

# Artificial Intelligence

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# Rules

- Attendance is compulsory (80%)
- Short gun full implementation
- Silence very important
- 30% or 70% Coursework and Assessments
- 70% or 30% Examination





# What is Intelligence?



# What is Intelligence?

-  the ability to learn or understand or to deal with new or trying situations
-  the skilled use of reason
-  the ability to apply knowledge to manipulate one's environment or to think abstractly as measured by objective criteria (such as tests)

# So What is Artificial Intelligence?

-  Systems that think like humans?
-  Systems that act like humans?
-  Systems that think rationally?
-  Systems that act rationally?

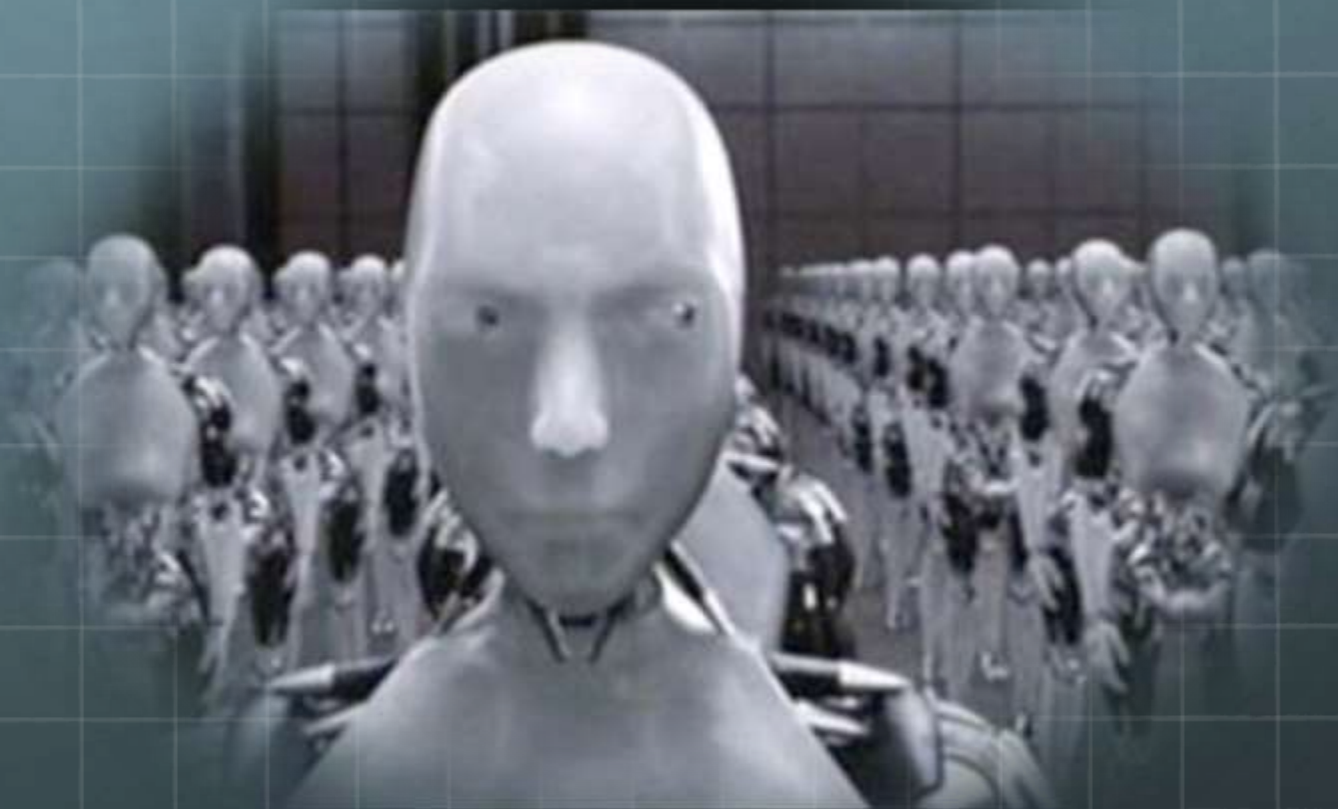






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ARTIFICIAL INTELLIGENCE

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# Artificial Intelligence

-  "The exciting new effort to make computers think... machines with minds, in the full and literal sense" (Haugeland, 1985)
-  "[The automation of] activities that we associate with human thinking, activities such as decision-making, problem solveing, learning..." (Bellman, 1978)



