The Eliza does not interact with the user, it doesn't give advice and only try to let the user find the answer themself. For example, I ask a question “What should I do?” and it replied “what answer would please you the most?” or “What else comes to mind when you ask that?”. This makes no interest to use it more. This psychotherapist chatbot feels not to help users to solve problems and will cause more stress.

Tutorial 1 The Nature of AI

1. Who is the father of AI? Describe the reason why he was recognized so. (Zi Yan)

Answer: John McCarthy was known as the father of Artificial Intelligence (AI) after playing a seminal role in defining the field devoted to the development of intelligent machines. ✓

contributed a lot in computer science

pioneer to proposed/create “AI” term in Dartmouth… conference in 1956

He believed machines behaved like a human>think, reason/interpret and solve a problem.

2. Identify one key event or major achievement of AI development in the year of
    - 1960-1969 (Yoon Khong)
    - 1970-1979 (Ser Kang)
    - 1980-1989 (Chiang Hang)
    - 1990-1999 (Jia Shin)
    - 2000-2009 (Xue Nir)
    - 2010-2019 (Charu)

Answer:

1960-1969: Joseph Weizenbaum (MIT) built ELIZA (simple chatterbot > chatbot), an interactive program that carries on a dialogue in English language on any topic. It was a popular toy at AI centers

on the ARPANET when a version that "simulated" the dialogue of a psychotherapist was programmed. ✓

McHack computer chess program (Richard)

Industrial robot (arduino)..

1970-1979: The first anthropomorphic robot, the WABOT-1, is built at Waseda University in Japan. It consisted of a limb-control system, a vision system and a conversation system.(simple knowledge based medical diagnosis system:expert systeM) ✓

1980-1989: More expert systems had been developed….Edward Feigenbaum introduced expert systems which mimicked the decision making process of a human expert.(Rockwell,Anyoha)..car diagnosis expert system, financial expert system…….

1990-1999: Ian Horswill extended behavior-based robotics by creating Polly, the first robot to navigate using vision and operate at animal-like speeds (1 meter/second). ✓

AIBO (sony)

2000-2009: Kismet was developed by MIT's Cynthia Breazel as a robot that could recognise and simulate emotions. ✓

reference:
https://artsandculture.google.com/asset/dr-cynthia-breazeal-s-kismet-a-robot-capable-of-recognising-human-emotion-through-facial-analysis-cynthia-breazeal/4wEpiaeJXYSJug?hl=en

autonomous vacuum cleaner (I robot's roomba): xiaomi RM800, 1+++, china brand: 200

2010-2019: Virtual assistants such as Siri(Apple), Google Now(Google) and Alexa(Amazon) that use speech recognition to answer questions and perform simple tasks were developed. ✓

machine learning/big data/deep learning….

history AI:

https://learn.g2.com/history-of-artificial-intelligence#ai-7

3. Name an artificial intelligence application that is created by a Malaysian company. Briefly describe its AI functions. **(Wei Ming)** ✓

Answer: https://www.crayon.com/en-MY/intelligent-cloud/

Billion Prima (Kulai Johor)

Intelligent Cloud from Crayon is an integrated suite of customer support and engagement platforms linked to unique technical services. Delivering capability that will transform Customer's Digital Transformation Journey and escalate Cloud Value Generation. ✓

4. Differentiate between the following:

- Systems that think like humans. (Kit Yao)
- Systems that act like humans. (Ting Shun)
- Systems that think rationally. (Shun Wai)
- Systems that act rationally. (Yi Chin)

Provide an example for each type of system.

