A few rules while setting up

- **No chatting on zoom**
  - Questions will be answered at specific times
- **Suppress distractions**
  - Turn off your phone and put it out of sight
  - Clear all sources of notifications on the computer
    - Mails, Facebook
  - Open a clean browser with only the google docs with your answers

FUNDAMENTAL PROBLEMS WITH CLASSICAL AI

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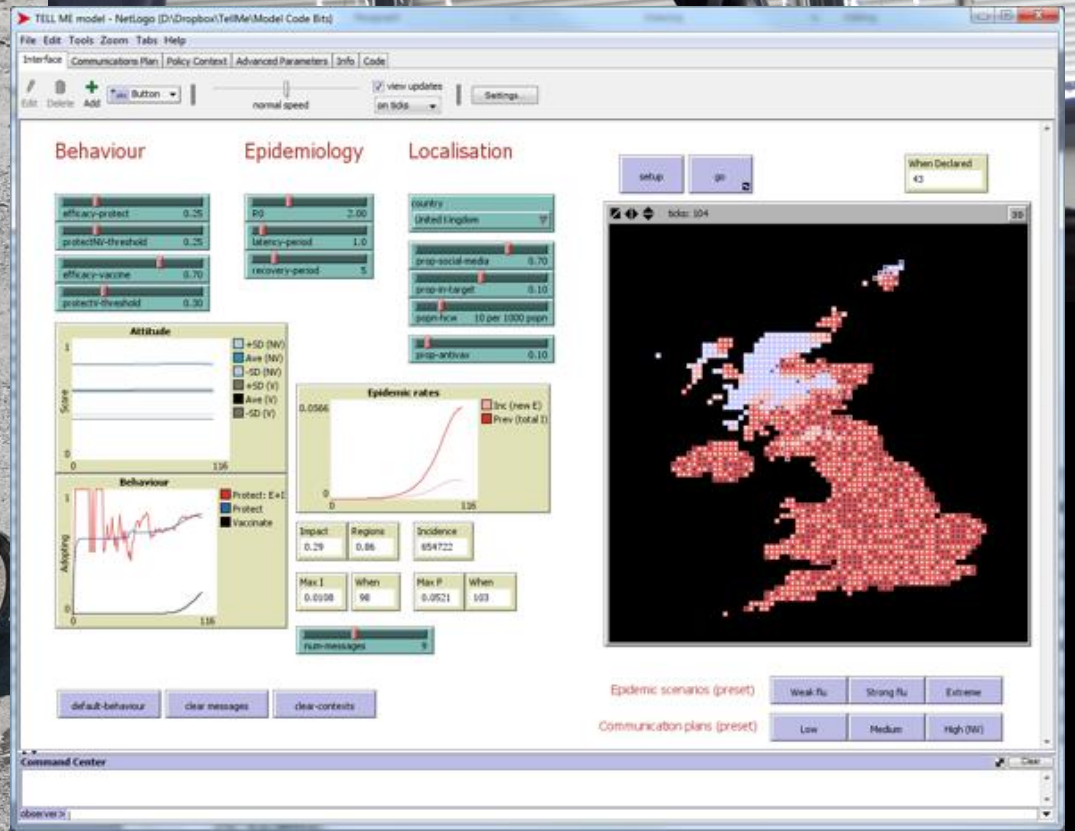
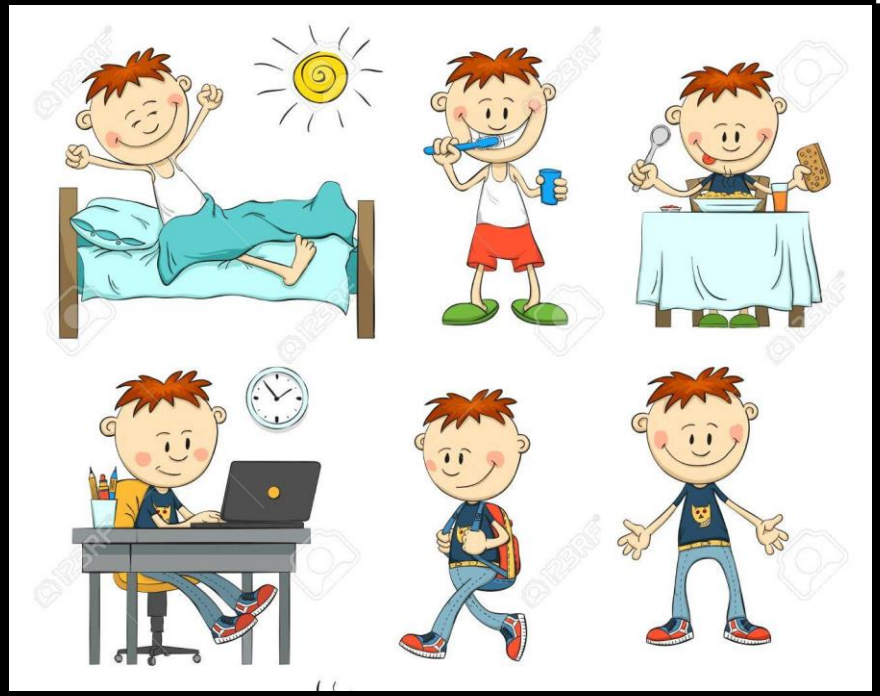
5DV124,5DV201
Fundamentals of Artificial Intelligence