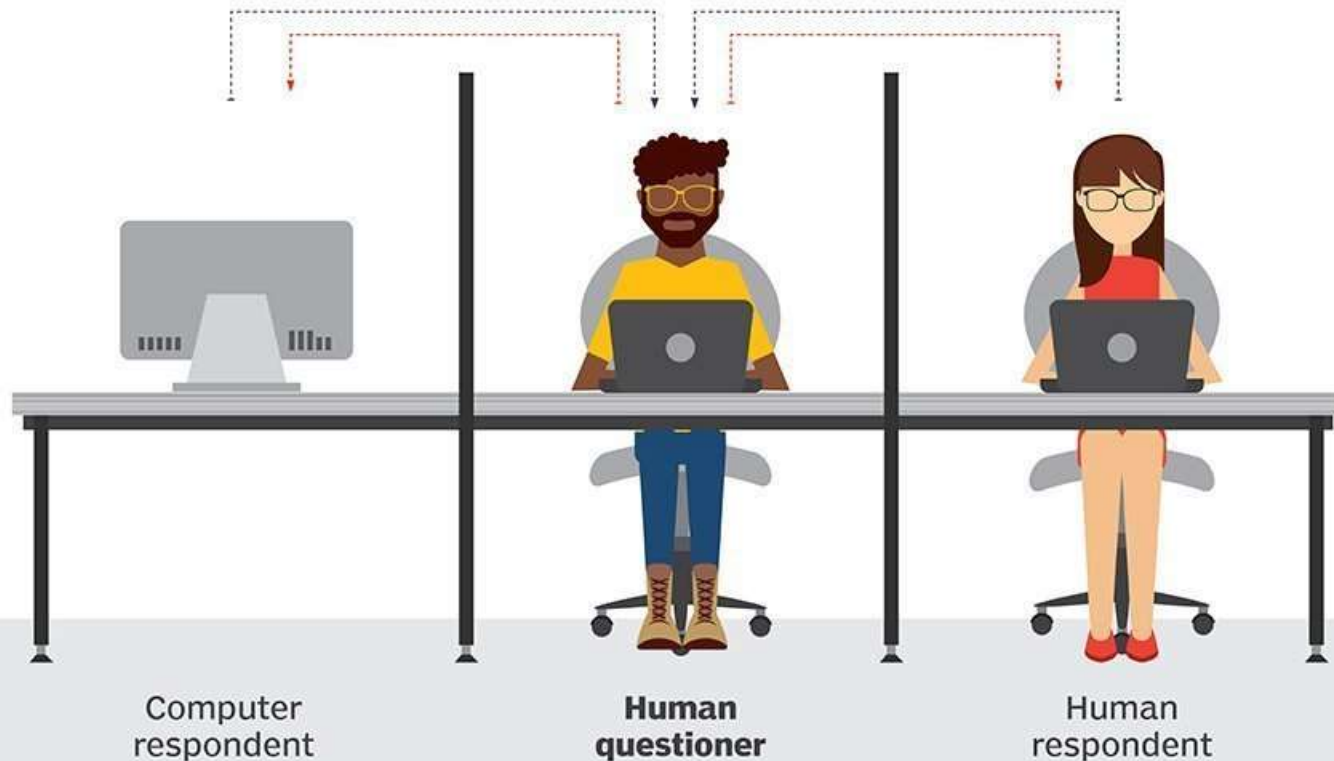
# Turing Test

- 🌐 Designed in 1950 by a Mathematician Alan Turing.
- 🌐 A Turing test is a test performed to determine a machine's ability to exhibit intelligent behavior.
- 🌐 The basic concept behind the test is that if a human judge is engaged in a natural language conversation with a computer where he cannot reliably distinguish machine from human, the machine passes the test.
- 🌐 Responses from both participants in the conversation are received in the form of a text-only channel.



# Turing test

During the Turing test, the human questioner asks a series of questions to both respondents. After the specified time, the questioner tries to decide which terminal is operated by the human respondent and which terminal is operated by the computer.

■ QUESTION TO RESPONDENTS ■ ANSWERS TO QUESTIONER



# Turing Test

-  The Turing test is used to measure a machine's ability to think and is an important concept in the philosophy of artificial intelligence.
-  A machine's success at thinking can be quantified by the likelihood that a human will misidentify it as a human subject.




