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Consistency in the use and translation of Croatian IT terminology:

Current state and professionals' opinions

Graduation Thesis

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Zagreb, September 2019

Sveučilište u Zagrebu

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Odsjek za anglistiku

Dosljednost u korištenju i prevođenju hrvatske računalne terminologije: Trenutno stanje i stavovi stručnjaka

Diplomski rad

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Zagreb, rujan 2019.

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Abstract

The research done for this M.A. thesis focuses on the Croatian IT terminological system, its current state and professionals' opinions about it. This topic is researched by analysing a group of terms and their translations, as well as by conducting a survey among the expert users of these terms in formal environments. The goal is to find out if the Croatian IT terminological system is unified and well-defined, and if IT experts as its users perceive and use it as such. A list of English IT-related terms and their translations into Croatian found in various sources are analysed with regards to standard terminological principles. The results of the survey conducted with members of the scientific and academic community are also discussed in order to find out their preferred translations and opinions on this field in general. Based on this, the conclusion was reached that the IT terminological system in Croatia is not yet entirely defined or completely unified, and that professionals in this field do not use it consistently or perceive it to be such. The results imply that there is room for improvement and systematization in this terminological field in Croatia.

Key words: terminology, IT, translation, terminological system

1. Introduction

With the new industrial revolution and advancing technological trends, the field of IT[1] is ever-growing in the 21st century. Constant new developments make the expansion of this area not only possible, but also rapid. This growth brings about new things, methods and concepts, many of which need new names, resulting in the creation of new terms. Just like the field of IT, the number of new terms that need to be created in languages during the process of language transfer to other language communities is growing quickly. This makes fulfilling the task of developing terminology difficult.

This is especially true of situations in which standard language and standardized terminology needs to be used, such as in the case of academic and scientific texts and papers. As opposed to informal contexts, where jargon can be and mostly is used (*komp* as opposed to *računalo* in Croatian everyday nonstandard-language communication), standard language needs to adhere to certain rules, including the use of standardized terminology. In languages where terminology is created mostly by secondary term formation, such as Croatian, not developing this terminology quickly and consistently enough can bring about a number of problems. When there is no singular and standardized Croatian term, it is not possible to have unambiguous and precise communication in specialized and formal contexts. This in practice means that experts as the main standardized terminology users will have to revert to existing foreign terms, or that there will be several competing terms with no standardization.

This is the aim of this paper: To take a closer look at how English terms related to IT have been translated into Croatian and to see what options and sources for term translation and terminology development are available for IT experts to use in formal environments. This goal was reached through two means: An analysis of selected English terms and their available Croatian translations found in various resources, and a survey conducted among Croatian IT professionals as terminology users in order to see what they think about the translations available to them and which terms they would personally use in a formal situation.

This paper is organized as follows: The next section will deal with IT terminology in Croatia, what specifically will be researched within the paper and why the topic was chosen. Then I will take a closer look at previously conducted research on this topic. Key concepts needed for the analysis done further in the paper will be defined, along with the research

[1] For the purposes of this paper, the term "IT" is used in a broad sense to encompass similar, as well as related scientific and technological disciplines and fields, such as computer science, software and hardware engineering, computing etc.

questions, hypotheses and aims of this research. The methodology used to analyse the terms used in this paper and to conduct the survey will be explained in chapter six, with the results of the term analysis and survey reported and discussed in the subsequent chapter.

2. IT terminology in Croatia

The beginning of the 21st century has been marked as the start of the so-called Fourth Industrial Revolution (Encyclopaedia Britannica, 2018) or the Industry 4.0. The new advancements in digital technology are expected to, much like the previous three industrial revolutions, cause many political, social and economic changes in the coming years. This was made possible by the recent rapid development of computer and IT technologies, such as the internet, artificial intelligence, big data, increasing computer processing speeds etc. Consequently, three out of five of the fastest growing sectors of global economy are directly connected to IT and related technological disciplines, while the remaining two are heavily influenced by them (World Finance, 2018). Considering that this field has become essential to not just industry and economy, but also our everyday lives, its influence and omnipresence cannot be ignored. The same is valid for Croatia – the IT-related industrial sector is one of the fastest growing and more important ones in the country[2], so much so that there are scholarships given for students in related fields[3], and many people rely on the new technology every day, either for work or in their free time.

With the growth of this sector comes an increase in the number of concepts, inventions and, consequently, names for them – terms. Most of these terms are created in English, as that is the most productive language in the field of computing and IT. These terms are often "imported" and used in their original form by speakers of other languages:

> Societies which depend on importing technological and scientific knowledge need to designate the new concepts and therefore tend to use a large number of terms from other languages which, once a part of usage, are very difficult to displace. Scientific and technological transfer is the most frequent cause behind the high number of borrowed terms from a language in which the product or idea was created. (Cabré, 1999, p. 89)

This is particularly relevant for languages with a relatively small number of speakers, such as Croatian (Halonja & Mihaljević, 2012, p. 11). There is a great number of users, the size of the technological field is constantly increasing, and it takes a lot of time and effort to develop the related terminology in Croatian. Therefore, it has become difficult to translate everything, develop a terminological system, and adapt it to standard Croatian for IT specialists to use consistently (Mihaljević, 1993, pp. 7-8). This is especially true if it was not done from the very beginning of introducing new terms into this field. Consequently, some use a number of these terms in their original (English) form, particularly the newer and less-frequently used ones. The

[2] Retrieved June 02, 2019, from <https://tockanai.hr/tehnologija/hrvatski-ict-sektor-13934/>
[3] Retrieved June 02, 2019, <from https://stemstipendije.mzo.hr/>

issue is further highlighted by the fact that, throughout the (especially recent) history of the Croatian language, there has been a tendency to preserve the purity of Croatian by giving priority to Croatian words and terms, as opposed to foreign ones and internationalisms (Halonja & Mihaljević, 2012, p. 13). But in the field of IT, there seems to be a discrepancy between what is expected to be standard ("pure" Croatian words) and what is used by professionals and experts (both Croatian and foreign terms). In the past, attempts have been made to systematize and form a standardized IT terminological system. However, so far there has not been a unified effort to do so in its entirety, and to then keep updating it continually. For example, the Institute of Croatian Language and Linguistics (Institut za hrvatski jezik i jezikoslovlje – IHJJ), the Croatian national institution aiming to preserve and research the Croatian language, has created a terminological portal called Struna. It is an online database of Croatian terminology for various scientific fields, the purpose of which is to coordinate, define and help develop each field's terminological systems. It can also serve as a platform for translators to find professional term translations from English into Croatian (and vice-versa) for these fields. However, despite the impact the field of IT has on our daily lives and the scientific and industrial sectors, Struna currently does not offer any data sets for this field. This example shows that even national institutions do not provide a developed terminological system for the IT sector. In other words, there is no one authority providing official translations. This leaves IT experts to fend for themselves, either by choosing to use the original English terms, or trying to find their own ways to translate or develop the terms they need, particularly in formal contexts where there are strict norms and expectations.

This is why, for the purpose of this research, formal and standardized texts are used – specifically informative texts written for scientific and academic purposes, as they need to use standard language along with precisely defined terms (Mihaljević, 1993, pp. 7-8). There is no space for artistic expression or variation – once a term is defined, it should be used in the same form every time in order to ensure clarity and precision. This is important for this research as it presupposes that (in theory) every English term will have its standard and widely-accepted Croatian equivalent, at least in academic and scientific papers and other standardized texts. Such uniformity and level of standardization make this type of text a good basis for linguistic analysis. The terminology used in these papers was compared to what translation options are provided in a number of resources an IT expert might use when looking for a Croatian translation of a term. These resources are both digital and in print, and they include various kinds of dictionaries, glossaries, databases, translation tools etc. They are further explained in

Chapter 6 of this paper, while a full list of sources and the term translation candidates found in them is provided in Annex 1 and Annex 2, respectively.

Overall, IT terminology in Croatia is still a relatively undefined field. Even though there are a number of (more or less) normative sources to look for translations in, there is no one primary and standard resource which would provide singular, definitive and uniform translations for these terms. This leads to a somewhat unstable situation, as it results in synonymy, varying (and sometimes opposing) views and opinions among experts, multiple signifiers for one signified concept, and a lack of uniformity and precision, which are needed for a scientific and academic text (Mihaljević, 1998, p. 10). As the terminology is not clearly defined and limited to one term per concept, the "semantic clarity" (Cabré, 1999, p. 111) sought after by terminologists cannot be reached. These issues will be further explored in the term analysis and survey conducted for this thesis, as described in Chapters 7 and 8.

3. Previous research

At the moment of writing this paper, the topic of IT-related terminology in Croatia has been researched by a relatively small number of authors and has not gained much formal attention. This is perhaps due to the fact that the field is still relatively new and has only recently become the subject of research. Because of this lack in variety of research perspectives, the previously-done research is somewhat one-sided and prescriptive in part.

Research was mostly conducted by, but is not limited to, members of the aforementioned Institute of Croatian Language and Linguistics (IHJJ), primarily by Mihaljević and her colleagues. In Mihaljević (1993, 1998 and 2003), the author sets the groundwork for future research done in this field by researching how Croatian (IT) terms are created, what the most common translation methods are, and which issues came up during the translation process. In these books, specifically the latter two, the author researches in detail topics such as how certain parts of speech are translated and what derivations can be created from them, what is considered to be more or less standard Croatian, and how the translation process should proceed in the future in order to maintain the Croatian language. The author is against using foreign words, especially in the field of IT, where English is becoming the dominant language worldwide. These works offer the perspective of a linguist specializing in Croatian and at times prescribe solutions that could today be considered obsolete, such as recommending the Croatian term *strojevina* for the term hardware, which does not seem to be accepted by IT experts (a topic further discussed in Chapters 7 and 8). The problem is also that many terms used today were only created years after these books were published, showing a need for more up-to-date research.

This need was in part fulfilled in the author's more recent work (Mihaljević, 2006, 2007 and 2009). The focus of this research lies in highlighting the notion that Croatian IT terminology (still) needs to be standardized, on explaining how this could and should be done, and on dispelling some usual misconceptions when it comes to this topic, such as that English terms are more precise than Croatian ones. These papers could be seen as expansions of the previously listed works in that they include some new terms, but the results and conclusions remain largely the same. In Mihaljević (2009), the author also describes the tools that were then being developed to help solve the issues of Croatian IT terminology, such as the previously mentioned Struna database, but up to the moment of writing this paper, this specific resource could not yet be utilized for this purpose. In Mihaljević (2007), there is also mention of a Croatian IT

terminology portal (hrana.ffzg.hr), but the link was not accessible at the time of writing this paper.

Halonja & Mihaljević (2012), offer a further expansion of Mihaljević's previous work by separating IT jargon from the standardized terminology. That is an important distinction for this paper, as this research analyses only formal and standard language. This book also includes a dictionary of the Croatian computer jargon, with standard English and Croatian variants provided where possible. The list of terms analysed by Halonja & Mihaljević is updated to an extent, compared to the previously described works, albeit still insisting on a number of not widely-accepted translations.

Other authors who have dealt with this field include Škifić and Mustapić (2012). They described the state of IT terminology, as well as related anglicisms, in respect to the currently dominant language ideology (language purism) in Croatia. Furthermore, the question of whether or not that stance is always viable or necessary was discussed. The authors also conducted a survey with elementary school students to see if they would choose Croatian or English terms. They found that, in most cases, Croatian is not threatened by English words, but that English was chosen where it is easier to apply it.

Of note is also the work done by Miščančuk and Vučković (2011), as the authors conducted research that is similar to what was done in the present study. They analysed a number of random terms and their translations from three normative sources, finding that these sources often do not agree or provide one agreed-upon translation for a given term. The authors also found that there can be many possible translations for a single English term. They mention using the "Megabajt" online dictionary (megabajt.org), but this resource was at the moment of writing this paper not available.

Overall, while there has been some research on this topic, a majority of the available resources are quite similar regarding the reached conclusions. Most of the available papers and books were written by the same author or group of authors, which could mean that there is little diversity in research perspective and methods. However, despite previous research, there are many aspects of Croatian IT terminology left to explore and research.

4. Key concepts

This section will outline the concepts that are most important for the research done in this paper, primarily the principles, standards and norms of developing translating terminology from English into Croatian.

4.1. Croatian terminological principles

When it comes to translating terminology into Croatian, or developing a terminological system in general, there are certain principles which are widely accepted as norms and should be adhered to. This should ensure that the new terminology fits into the currently existing terminological systems and the Croatian standard language. These guidelines are given in the updated terminological handbook (Hudeček, Mihaljević, & Nahod, 2009, pp. 69-78) and are followed by most of the authors and in the papers cited in this research. They are as follows:

1. Croatian words should be prioritized over foreign words.
2. Terms of Greek or Latin origin should be prioritized over terms of English, German, French etc. origin.
3. The more widely used and accepted term should be prioritized over the less used term.
4. Terms need to comply with the Croatian standard language system.
5. Shorter terms should be prioritized over longer ones.
6. Terms which are easier to derive new words and terms from should be prioritized over those with few possible derivations.
7. Terminological polysemy within the same terminological system should be avoided.
8. Existing terms should not be altered without valid reason.
9. One term should be prioritized over another if it fits the concept it is associated with and if it reflects its position in the conceptual system.

These principles correlate with those proposed by the International Organization of Standardization (ISO), as described by Sager (1990, pp. 88-89). This is particularly true for principles numbered four, seven, eight and nine. Other principles were added specifically for Croatian, in relation to the current language policies. According to Halonja & Mihaljević (2012, p. 101), principles numbered one, four and nine hold the highest hierarchical position of the nine and should take precedence over the others when creating new terms in standard Croatian.

4.2. Most common Croatian IT term formation procedures

When it comes to secondary term formation for this field, there are four main ways of introducing new IT-related terms into Croatian, with English being the main source language. These methods will here be explained briefly and used again later on in Chapters 6 and particularly 7. While the aforementioned Croatian authors (see Mihaljević (2003, pp. 96-105) and Halonja & Mihaljević (2012, pp. 83-84)) provide a classification of terminology development procedures, they do not differentiate between primary and secondary term formation. As the terms in the field of IT in Croatia are mostly developed through secondary term formation, Sager's classification (1990, p. 90) will be used for this paper. The following procedures are most commonly used for Croatian, with examples from the table of researched terms, which is shown in Annex 2:

1. Borrowing – as part of secondary term formation, an existing term is borrowed to be used in a new environment and terminological field. For the purposes of this paper, Sager's classification will be further divided into two groups, considering that an existing term can be borrowed in two ways. These are borrowing from a foreign language (in the case of IT – English) and borrowing within the same language, i.e. from the general language or another terminological field (in this case, from Croatian). A foreign borrowed term can in time be adapted to the Croatian morphological, phonetic and orthographic system, meaning that its spelling, pronunciation and morphology can (but do not have to be) adapted to varying degrees. According to some authors, this should not be the primary way of introducing new terms into the Croatian system of IT terminology or the standard language, but it often is (see Halonja & Mihaljević, 2012, p. 83). The terms that are borrowed from other Croatian terminological fields or the general language are more adapted than those taken from a different language as they have already been actively used, there may aready be derivatives available etc. Their meaning in the target language is usually similar or related to that in the source, but they do not share their connotative or literal meaning (as shown with the term handshake below).

   software > software or *softver* (varying levels of adaptation to standard Croatian)

   handshake > *dogovaranje* (from general Croatian – to arrange or agree upon something)

2. Literal translation – a word's or phrase's lexical bases are translated literally in order to form a new word or phrase in the target language. This means that, unlike borrowings from the same language, the English and Croatian terms do have the same connotative

meaning. These new terms are then usually well-adapted to the target language phonetically, orthographically, as well as morphologically (which adheres to the Croatian terminological principles). This term formation method can result in completely new words or add new meaning to existing words.

> computer > *računalo* (from *računati* – to compute; a new word in Croatian, but translated literally from English)
>
> stack > *stog* (a literal translation and an existing general-language word in both languages)

3. Neologism – the creation of an entirely new word with its own meaning in the target language. Many originally English IT terms are neologisms, which can then be literally translated into Croatian, but there are also neologisms in IT terminology in Croatian specifically. This type of term formation procedure is reflected in developing previously non-existent words, deriving new words from existing ones, joining words or lexical bases together etc. For example:

> object program > *odredišnik* (derived from *odredište* – destination, target, goal)
>
> software > *napudbina* (derived from *naputak* – instruction, direction)

4. Paraphrases – IT terms are often introduced into Croatian as multi-word units which together refer a single term and concept. While this solution is often well-adjusted to the standard language, deriving new (related) terms from paraphrases can be problematic, due to containing multiple words. This is where single-word terms could be more often used, even if they are not the preferred or standard option (Škifić and Mustapić, 2012). For example:

> software > *programska podrška* (which is more adapted to standard Croatian than the previously mentioned software and *softver*, but deriving related terms from it is more difficult)

Of note are also acronyms and initialisms, which are usually kept in their original, English form and can be seen as borrowings – in other words, the term Local Area Network will be translated as *lokalna mreža* or *područna mreža*, to name but two options; however, if used as LAN, the Croatian abbreviation will not be translated as *LM* or *PM*, but will instead be kept as LAN, such as in the case of *LAN-kartica*.

These are the most important concepts relating to the research done in this paper. The terminological principles and term formation procedure listed here will be important in the upcoming chapters as part of an analysis of terms and their translation options found in various

sources, as well as a description of survey results. These principles and procedures will serve as a reference point to compare Croatian term candidates (where there are multiple options) and to see which terms are “better” than others in that sense. More on this in the upcoming sections of the paper.

5. Research questions, hypotheses and aims

The main questions this research works towards answering are the following:

1. Is the Croatian IT terminology system standardized, i.e. is there a normative institution or resource which would provide IT experts as the primary terminology users with definitive, formal and widely-accepted Croatian terms for this field?
2. Do scientists, academics and other IT experts use these terms consistently and uniformly in formal communication, such as in scientific, academic and similar texts?

The hypotheses are negative answers to these questions – it is assumed that there is no institution or resource on which one could rely to find definitive answers when looking for terms in this field; thus, professionals do not (and cannot) use this terminology in such a way that they would be consistent and uniform country-wide or even within a single institution (e.g. at a single faculty). Instead, they have to find their own translations for English IT-related terms. This has been explained in Chapters 2 and 3, and will be further shown on concrete examples in Chapter 7.

Therefore, the aim of this research is to determine the current state of IT terminology in Croatia by taking a closer look at the existing term candidates and by conducting a survey among IT experts who are the users of this terminology in order to get their opinions directly.

6. Methodology

The study consists of two parts – an analysis of terms, i.e. term translation candidates found in the sources described in Chapter 2 and discussed further in the paper, and a survey conducted among members of the academic and scientific community in Croatia from various institutions and of various levels of education. The aim of the survey is to find out which the participants' preferred translation solutions are and what they think of the state of IT terminology in Croatia in general.

6.1. Term analysis

In order to decide which terms would be used in the survey, their Croatian terminological equivalents first had to be found and researched in various sources. For this purpose, a number of normative and conventional sources were used, all of which are listed with their respective codes in Annex 1. The analysed English terms, a list of which is provided in Annex 2 (along with their translation candidates), were first randomly selected through internet browsing, researching available literature and taking part in discussions on topics related to this field. This larger list of terms was then narrowed down based on how often they could be found in the used resources – if at all. For example, if a term is too new or too specialized to be present in any of the listed sources, it was not further researched as there was no confirmed or even suggested translation of it. While the lack of a term's terminological equivalent(s) is also an indication of the state of a language's terminological system, it was not the topic of this research, as translation options were required. Additionally, the narrowed-down list of terms was further adjusted to include only those terms that are neither too complex nor focused on a single narrower topic. This ensured that they would be recognized by as many survey participants as possible, thereby providing clearer survey results. The final list consisted of 45 English terms.

The sources used for this research are both digital and in print, including printed dictionaries, online resources such as glossaries, linguistic texts written on this topic by experts, papers written by students, experts and academics published in relevant databases, online dictionaries and translation tools etc. The list of sources was compiled in part from the perspective of a translator looking for normative and standardized sources for this terminology in the Croatian language; however, the list also includes a number of less normative sources (such as Google Translate) which were specified by IT terminology users when asked about how they find terms in Croatian when writing an academic paper. This list can therefore serve as a general overview of what resources are available for this purpose in Croatia. Corpora were not used for this research, as there are currently no corpora of the Croatian language which

include scientific texts or other types of texts using standard and formal language in the field of IT. In other words, they were not a relevant resource when looking up this terminology in Croatian for formal purposes.

The used sources were divided into larger groups as follows, with the individual used resources listed with their codes (list with complete references in Annex 1):

- Linguistic literature: Books and papers written on the topic of terminology in general and about the field of IT. The authors discuss how certain terms were developed and offer an overview of available translations, options or their own suggestions on how a term can or should be created or translated. This also includes online style guides for standard, formal communication, including formal (scientific, academic) papers. This group includes the following resources: Mihaljević 1, Mihaljević 2, Halonja, Jezični savjetnik, Bolje je hrvatski.
- Printed dictionaries and lexicons: These are general language English to Croatian dictionaries, as well as specialized terminological dictionaries and lexicons. Only those resources providing an explicit translation from English into Croatian were used, as opposed to e.g. looking up terms in Croatian lexicons, encyclopaedias etc. and assuming that they are translations of certain English terms based on their definitions. However, while these are the most standardized resources, it should be noted that some of them are obsolete to a degree – for example, one of the dictionaries was published in 1991, before the internet as we know it today even existed. None of the terms related to it and stemming from it are included in this resource. Overall, there were few recent dictionaries or lexicons (with English terms) available in Croatian at the time of writing this paper. This group encompasses these materials: Bujas, Kiš 1, Kiš 2, Microsoft Press, Šijak, Babić, Školska knjiga, Štambuk, Jakobović.
- Online scientific databases: This primarily refers to the CROSBI scientific database (code: CROSBI, with all the individual authors listed in this category), but also to the HRČAK portal (code: hrčak, with all the individual authors listed under this category); As was the case in the previous group, only those papers which provided explicit translations from English into Croatian were used, such as in the key words or abstracts of papers, theses and other scientific or academic publications.
- Online dictionaries, glossaries and translation tools: These resources are the most up-to-date, but the least normative and standardized, as they include personal glossaries compiled by university professors, online dictionaries which often rely on crowd-

sourcing, and tools such as Google Translate, which is not a normative resource, but it was nonetheless suggested by IT experts and terminology users as a place they look for translations. The following resources belong in this group: Nazivlje, Microsoft, Groš, Google Translate, EUdict, Begušić, Muljević.

Based on these resources, the translation options i.e. term candidates were organized in a table: The first column contains the English terms, the columns to the right are suggested terminological equivalents. If a term candidate was provided in multiple sources, all of the sources were listed next to it as codes. The translations are not displayed in any particular order, except for those provided in the right-most column titled "Additional translations". These are confirmed Croatian translations usually only found in one resource, signifying that they may be less frequently used. By organizing the terms and translations in this way, it is possible to see the number of Croatian term candidates and confirmed sources for each English term at first glance, allowing for an easier overview when analysing the individual terms. This analysis will be done in the following chapter of the paper by comparing the found translations to the terminological principles and term formation procedures described in Chapter 4.

6.2. Survey

The participants in the survey were Croatian IT professionals, the main users of this terminological system. The survey can be found in its entirety in Annex 3. In short, it consisted of these three parts:

1. In the first part, participants had to choose from among the 2 to 5 offered term candidates. In case they would not use any of the provided translations, they had the possibility of suggesting their own terminological equivalent for a given English term. In total, there were 20 questions, i.e. English terms (out of the analysed 45) and their respective translations.
2. In the second part, survey participants were asked to choose the best method for term translation according to their opinion; furthermore, they offered their point of view on questions relating to IT terminology in Croatia and terminology in Croatia in general. They rated statements on this topic from 1 to 5, where 1 signified that they do not agree at all and 5 that they fully agree. The statements focused on subjects such as the current state of this terminological system in Croatia, if it is standardised, how this should be done etc. It is important to note that participants did not have the option to go back to the first part of the survey once they had finished it, so that the questions in the second part might would not influence their previous choices.

3. The third part of the survey gathered demographic information on the participants, including their age and level and field of education. There was also a field for optional comments regarding the topic of the survey or the survey itself.

The first two parts of the survey were expected to provide information about which solutions are preferred in actual use in Croatia and whether the participants' choices correspond with the principles described in Chapter 4 of this paper. They could also be compared to see if the experts' opinions align with the choices they made in the first part, e.g. if the majority chose English (borrowed) terms, but later said that everything should be translated to Croatian.

The survey was made on the LimeSurvey[4] platform and a direct link to the survey was sent to various staff and student groups: University of Zagreb Faculty of Electrical Engineering and Computing (UNIZG-FER), University of Dubrovnik (UNIDU), Zagreb University of Applied Sciences (TVZ), University of Split Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture (FESB), and social media groups (Facebook) with members related to this terminological field. The survey is anonymous in its entirety, as ensured by the LimeSurvey platform, aside from the information the participants entered about themselves. No personal data about the participants, such as their names, locations, IP or e-mail addresses are saved or used in the survey in any way.

The results of the survey are described in detail in the next Chapter of this paper and are available in their entirety in Annex 4.

[4] The platform can be used free of charge by users with a valid AAI@EduHr account, including students of the University of Zagreb and the Faculty of Humanities and Social Sciences.

7. Results

The following two sections report on the results of the two types of research done as part of this paper – the first one being the term analysis, the second the survey with IT professionals. This was carried out in order to reach the described aim of this research – taking a closer look at the current state of IT terminology in Croatia.