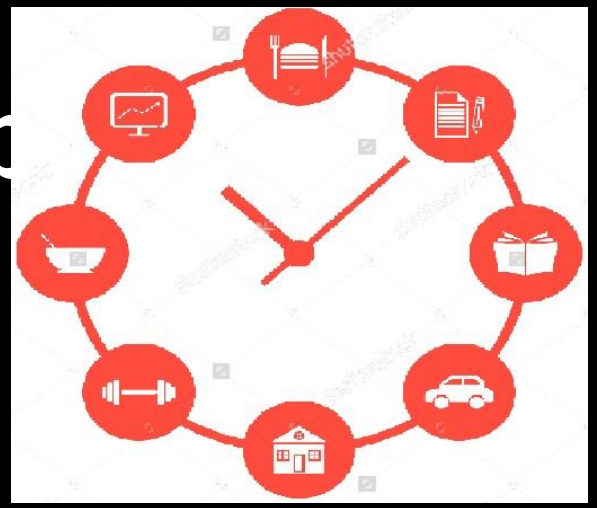
Department of Computing Science

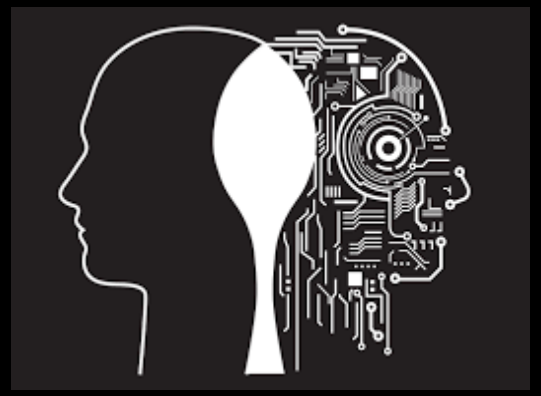
UMEÅ UNIVERSITY


TELL ME model - NetLogo (D:\Dropbox\TellMe\Model Code Bits)
File Edit Tools Zoom Tabs Help
Interface
Communications Plan
Policy Context
Advanced Parameters
Info
Code
Behaviour
Epidemiology
Localisation
Attitude
Epidemic rates
Behaviour
When Declared
Epidemic scenarios (preset)
Weak flu
Strong flu
Extreme
Communication plans (preset)
Low
Medium
High (NV)
default-behaviour
clear messages
clear-contexts
Command Center