Don't be nervous! My parents just want to see that you are a decent human being.

01110011011  
010000110100  
101110100

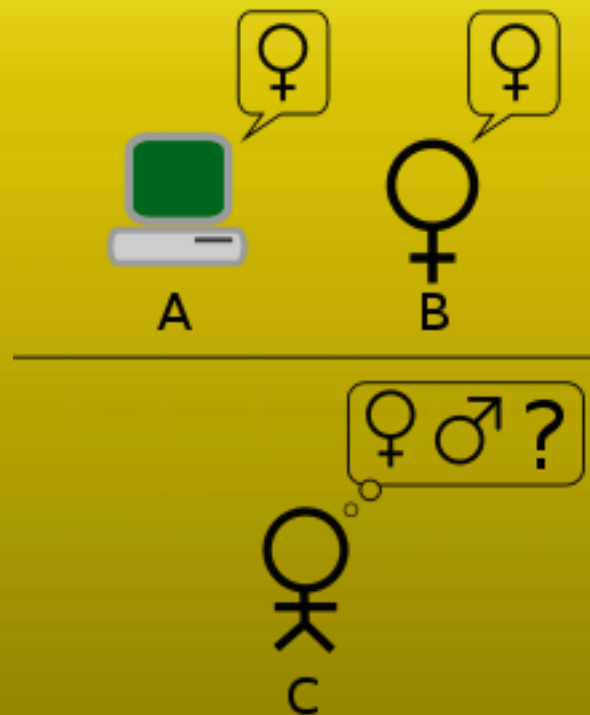
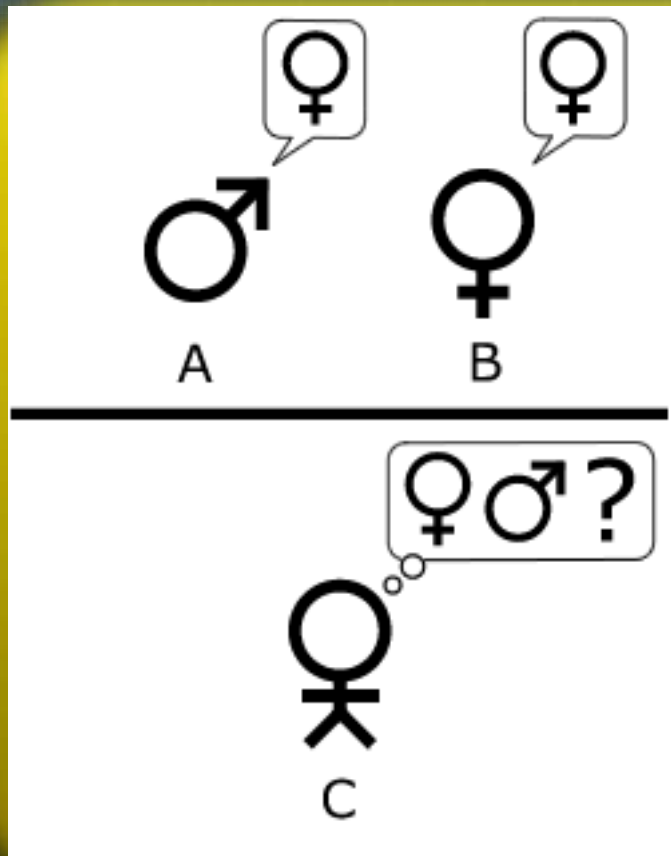






# Turing Test (Imitation Game)

-  A computer's ability to think is determined through an imitation game.
-  In this game, there are three players A, B and C. Player A is a man, B a woman and C is of either sex. C cannot see A and B, and communicates with the others through written notes.
-  Player C determines which of the others is a man and which is a woman by asking a series of questions. Player A tricks the interrogator into making the wrong decision, while B attempts to guide C toward the right path.

# Imitation Game



# Imitation Game

-  In the original imitation game test, Turing proposes A to be a computer. The computer pretends to be a woman and tricks the interrogator into making an incorrect evaluation. The machine's success is determined by comparing the outcome of the game when A is a computer against when A is a man. If the interrogator goes wrong when playing the game between man and woman, the computer is assessed to be intelligent.
-  There are some variations on the interpretation of how a Turing test should be performed but the basic premise is whether a human judge can determine whether he is talking to a machine or another human.