7.1. Term analysis results

Altogether 45 IT-related terms were analysed. Their 223 translation options (61 borrowings, 35 of which are from English, 26 from Croatian, 92 literal translations, 16 neologisms, 47 paraphrases, 2 descriptive translations and 5 mixed translations) were found in various resources. The resources were assigned codes for easier use (see Annex 1 and Annex 2) and added into a table, ensuring a clear overview of the English terms and their Croatian translations. The terms each have at least one and up to 11 possible translations, with an average of 5 translations per term (mean: 4.9, median: 5). This signifies that some English terms do not have a single agreed-upon Croatian counterpart, or that there are many synonyms for a single term. Such a state should be avoided in formal, informative and academic texts (see Chapter 2) and within the same terminological field, as per terminological principle number seven from Chapter 4.1. Considering that the majority of the used resources are provided by relevant normative institutions and authors, it can be concluded that the Croatian IT terminological system has not yet been thoroughly standardized, at least for the needs of formal communication. Even terms or concepts which could be considered basic, such as hardware, are problematic when it comes to Croatian terminology. This and a number of other issues are demonstrated in the following analysis:

There are 8 possible translations for the term hardware, some of which (e.g. *strojevina, tehnička oprema, sklopnjak*) are only used by one to two authors:

hardware	sklopovska oprema (Školska knjiga, Muljević)	hardver (Mihaljević 2, Bujas, Microsoft, Nazivlje, Šimunković, Ledić, Štaher, Microsoft Press, Šijak, Školska knjiga, Vrhovski, Šumiga, EUdict, Google Translate, Begušić)	strojna oprema (Kiš 1, Halonja 95, Kiš 2, Microsoft Press, Bolje je, Jezični savjetnik, EUdict, Begušić)	sklopovlje (Kiš 1, Halonja 95, Šimunac, Šerfezi, Aljinović, Kiš 2, Microsoft Press, Jakobović, EUdict, Begušić, Muljević)	• tehnička oprema (Bujas, Muljević) • strojevina (Kiš 2) • računalna oprema (Muljević) • sklopnjak (Mihaljević 2)

Table 1 All found translation options for the term hardware

In terms of formation procedures, there are paraphrases (*sklopovska oprema, strojna oprema, tehnička oprema, računalna oprema)*, neologisms (*strojevina, sklopnjak, sklopovlje)*

derived from Croatian words *stroj* (machine) and *sklop* (circuit, construction), as well as one English borrowing (*hardver*), which is semi-adapted to Croatian (phonetically and orthographically). Since both *stroj* and *sklop* are of Croatian (Slavic) origin, neologisms derived from them should be the preferred translations, yet *hardver* was listed in the most sources. None of the resources which provided multiple translations pointed any of them out as more adequate than others in any way. When these term candidates are looked at in the context of the Croatian terminological principles, the following can be concluded: Terms derived from Croatian words, such as *sklop* and *stroj (sklopovska oprema, strojna oprema, strojevina*, but also *računalna oprema* etc.) are "better" than borrowed words (in this case, *hardver*). Even the internationalism in *tehnička oprema* should be prioritized over *hardver*. The question of use and professionals' preference will be discussed in more detail as part of the survey results; still, the number of authors using *hardver* shows that this term should be foregrounded, according to the terminological principle number three. All of the terms comply with standard Croatian, albeit *hardver* has an unusual combination of consonants – "rdv". If shorter terms should be prioritised, only *strojevina, sklopnjak, sklopovlje* and *hardver* remain as options. All of the shorter terms can have new words derived from them without issue. The seventh principle (polysemy/synonymy) has already been mentioned; the eight is not relevant in this case, as there was never a single established standard term to be changed. Finally, all of the suggested one-word term candidates could reflect their position in the conceptual and terminological system if their respective related terms were adjusted accordingly – e.g. if *hardver* were to be used, so should *softver*. Overall, even if considering that principles number one, four and nine should be the most important, there is still no one definitive translation that can be judged and used as "the best" option.

A similar example is that of the terms assembler, compiler and interpreter. These three concepts share some similarities, yet they also have specific qualities which clearly differentiate them from one another. This fact is important for the translation – considering that all three have *prevodilac, prevodioc* or *prevoditelj* as options or part of an option. Nouns ending in -oc and signifying a subject performing an action are not part of standard Croatian, while the suffix -telj is preferred over -ac for the same nouns (Institut za hrvatski jezik i jezikoslovlje, 2019). If all foreign words are taken out of the equation and only Croatian options are left (as is recommended), this would mean that all three terms could be translated to *(programski) prevoditelj*, which is a problematic case of polysemy and can be confusing even with some context. While the terms assembler and interpreter have Croatian options which are clear and

differ from each other (*zbirnik* and *tumač*, respectively), there is no standard Croatian term suggested for the term compiler. This goes against the ninth terminological principle. Together with the number of sources listing the following solutions, this points to the practicality of using borrowed words, adapted to Croatian: *asembler*, *kompajler* and *interpreter*. More on this in the survey results in Chapter 7. It is interesting to note that the term candidate *zbirnik* was also proposed as a translation of the English term bus in two resources, creating another example of polysemy (assembler and bus are both *zbirnik*) within the same field. These two concepts are evfen more different from one another than the abovementioned assembler, compiler and interpreter, but two authors gave them both the same signifier. The Croatian term candidate *pretraživač* was also suggested for two terms (browser and crawler) in two different sources, which is also an example of potential polysemy.

The term encryption is also interesting – there are four options, three of which are provided by multiple authors (*šifriranje, kriptiranje, enkripcija*), and one by a single author (*zakrivanje*). While the former two are literal translations, their lexical bases are all foreign, borrowed words (from French and Greek, albeit already accepted in Croatian). The third option, *enkripcija*, is a borrowed adapted term from the English original, while the latter one is derived from a Croatian word, but it is not given in any other resource. They are all short terms, new words can be derived from all of them (maybe even more so from the foreign ones), and they could all work well within the conceptual and terminological system. Still, it seems that the foreign options are preferred to the domestic one, despite the terminological principles.

Pleonasms and paronyms can also be found among the analysed term candidates. For example, the term *LAN-mreža* (Engl. LAN), as suggested by one author, is redundant since the word *mreža* is included in the English acronym (Local Area Network). Similarly, there are paronyms among the translation options: e-mail is translated as both *elektronska* and *elektronička pošta* – both cannot be the solution, as they signify different concepts. In this case, *elektronička* is correct[5], as this adjective refers to electronics, as opposed to *elektronska,* which describes something relating to electrons. The term operating system was also difficult, as there are two paronyms: *operacijski* or *operativni* sustav. *Operativni* derives from the internationalism *operativa,* indicating the capability or possibility of action. *Operacijski*, on the other hand, stems from *operacija,* which in Croatian mostly refers to operations in the context

[5] Retrieved 02 June, 2019 from <http://jezicni-savjetnik.hr/?page=7>

of medicine, such as operating rooms. Therefore, the correct term would be *operativni sustav,* even though it was suggested in fewer sources.

The Croatian translations of the term thread provide an example of dialects entering the terminological system. The proposed translations are the general language borrowing *dretva,* which is a northern Croatian dialectal word (and also a Germanism) for shoemaker's thread[6], and *nit,* a standard Croatian word and a literal translation. Despite being dialectal, more resources suggested using *dretva* than *nit*. The IT terminology development in Croatia is further influenced by other terminological systems – the Croatian borrowing *osmak* comes from the Croatian agricultural terminology, indicating a sort of corn that has eight rows of kernels on one cob. The English original, *byte*, is a neologism and has no relation to corn (which this Croatian term candidate does).

The English term boilerplate is an example of a term relatively newly introduced into this field (even on an international level). While the term exists in other fields, in the context of IT, it has only recently become popular. Since that is the case, there were virtually no Croatian translations to be found in any of the used resources, with the only two options being *standard* and *ponavljajući tekst,* each in one resource only, one of which is from 1995. This is an instance of new terms not being translated or developed quickly enough as they enter Croatian, so instead authors use them in their original form or translate them on their own.

However, not all terms are necessarily problematic – the terms database and programming language are examples of there only being one term candidate provided by a large number of sources. These are *baza podataka* and *programski jezik,* respectively. While they are both literal translations consisting of two words (and shorter terms would normally be preferred), these translations were consistently the only ones provided in the listed resources. They show that standardization and agreeing upon one term is possible and could be achieved in the future.

To sum up, the analysed terms point towards the Croatian IT terminology system not yet being thoroughly standardized and unified. There is still a large number of English terms which each have their own numerous Croatian counterparts. This is not a state that is normally sought after for formal (academic, scientific etc.) texts. It means that there are many synonyms, as well as polysemous and unclear (translations of) terms. Such a state can lead to a number of issues in informative texts, primarily a lack of clarity and precision. While there are examples of well-

[6] Retrieved 02 June, 2019 from
< http://hjp.znanje.hr/index.php?show=search_by_id&id=fF9jWhA%3D&keyword=dretva>

translated terms that experts agree upon, such as database > *baza podataka*, the majority of the here analysed terms are nonetheless problematic. Of course, this is only a small segment of an ever-growing terminological and technological field, and these results cannot be applied to all terms; however, considering that most of the concepts and terms chosen for this analysis are relatively simple and well-known, it can be assumed that the situation is similar with more complex and less frequently used terms and concepts.

7.2. Survey results

The survey was taken by 75 participants: 48 (60%) of the participants are students of computing, i.e. IT or related scientific fields, with the average age of 22.96 years for this group. 20 (27%) participants are engineers of the same fields with ages ranging from 22 to 51, and 7 (10%) participants, aged 30 to 63, have a Ph.D. degree in IT-related fields.

All survey results are available in more detail in Annex 4 – Survey results.

7.2.1. Term translation choices

The first part of the survey produced mixed results when looking at the consistency of choice based on term formation i.e. term translation procedures. In some cases, the participants chose Croatian terms (Croatian neologisms, literal translations or paraphrases); in other cases, they chose English terms (foreign borrowings) with varying levels of adaptation to standard Croatian. For example, in Question 1, 46% of participants chose *asembler* (a foreign borrowing) instead of the other options, all of which are Croatian words. However, in Question 5, 51% chose *sklopovlje*, which is a neologism and a derivation of the Croatian word *sklop*, making it a "better" choice according to the nine terminological principles in Croatia. Furthermore, the second choice for Question 1 was *programski prevoditelj*, which is a problematic case of polysemy within a terminological system, as it relates to Questions 8 (interpreter) and 16 (compiler), both of which had *prevoditelj*, *programski prevoditelj* or *prevodilac* as choices. Since they are all very similar, issues could occur when e.g. two or all three terms are used in a paper, as readers would likely not be able to differentiate between *programski prevoditelj*, *prevoditelj* or *prevodilac.* For this particular case, there are other recommended solutions, such as *zbirnik* (assembler), *prevodnik* (compiler) and *tumačnik* (interpreter) (Mihaljević, 1993, p. 165). This set of terms would indeed be more fitting in the context of the terminological principles, and the terms themselves are relatively clear and not easily confused with other words. However, only one of them (*zbirnik)* was found in the various used sources as a confirmed translation (and, as previously explained, this is problematic, as well, since *zbirnik* is also a translation candidate for bus). Therefore, this is an example of where borrowed terms

are useful – *asembler* (46%), *interpreter* (47%) and *kompajler* (39%) were all the first choice in their respective questions, which allows for a clear distinction between the three terms, even if the translations do not comply with all of the terminological principles.

In Question 2, 46% of participants chose *dubinska analiza podataka* as their preferred translation for data mining, which is a paraphrase. 35% opted for *rudarenje podataka*, a literal translation. Once again, two terminological principles clash – the former was chosen by more participants, but the latter is shorter and should therefore be the preferred choice. The English borrowing data mining was chosen by 17% of the participants, while *majnanje* and *sakupljanje podataka* were also added as options.

In Question 3, *elektronička pošta* was the translation of choice for over half of the participants (52%), and another 36% said they would use e-mail, a foreign borrowing. Only 11% of the participants chose the incorrect term *elektronska pošta*, and one participant suggested they would use just *pošta*, which is not necessarily the clearest translation for this English term.

When asked to choose a translation for the English term framework in Question 4, the preferred term candidate (50%) was *razvojni okvir*, a paraphrase of Croatian origin, which is a good solution according to the terminological principles. *Radni okvir* was also a possible choice (25%), but since *razvojni okvir* was chosen by more participants, this can be seen as the go-to translation of the term framework. Another solution is *radno okruženje*, but this term can be problematic as it is very similar to potential translations of the term environment (or development environment) within this field. Participants also suggested using the borrowed term framework, just *okvir*, or *razvojno okruženje*. One participant said that their choice was context-dependant.

Questions 5 (hardware) and 10 (software) are discussed together because their positions in the terminological system are related to one another according to the terminological principle number 9. For hardware, s*klopovlje* was the first choice (51%) and *hardver*, an English borrowing, was the second (40%). Other options include another borrowing, hardware, followed by the paraphrase *strojna oprema* and the term *tvrdi disk*, which is not a correct translation in this case, as that is just one possible element of a computer's hardware (the hard disk). However, *softver* was the translation chosen by the most participants (40%) for the term software, which means that some participants (specifically, 10 of them) would combine *sklopovlje* and *softver*, going against the terminological principle number 9. The second choice

was *programska podrška* (34%), the third was the English borrowing software (17%). Four participants from this latter group also combined a foreign borrowing and neologism - software and *sklopovlje*. This brings the percentage of participants who combined software/*softver* and *sklopovlje* to 14, or 18%. The participants also chose *programska oprema* and suggested the term *aplikacija*. The terms hardware and software are therefore problematic, as they are seen as a pair and their translations should be used accordingly, e.g. by combining *hardver* and *softver* (20 participants or 27%), or *strojna oprema* and *programska oprema* (done by only two participants or 2.3%), as was discussed in the previous section of this paper.

Question 6 focused on the *operacijski sustav – operativni sustav* paronym: 73% of the participants chose the incorrect term *operacijski sustav*, which, as previously described, would actually refer to e.g. medical operations. The correct term *operativni sustav* was the preferred option for only a quarter of the participants, as can be seen in Figure 1. Additionally, one participant suggested they would just use the English abbreviation OS.

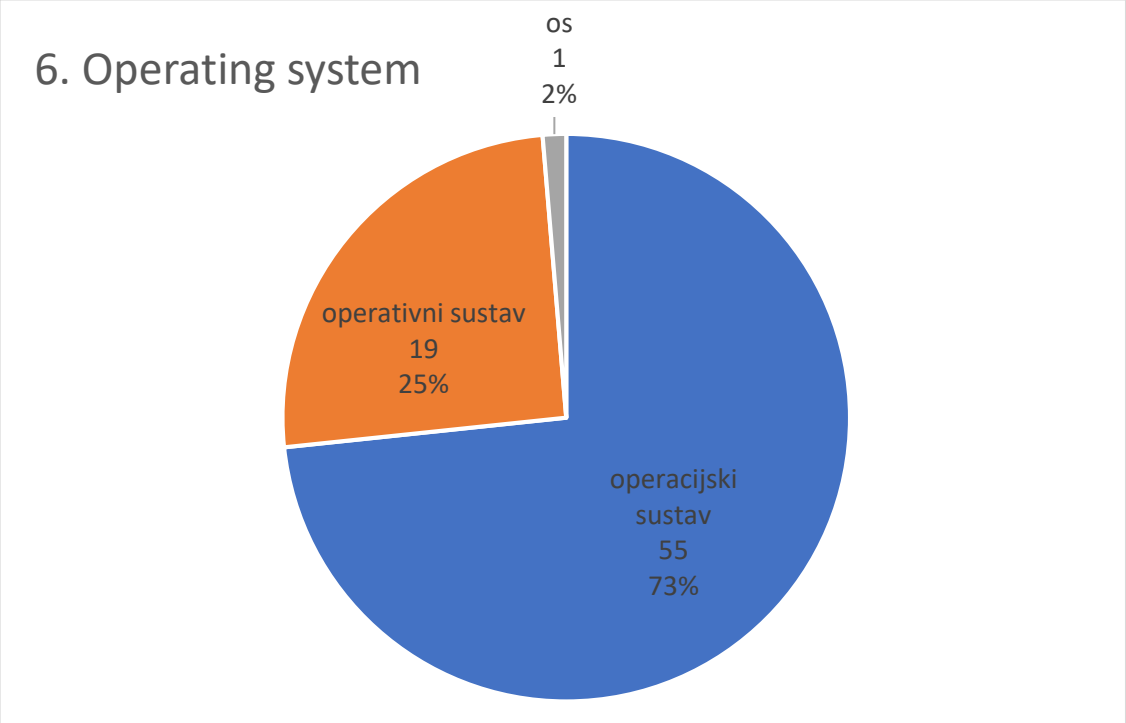


Figure 1 Survey results for the term operating system

An interesting example of synonymy can be seen in Question 7 (save) – *spremiti* (56%) and *pohraniti* (39%) are both Croatian words and literal translations which do not go against any of the terminological principles. In this case, the deciding principle is number 3, as *spremiti* was chosen by a larger number of participants. Only four participants altogether opted for other solutions – *sačuvati*, *sejvati* and save. While 15% more participants chose *spremiti*, this is a

relatively small difference (as compared to e.g. Question 6) and can be considered a potentially problematic case of synonymy within the terminological system.

The mixed solution (foreign borrowing and literal translation) *web stranica* was chosen by a majority of the participants (85%) in Question 9 (website), even though it should actually be spelled *web-stranica.* The Croatian term and literal translation *mrežna stranica* would be a better choice (according to the terminological principles). One participant added their answer *internet stranica*, which is not grammatically correct and should instead be *internetska stranica* or *internet-stranica*. None of the participants chose the proposed mixed candidate *web-mjesto.*

Question 12 (thread) is particularly interesting – it is a clear example of a dialectal term becoming a part of a field's terminological system – 69% of the participants chose *dretva* as their preferred translation. That is perhaps due to the fact that some participants (as they explained after taking part in the survey) did not know this was a dialectal word and perceived it as a neologism for the term. The literal translation *nit* was chosen by 23% of the participants, while another 7% selected the English borrowing thread as their own option. This question is another example of the majority of survey participants choosing a non-standard term.

The same can be concluded for Question 13 (update) and 14 (widget) – *ažurirati* was the choice of an overwhelming majority of the participants (95%), displayed in Figure 2, even though this is a literal translation, the origins of which are French, which goes against a number of the terminological principles; similarly, 76% chose the term widget as a translation, which is a non-adapted borrowing from English. Even though the participants could also choose *posuvremeniti* or *dopuniti*, which are more in line with the terminological principles in Croatia as they are of Croatian origin, none of the participants chose these term candidates.

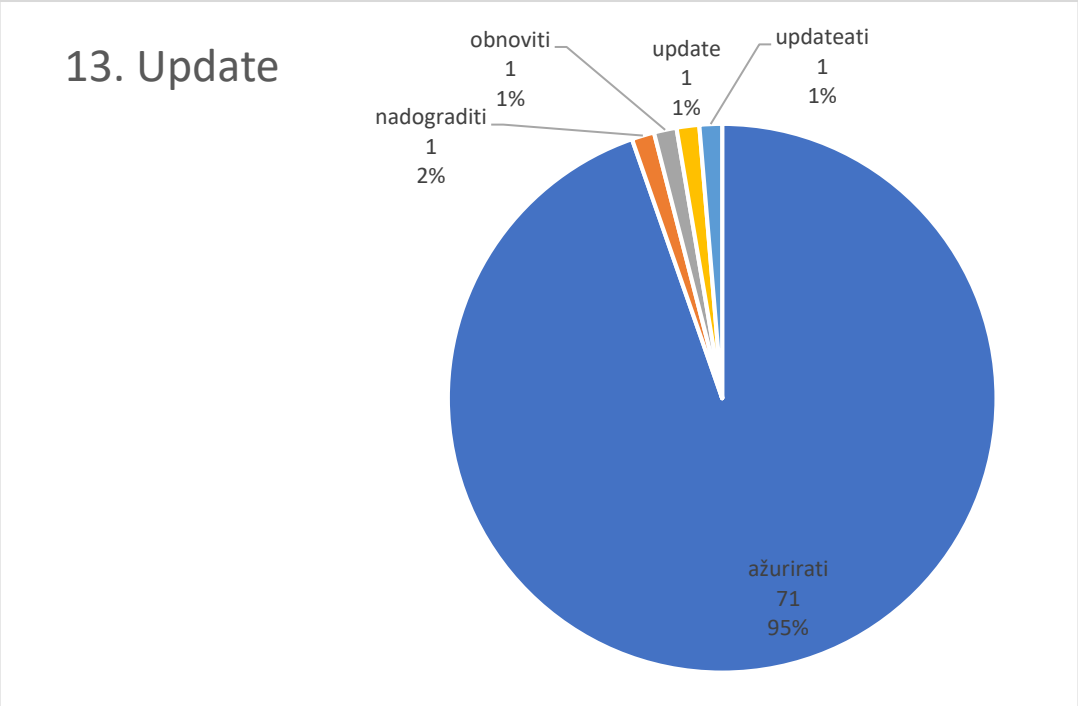


Figure 2 Survey results for the term update with 95% of participants choosing ažurirati

The term dongle (Question 15) was somewhat problematic for some participants (5%) as they did not know what the term refers to. The preferred translation here was *hardverski ključ* (45%), followed by *privjesak* (24%) and *ključić* (16%). It should be noted that 15 participants (20%) who chose *sklopovlje* for the term hardware in Question 5 selected *hardverski ključić* in this question, which is an example of inconsistency within the terminological system and among its expert users (they had the option of adding their own answer to be consistent – e.g. the derivation *sklopovski ključić* if they chose *sklopovlje*).

Priručna memorija was the best choice (52%) for the term cache (Question 17), followed by the non-adapted borrowing cache (29%) and neologism *predmemorija* (19%). Once again, multiple terminological principles are clashing – while *priručna memorija* was selected by more participants, *predmemorija* is shorter and better suited for derivations. Still, more participants chose the borrowed term which is not adapted to standard Croatian.

Question 18 (Random access memory (RAM)) was also interesting in that a number of participants (25%) said they would use just the abbreviation RAM, even though it is originally in English, or that they would use the pleonasm *RAM-memorija* (5%). Still, 68% chose the term *radna memorija*, which is an acceptable choice in the context of the terminological principles. However, it is debatable whether this (descriptive) paraphrase can or should be applied to only this type of computer memory.

Locale (Question 19) was primarily translated as *regionalne postavke* (79%), followed by *regionalna shema* (15%). Of note are also the answers the participants added themselves – *lokal* (usually translated as a bar), *lokalitet* (locality or site) and the adjective or adverb *lokalno*, presumably due to their etymological similarity with the original English term. None of these three options were found in the sources used for the term analysis.

Finally, a majority of participants (65%) chose the English borrowing *enkripcija* in Question 20 (encryption), even though *kriptiranje* (20%) would be more fitting according to the terminological principles, as its lexical base is borrowed from Greek. The third option, *šifriranje* (15%) was chosen by the fewest participants, even though the words it was derived from and their ("undesirable" French) lexical base are accepted in Croatian.

Based on these results, it can be concluded that there is generally a lack of consistency when it comes to translating and using IT-related terms in Croatian, particularly in formal contexts. The survey participants sometimes chose borrowed English terms with varying degrees of adaptation to the standard Croatian language; other times, they chose terms which can be considered Croatian in their entirety and are well-adapted to the terminological principles which are seen as normative in Croatia. The results of the first part of the survey can be compared to the opinions the participants gave on this topic in the following part of the survey.

7.2.2. Professionals' opinions

Half of the participants said that, in their opinion, mixed translation solutions (such as *web stranica* and *LAN-kartica*) are the best way to translate terms in this field, followed by adapting English terms to the Croatian language (grammatically, orthographically, etc.). This does mostly correspond with the answers provided in the first part of the survey, *web stranica* being their first choice. When asked whether all terms should be as adapted to standard Croatian as possible, participants chose the middle-ground (average rating: 3.24 on a scale of 1 to 5), which also corresponds with their varying choices in the first part of the survey. In addition to that, they disagree with the statement that Croatian IT terminology should by no means contain any untranslated or inadequately adapted foreign words (average rating: 2.2), as confirmed by the choice of e.g. *widget* as the term they would use in a formal context.

Survey participants neither agree or disagree that every country should have a standardized terminological system for each scientific and academic field within their own language (average rating: 3.13). They also share this opinion for standard Croatian specifically,

with the average rating being 3.56. However, with an average of 3.89 for the next question, participants tend to agree that the Croatian IT terminology is not developing quickly enough compared to the rest of the world, implying that they are dissatisfied with its current state to a certain extent. This is confirmed in the subsequent question: With an average of only 1.88 (Figure 3), the participants disagree with the statement that Croatian scientific and academic specialists and community members, specifically IT terminology users, see the terminological system as unified.

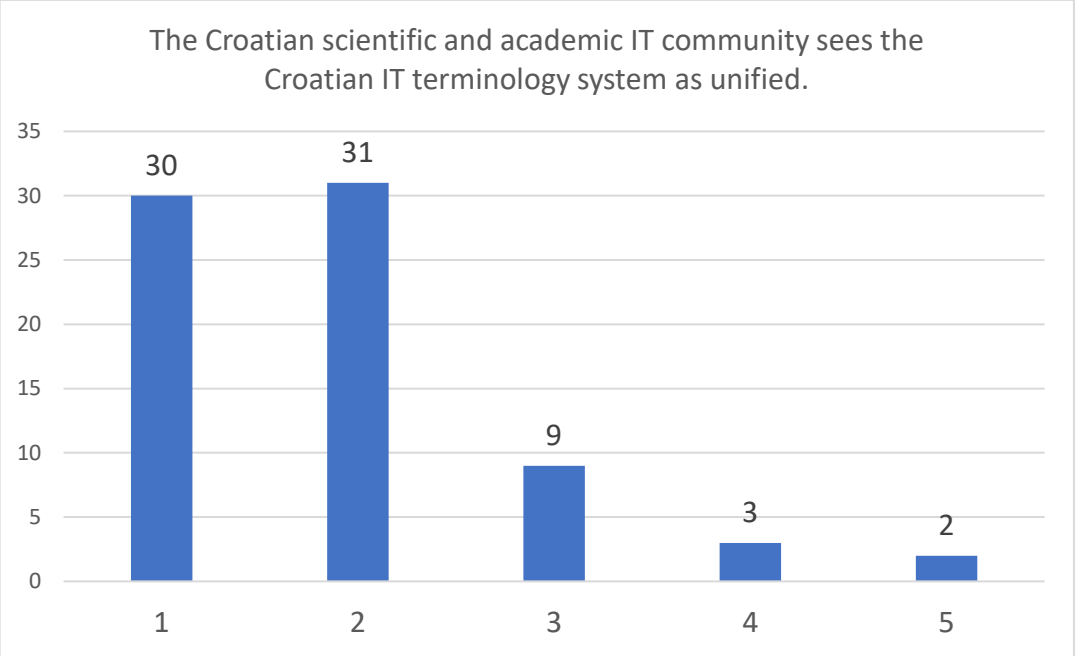


Figure 3 Survey participants do not think the terminology in Croatia is unified

This means that most participants do not think all of their peers would use the same translations for specific terms, resulting in inconsistencies (as seen in the previous section of this paper). Participants agree (average: 4.32) that terms should be translated and formed through the collaboration between IT experts and linguists (such as translators), as opposed to just one of the two professions or branches working on their own. Finally, with the average answer of 2.02, the participants disagree with the statement that the Croatian IT terminology system is well-developed and translated (see Figure 4).