Time to wake up



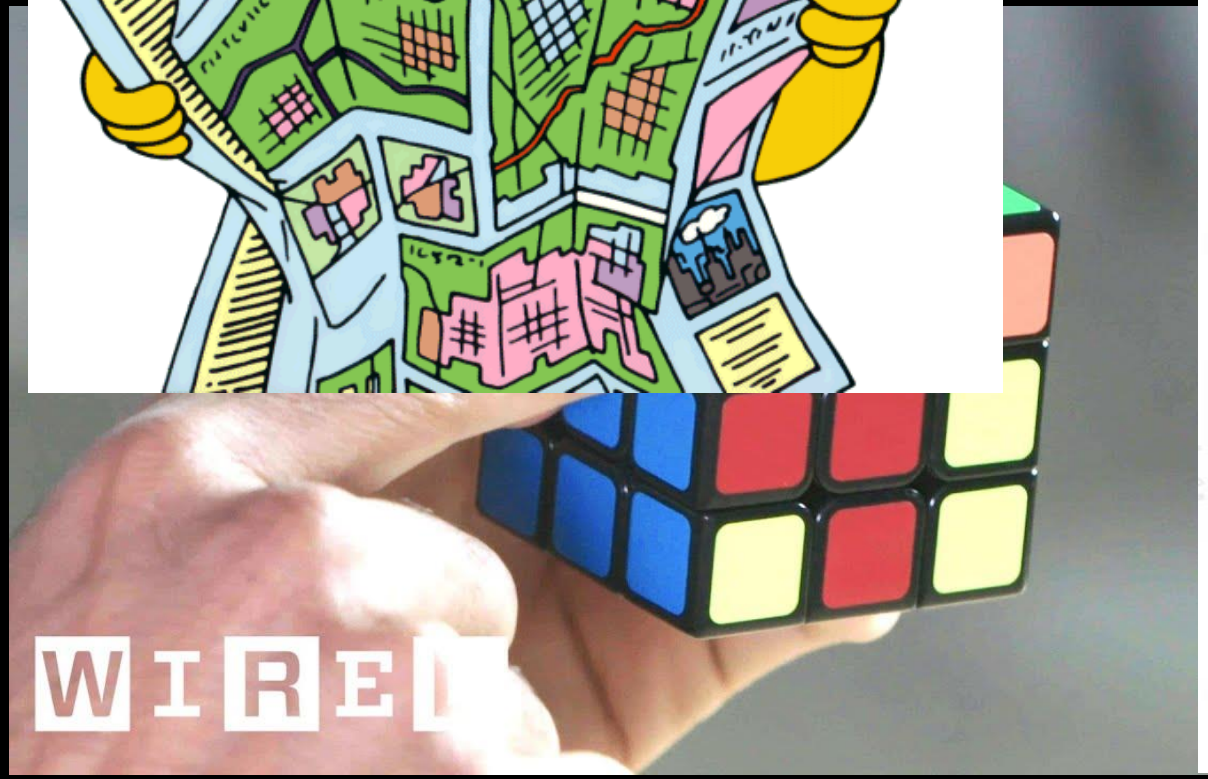


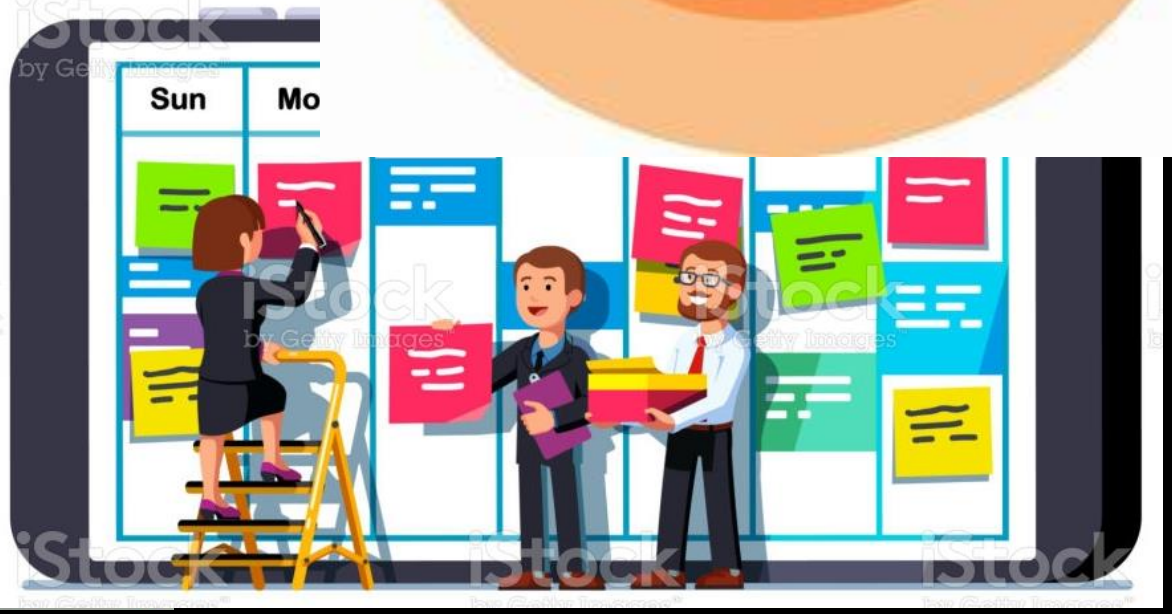


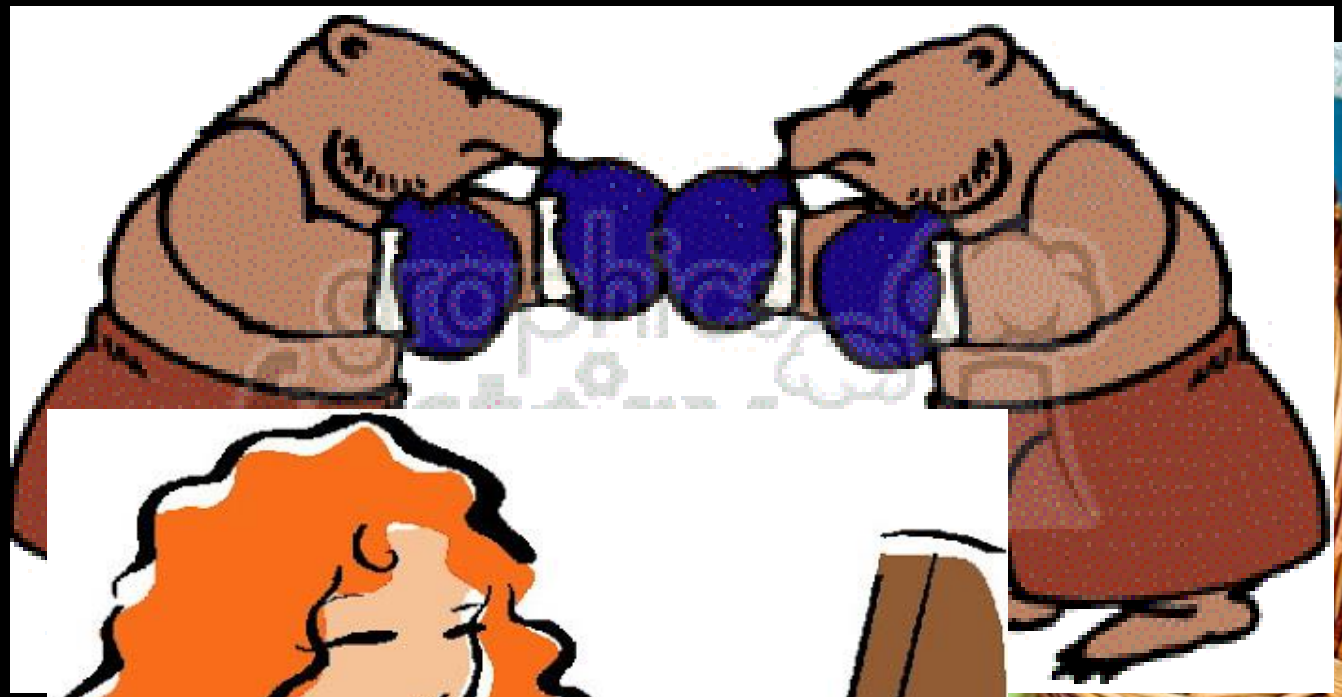
What is intelligence?

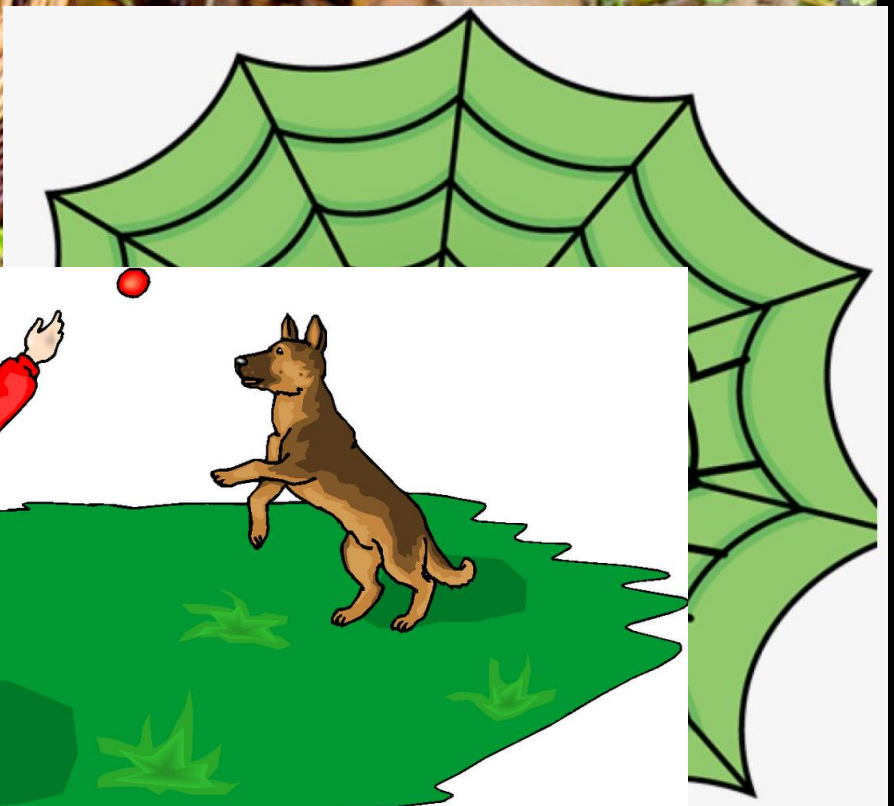
How can intelligence be built or integrated in systems?