Answer:

Systems that think like humans are designed to **solve problems by thinking, reasoning, and remembering, to mimic the way the human brain works.** The programme's input-output behavior matches corresponding human behaviour, that is evidence that some of the programme's mechanisms could be operating in humans. For example, **machine learning in image recognition.** ✓

Systems that act like humans : systems have human characteristic and reflect human condition…..*such as the example Chatbot* ***Turing Test*** *(example)designed by* ***Alan Turing*** *as a way to determine whether or not a machine is capable of coherent speech and natural language communication towards humans along with the type of decision-making and reasoning skills a human possesses. Turing in the 1950s expressed the idea of a machine to be considered intelligent if humans cannot distinguish between human and machine within 5 minutes. So far no AI system has been deemed intelligent enough to mimic human*

ingenuity by Turing Test standards as mentioned by the annual Loebner Prize which awards scientists for getting close to achieving human mimicry. ✓

Systems that think rationally *are the approach to how humans think by the use of symbolic* ***logic*** *in order to capture the laws of rational thoughts as symbols that can be manipulated. The system's reasoning involves manipulating the symbols according to well-defined rules and the result is an idealized representation of human reasoning that mimics the real and ideal world. For example, the* ***expert system***. ✓

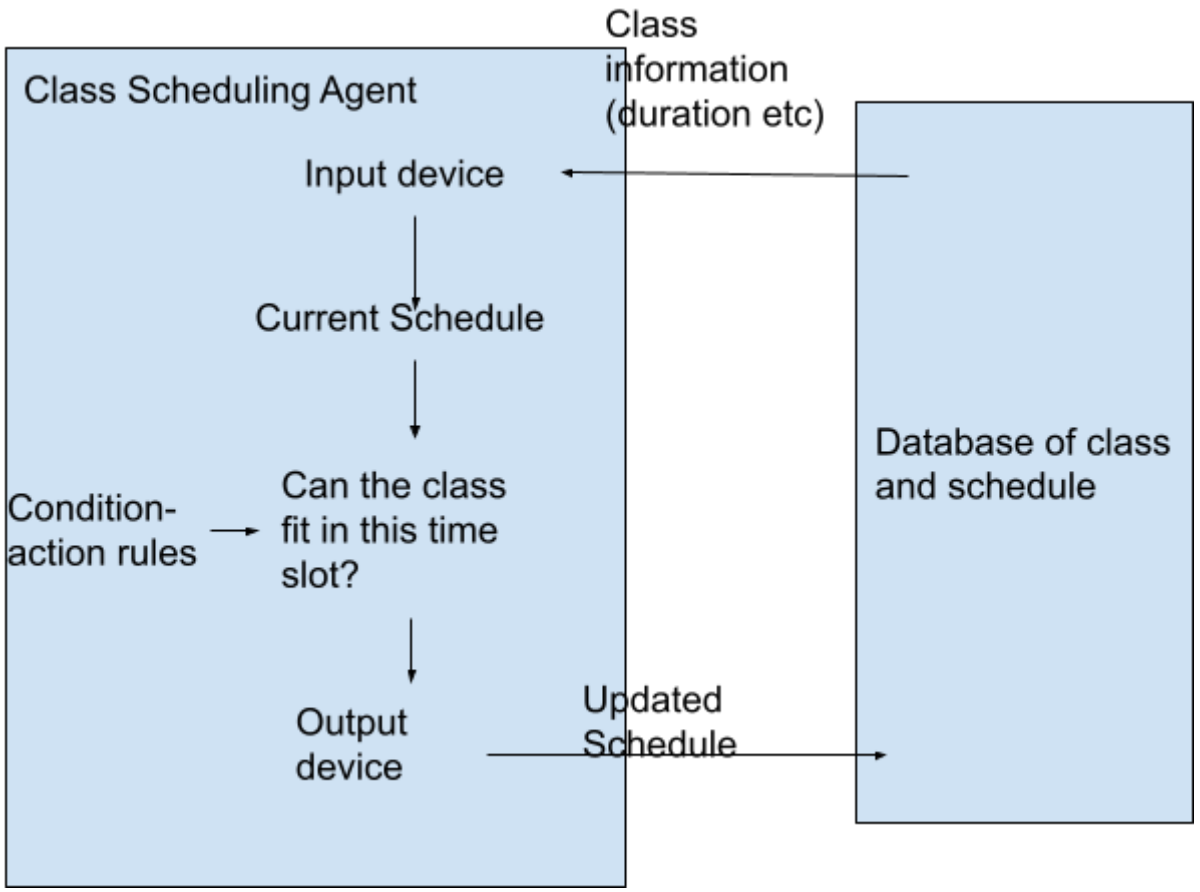
Systems that act rationally
AI is something that acts ***autonomously,*** *sensitive* ***(sense) to its environment, adapts to change, and creates/pursues goals****. Rational action may involve rational thinking, but if there is no provably correct thing to do (the thinking may not be rational), the best expected outcome must still be done. exmple:?...In Question 5*

