ARTIFICIAL INTELLIGENCE

Prepared by: Nurzhan Duisengali

Alikhan Kalnazarov

Group: SIS-1603

Artificial Intelligence (AI) is a computer science section that studies imitations of human thinking.

AI areas

- Mind games
- Pattern recognition
- Computational linguistics
- Intellectual work
- Expert Systems

How does a human think?

Scientists of all countries ponder this question.

The purpose of their research is to create a model of human intelligence and implement it on a computer.

Somewhat simplistic, the above named target sounds like this:

- Teach the computer to think.

Purpose of creating Artificial Intelligence

- building a universal, designed to solve certain types of problems of a computer intellectual system, which would find solutions to all (or at least most) non-formalized tasks, with an efficiency comparable to or exceeding human ones.

The main approach to the development of AI:

- descending (English Top-Down AI), semiotic - the creation of expert systems, knowledge bases and inference systems that imitate high-level mental processes: thinking, reasoning, speech, emotions, creativity, etc .;

- ascending (eng. Bottom-Up AI), biological - the study of neural networks and evolutionary calculations that simulate intelligent behavior based on biological elements, as well as the creation of appropriate computing systems, such as a neurocomputer or a biocomputer.

Human activities

There are many human activities that cannot be programmed in advance.

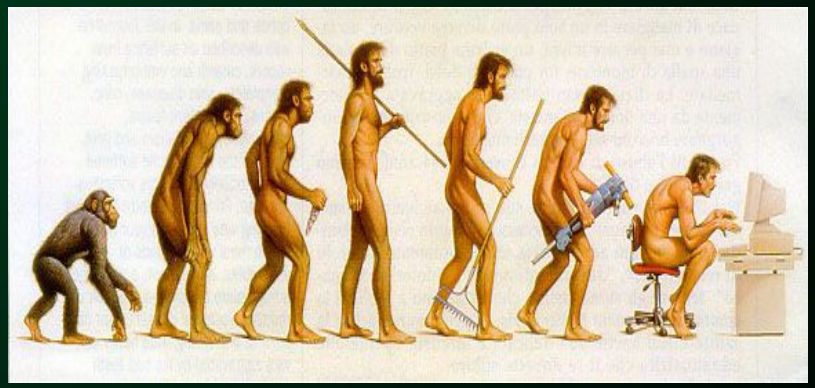
For example:

- composing music and poetry
- proof of the theorem
- literary translation from a foreign language,
- diagnosis and treatment of the disease
- and much more.

Can a computer think independently?

- The developers of AI systems are just trying to teach the machine, like a man, to independently build a program of their actions, based on the conditions of the problem.

- The goal is to turn a computer from a formal artist into an intellectual artist.



How intelligent systems are created

- Artificial intelligence systems operate on the basis of their knowledge bases, and human thinking is based on two components: a stock of knowledge and aptitude for logical reasoning.
- Therefore, to create intelligent systems on a computer, two tasks need to be solved:
- knowledge modeling (development of knowledge formalization methods for entering them into computer memory as a knowledge base);
- modeling of reasoning (creating computer programs that mimic the logic of human thinking in solving various problems).

The main areas in which AI methods are applied:

- Pattern Recognition
- Optical character recognition
- Handwriting Recognition
- Speech recognition
- Face recognition
- Natural language processing
- Machine translation
- Nonlinear control and robotics
- Machine vision, virtual reality and image processing
- Game Theory and Strategic Planning
- Diagnostics of AI in games and bots in computer games Machine creativity
- Network security

Модели функционирования формального и интеллектуального исполнителя

Формальный исполнитель

Интеллектуальный исполнитель

What should know the computer?

- Any AI system works within a specific subject area (medical diagnostics, economics, etc.). Like a specialist computer must have knowledge in this area.
- Knowledge in a particular subject area, a certain way formalized and embedded in computer memory, called a computer database.

THANK YOU FOR YOUR ATTENTION