olving pr

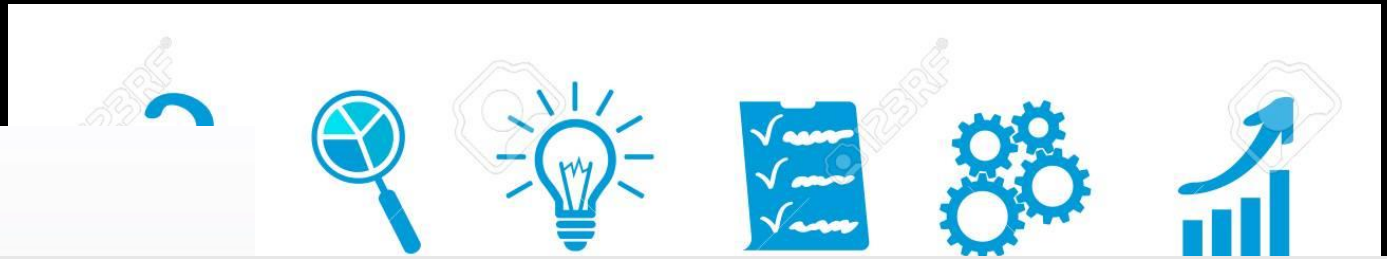


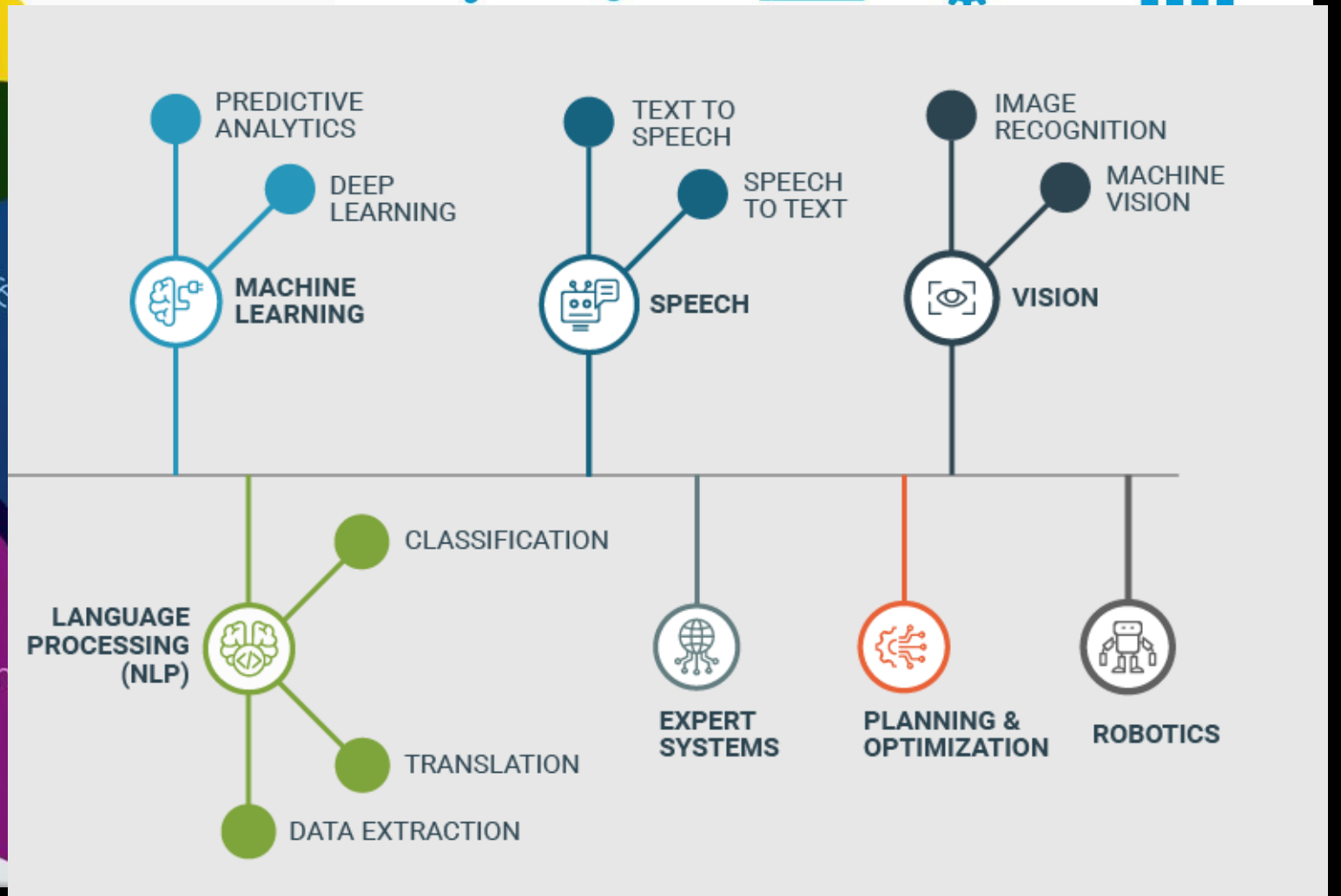




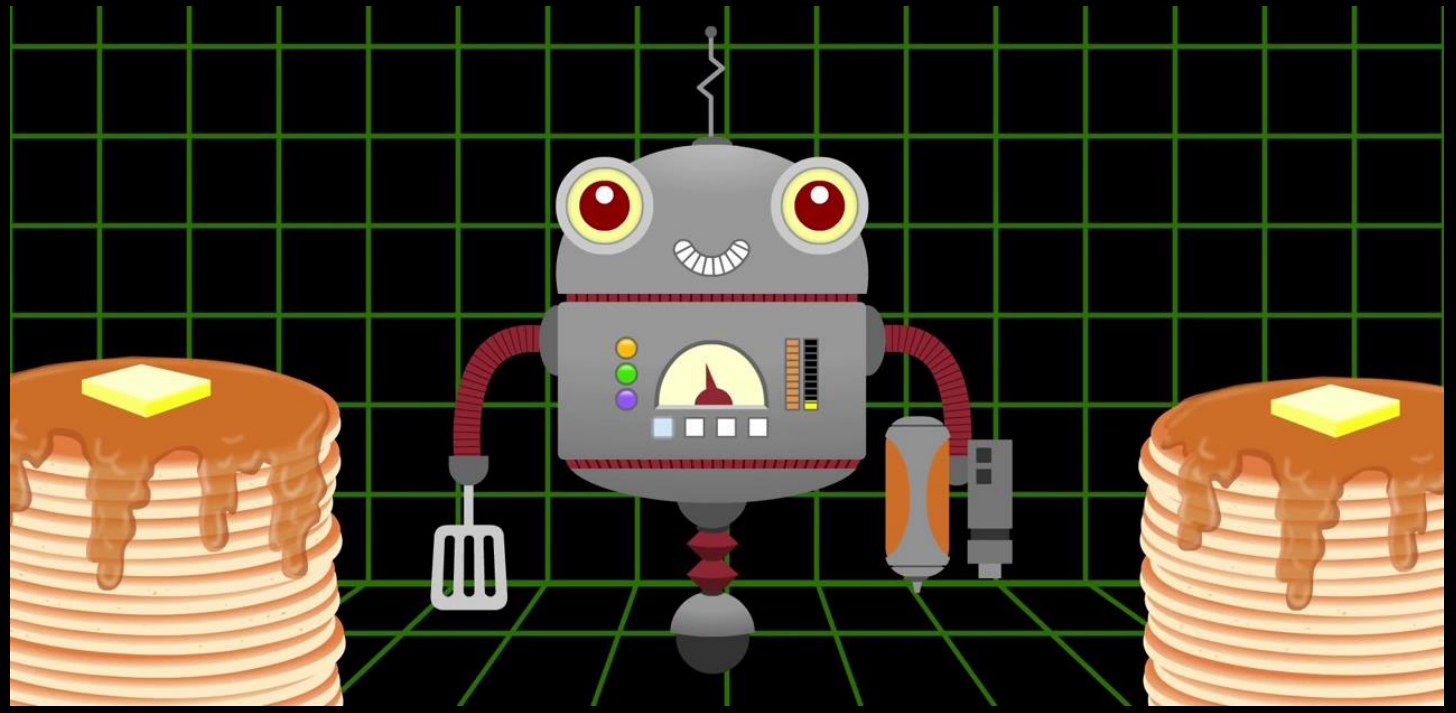