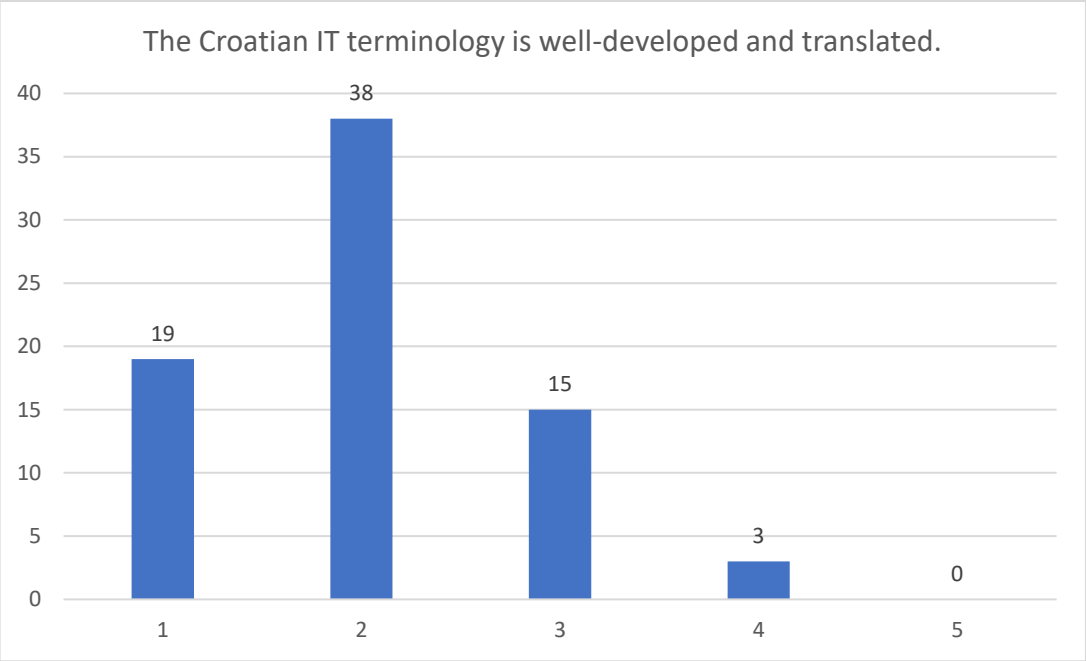


Figure 4 Survey participants do not see the Croatian IT terminology system as well-developed

A small number of participants made additional comments about the survey. On the one hand, some said that the research topic is relevant due to the current state of standard Croatian and IT terminology (even stating that Croatian is "dying out"); on the other hand, one respondent said that there is no point in learning Croatian terms, stating that they can be confusing, as only the English terms will ever be used for practical purposes (i.e. in a workplace).

Overall, the results of the term analysis and survey for the most part confirm the hypotheses stated in Chapter 5: There are situations in which the term translations into Croatian seem consistent and abide by the expected norms and principles (e.g. *baza podataka*); even so, there are also numerous examples of synonymy (*spremiti* and *pohraniti)*, polysemy (*programski prevoditelj*), pleonasms (*RAM-memorija*) and paronyms (*elektronska* vs *elektronička pošta*). All of these are typically unwanted within a well-defined terminological field and should especially not be used by a number of experts in formal texts and situations. While the results of this research are based on only a fraction of the entire terminological field and a small number of survey participants, they still provide clear examples of problematic areas. A number of opportunities for further research on this topic are available, such as analysing newer terms and concepts (and their Croatian counterparts), researching improvised translations created by IT experts by themselves, or discussing the motivation behind choosing a specific term candidate as the preferred one (e.g. in the case of *dretva*).

8. Conclusion

IT terminology is a growing field influencing not only the formal discourse of related scientific and academic texts, but also our everyday lives. Even still, the Croatian IT terminological system is not keeping pace with developments in the rest of the world, especially in English-speaking countries. Most IT-related terms are imported into Croatian from English and are adapted varying degrees. While there are tendencies to translate everything into standard Croatian and to remove all foreign and unadjusted (borrowed) words, these efforts have not yet proven to be successful.

In this paper, a list of 45 IT-related terms in English was composed. Then their translations were researched, found in various resources and listed so as to give an overview of the available translation options and Croatian term candidates. Some of these options were analysed in more detail to further explain what translation solutions are seen as good or bad according to accepted terminological principles in Croatia. Furthermore, 20 of the 45 analysed terms were used in a survey conducted among the expert users of this terminological field who are IT specialists. In the survey, they also gave their opinions on which translation options they found best and what they thought about the current status of Croatian IT terminology. The results have shown that there are certain situations in which there is consistency and clarity; however, there is also a number of cases showing that the Croatian IT terminological system lacks systematization and consistent implementation of the accepted standards, as well as relevant institutions which would strive to reaching these goals.

There is room for further linguistic and terminological research in this board and ubiquitous field of technology, science and even everyday life. Considering the influence of this scientific and technological domain and its needs when it comes to terminology, it can be expected that the needs for terminological research will grow, as well.

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Annex 1 – list of term resources

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	Linguistic literature
Bolje je hrvatski	Institut za hrvatski jezik i jezikoslovlje. *Bolje je hrvatski*. Retrieved June 2019, from <http://bolje.hr/>
Halonja	Halonja, A., & Mihaljević, M. (2012). *Od računalnog žargona do računalnog nazivlja.* Zagreb: Hrvatski institut za jezik i jezikoslovlje.
Jezični savjetnik	Institut za hrvatski jezik i jezikoslovlje. *Jezični savjetnik*. Retrieved June 2019, from <http://jezicni-savjetnik.hr/>
Mihaljević 1	Mihaljević, M. (1998). *Terminološki priručnik.* Zagreb: Hrvatska sveučilišna naklada.
Mihaljević 2	Mihaljević, M. (1993). *Hrvatsko računalno nazivlje.* Zagreb: Hrvatska sveučilišna naklada.
	Printed dictionaries, lexicons, glossaries etc.
Babić	Babić, S., & Žic-Fuchs, M. (2007). *Rječnik kratica.* Zagreb: Nakladni zavod Globus.
Bujas	Bujas, Ž. (2008). *Veliki hrvatsko-engleski rječnik.* Zagreb: Nakladni zavod Globus.
Jakobović	Jakobović, Z. e. (2007). *Tehnički leksikon*. Zagreb: Leksikografski zavod Miroslav Krleža.
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Kiš 2	Kiš, M. (2000). *Englesko-hrvatski i hrvatsko-engleski informatički rječnik.* Zagreb: Naklada Ljevak.
Microsoft Press	Microsoft Press (1995*). Informatički rječnik. Cjelovit i detaljan priručnik za posao, školu, knjižnicu i dom*. Zagreb: Znak.
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Školska knjiga	Školska knjiga. (2017). *Veliki englesko-hrvatski rječnik.* Zagreb: Školska knjiga.
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Barilar	Barilar, Romno. *Implementacija i vrednovanje algoritma RIPPER za izgradnju pravila prekrivanja*. Bachelor's thesis. 2018. Retrieved June 2019, from <https://www.bib.irb.hr/947636>
Bejuk	Bejuk, Borna. *Ostvarenje i analiza algoritama za rudarenje podataka*. Bachelor's thesis. 2017. Retrieved June 2019, from <https://www.bib.irb.hr/988371>
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Martinek	Martinek, Mario. *OpenWrt sustav na mrežnim uređajima.* Master's thesis. 2019. Retrieved June 2019, from <https://www.bib.irb.hr/983426>
Matak	Matak, Ivan & Tihomir Orehovački. *Mogućnosti okruženja Vue.js i njegovih paketa*. In: ASE 2019 - razvoj poslovnih i informatičkih sustava. pp.57-64. 2019. Retrieved June 2019, from <https://www.bib.irb.hr/988694>
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Google Translate	*Google Translate*. Retrieved June 2019, from <translate.google.com>
Groš	Groš, S. *Englesko hrvatski rječnik*. Retrieved June 2019, from <http://www.zemris.fer.hr/~sgros/stuff/rjecnik.shtml>
Microsoft	*Microsoft Language Portal*. Retrieved June 2019, from <https://www.microsoft.com/en-us/language>
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Annex 2 – list of terms and translation options

The sources for the provided term translations are provided in their respective codes; full references are available in Annex 1.

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
1.	**add-on**	dodatak (Bujas, Nazivlje, Eržišnik, Kiš 2, Microsoft Press, Google Translate)	dodatni uređaj (Bujas)	proširenje (Kiš 2)		
2.	**assembler**	asembler (Kiš 2, Microsoft Press, Šijak, Kiš 1, Štambuk, EUdict, Google Translate, Begušić, Muljević)	zbirnik (Kiš 2, Microsoft Press, Kiš 1, Begušić)	programski prevodilac (Kiš 2)	prisjetnik (Kiš 2)	programski prevoditelj (Microsoft Press, EUdict)
3.	**boilerplate**	standard (Microsoft)	ponavljajući tekst (Microsoft Press)			
4.	**browser**	prebirnik (Halonja 179)	preglednik (Nazivlje, Jukić, Brebrek, Kiš 2, Školska knjiga, Bolje je, Google Translate, EUdict)	web preglednik (Volf, Harmadi, Kiš 2)	pretraživač (EUdict)	program za pregledavanje (Begušić)
5.	**bug**	pogreška (Kiš 1, Pereglin, Čelar, Vrtarić, Kiš 2 Štambuk, Begušić, Muljević)	bag (Mihaljević 2, 45, Microsoft Press, Školska knjiga)	greška (Mihaljević 2, Kiš 1, Groš, EUdict)	kvar (Bujas, Kiš 1, Kiš 2, Štambuk, EUdict, Google Translate)	• mušica (Microsoft Press, Štambuk) • pogrješka (Školska knjiga) • tehnička smetnja (Muljević)
6.	**bus**	bas (Mihaljević 2)	sabirnica (Mihaljević 2, Kiš 1, Microsoft, Nazivlje, Brumec 1, Matković, Microsoft Press, Šijak, Štambuk)	magistrala (Kiš 1, Microsoft Press, Šijak)	zbirnik (Kiš 2, Microsoft Press)	

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
7.	**byte**	bajt (Bujas, Kiš 1, Microsoft, Nazivlje, Šimunković, Kiš 2, Microsoft Press, Šijak, Školska knjiga, Štambuk, Google Translate, EUdict, Begušić)	osmak (Kiš 1, Microsoft Press)	oktet (Kiš 1, Groš, Kiš 2, Microsoft Press, EUdict, Begušić)	bitnjak (Kiš 2)	
8.	**cache**	cache (Kaluža, Ajanović, Šijak)	priručna memorija (Kostervajn, Rukavina 2, Kiš 2, Microsoft Press, Jakobović, EUdict)	priručna pohrana (Majer)	predmemorija (Kiš 2, Microsoft Press, Kiš 1, EUdict, Google Translate)	• prihvatna memorija (Šijak) • privremena memorija (Groš) • brza memorija (Kiš 1, Štambuk) • keš (Šijak) • priručno pamtilo (Begušić) • predpamtilo (Begušić) • puferska memorija (Muljević)
9.	**compiler**	prevodnik (Mihaljević 1, Kiš 1)	kompajler (Mihaljević 2, Bujas, Varga, Šijak, Google Translate)	kompilator (Mihaljević 2, Bujas, Kiš 1, Microsoft, Srbljić, Kiš 2, Microsoft Press, Školska knjiga, Štambuk, Google Translate, Begušić, Muljević)	prevodilac (Kiš 1, Macut, Kiš 2, Štambuk, Begušić)	• programski prevoditelj (Microsoft, Kiš 2); • prevoditelj (Groš, Matetić, Perleta, Kiš 2) • sastavljač (Microsoft, Školska knjiga) • programski prevodilac (Begušić) • program za prevođenje (Muljević) • kompiler (Muljević)
10.	**crawler (webcrawler)**	alat za indeksiranje (Nazivlje, Microsoft, Google Translate)	program za pretraživanje radi indeksiranja sadržaja (Microsoft)	pretraživač (Microsoft)	crawler (Danzante)	• puzavac (Kasalo) • programska oprema koja se koristi za pretraživanje i automatsko indeksiranje (Kiš 2)
11.	**cursor**	kursor (Mihaljević 2, Bujas, Kiš 1, Nazivlje, Gizdić, Kiš 2, Microsoft Press, Školska knjiga)	značka (Mihaljević 2)	odzivnik (Kiš 1, Kiš 2, Microsoft Press, Begušić)	pokazivač (miša) (Microsoft, Bošković, Kiš 2, Microsoft Press, Školska knjiga)	pokaznik (Begušić)

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
12.	**data mining**	dubinska analiza podataka (Matetić 2, Stančin, Penić, Barilar, Buljan, Microsoft, Kraljević, EUdict, Groš)	rudarenje podataka (Klarić, Bejuk, Kaluža 2, Oreški, Keček, Google Translate, EUdict)			
13.	**database**	baza podataka (Bujas, Kiš 1, Nazivlje, Microsoft, Volf, Rukavina, Brumec 2, Janda-Hegediš, Kiš 2, Microsoft Press, Šijak, Školska knjiga, Štambuk, Kaluža, Jakobović, Bolje je, Begušić)				
14.	**directory**	direktorij (Mihaljević 2, Bujas, Kiš 1, Microsoft, Nazivlje, Janda-Hegediš, Kiš 2, Microsoft Press, Šijak, Školska knjiga, Begušić)	imenik (Mihaljević 1, Kiš 1, Microsoft, Vuković, Kiš 2, Microsoft Press, Školska knjiga, Begušić)	kazalo (Kiš 1, Kiš 2, Begušić)	popis [datoteka] (Kiš 1, Kiš 2, Microsoft Press, Begušić)	• adresar (Bujas) • pristupnik (Pavić)
15.	**dongle**	hardverski ključ (Microsoft Press, EUdict, Google Translate)	privjesak (Kiš 2)	ključić (Microsoft)		
16.	**download**	preuzimanje (Halonja 185, Microsoft, Nazivlje, Groš, Školska knjiga, Bolje je, Jezični savjetnik, EUdict, Google Translate)	učitavanje (Halonja 185, Kiš 2, Kiš 1, Begušić)	download (Microsoft)	dohvaćanje (Balaban)	primanje (Microsoft Press)
17.	**e-mail**	elektronska pošta (Žabojec, Šijak, Google Translate, EUdict)	elektronička pošta (Groš, Kolobara, Zrna, Kiš 2, Školska knjiga, Kiš 1, Jakobović, EUdict, Begušić, Muljević)	elektronička poruka (Halonja, Školska knjiga)	e-pošta (Nazivlje, Microsoft, Kiš 2, Microsoft Press, Bolje je, Jezični savjetnik, Google Translate)	• poruka e-pošte (Nazivlje) • računalna pošta (Kiš 1)
18.	**encryption**	šifriranje (Microsoft, Nazivlje, Mihaljević 1, Meštrović, Zovkić, Begušić, Školska knjiga)	kriptiranje (Petrovečki, Trstenjak, Varga 2, Budin, Groš)	enkripcija (Kišasondi, Hanžek, Stanić, Combaj, Margetić)	zakrivanje (Begušić)	
19.	**framework**	razvojni okvir (Mrgan, Elek, Lovrić, Glad)	okvir (Groš, Microsoft, Nazivlje, Kiš 2, Ciriković 2, Google Translate)	radni okvir (Pevec, Penić, Buriša)	radno okruženje (Vuletić Antić)	• okruženje (Matak) • sustav (Kiš 2) • sistem (Kiš 2) • poredak (Kiš 2)

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
20.	**handshake**	rukovanje (Mihaljević 2, Kiš 1, Microsoft, Microsoft Press, Google Translate, EUdict, Begušić)	hendšejk (Mihaljević 1)	usklađivanje (Kiš 1, Nazivlje, Kiš 2, EUdict, Begušić)	dogovaranje (Groš, EUdict, Begušić)	opipavanje (Kiš 2)
21.	**hard disc/disk**	fiksni disk (Kiš 2)	tvrdi disk (Kiš 1, Nazivlje, Microsoft, Međić, Kiš 2, Microsoft Press, Šijak, Školska knjiga, Bolje je, Jezični savjetnik, Begušić)	kruti disk (Mihaljević 2, 105, Kiš 1, Kiš 2, Microsoft Press, Begušić)	čvrsti disk (Kiš 1, Kiš 2, Microsoft Press)	
22.	**hardware**	sklopovska oprema (Školska knjiga, Muljević)	hardver (Mihaljević 2, Bujas, Microsoft, Nazivlje, Šimunković, Ledić, Štaher, Microsoft Press, Šijak, Školska knjiga, Vrhovski, Šumiga, EUdict, Google Translate, Begušić)	strojna oprema (Kiš 1, Halonja 95, Kiš 2, Microsoft Press, Bolje je, Jezični savjetnik, EUdict, Begušić)	sklopovlje (Kiš 1, Halonja 95, Šimunac, Šerfezi, Aljinović, Kiš 2, Microsoft Press, Jakobović, EUdict, Begušić, Muljević)	• tehnička oprema (Bujas, Muljević) • strojevina (Kiš 2) • računalna oprema (Muljević) • sklopnjak (Mihaljević 2)
23.	**hot spot / hotspot / hot-spot**	vruće mjesto (Halonja 135)	pristupna točka (Microsoft, Nazivlje, Google Translate)	aktivno mjesto (Microsoft)	vruća točka (Lerotić, Microsoft Press, EUdict)	• mjesto/točka slobodnog pristupa (Bolje je, Jezični savjetnik) • hot spot (Microsoft, Nazivlje)
24.	**HTML**	hipertekstovni programski jezik na internetu (Babić, Kiš 2)	HTML (Kiš 2)	hipertekstualni označni jezik (Begušić)		
25.	**hub**	koncentrator (Microsoft, Nazivlje, Groš, Kiš 2, Microsoft Press)	razdjelnik (Nazivlje)	mrežni čvor (Begušić)		
26.	**icon**	sličica (Mihaljević 1, Kiš 1, Kiš 2, Microsoft Press, Begušić)	ikon (Kiš 1, Kiš 2)	ikona (Nazivlje, Microsoft, Vasić, Školska knjiga, Begušić)	simbol (Microsoft Press)	
27.	**implementation**	izvršavanje (Bujas, Kiš 2, Begušić)	ostvarenje (Bejuk, Kiš 2, Školska knjiga, Begušić	provedba (Kiš 1, Kiš 2, Školska knjiga)	implementacija (Kiš 1, Microsoft, Nazivlje, Matak, Berger, Smojić, Kiš 2, Barilar, Begušić)	• primjena (Nazivlje, Kiš 2, Školska knjiga) • izvedba (Kiš1, Kiš 2)

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
28.	**Internet**	Internet (Nazivlje, Kiš 2, Microsoft Press, Bujas, Jakobović, Begušić)	internet (Nazivlje, Microsoft, Groš, Microsoft Press, Kiš 1, Jezični savjetnik)	svjetska mreža (Kiš 2)	međumrežje (Kiš 2)	
29.	**interpreter**	tumač (Mihaljević 2, Nazivlje, Microsoft, Muljević)	interpretator (Kiš 1, Srbljić, Kiš 2, Microsoft Press, Han)	interpreter (Kiš 1, Varga, Bralić, Ivica, Kiš 2, Begušić, Muljević)	prevodilac (Nazivlje, Kiš 2, Begušić)	program prevodioc (Štambuk)
30.	**LAN**	područna mreža (Halonja, Kiš 2, Kiš 1, Muljević)	lokalna računalna mreža (Halonja)	LAN (Halonja, Microsoft, Kiš 2, Microsoft Press, Šijak, Kiš 1, Jakobović)	lokalna mreža (Nazivlje, Aljinović, Kiš 2, Microsoft Press, Šijak, Kiš 1, Štambuk, Stanić, Begušić, Muljević)	• LAN mreža (Lerotić) • lokalna mreža podataka (Babić)
31.	**link**	veza (Halonja, Nazivlje, Microsoft, Groš, Kiš 2, Štambuk, Jakobović, Begušić)	spojka (Halonja)	poveznica (Halonja, Nazivlje, Microsoft Press, Bolje je, Jezični savjetnik)		• međuveza (Štambuk) • povezanost (Kiš 2) • spoj (Begušić)
32.	**locale**	regionalna shema (Nazivlje, Microsoft)	regionalne postavke (Nazivlje, Microsoft, Google Translate)			
33.	**object program**	objektni program (Mihaljević 2, Kiš 1, Kiš 2, Školska knjiga)	odredišnik (Kiš 2)	odredišni program (Kiš 1, Kiš 2)	ciljni program (Kiš 1, Kiš 2, Štambuk)	prevedeni program (Školska knjiga)
34.	**operating system (OS)**	operacijski sustav (Babić, Kiš 2, Kiš 1, Budin, Sičanica, Kasap, Microsoft, Zec, Vrhovski, Jakobović, Google Translate, EUdict, Groš, Begušić)	operativni sustav (Kiš 2, Tirić, Martinek, Kontak, Koren, Nazivlje, EUdict)	radni sustav (Kiš 2, Kiš 1, Štambuk, Begušić)	OS (Kiš 2, Kiš 1)	izvršni sustav (Štambuk)
35.	**processor**	obradnik (Halonja, Kiš 2, Microsoft Press, Kiš 1, Begušić)	procesor (Nazivlje, Microsoft, Kiš 2, Microsoft Press, Kiš 1, Štambuk, Begušić)	prerađivač (Školska knjiga)		
36.	**programming language**	programski jezik (Mihaljević 1, Kiš 1, Microsoft, Nazivlje, Groš, Perleta, Kiš 2, Microsoft Press, Šijak, Štambuk)				

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
37.	**Random access memory (RAM)**	RAM-memorija (Kiš 1, Nazivlje, Šijak, Google Translate)	radna memorija (Međić, Kiš 2, Google Translate)	memorija s izravnim pristupom (Kiš1, Nazivlje, Kiš 2, Štambuk, Begušić, Muljević)	RAM (Microsoft, Microsoft Press)	• memorija s nasumičnim pristupom (Microsoft Press) • memorija sa slučajnim pristupom (Babić, Begušić) • upisnik (Mihaljević 2) • paralelna memorija (Kiš 1, Kiš 2)
38.	**save**	pohraniti (Halonja, Nazivlje, Kiš 2, Microsoft Press, Školska knjiga, Kiš 1, Jakobović, Begušić)	spremiti (Halonja, Microsoft, Nazivlje, Kiš 2, Microsoft Press, Školska knjiga, Kiš 1, Google Translate, Begušić, Muljević)	sačuvati (Školska knjiga, Muljević)	odložiti u memoriju (Muljević)	spasiti (Muljević)
39.	**software**	programi (Halonja, Nazivlje, Groš, Štambuk, Jakobović, EUdict)	programska oprema (Kiš 1, Kiš 2, Microsoft Press, Štambuk, EUdict, Begušić)	programska podrška (Kiš 1, Pereglin, Kiš 2, Štambuk, Bolje je)	softver (Nazivlje, Microsoft, Šimunković, Microsoft Press, Šijak, Šumiga, Jakobović, Google Translate, EUdict)	• kompjutorski programi (Školska knjiga) • naputbina (Kiš 1, Halonja) • kompjuterski programi (Bujas) • programska potpora (Kiš 2, Muljević) • software (Kiš 1, Kiš 2)
40.	**stack**	stek (Mihaljević 2)	stog (Kiš 1, Microsoft, Nazivlje, Kiš 2, Microsoft Press, Štambuk, Lazić, Zec, Begušić)	složaj (Mihaljević 2, 106, Kiš 1, Kiš 2, Microsoft Press)	slog (Begušić)	
41.	**switch**	preklopnik (Nazivlje, Microsoft, Groš, Kiš 2, Microsoft Press, Kiš 1, Štambuk, Marković, Škrnjug, Mehić, Jakobović, Begušić)	prespojnik (Microsoft)	komutacija (Štambuk)	komutator (Ciriković, Genc, Kasunić, Jakobović)	• sklopka (Kiš 2, Microsoft Press, Kiš 1, Štambuk) • prekidač (Kiš 2, Microsoft Press, Kiš 1, Štambuk) • skretnica (Microsoft) • switch (Microsoft)
42.	**thread**	dretva (Halonja, Groš, Žunko, Hunjadi, Budin, Jelenković)	nit (Microsoft, Microsoft Press, Milić, Šerić, Gudelj)			

	ENGLISH TERM	TRANSLATION 1	TRANSLATION 2	TRANSLATION 3	TRANSLATION 4	Additional translations
43.	**update**	obnoviti (Kiš 2, Microsoft Press, Kiš 1, Štambuk, Muljević)	dopuniti (Kiš 2, Microsoft Press, Kiš 1, Štambuk, EUdict	posuvremeniti (Školska knjiga, Bolje je, Jezični savjetnik)	ažurirati (Kiš 2, Školska knjiga, Kiš 1, Bujas, Štambuk, Microsoft, Nazivlje, Google Translate, EUdict, Groš, Muljević)	• Osuvremeniti (Bujas) • poboljšati (Kiš 2, Microsoft Press, Kiš 1) • nadopuniti (Muljević)
44.	**website / webpage**	web stranica (Nazivlje, Mrgan, Balaban, Kiš 2, Štajdohar, Google Translate)	mrežna stranica (Nazivlje, Jezični savjetnik)	web-mjesto (Microsoft, EUdict)	web-sjedište (Eržišnik)	mrežni čvor (Kiš 2)
45.	**widget**	udomljenik (Kontak, Novković, Grce, Brkić, Srbljić)	widget (Microsoft, Marjanović)	mali program (Nazivlje)	mala aplikacija (Jezični savjetnik, Bolje je)	

Annex 3 – survey

Stavovi korisnika hrvatske računalne terminologije

Poštovani,

U nastavku nalazi se anketa koja je dio diplomskog rada na Diplomskom studiju anglistike –prevoditeljski smjer. Anketa je u potpunosti anonimna, a njeni se rezultati kao takvi neće koristiti ni u kakve druge svrhe osim za potrebe istraživanja za diplomski rad. Tema ovog istraživanja jest hrvatska računalna terminologija te mišljenja njenih korisnika, ponajprije u stručnom i znanstvenom (formalnom) kontekstu.

