**Computer programming**

#### There are several main programming paradigms:

#### **Imperative** - computations are performed through a guided sequence of steps, in which these variables are referred to or changed. The order of the steps in this paradigm is crucial.

#### **Logical** – various logical assertions about a situation are made, establishing all known facts. Then queries are made. The role of the computer becomes maintaining data and making an output using inference engine.

#### **Functional** - all subprograms are functions or procedures that take in arguments and return a value. The solution is based entirely on the input.

#### **Object-Oriented** - is a paradigm in which real-world objects are each viewed as separate entities – objects. Objects are organized into classes, from which they inherit methods and fields.

#### The 5 Most Popular Programming Languages in 2022:

1. **Python** - is used in a wide variety of applications, including artificial intelligence and data science
2. **JavaScript** - the most language for building interactive websites
3. **Java** - most commonly used for development of client-server applications
4. **C#** - OOP language for developing Windows applications (UI included)
5. **C/C++** - used in game development and in hardware programming

Object-oriented programming (OOP) is a computer programming model that organizes software design around data, or objects, rather than functions and logic. 4 main concepts of OOP are inheritance, abstraction, incapsulation and polymorphism. It helps to make connections between objects more obvious and maintain clean code easier.

Game programming refers to the code that brings a video or computer game to life. As technology has evolved, so has programming. Early on in video game history, programmers were often responsible for most aspects of development, including design. But as hardware and software improved, and games became increasingly more complex.

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

AI finds application almost in any field of life since the term itself means being able to find solutions that were not known before. Even if modern AI is not as intelligent as we might want, it’s already capable of much things.

Among applications of AI there is one of the most popular today – machine learning. This term refers to machines finding patterns in large amounts of data, thus “learning” from it. Good examples of ML are ChatGPT and other language models.