Intelligence as **cognitive abilities** and **functions**





If we want to **build an AI**…

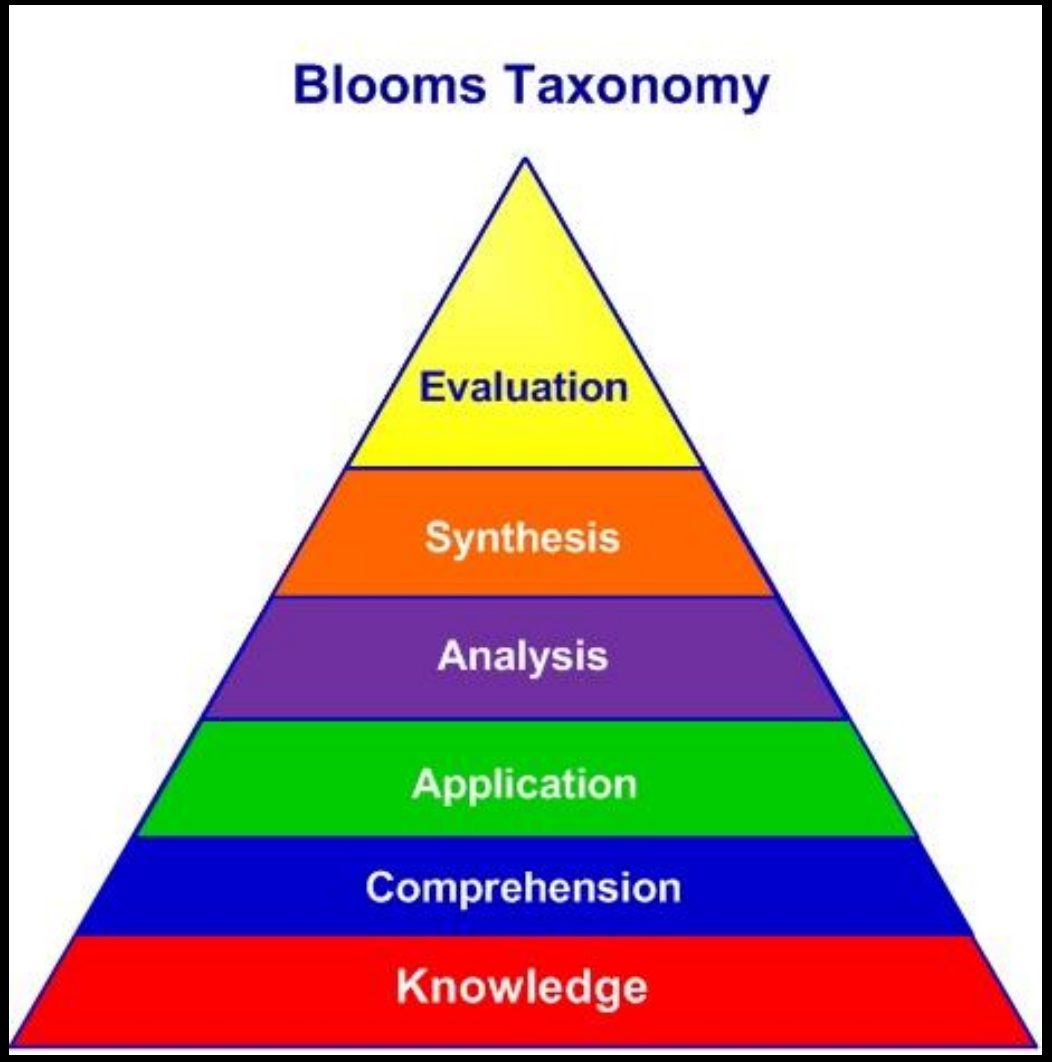


Where do we **start**?