Samo ispunjanje ankete ne traje dulje od 5 minuta.

U nastavku su informacije davatelja usluge LimeSurvey:

Informacija o privatnosti
Ovaj upitnik je anoniman.
Zapisi Vaših odgovora ne sadrže informacije preko kojih bi Vas se moglo identificirati, osim ukoliko se to izričito ne traži u anketi. Ukoliko koristite indentifikacijske tokene za pristup ovom upitniku, budite sigurni da token neće biti spremljeni zajedno sa Vašim odgovorima. Tokeni se spremaju u zasebnu bazu podataka i biti će izmjenjeni nakon što završite (ili ne završite) ispunjavanje upitnika. Ne postoji način za povezivanje tokena s danim odgovorima.

Sljedeće

Prvi dio

U prvom dijelu ankete molimo Vas da za svaki engleski termin odaberete jedan od ponuđenih naziva koji biste koristili u formalnom tekstu na hrvatskom jeziku (npr. u znanstvenom ili stručnom radu).

* Assembler

Izaberite jedan od ponuđenih odgovora

- prevodilac
- zbirnik
- asembler
- programski prevoditelj
- Drugo:

* Data mining

Izaberite jedan od ponuđenih odgovora

- dubinska analiza podataka
- rudarenje podataka
- data mining
- Drugo:

* e-mail

Izaberite jedan od ponuđenih odgovora

- elektronska pošta
- elektronička pošta
- e-mail
- Drugo:

* Framework

Izaberite jedan od ponuđenih odgovora

- radno okruženje
- razvojni okvir
- radni okvir
- okvir
- Drugo:

* Hardware

Izaberite jedan od ponuđenih odgovora

- hardver
- sklopovlje
- strojna oprema
- Drugo:

* Operating system

Izaberite jedan od ponuđenih odgovora

- operativni sustav
- operacijski sustav
- Drugo:

* Save

Izaberite jedan od ponuđenih odgovora

- spremiti
- pohraniti
- sačuvati
- Drugo:

* Interpreter

Izaberite jedan od ponuđenih odgovora

- tumač
- interpreter
- interpretator
- prevodilac
- Drugo:

* Website

Izaberite jedan od ponuđenih odgovora

- web stranica
- mrežna stranica
- web-mjesto
- Drugo:

* Software

Izaberite jedan od ponuđenih odgovora

- software
- programska podrška
- softver
- programska oprema
- Drugo:

* Switch

Izaberite jedan od ponuđenih odgovora

- switch
- preklopnik
- komutator
- Drugo:

* Thread

Izaberite jedan od ponuđenih odgovora

- dretva
- nit
- Drugo:

* Update

Izaberite jedan od ponuđenih odgovora

- posuvremeniti
- obnoviti
- ažurirati
- dopuniti
- Drugo:

* Widget

Izaberite jedan od ponuđenih odgovora

- mali program
- udomljenik
- mala aplikacija
- widget
- Drugo:

* Dongle

Izaberite jedan od ponuđenih odgovora

- ključić
- privjesak
- hardverski ključ
- Drugo:

* Compiler

Izaberite jedan od ponuđenih odgovora

- prevodilac
- kompilator
- prevoditelj
- kompajler
- Drugo:

* Cache

Izaberite jedan od ponuđenih odgovora

- priručna memorija
- cache
- predmemorija
- Drugo:

* Random access memory (RAM)

Izaberite jedan od ponuđenih odgovora

- radna memorija
- RAM
- memorija s izravnim pristupom
- RAM-memorija
- Drugo:

* Locale

Izaberite jedan od ponuđenih odgovora

- regionalna shema
- regionalne postavke
- Drugo:

* Encryption

Izaberite jedan od ponuđenih odgovora

- kriptiranje
- enkripcija
- šifriranje
- Drugo:

Sljedeće

Drugi dio

Drugi dio ankete odnosi se na Vaše stavove o terminologiji u Hrvatskoj općenito te računalnoj terminologiji.

*
Po vašem mišljenju, koja bi se od niže navedenih metoda prevođenja terminologije prvenstveno trebala koristiti?

Izaberite jedan od ponuđenih odgovora
Ovo pitanje je obavezno

- ○ Doslovan prijevod riječi na hrvatski jezik (kada je to moguće) (npr. mouse - miš)
- ○ Prilagodba strane riječi hrvatskome jeziku u izgovoru i pismu (npr. cursor - kursor)
- ○ Preuzimanje strane riječi u izvornom (stranom) obliku (npr. hotspot - hotspot)
- ○ Stvaranje novog termina na hrvatskom jeziku (npr. file - datoteka)
- ○ Miješana rješenja (npr. web stranica, LAN-kartica)

*
Ocijenite sljedeće tvrdnje od 1 do 5, pri čemu 1 označava potpuno neslaganje, a 5 potpuno slaganje:

Ovo pitanje je obavezno
Molim da popunite sve dijelove pitanja.

	1	2	3	4	5
Svaka država unutar svog jezika mora imati vlastitu standardiziranu terminologiju za svako znanstveno i stručno područje (u ovom slučaju za računarstvo i srodne grane znanosti).	○	○	○	○	○
Hrvatski jezik mora imati razrađen, ustustavljen i funkcionalan sustav računalne terminologije.	○	○	○	○	○
Hrvatska računalna terminologija razvija se presporo u usporedbi s brzinom razvoja u ostatku svijeta.	○	○	○	○	○
Stručna i akademska zajednica koja koristi hrvatsku računalnu terminologiju usuglašena je oko iste.	○	○	○	○	○
Terminologiju bi trebali stvarati stručnjaci iz tog područja (u ovom slučaju računarstva) u suradnji sa stručnjacima s područja jezikoslovlja (prevoditelji, kroatisti i/ili stručnjaci za strani jezik s kojeg se prevodi).	○	○	○	○	○
Pri uvođenju novog termina u hrvatski jezik treba težiti što većoj bliskosti i prilagođenosti hrvatskom jeziku.	○	○	○	○	○
Hrvatska računalna terminologija ne bi trebala sadržavati neprevedene, odnosno neprilagođene strane riječi.	○	○	○	○	○
Hrvatska računalna terminologija dobro je razvijena i prevedena.	○	○	○	○	○

Treći dio

Molimo Vas da ispunite nekoliko dodatnih informacija o sebi.

* Vaša dob:

* Vaša struka:

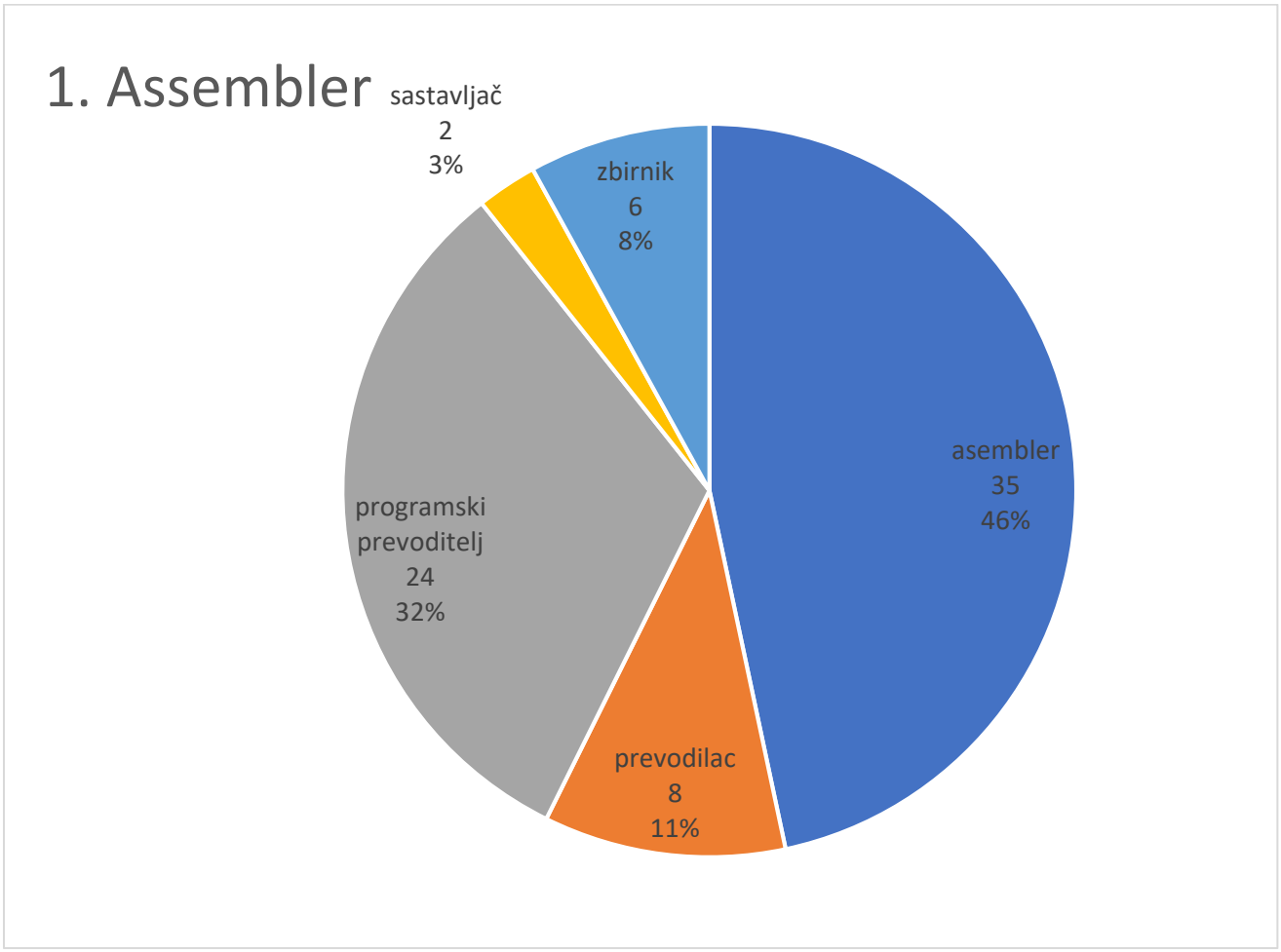
Izaberite jedan od ponuđenih odgovora

- [ ] Student/ica računarstva, odnosno srodnog smjera
- [ ] Inženjer/ka računarstva, odnosno srodnog smjera
- [ ] Doktor/ica računarstva, odnosno srodnog smjera
- [ ] Drugo:

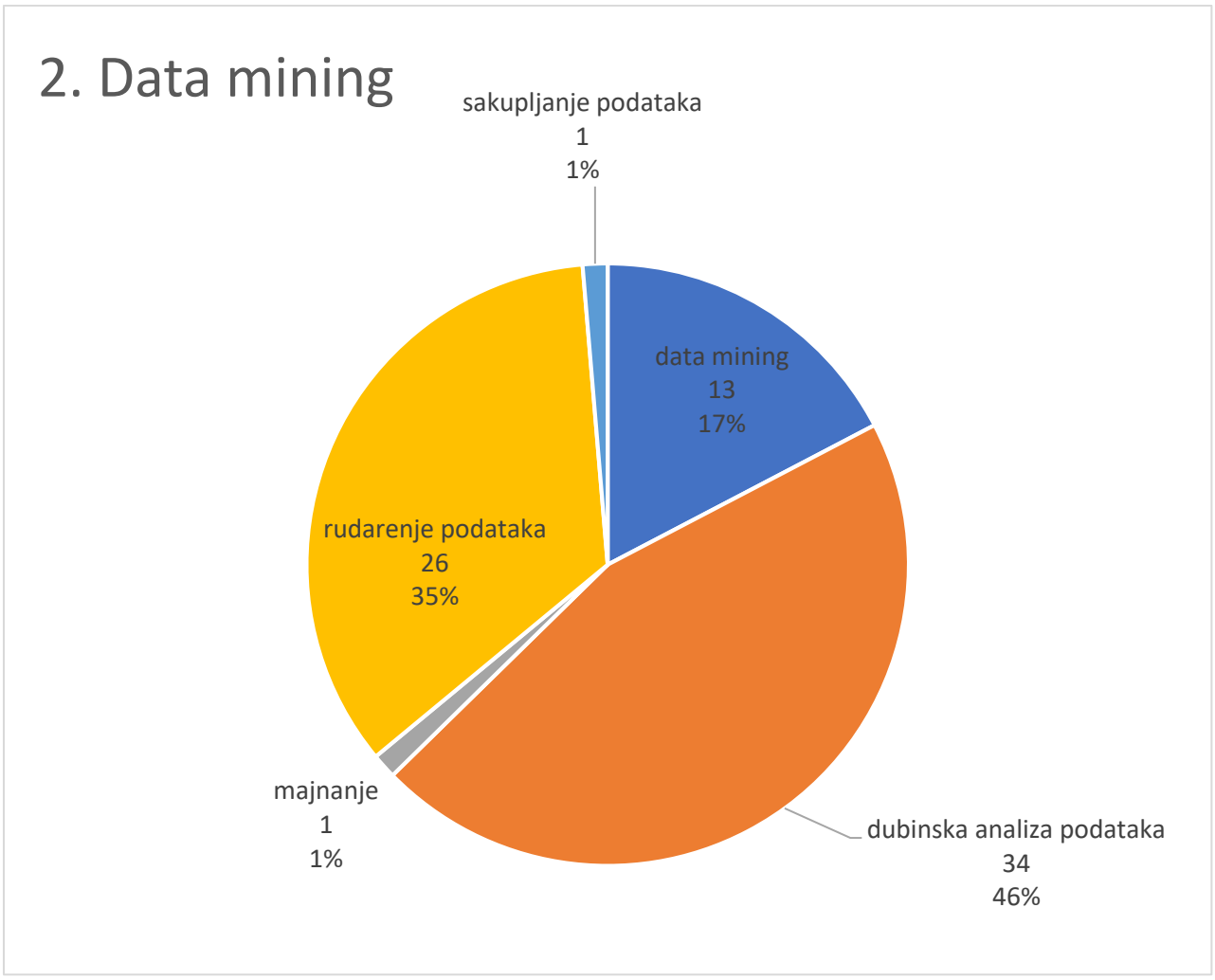
Ukoliko želite, možete ostaviti komentar o anketi, njenom sadržaju ili temi ankete općenito. Nije obavezno ispuniti ovaj dio ankete, no Vaši komentari mogu doprinijeti kvaliteti istraživanja.

Annex 4 – survey results

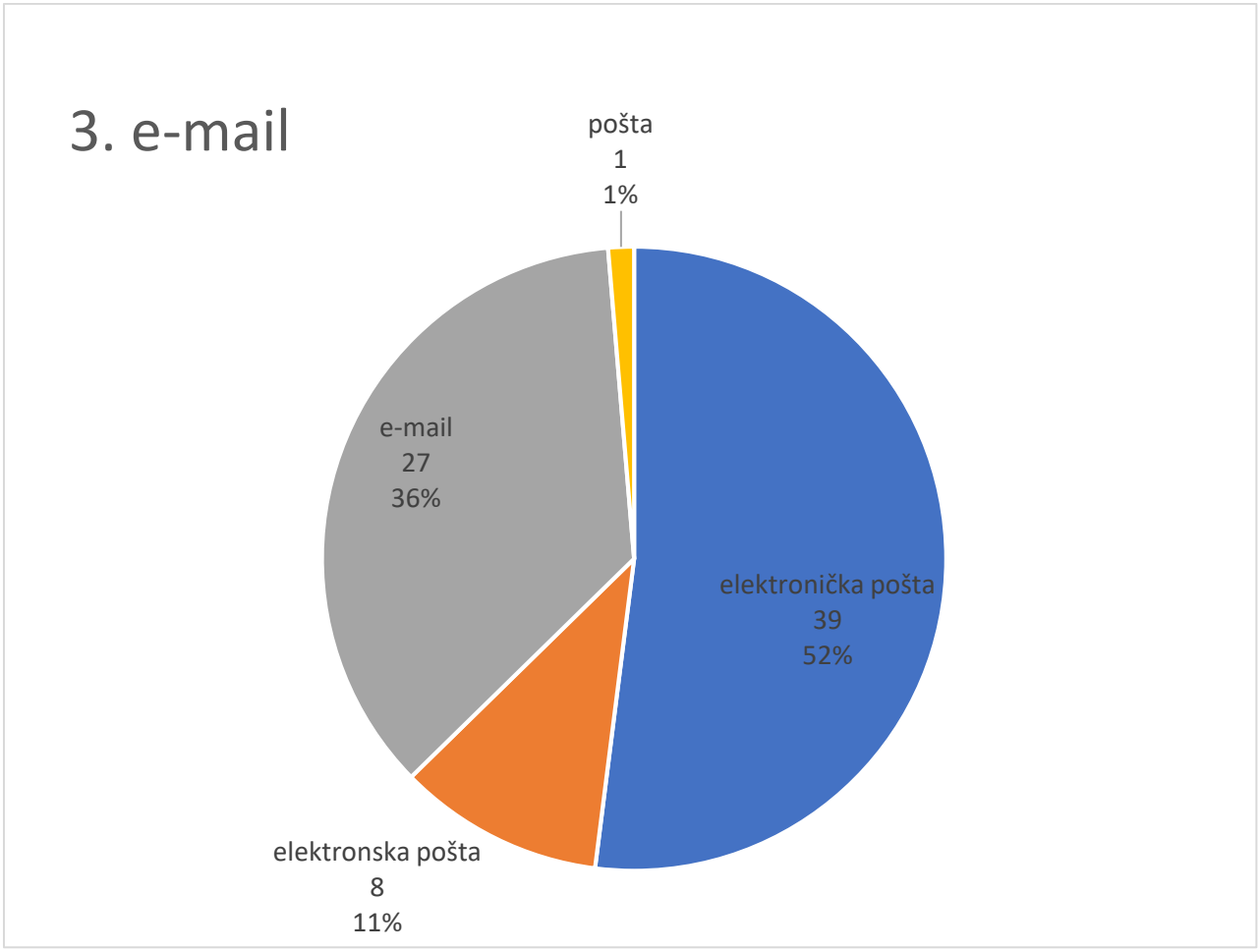
1. Assembler	Count of Assembler
asembler	35
prevodilac	8
programski prevoditelj	24
sastavljač	2
zbirnik	6
Grand Total	**75**



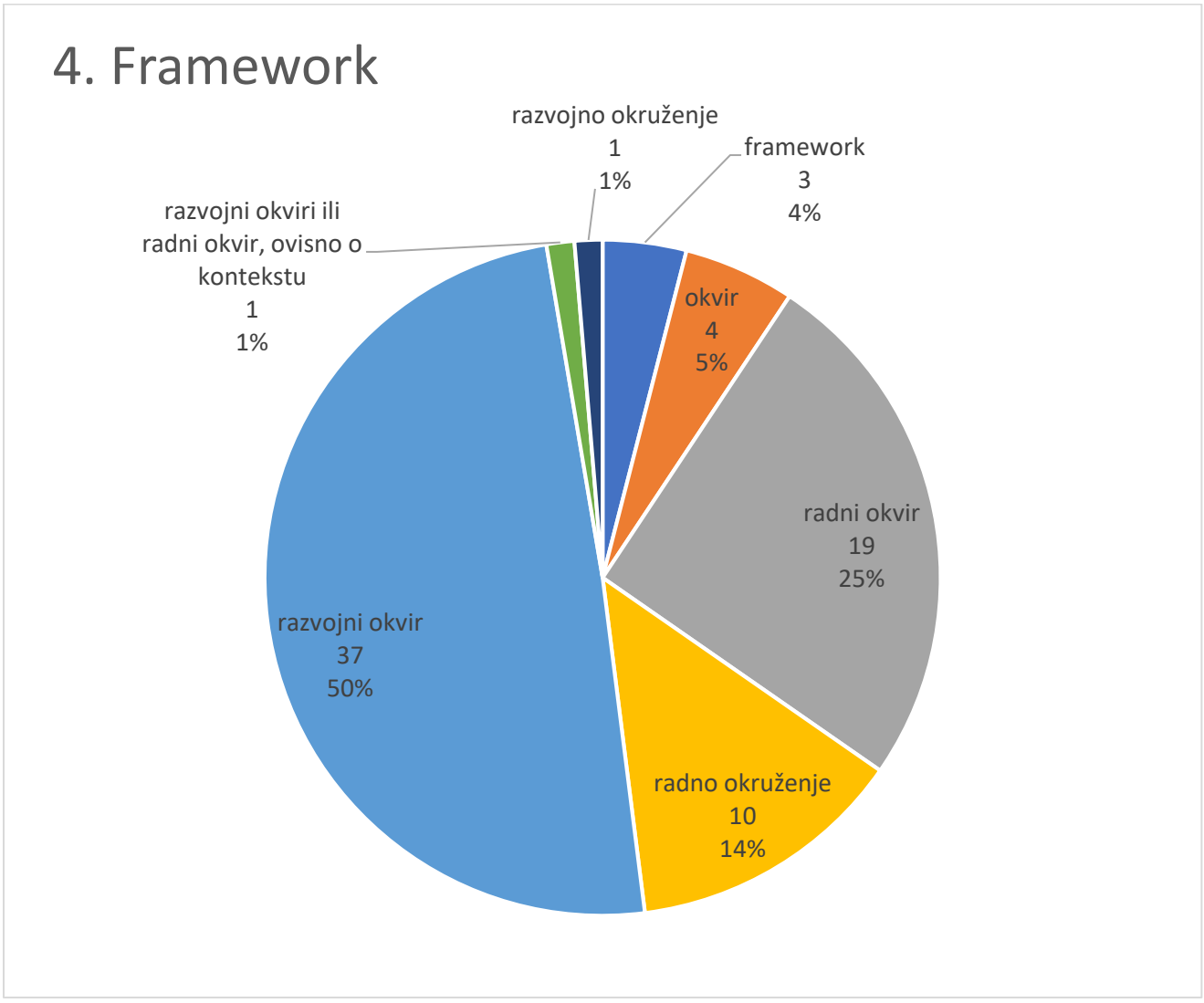
2. Data mining	Count of Data mining
data mining	13
dubinska analiza podataka	34
majnanje	1
rudarenje podataka	26
sakupljanje podataka	1
Grand Total	**75**



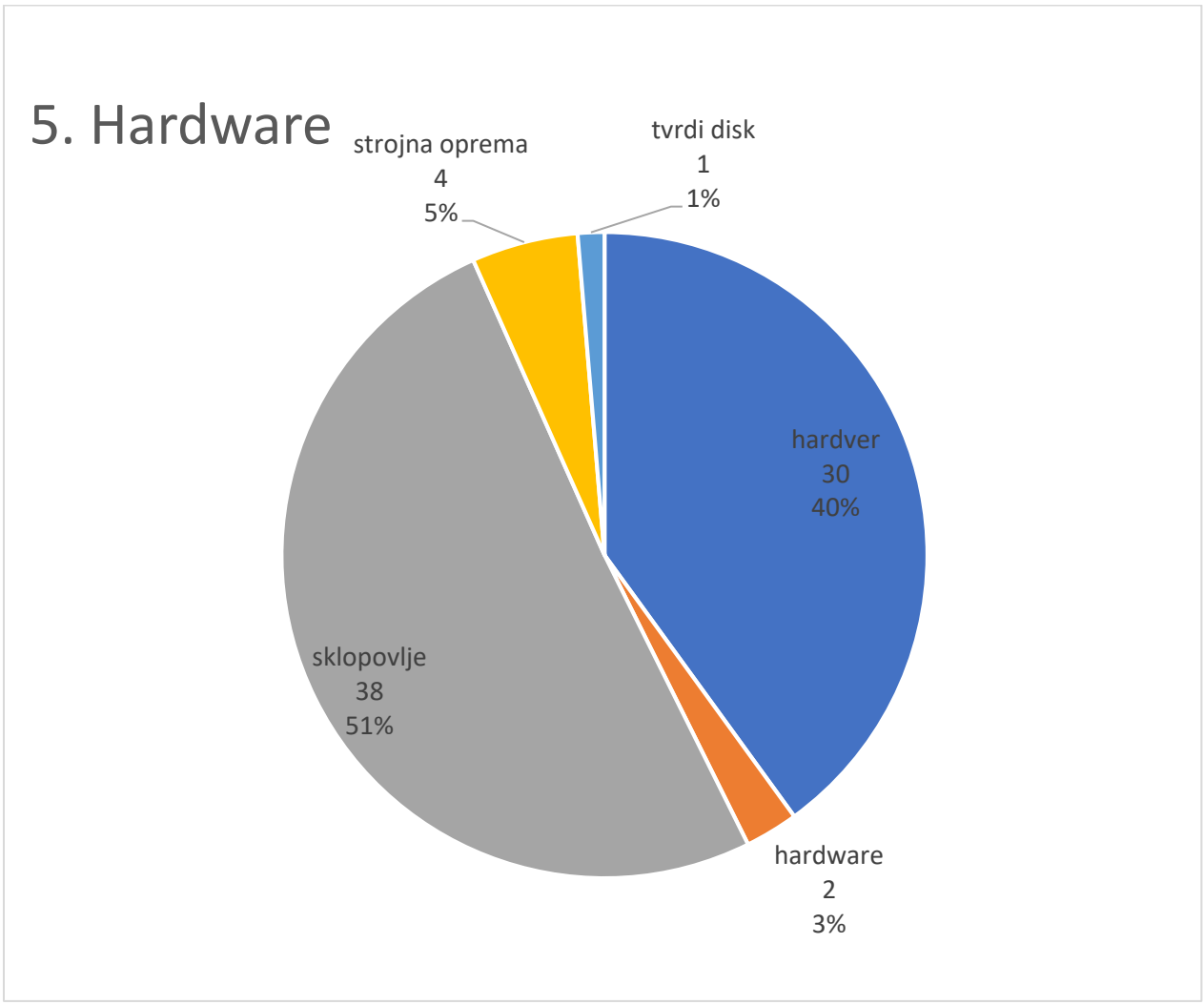
3. e-mail	Count of e-mail
elektronička pošta	39
elektronska pošta	8
e-mail	27
pošta	1
Grand Total	**75**



