

PYTHON AS A CHAT-BOT DEVELOPMENT TOOL

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ABSTRACT

Constantly changing market conditions, high speed of decision-making, multitasking in asset management and the need to reduce risks require modern approaches to business organization. The solution to the increasingly complex internal and external environment of the enterprise lies in the integrated automation of business processes.

Keywords: chatbot, programming languages, C, Python, Java, C#, PHP.

This frees up valuable resources for strategic planning and concentration of management in key areas of the company. The need to automate information processes is due to the increase in the amount of information in the information system (IS) of the organization, the need to accelerate and use more complex methods of processing them.

Business automation is a partial or complete transfer of stereotypical operations and business tasks under the control of a specialized information system or complex hardware and software. As a result, human and financial resources are released to increase labor productivity and the effectiveness of strategic management [1].

The main tasks of automation of information processes are [2]:

- elimination of routine operations;
- reduction of labor costs when performing traditional processes and operations;
- increasing the speed of information processing and transformation processes; providing greater efficiency and quality of customer service;
- providing ample opportunities for statistical analysis and improving the accuracy of accounting and reporting information;
- providing great opportunities for the organization and effective use of information resources through the use of information technology;

Thus, it should be recognized that business process automation is important for the company and follows the development of the company, as its efficiency increases.

Chatbots are special accounts that are not assigned to any person, and messages sent from or to them are processed by an external system. In addition, for the user, communication with the bot looks like a regular correspondence with a real person [2].

A chatbot is a smart program that lives in instant messengers and performs different functions.

Chatbot features:

1) Customer support

A chatbot will help replace an inconvenient FAQ on the site, which is sometimes not immediately visible, and will be able to answer typical customer questions. The bot can work 24 hours a day and relieve your employees.

2) Marketing

A chatbot is another marketing tool that will help you distribute content, maintain customer loyalty, and collect analytics. With it, you can make mailings, inform customers about promotions, collect comments about goods or services, quality of service.

There are several options for classifying chatbots, but after analyzing them all, we can distinguish two types: business classification of chatbot applications and classification of chatbots by technical type. The business classification diagram is shown in Figure 1.

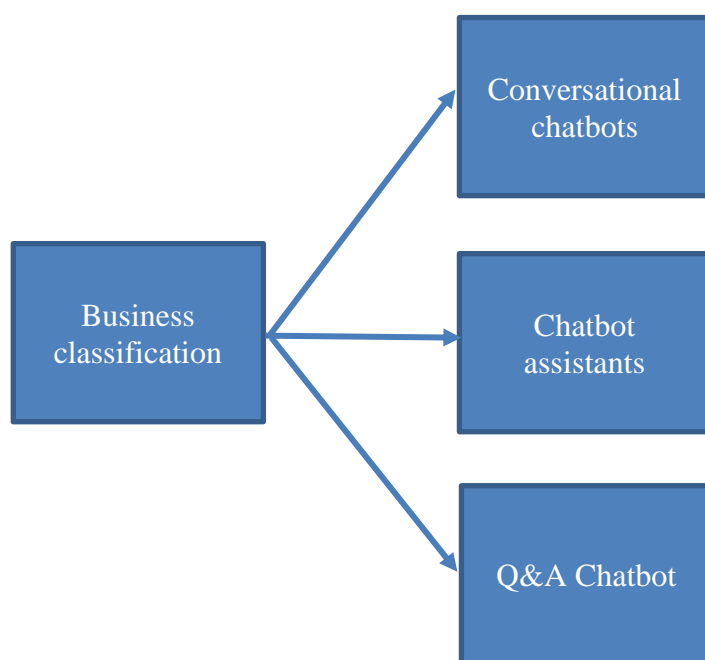


Figure 1 - Business classification of chatbot applications

In the modern world, a lot is tied to IT technologies, in almost any company, employees use various applications for efficient and high-quality work, the world does not stand still, and the subject of this article is developing due to the fact that within the framework there is an idea of writing a chat bot in the Telegram messenger. To write a chatbot, you need to choose a programming language, which will determine the speed of writing code, language capabilities, etc.

A programming language is a set of rules that govern what a written computer program looks like and what the computer can do under its control. A program is code written according to the rules of a given programming language.