It is a **MESS**!

Today, we **organize the space**

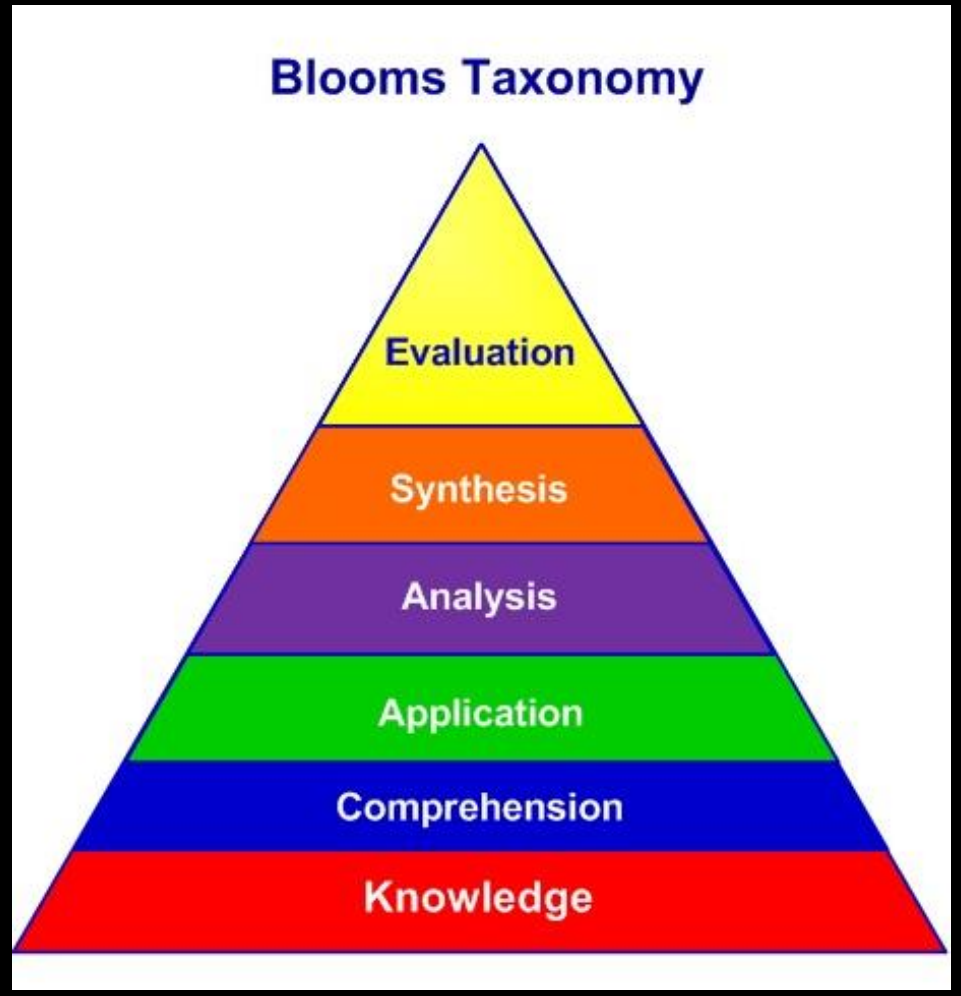
Fundamental problems of artificial intelligence



Real-world skill tree

Intended learning outcomes

At the end of the session, you should be able to:



Define AI and classic philosophical problems affiliated to AI

Relate the key concepts of **decision problems** and **AI systems,** a **framework** for using AI

Apply this framework for assessing existing decision problems and AI solutions

Synthesize relevant AI solutions and decision problems, given a general domain

Research shows that learning happens when:

- You are *active* during the learning session.
- You *reflect* over what is learned.
- You put new knowledge in *context*.
- You *connect* new knowledge to previous one.
- You *embrace difficulties*.
- You *do **not** get distracted* by mobile phone and other gadgets.

What's next?

- Three parts (A, B and C) to be prepared
- For each part
  - **For 15 minutes**
    - Breakout rooms, random allocations
    - Discuss the points related to this part you had issues solving
    - Or present your solutions/answers
    - Start with the easiest question for getting moving
    - No more than 5 minutes per question
    - Return to the main class
  - **For 10 minutes:** Break and questions