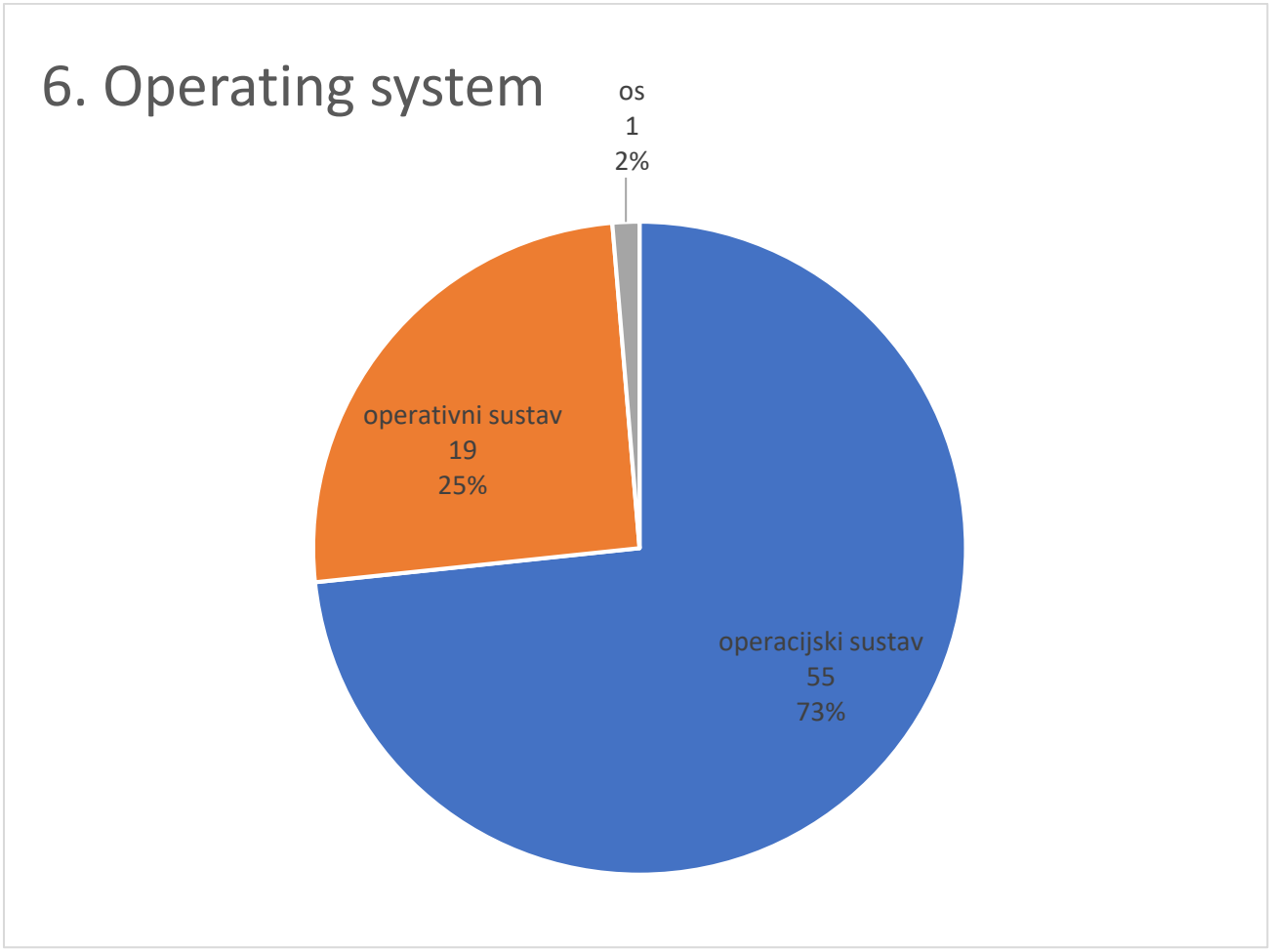
4. Framework	Count of Framework
framework	3
okvir	4
radni okvir	19
radno okruženje	10
razvojni okvir	37
razvojni okviri ili radni okvir, ovisno o kontekstu	1
razvojno okruženje	1
Grand Total	**75**



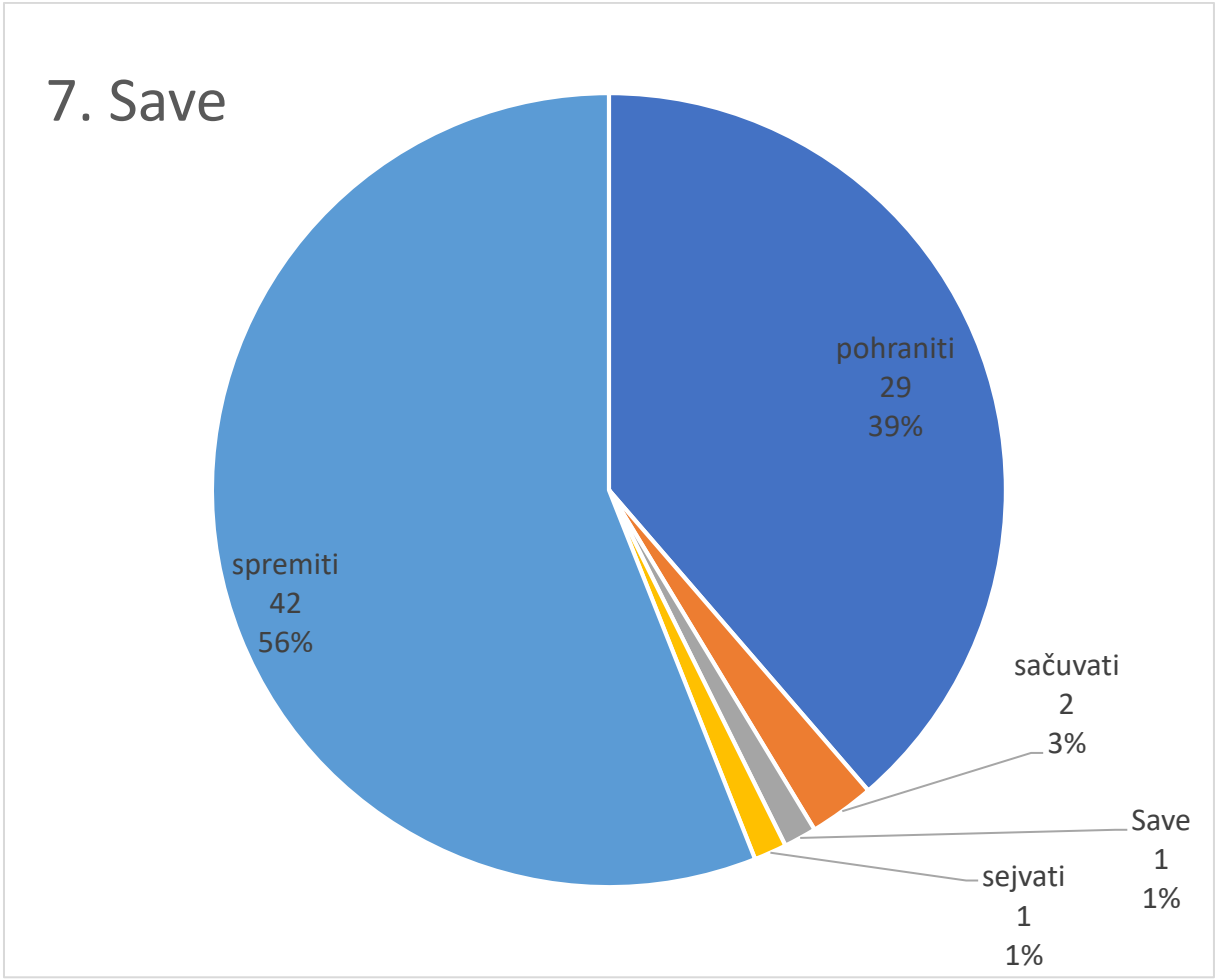
5. Hardware	Count of Hardware
hardver	30
hardware	2
sklopovlje	38
strojna oprema	4
tvrdi disk	1
Grand Total	**75**



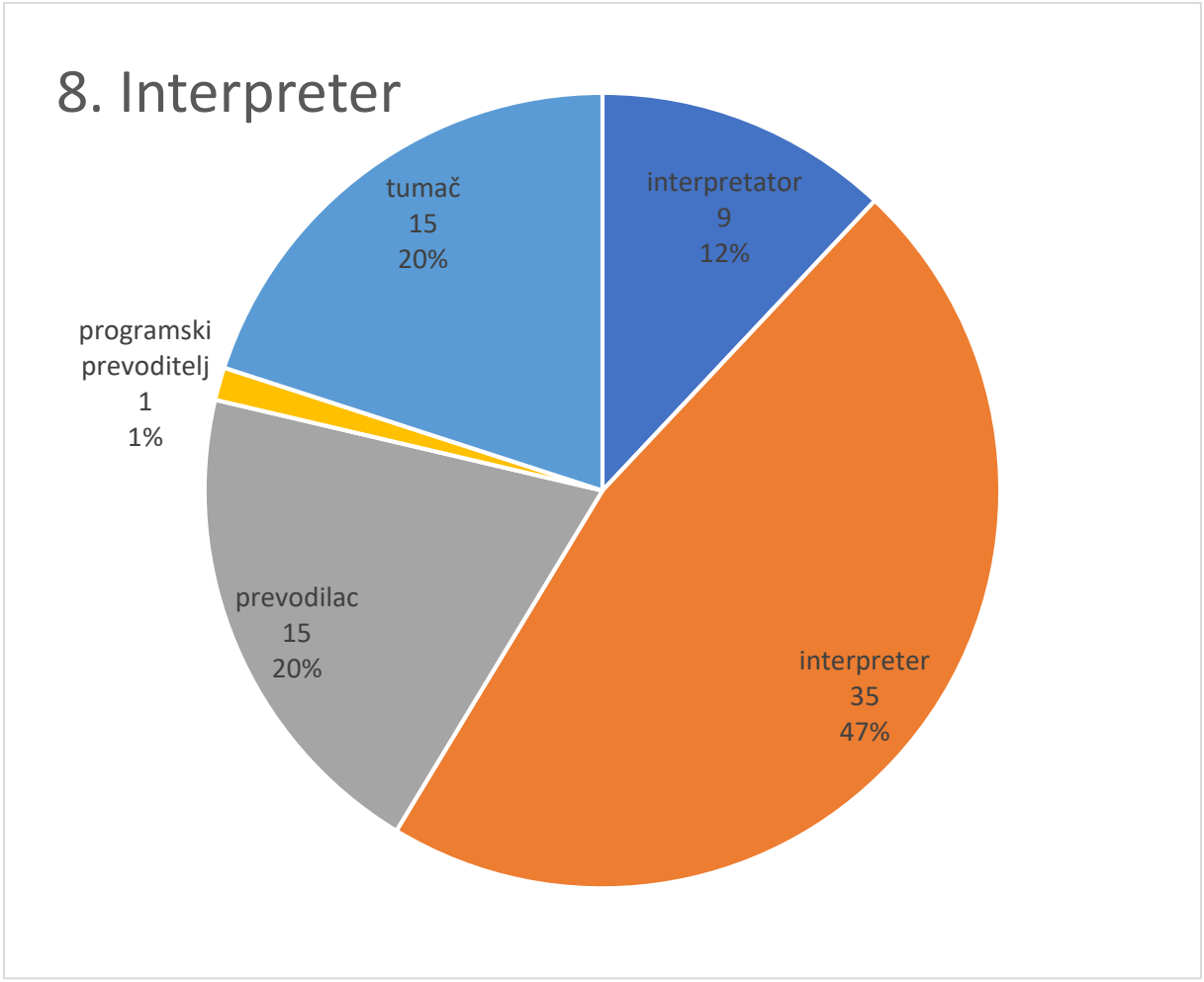
6. Operating system	Count of Operating system
operacijski sustav	55
operativni sustav	19
os	1
Grand Total	**75**



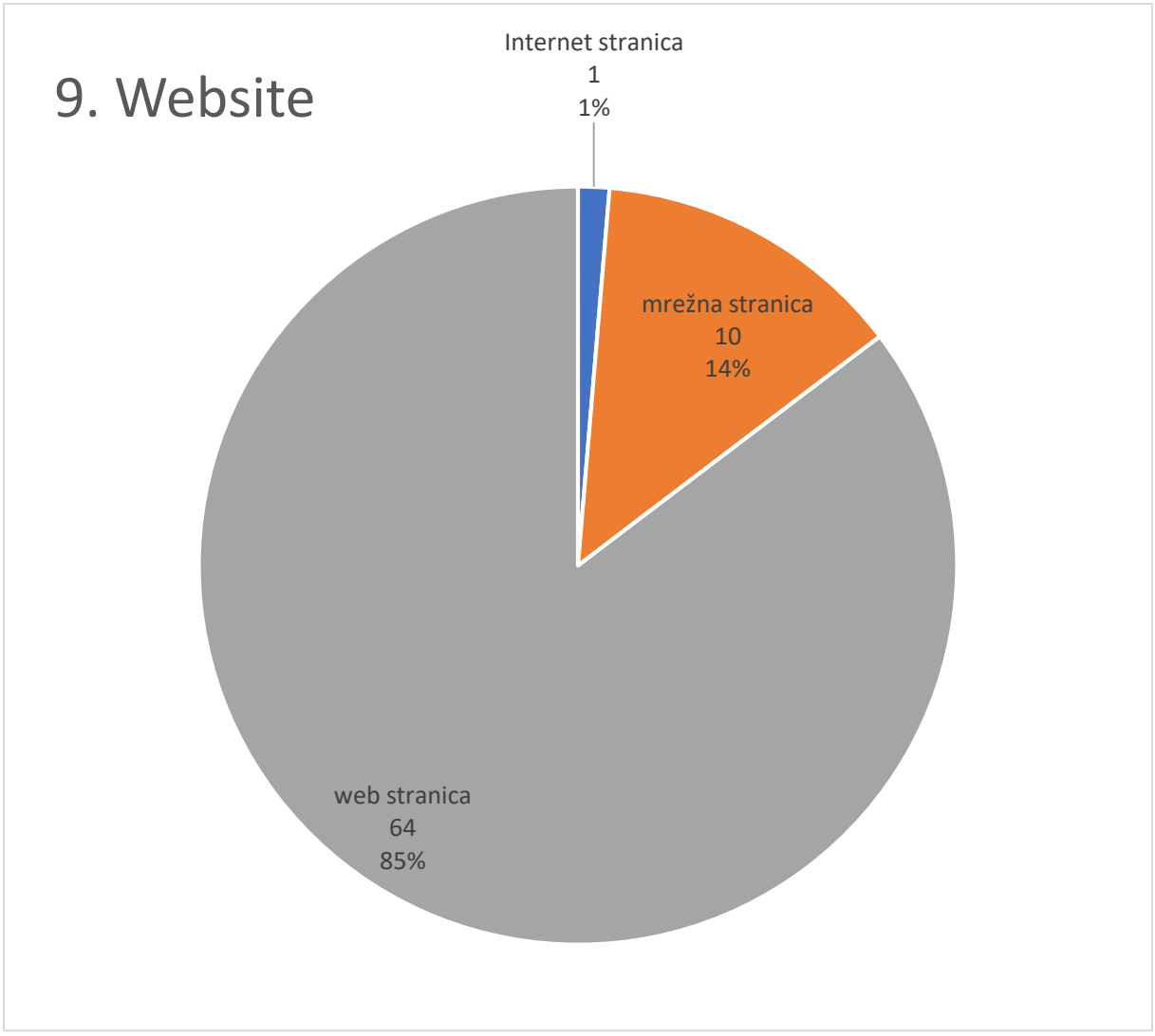
7. Save	Count of Save
pohraniti	29
sačuvati	2
Save	1
sejvati	1
spremiti	42
Grand Total	**75**



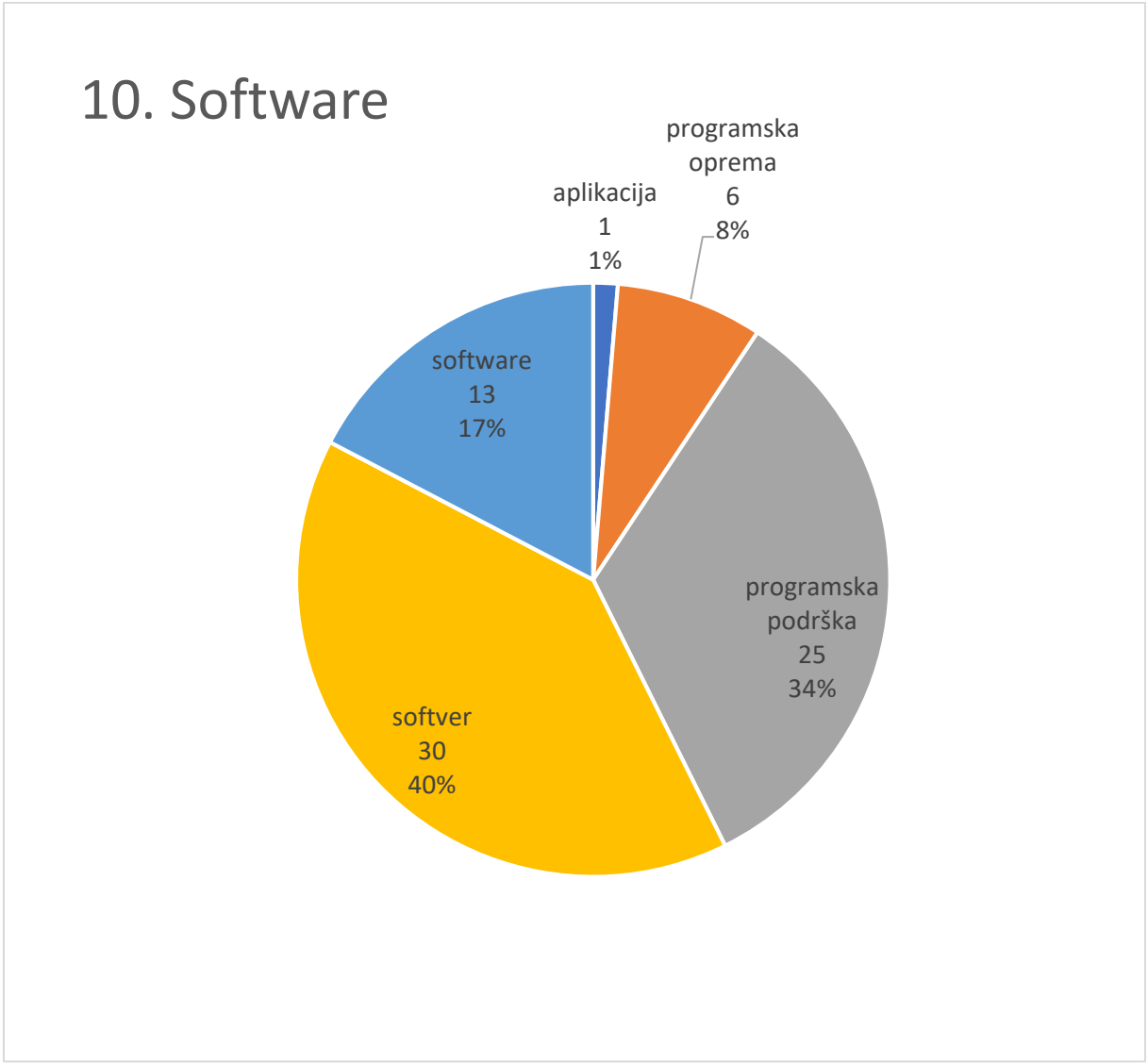
8. Interpreter	Count of Interpreter
interpretator	9
interpreter	35
prevodilac	15
programski prevoditelj	1
tumač	15
Grand Total	**75**



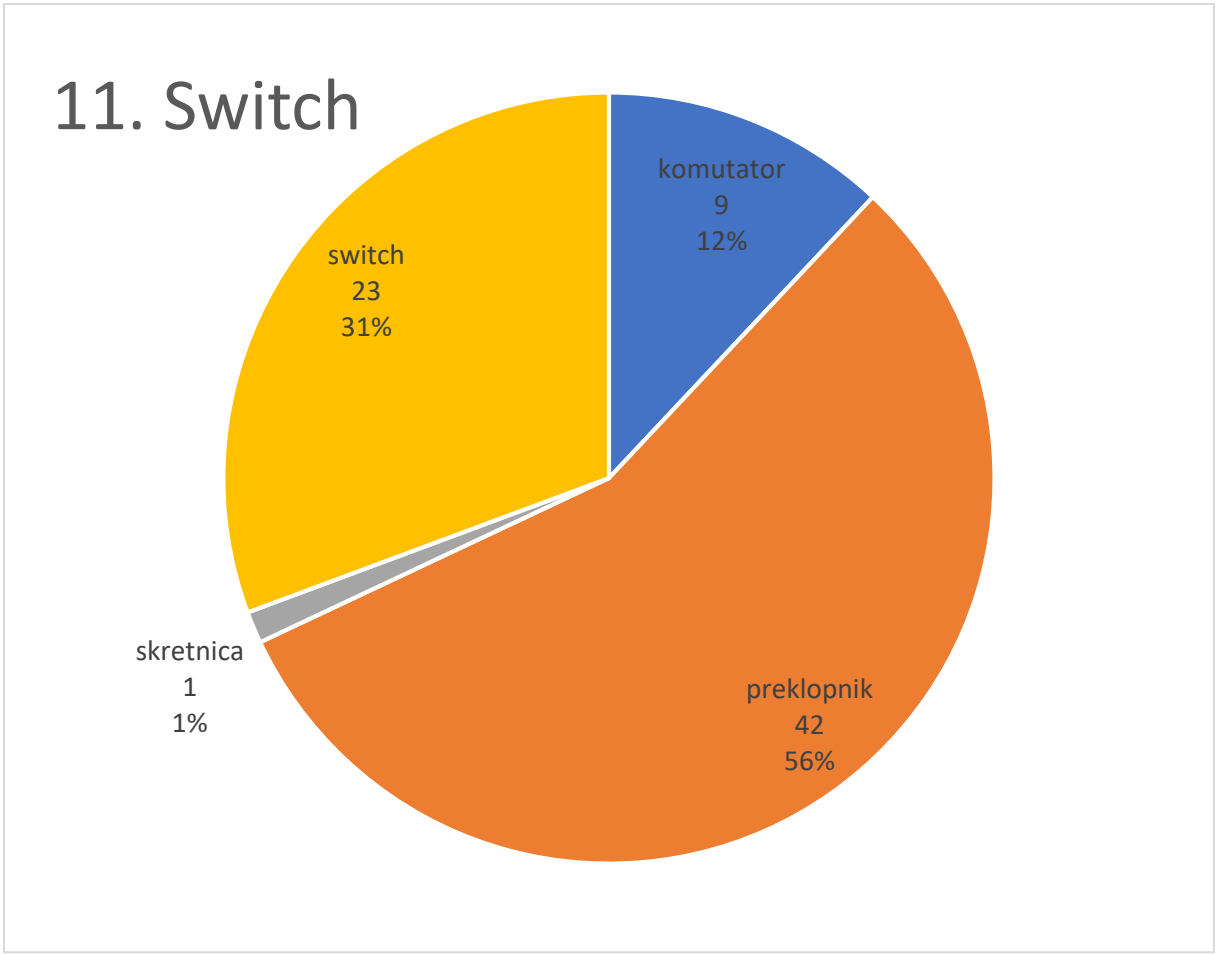
9. Website	Count of Website
Internet stranica	1
mrežna stranica	10
web stranica	64
web mjesto	0
Grand Total	**75**