To date, there are a large number of different programming languages and each of them has its own scope, but still, in order to analyze the choice of the best language for writing a chatbot, you need to select several of the most popular languages in order to analyze between them, so in this In this chapter, we turn to statistics on the popularity of languages [3]. Figure 6 shows the ranking of 2020 languages in commercial work projects.

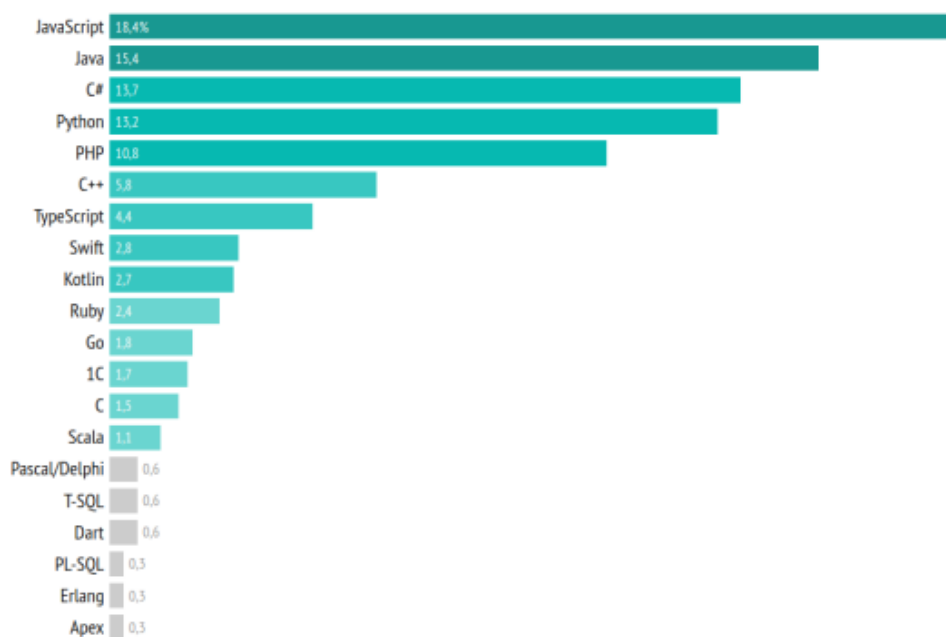


Figure 2 – Rating of programming languages in commercial projects, %

According to the data, we can conclude that JavaScript is significantly ahead of Java and is now the most popular programming language. The top five languages also included: C#, Python, PHP.

Python is a general-purpose high-level programming language that is also used to develop web applications. The language is aimed at improving developer productivity and code readability. Python supports various programming paradigms: structural, object-oriented, functional, imperative, and aspect-oriented. The language includes dynamic typing, automatic memory management, full introspection, an exception handling mechanism, support for multi-threaded computations, and practical high-level data structures [3].

Advantages of Python:

- open development;
- quite easy to learn, especially at the initial stage;
- syntax features encourage the programmer to write well-read code;
- provides a means of rapid prototyping and dynamic semantics;
- has a large community, positive attitude towards newcomers;
- many useful libraries and extensions of the language can be easily used in your projects thanks to the extremely unified import mechanism and programming interfaces;
- modularity mechanisms are well thought out and can be easily used;
- absolutely everything in Python is an object in the sense of OOP, but the object approach is not imposed on the programmer.

Drawbacks of Python:

- not too successful multithreading support;

- not so many high-quality software projects have been created in Python compared to other universal programming languages, such as Java;
- lack of commercial support for development tools (although this situation changes over time);
- initial limited means for working with databases;
- Benchmarks show less performance of Python compared to the main Java VM, which gives this language a reputation for being slow.

```
class HelloWorldApp {
    public static void main(String[] args) {
        System.out.println("Hello World!"); // Display the string.
    }
}
```

Figure 3 - Example code on the Java

```
#include<stdio.h>
int main(int argc, char** argv)
{
    printf("Hello World");
}
```

Figure 4 - Example Code on the C

```
print "Hi there"
```

Figure 5 – Example Code on the Python

In articles, the bot allows users to conveniently hold meetings, meetings, training in the Telegram format channels. In the course of the work, a review was carried out existing analogues, on the basis of which the key features for the created service were identified, allowing you to get a product that stands out among the rest with its unique functionality. Various tools were considered and the most suitable ones for the implementation of the development were selected. Using the Python language, a Telegram bot was developed. Thus, in the course of the work done, it was achieved goal - a telegram bot was developed to manage the channel and voting.

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