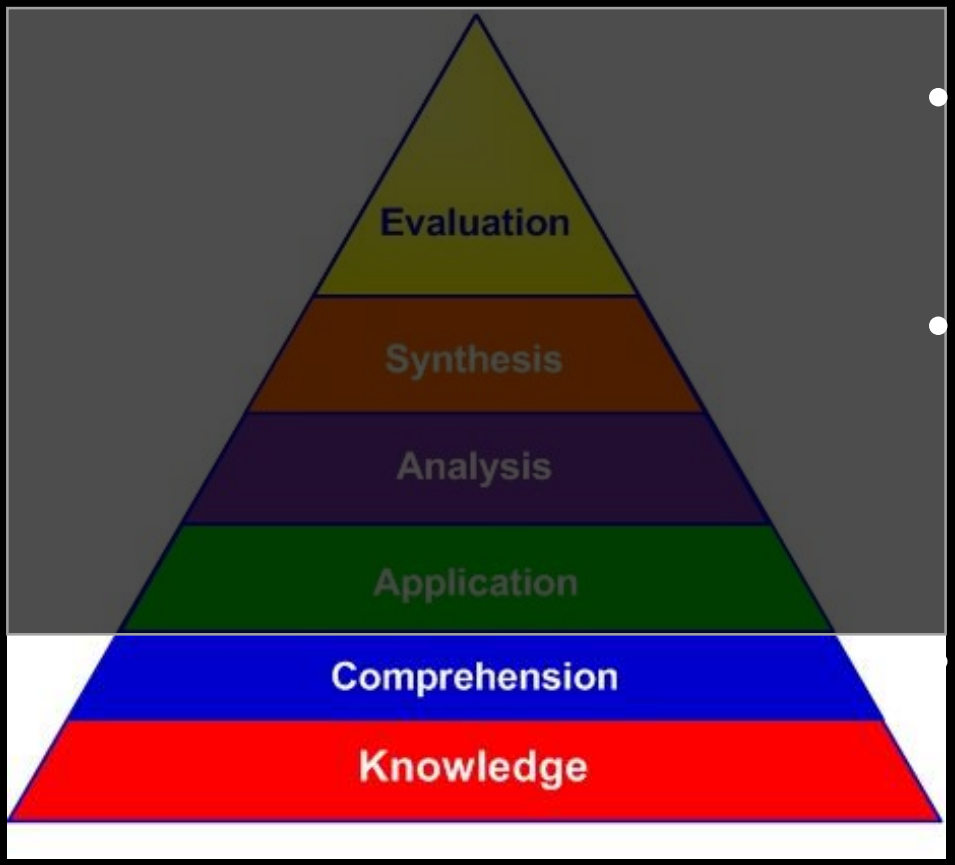
No chitchat,
Be effective

One more concrete B assignment

- Share a google drive “draw” folder within the group
- Use it as a **big white board**

  collaborative public drawing space
  - Everyone adds missing concepts or links
  - Copy paste your answers if you see some important differences

Part A



- **Define** AI and classic philosophical problems affiliated to AI
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- **Synthesize** new decision problems and relevant AI solution given a general domain

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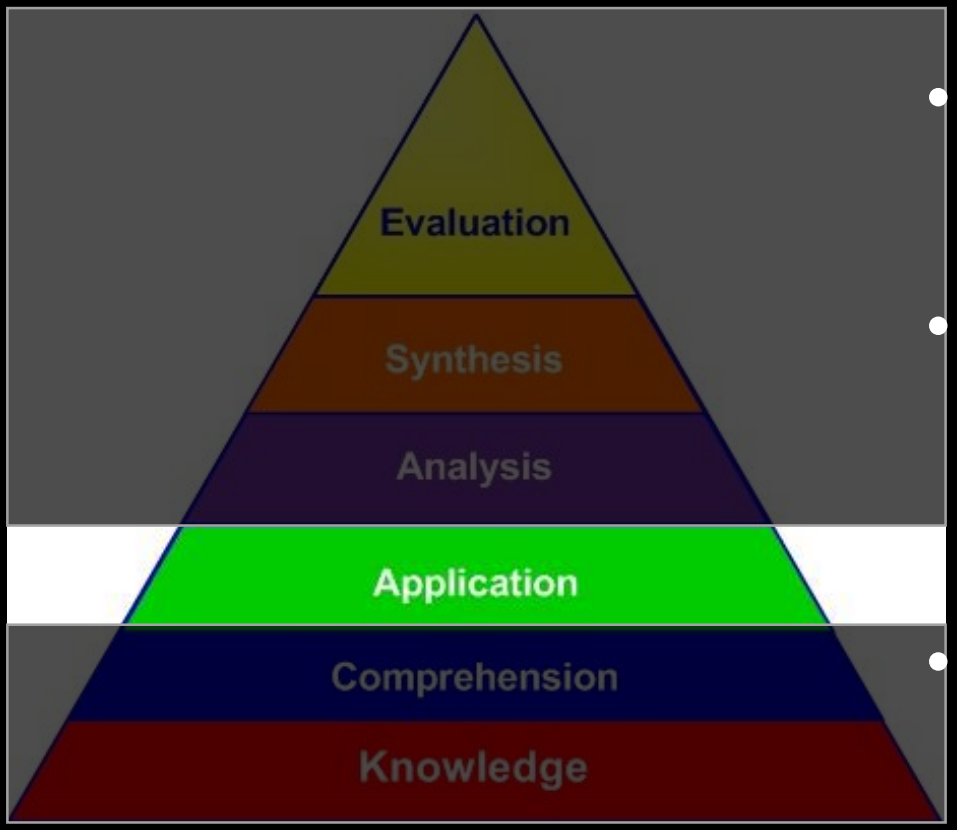
Second activity: Application



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Instructions

- In turn **each person in the group**
  - Presents one of the subproblems he/she has identified
    - Adds it on the drawing board
  - Presents the cognitive ability for solving this problem input and output
    - Adds it on the drawing board
- **Everyone**: is free to agree or explain why you would do different
- **Duration:** 15 minutes

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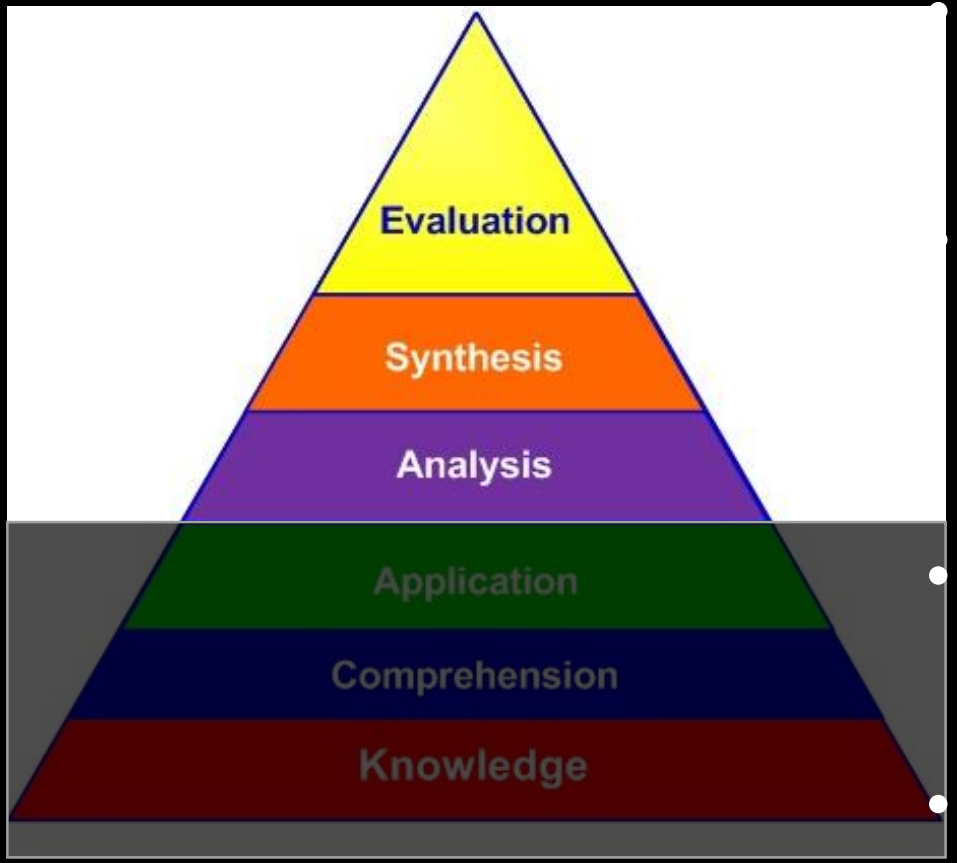
Third activity: Synthesize