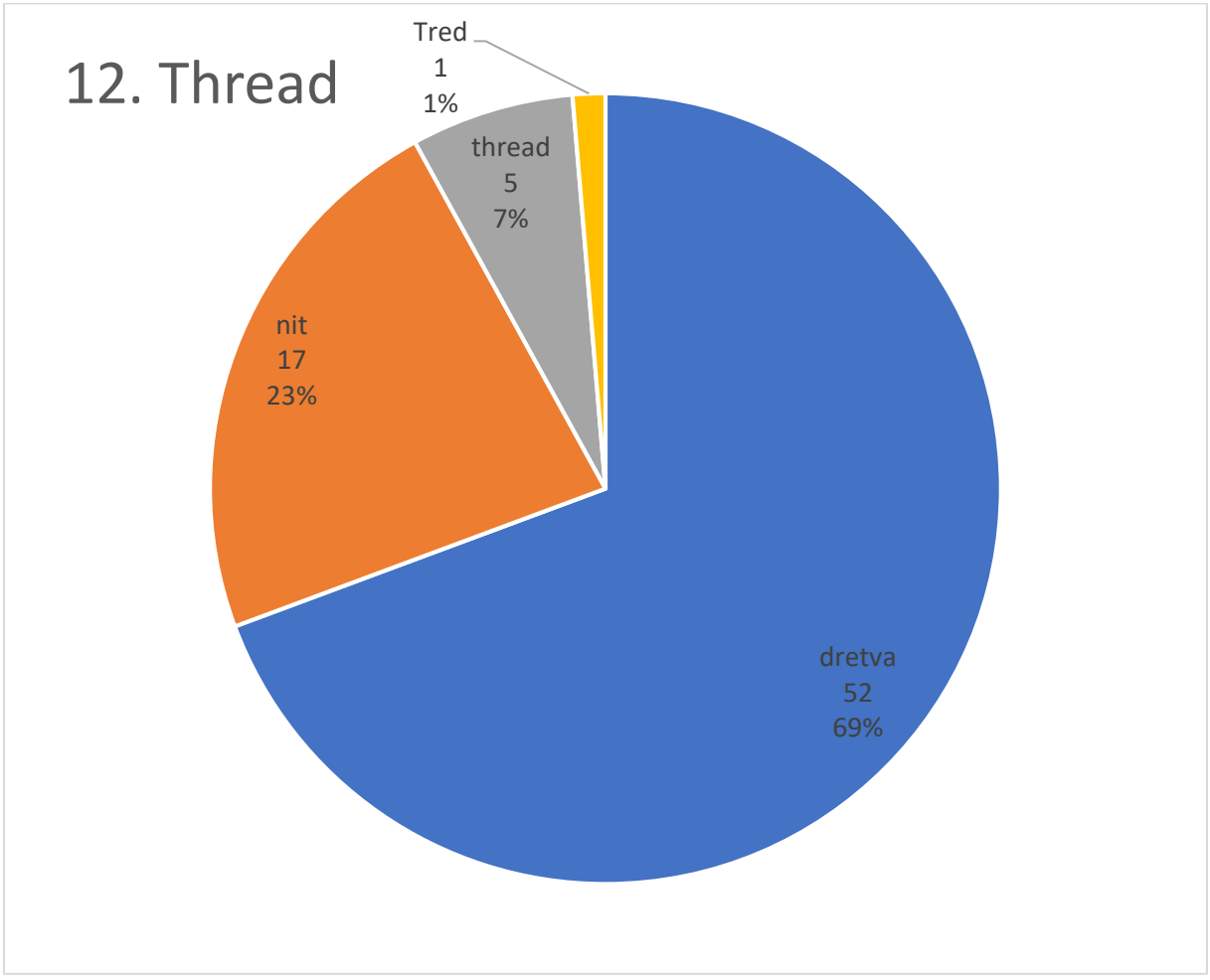
10. Software	Count of Software
aplikacija	1
programska oprema	6
programska podrška	25
softver	30
software	13
Grand Total	**75**



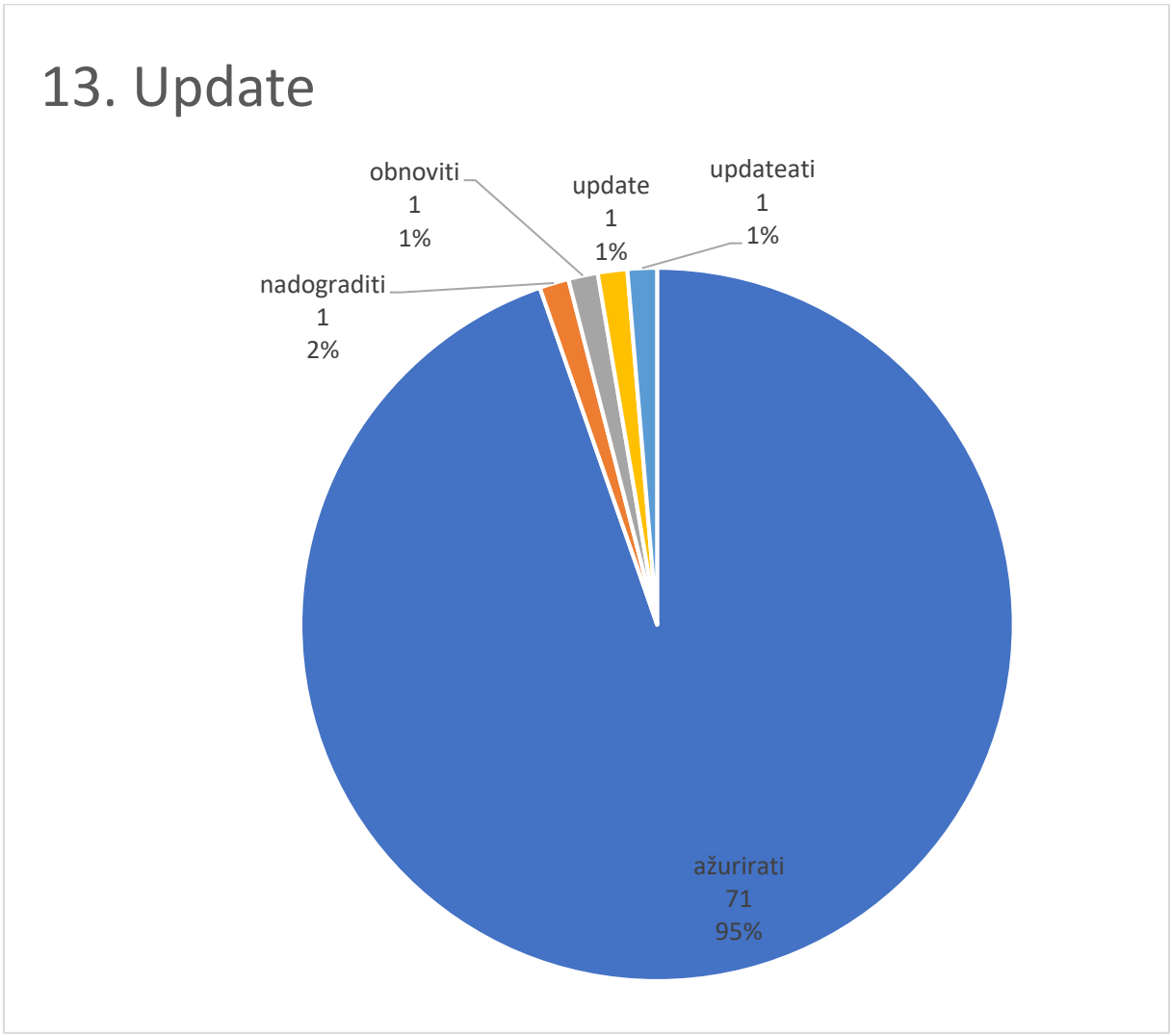
11. Switch	Count of Switch
komutator	9
preklopnik	42
skretnica	1
switch	23
Grand Total	**75**



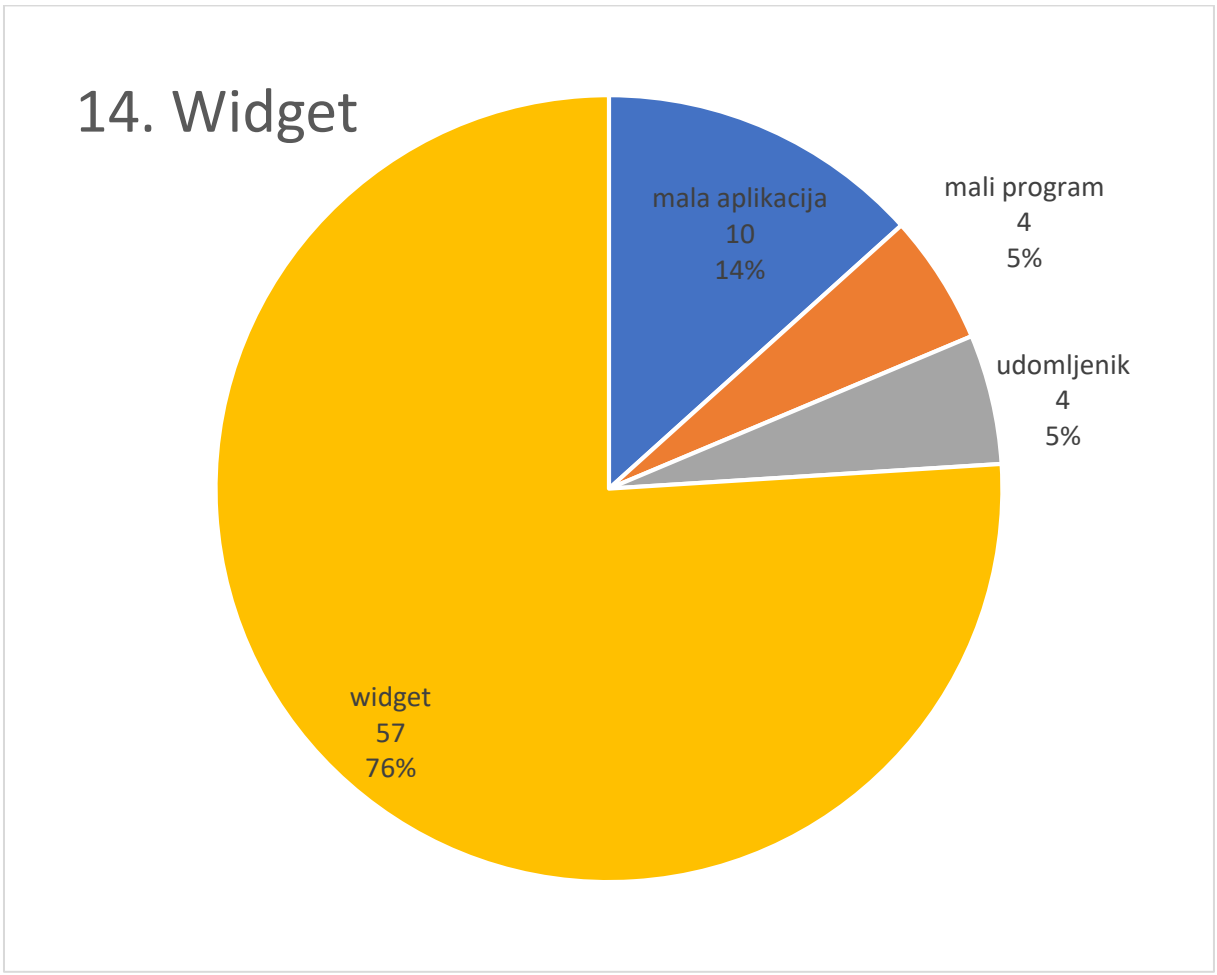
12. Thread	Count of Thread
dretva	52
nit	17
thread	5
Tred	1
Grand Total	**75**



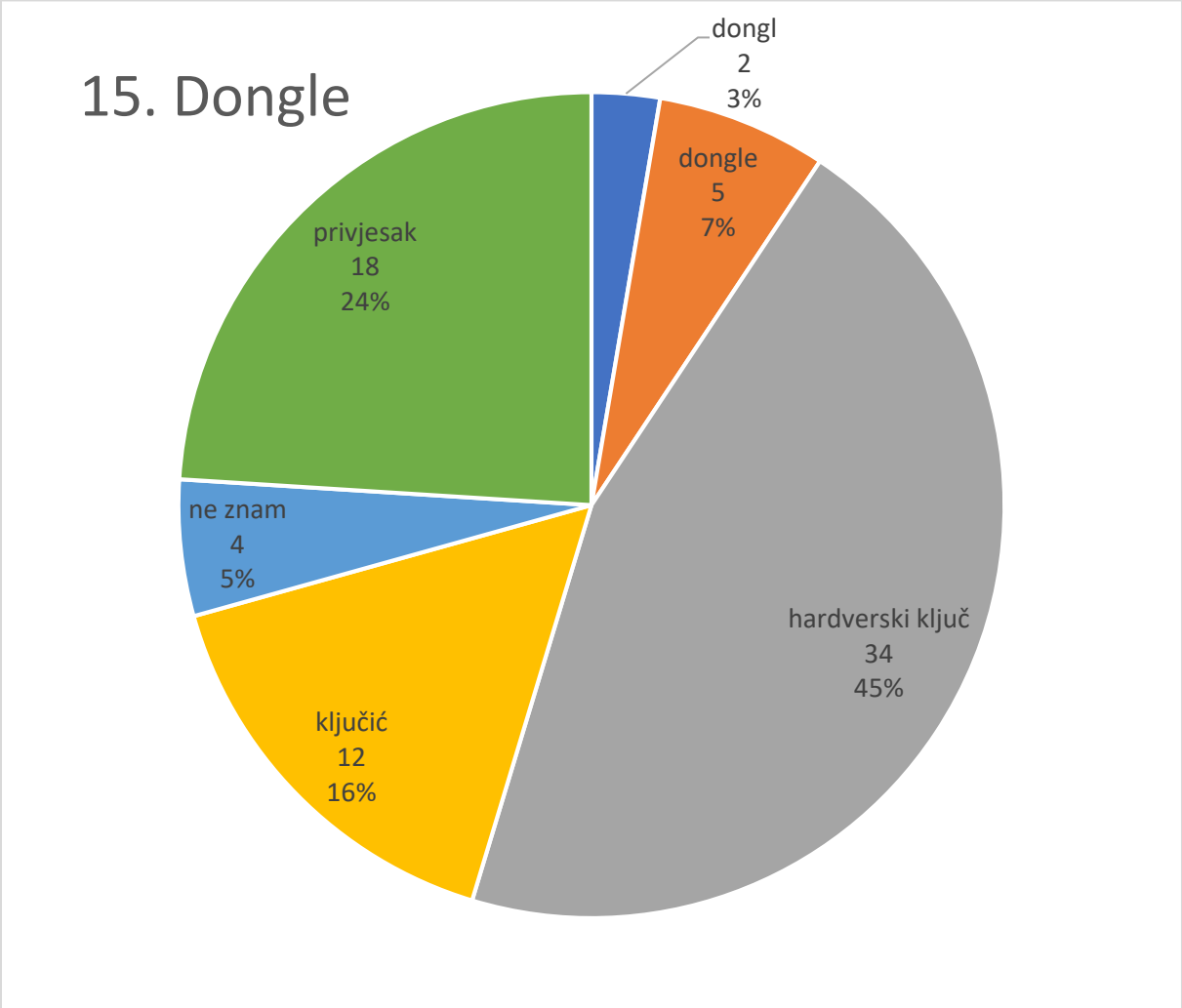
13. Update	Count of Update
ažurirati	71
nadograditi	1
obnoviti	1
update	1
updateati	1
posuvremeniti	0
dopuniti	0
Grand Total	**75**



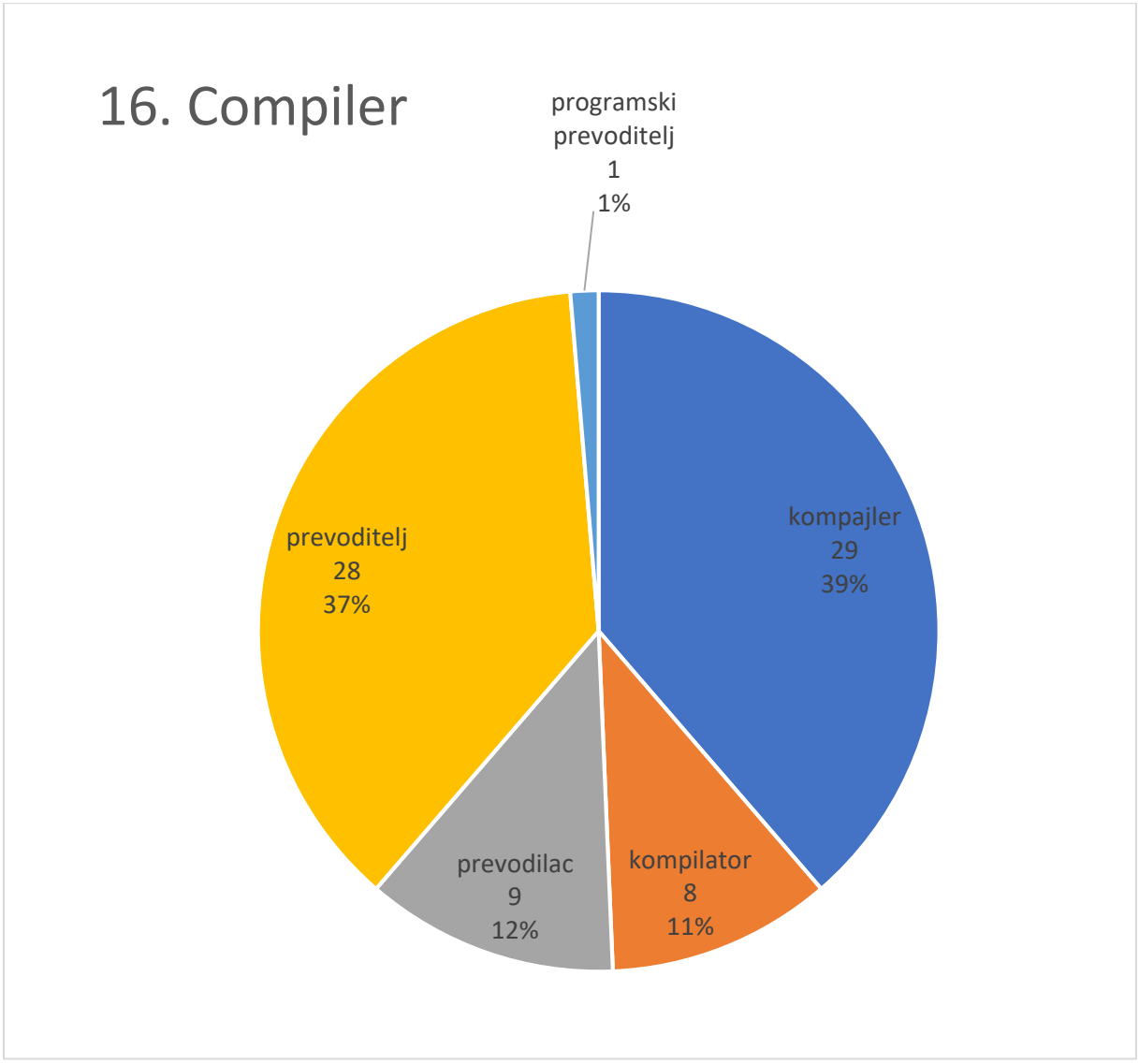
14. Widget	Count of Widget
mala aplikacija	10
mali program	4
udomljenik	4
widget	57
Grand Total	**75**



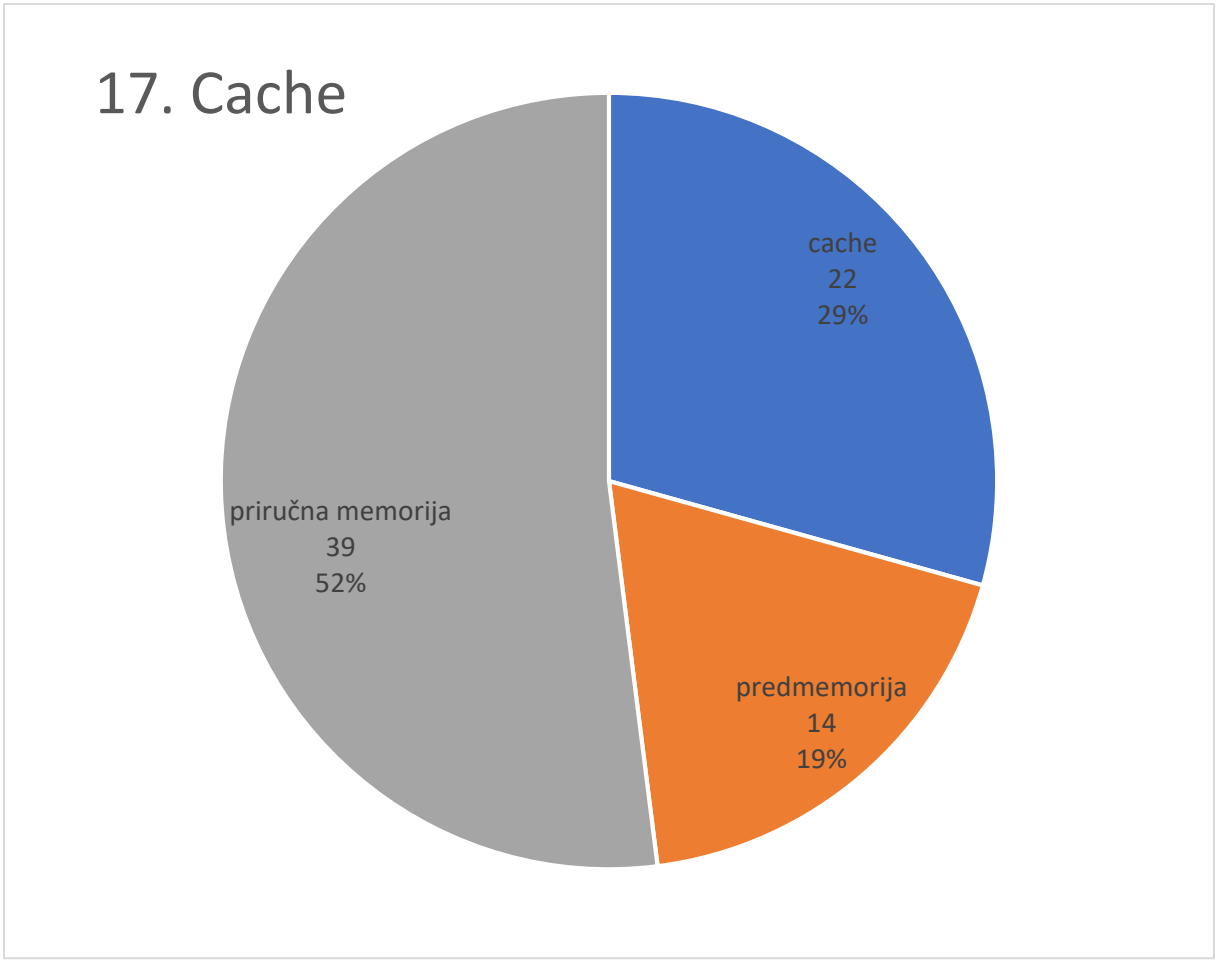
15. Dongle	Count of Dongle
dongl	2
dongle	5
hardverski ključ	34
ključić	12
ne znam	4
privjesak	18
Grand Total	**75**



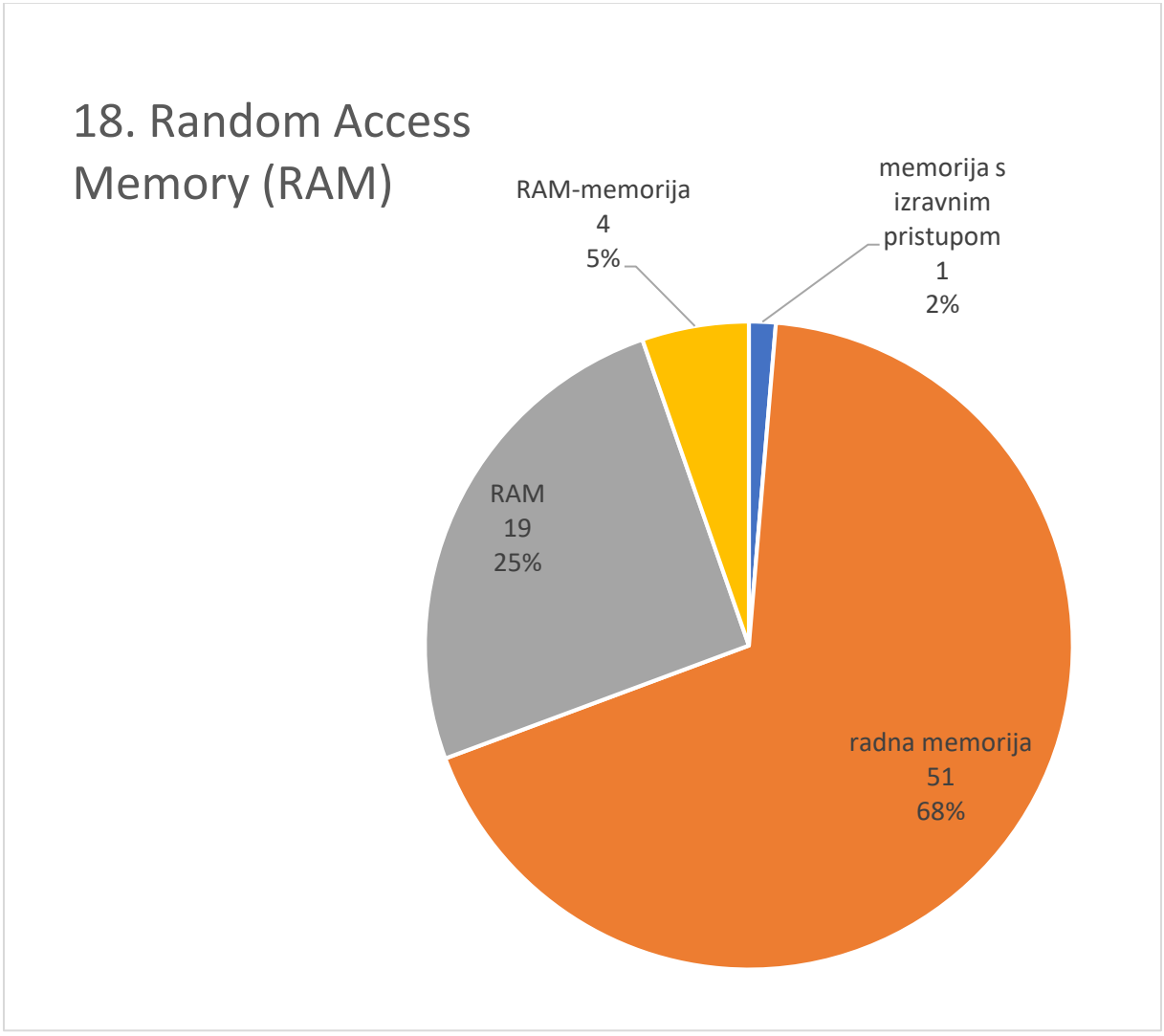
16. Compiler	Count of Compiler
kompajler	29
kompilator	8
prevodilac	9
prevoditelj	28
programski prevoditelj	1
Grand Total	**75**