5. An agent is created for an intelligent air-conditioning system to automatically release the amount of chilled gas based on the surrounding temperature.
    - Define agent. (Jun Xian)agent example of system that acts rationally..
    - **Design a simple architecture** of the following agents. You must clearly **illustrate** how the agent should react to the necessary input and produce output based on the problem above.
        i. **Agent of an automated class scheduling system. (Jing Henn)**
        ii. **Agent of an intelligent air-conditioning system. Arvin)**
        iii. **Agent of autonomous driving car. (Wei Han)**

Answer:

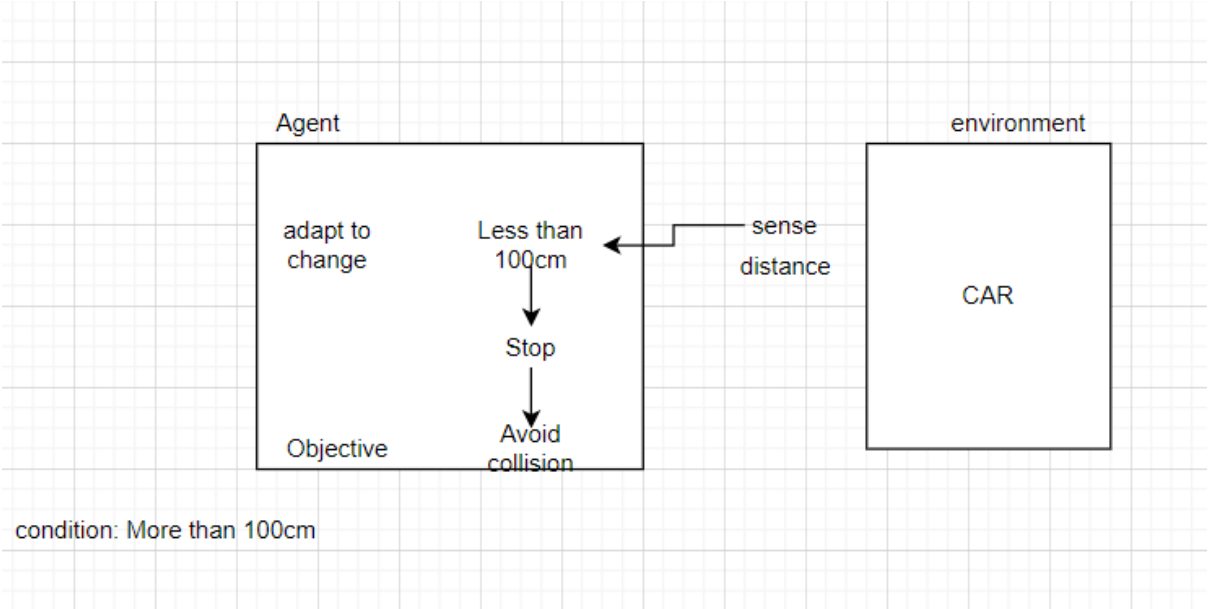
Agent is something that acts **autonomously,** sensitive (**sense**) to its environment, **adapt to change**, and create/pursue **goals**.

i. The automated class scheduling agent will assign a class automatically by detecting the available time slot and class duration.(10+architecture/10)



ii. The agent will detect the current temperature and decide whether to increase the duty cycle to create more cold air or reduce the duty cycle to save energy.(3/10)

iii. The agents will drive the car automatically which will detect the surrounding object such as the car that is moving in front or beside and decide whether it wants to lower down the speed of the car or is it suitable to increase the speed.(3/10)


Agent
environment
adapt to change
Less than 100cm
sense
distance
CAR
Stop
Objective
Avoid collision
condition: More than 100cm