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Instructions: same as previously

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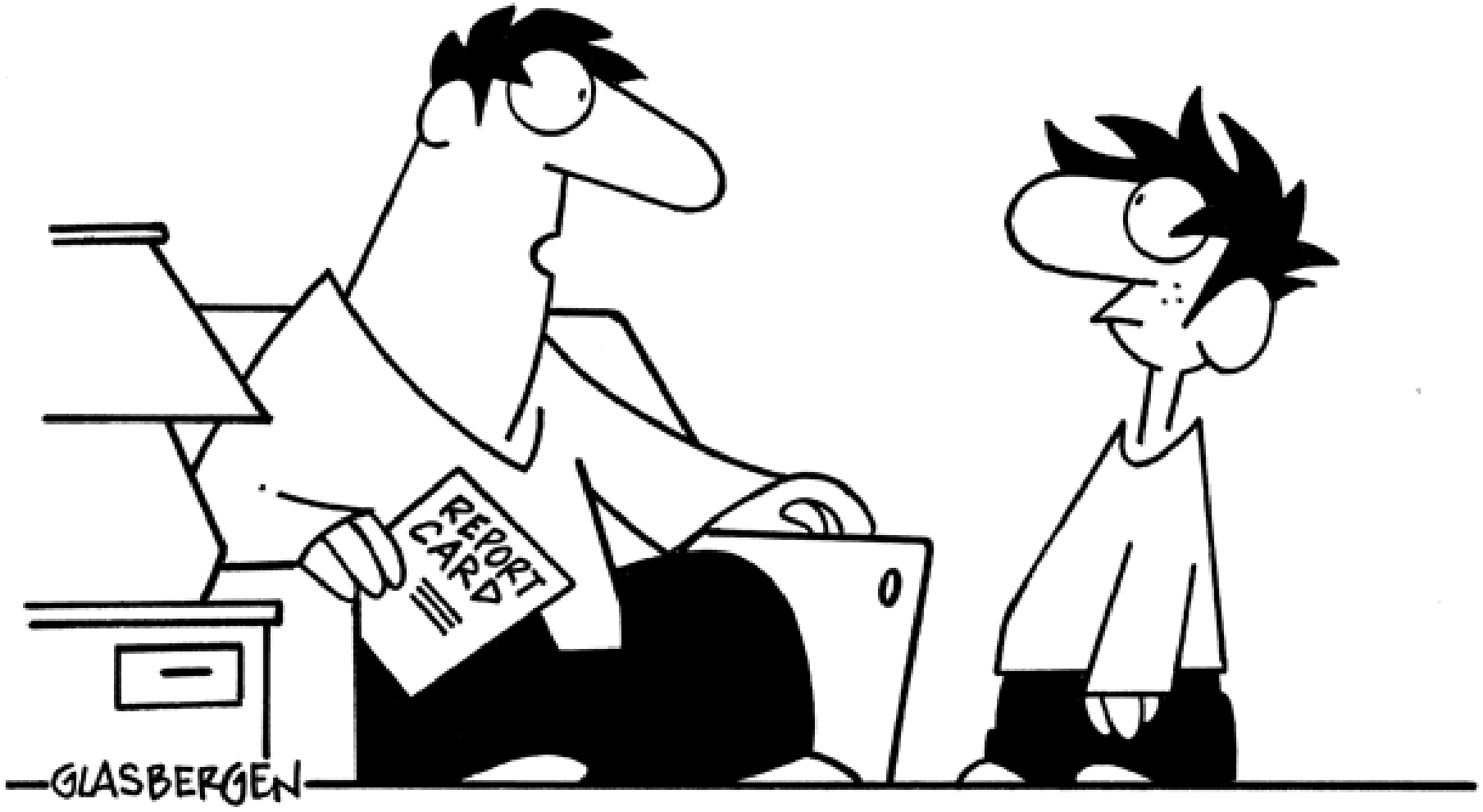

**"I probably remember 20% of the stuff
I learned in school and forgot the other 90%."**

Take home message

- **Intelligence** combines of multiple cognitive abilities that are **specialized** for **concrete functions**
- **Designing AI systems** is the art of relating environments, decision problems, cognitive abilities, and desired behavior
- Problems are often interleaved: multiple decision abilities are to be combined
- Deciding what to consider and what to ignore is important for designing useful AI systems
- One can become good at recognizing such structures!
  (without even needing to know how to code ☺)

If you want to learn more

- Checkout online resources on Canvas
- Mingle with your colleagues
  - Go talk to your colleagues
  - Checkout their report
- Look at existing AI systems
- Sketch how to build your own for a specific problem

Anchoring

Fill in the following form:

This is anchoring:

State what you learned

Feedback will come later

https://tinyurl.com/fundOfAI-LR