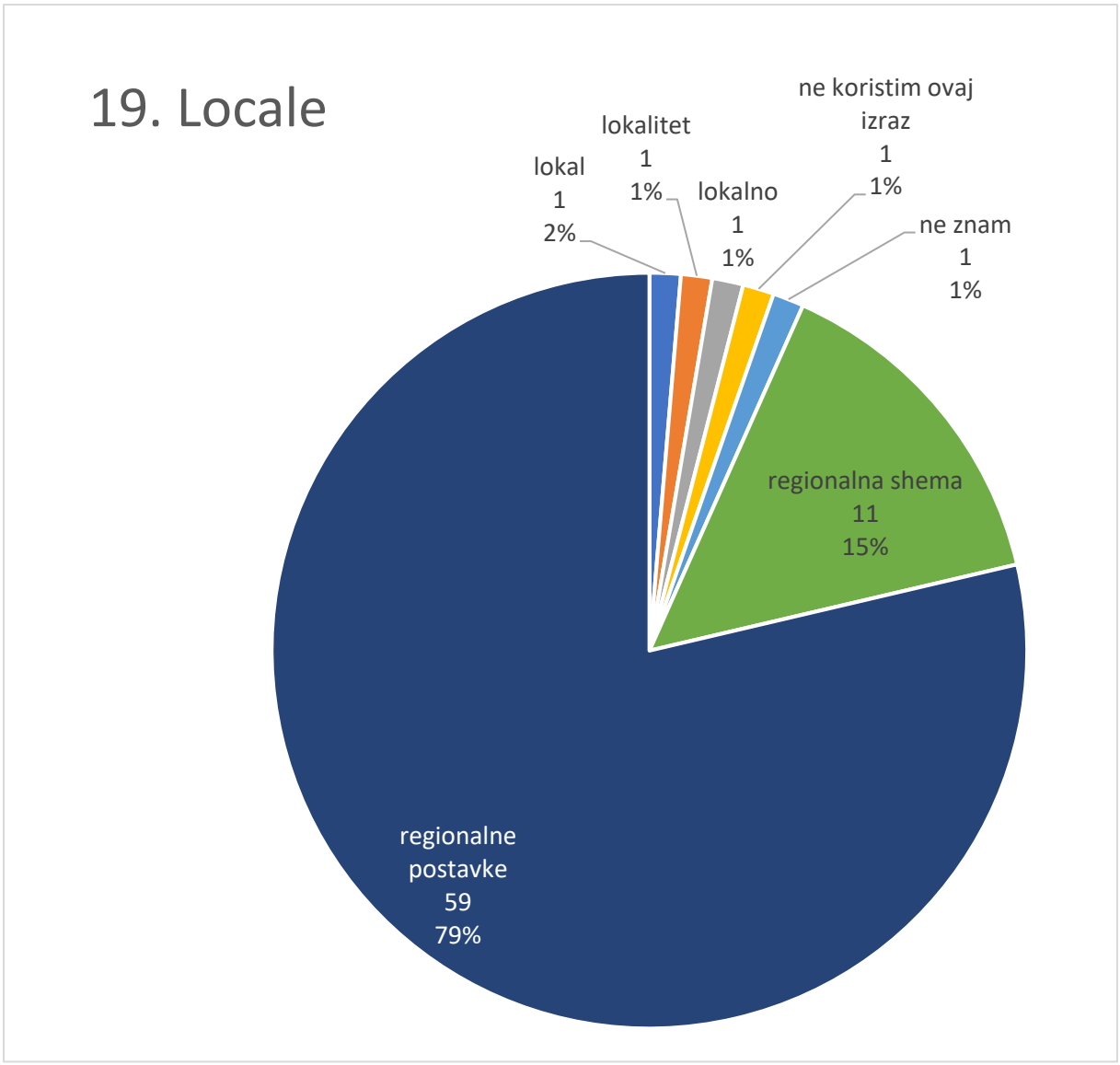
17. Cache	Count of Cache
cache	22
predmemorija	14
priručna memorija	39
Grand Total	**75**



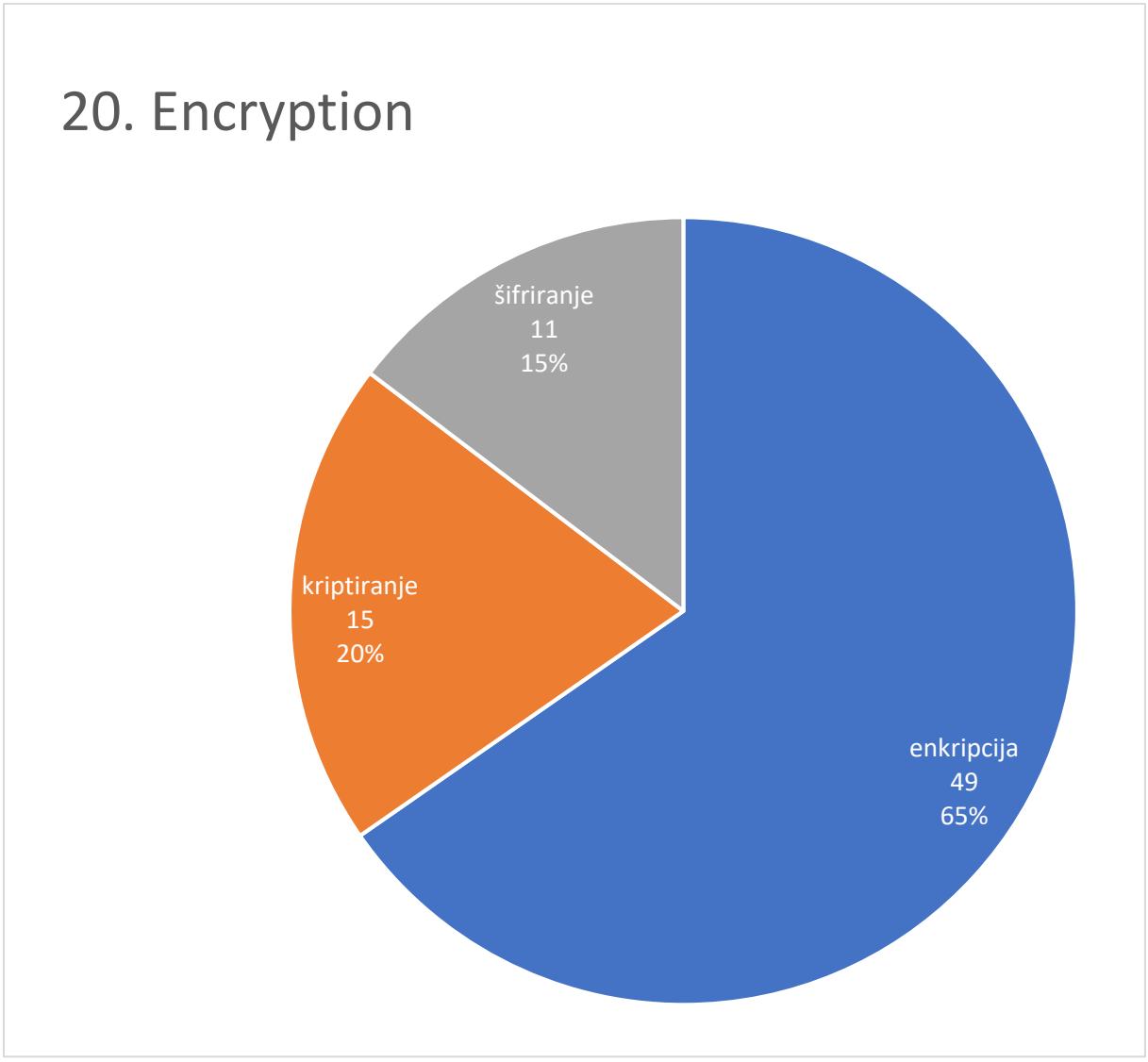
18. Random access memory (RAM)	Count of Random access memory (RAM)
memorija s izravnim pristupom	1
radna memorija	51
RAM	19
RAM-memorija	4
Grand Total	**75**



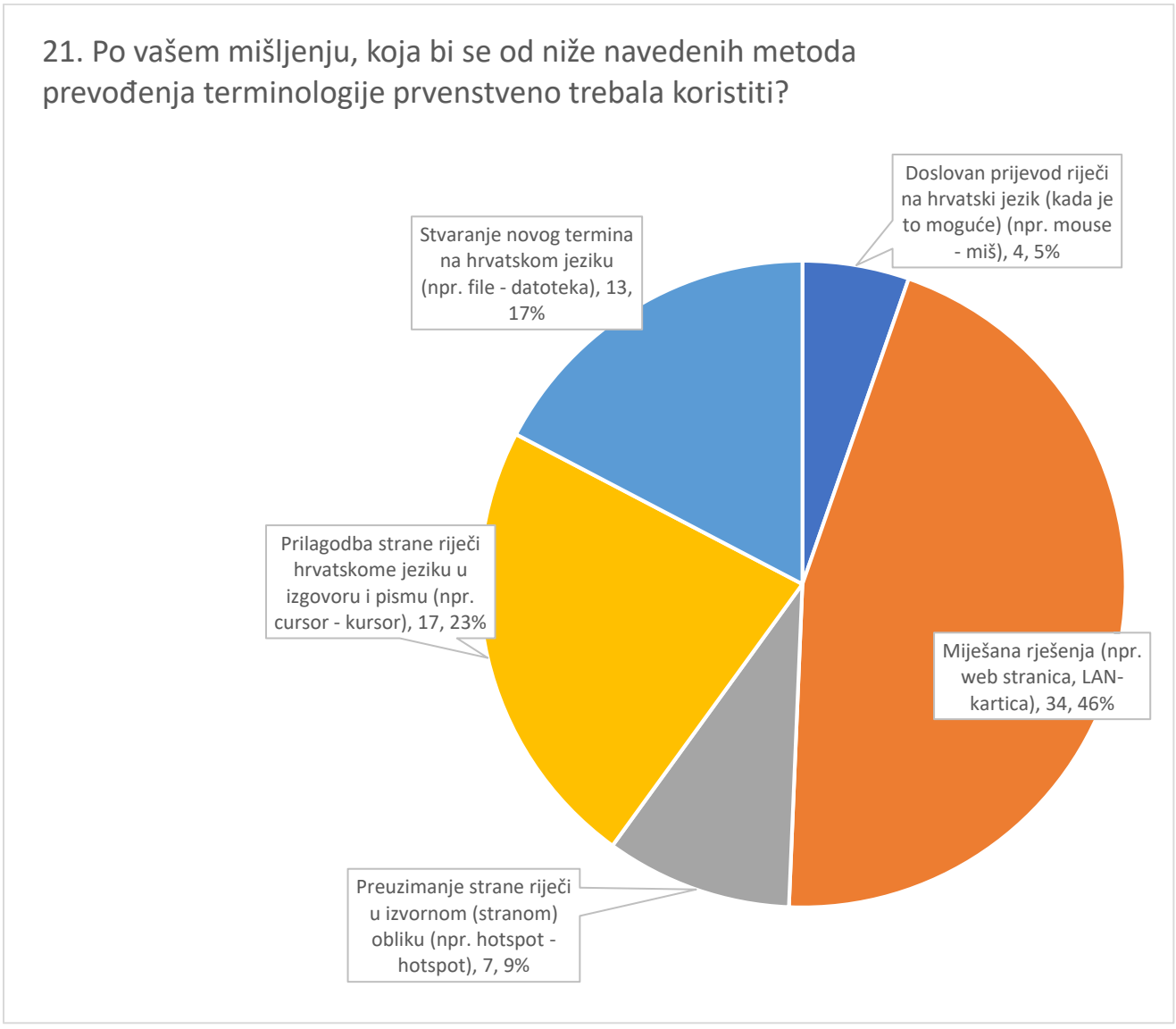
19. Locale	Count of Locale
lokal	1
lokalitet	1
lokalno	1
ne koristim ovaj izraz	1
ne znam	1
regionalna shema	11
regionalne postavke	59
Grand Total	**75**



20. Encryption	Count of Encryption
enkripcija	49
kriptiranje	15
šifriranje	11
Grand Total	**75**

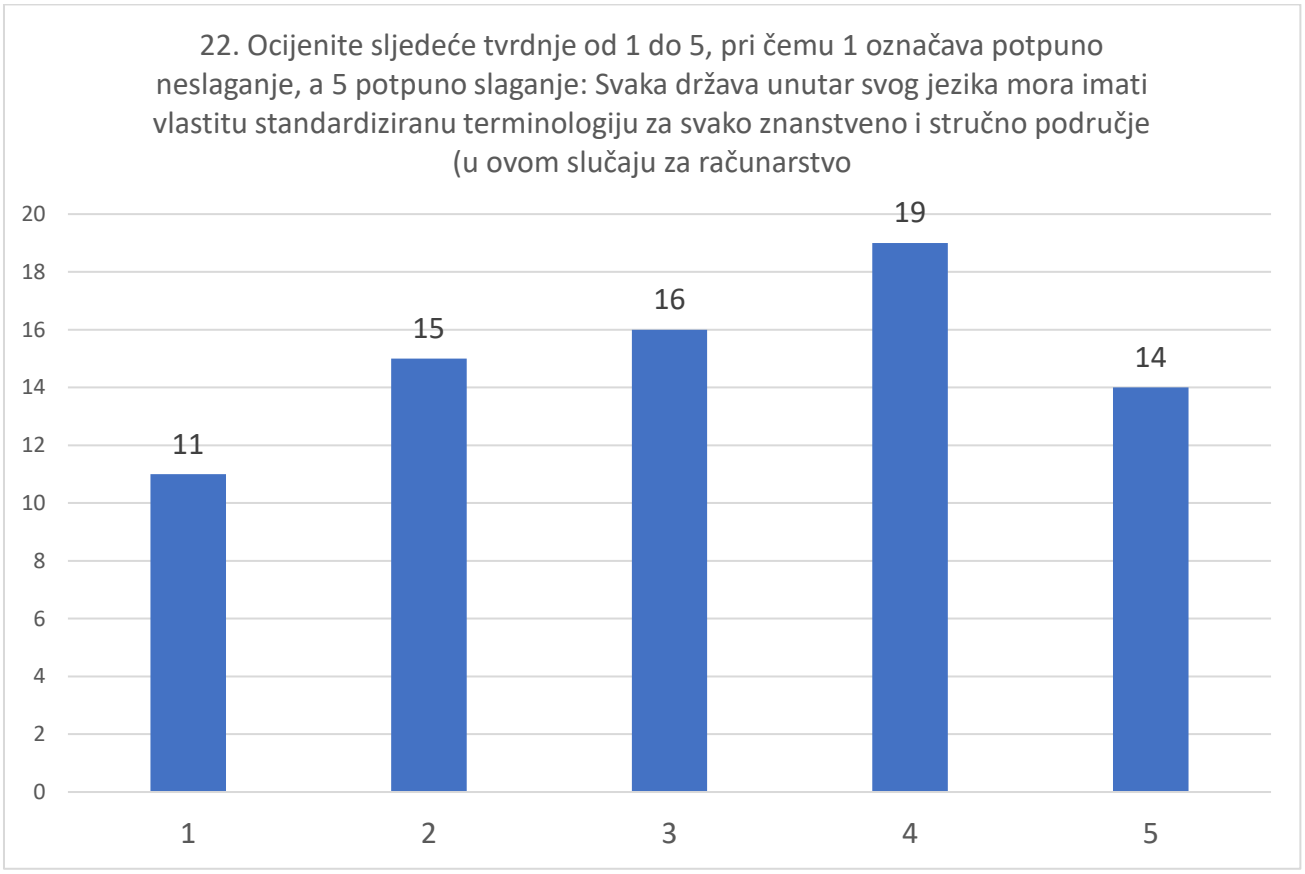


21. Metode	Sum of Metode
Doslovan prijevod riječi na hrvatski jezik (kada je to moguće) (npr. mouse - miš)	4
Miješana rješenja (npr. web stranica, LAN-kartica)	34
Preuzimanje strane riječi u izvornom (stranom) obliku (npr. hotspot - hotspot)	7
Prilagodba strane riječi hrvatskome jeziku u izgovoru i pismu (npr. cursor - kursor)	17
Stvaranje novog termina na hrvatskom jeziku (npr. file - datoteka)	13
Grand Total	**75**



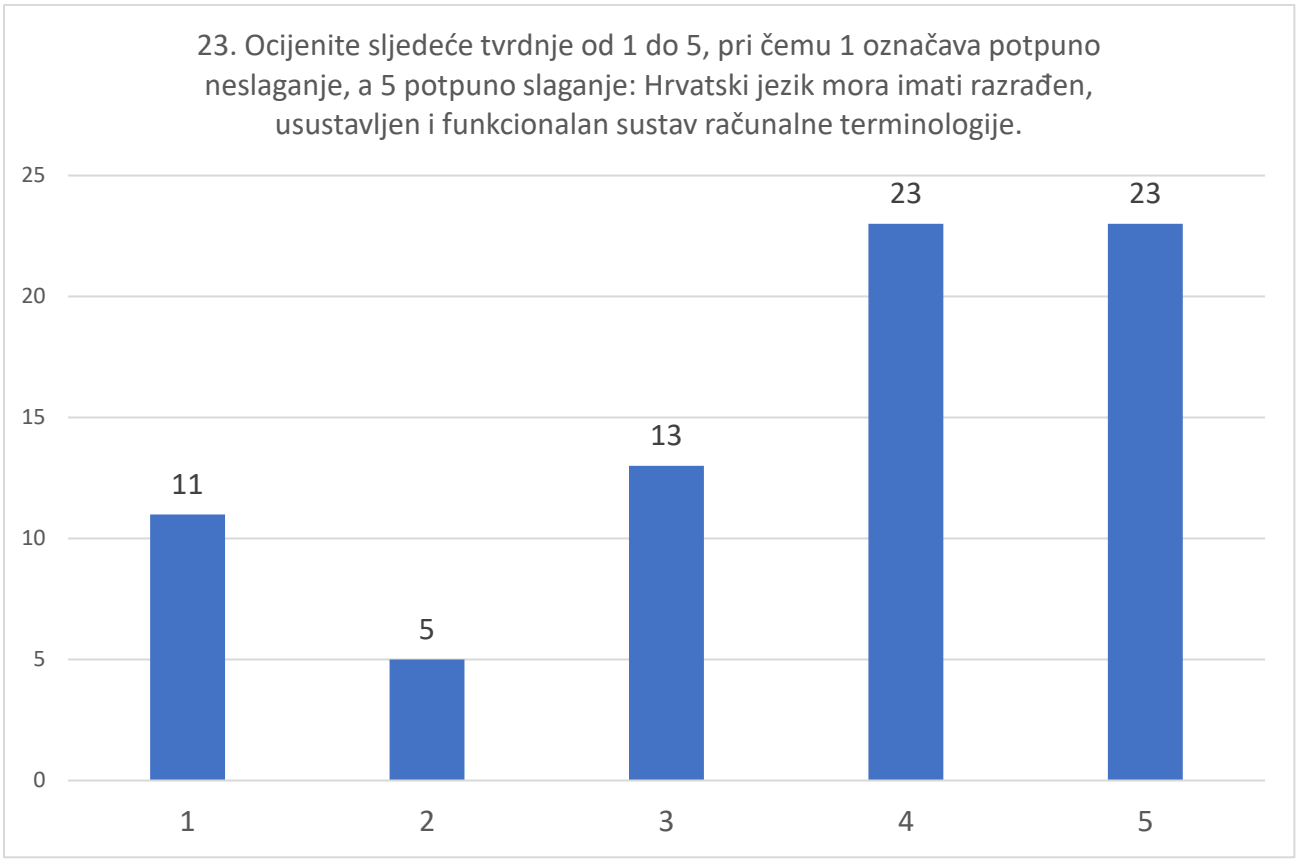
22. Ocjene	Sum of Ocjene
1	11
2	15
3	16
4	19
5	14
Grand Total	**75**

Average: 3.133333333



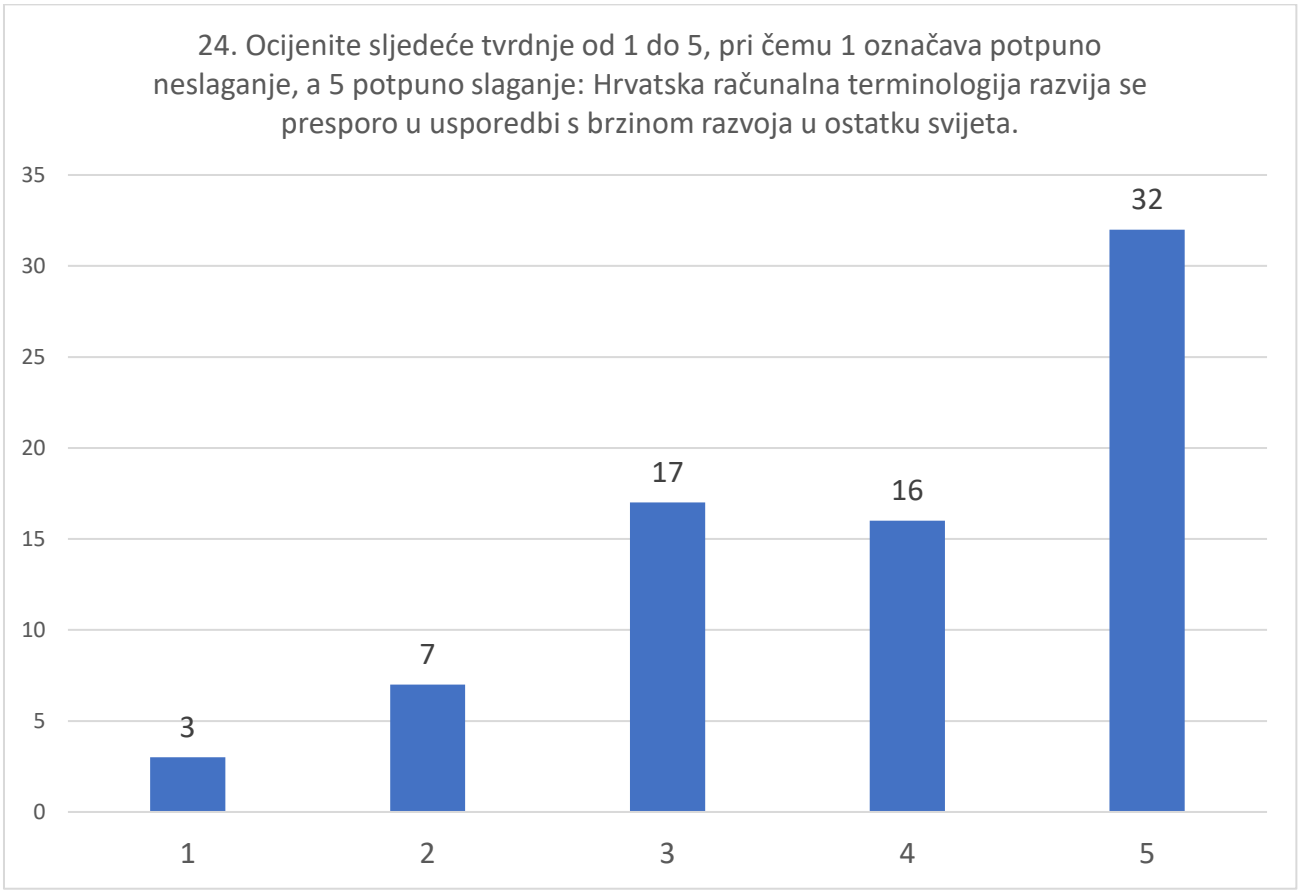
23. Ocjene	Sum of Ocjene
1	11
2	5
3	13
4	23
5	23
Grand Total	**75**

Average: 3.56



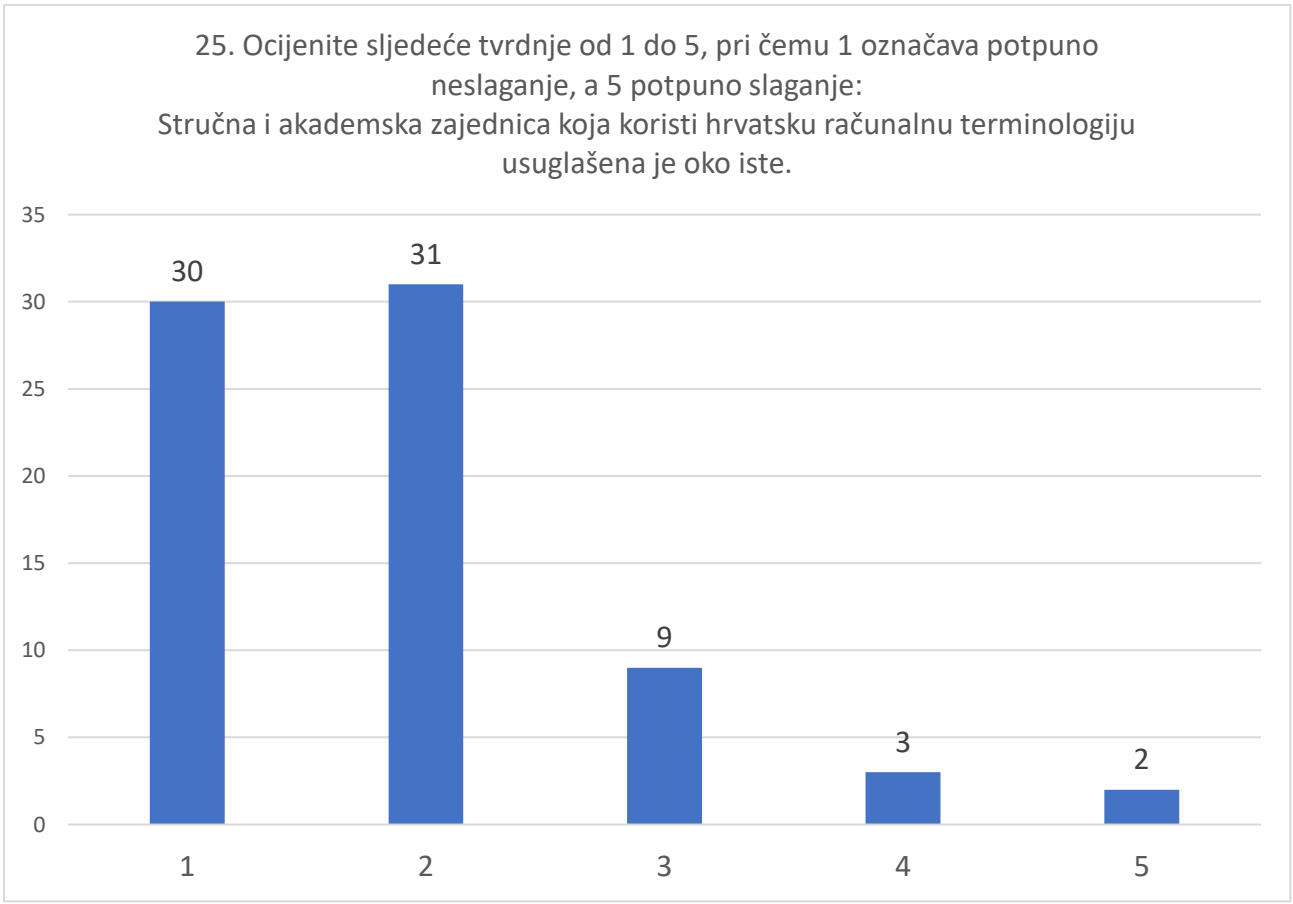
24. Ocjene	Sum of Ocjene
1	3
2	7
3	17
4	16
5	32
Grand Total	**75**

Average: 3.893333333



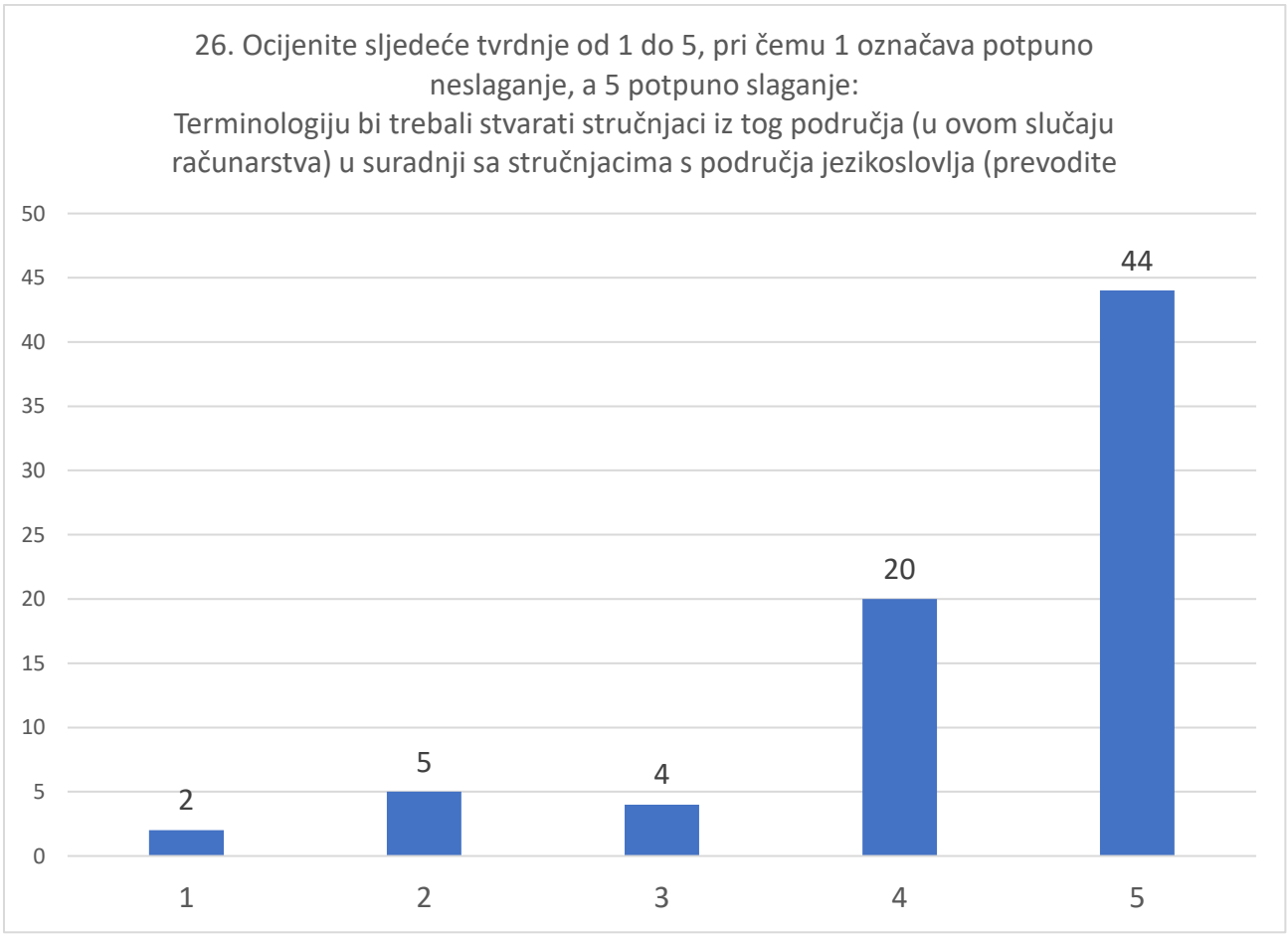
25. Ocjene	Sum of Ocjene
1	30
2	31
3	9
4	3
5	2
Grand Total	**75**

Average: 1.88



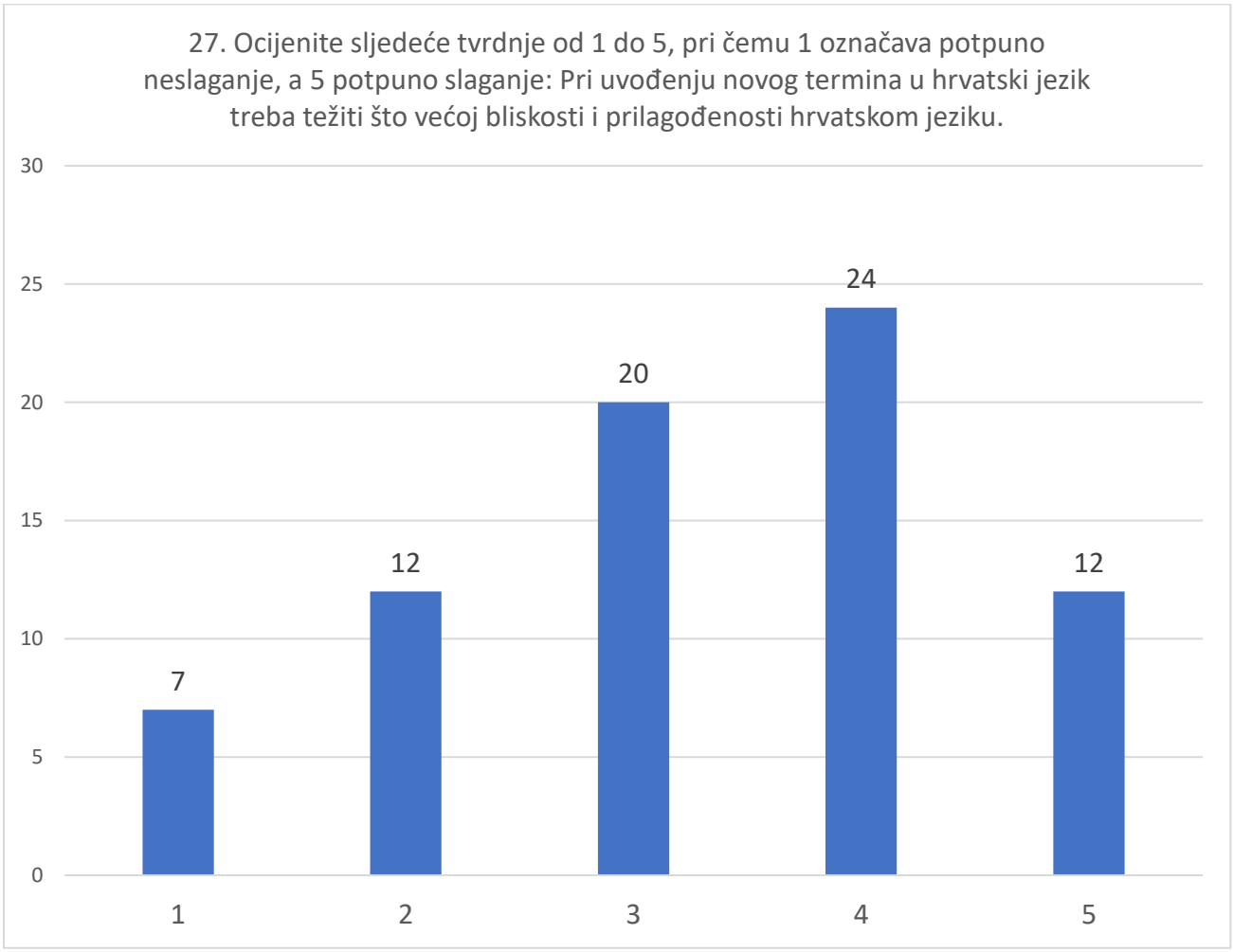
26. Ocjene	Sum of Ocjene
1	2
2	5
3	4
4	20
5	44
Grand Total	**75**

Average: 4.32



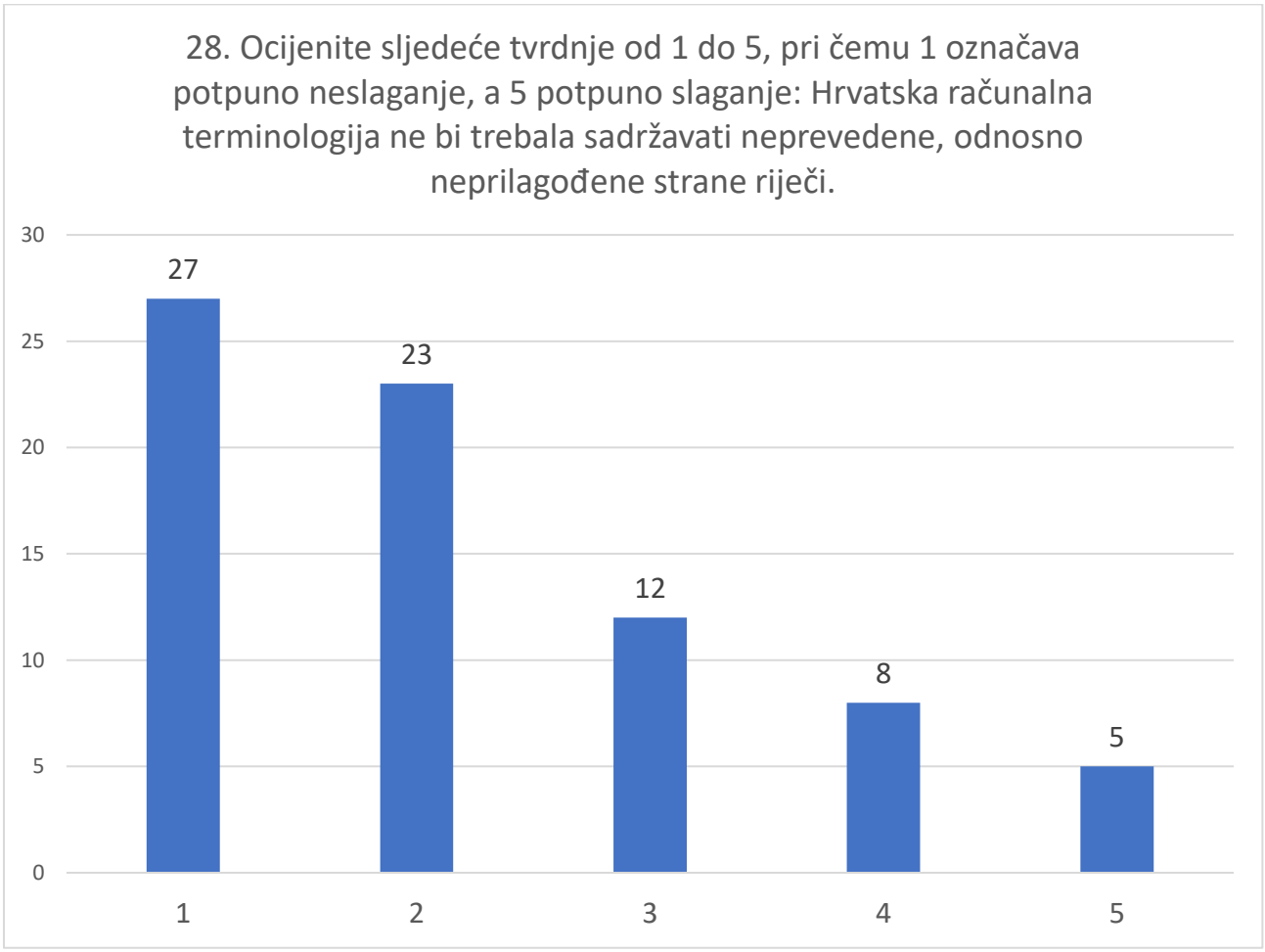
27. Ocjene	Sum of Ocjene
1	7
2	12
3	20
4	24
5	12
Grand Total	**75**

Average: 3.293333333

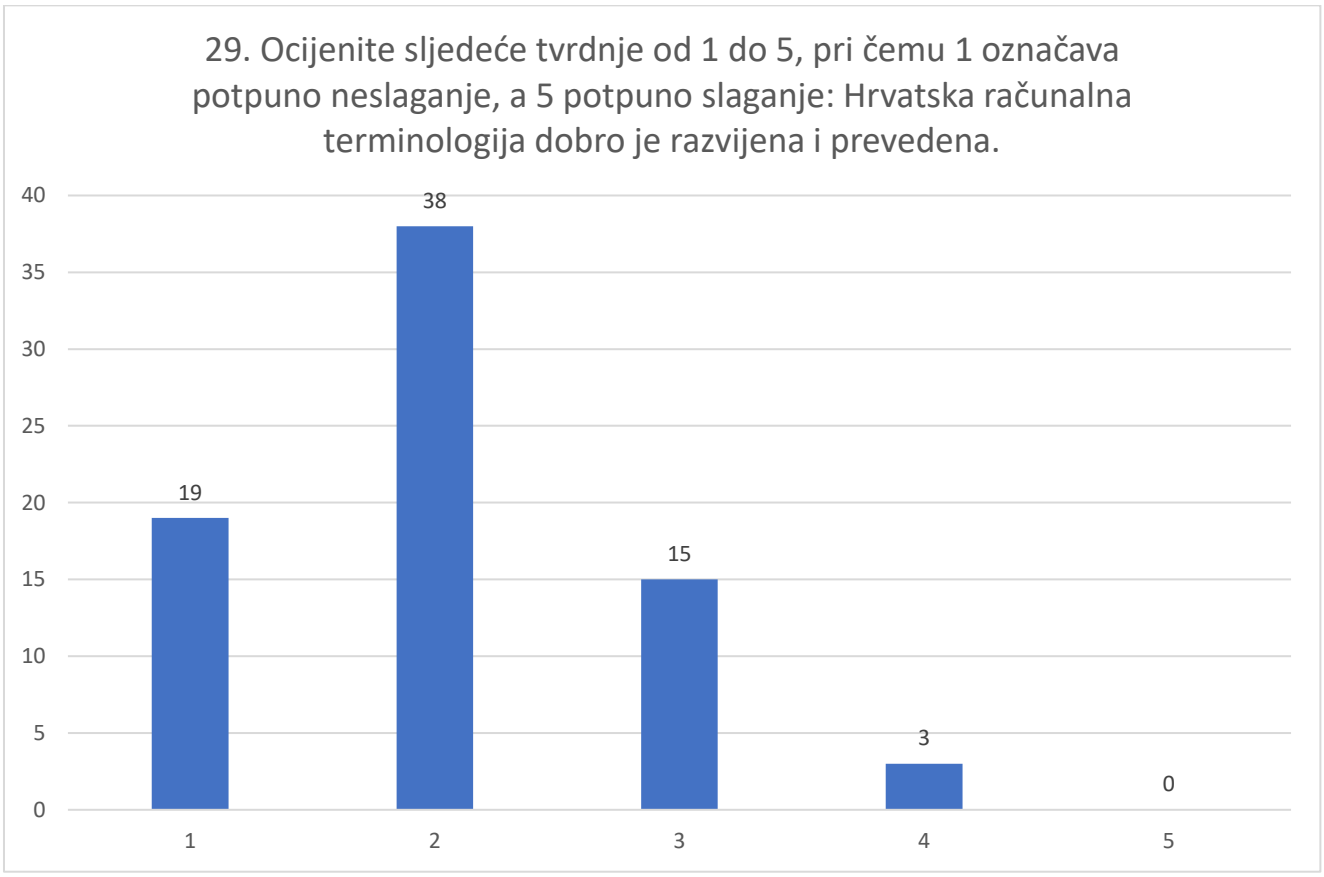


28. Ocjene	Sum of Ocjene
1	27
2	23
3	12
4	8
5	5
Grand Total	**75**

Average: 2.213333333

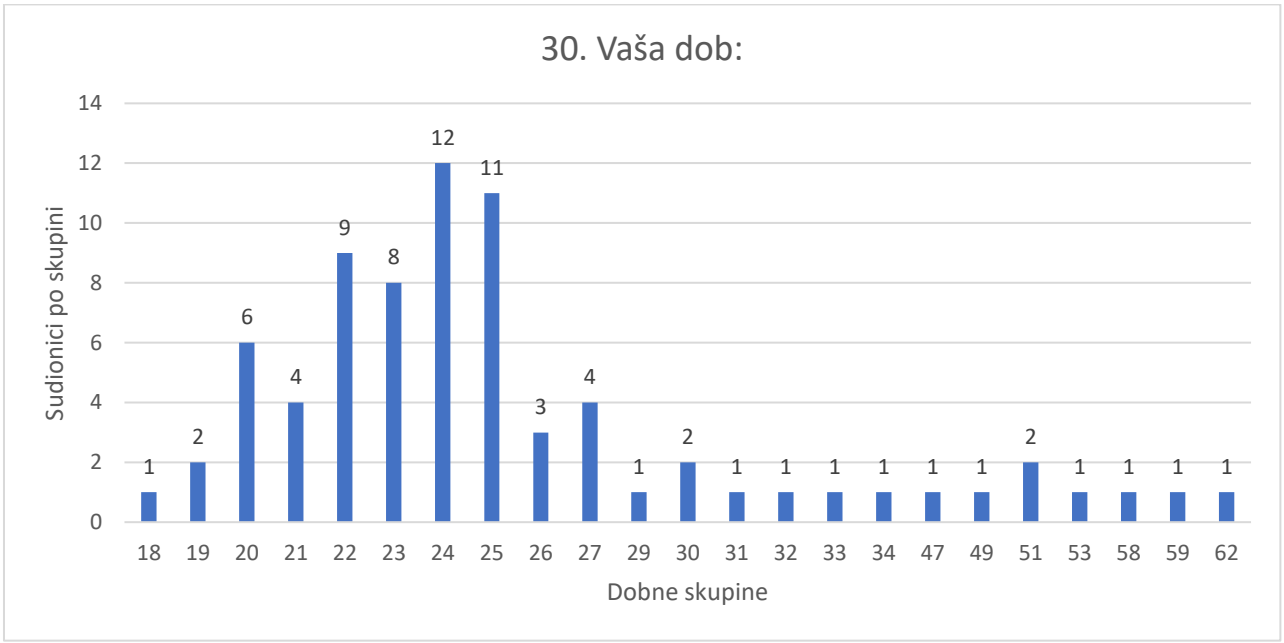


29. Ocjene	Sum of Ocjene
1	19
2	38
3	15
4	3
5	0
Grand Total	**75**
Average:	2.026666667

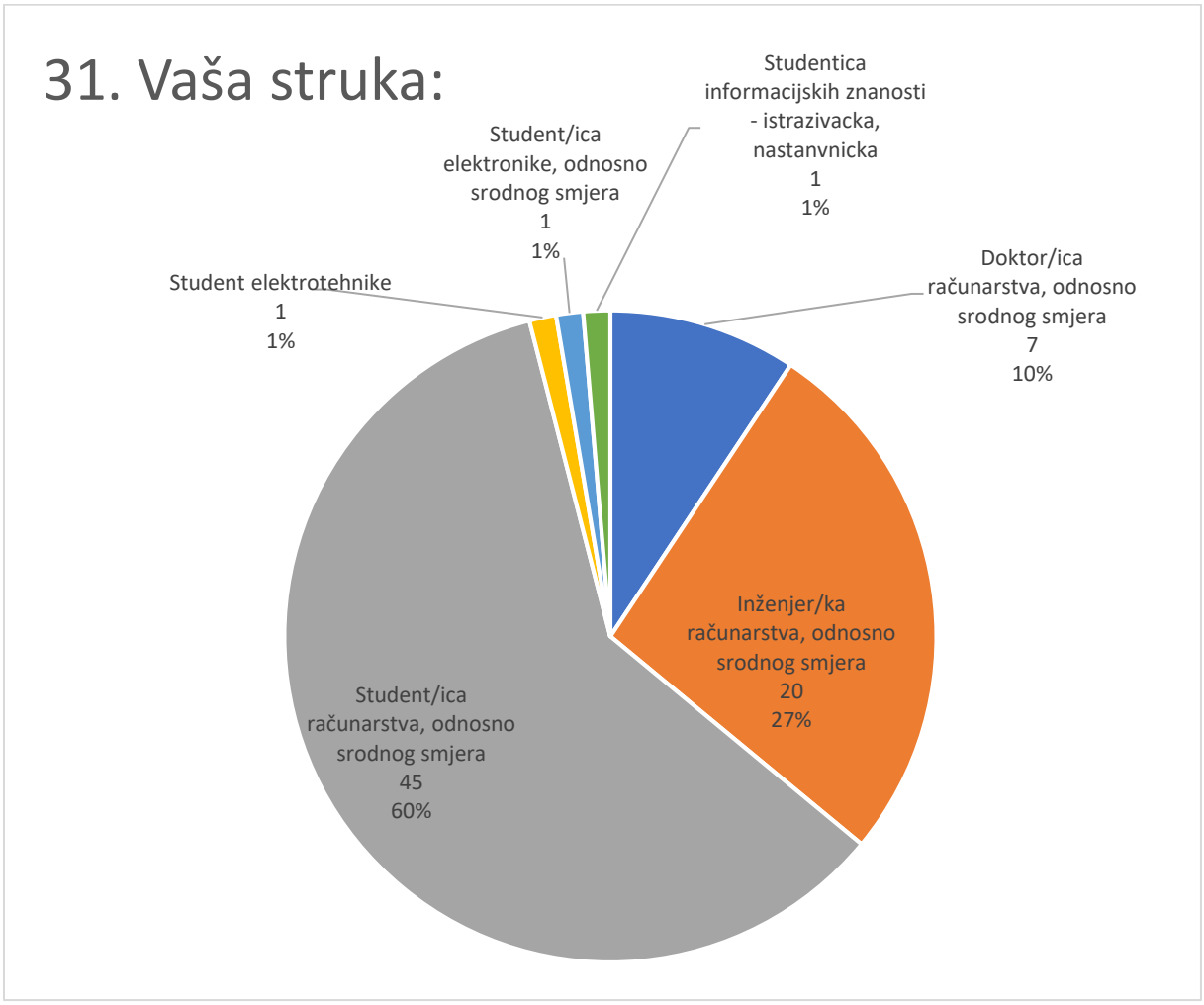


30. Age	Persons per Age
18	1
19	2
20	6
21	4
22	9
23	8
24	12
25	11
26	3
27	4
29	1
30	2
31	1
32	1
33	1
34	1
47	1
49	1
51	2
53	1
58	1
59	1
62	1
Grand Total	**75**

Average Age: 27.2



31. Vaša struka	Number per group
Doktor/ica računarstva, odnosno srodnog smjera	7
Inženjer/ka računarstva, odnosno srodnog smjera	20
Student/ica računarstva, odnosno srodnog smjera	45
Student elektrotehnike	1
Student/ica elektronike, odnosno srodnog smjera	1
Studentica informacijskih znanosti - istrazivacka, nastanvnicka	1
Grand Total	**75**



32. Ukoliko želite, možete ostaviti komentar o anketi, njenom sadržaju ili temi ankete općenito. Nije obavezno ispuniti ovaj dio ankete, no Vaši komentari mogu doprinijeti kvaliteti istraživanja.

- Sretno!
- Pitanja su relevantna za problematiku i vrlo aktualna. Ova istraživanja treba nastaviti sukladno prijedlogu u jednom od pitanja
- Kod nekih pitanja (pr. za Thread) nema ponuđenih engleskih riječi za odabir. Ne znam je li se tim pitanjem nešto drugo htjelo postići, no čini mi se da bi to trebalo ažurirati.
- ćao anamarija, sritno sa diplomskin :)
- Odlična anketa s obzirom da nam jezik izumire!
- volio bi rezultate vidjet pa ako mozete posaljite na filip.jugkala@yahoo.com
- Za programiranje je potrebno znati iskljucivo(!!!!!) englesku terminologiju, nema potrebe (zbunjujuce je i neproduktivno) ucit na fakultetu hrvatsku kada ce se cijeli zivot koristiti engleska.