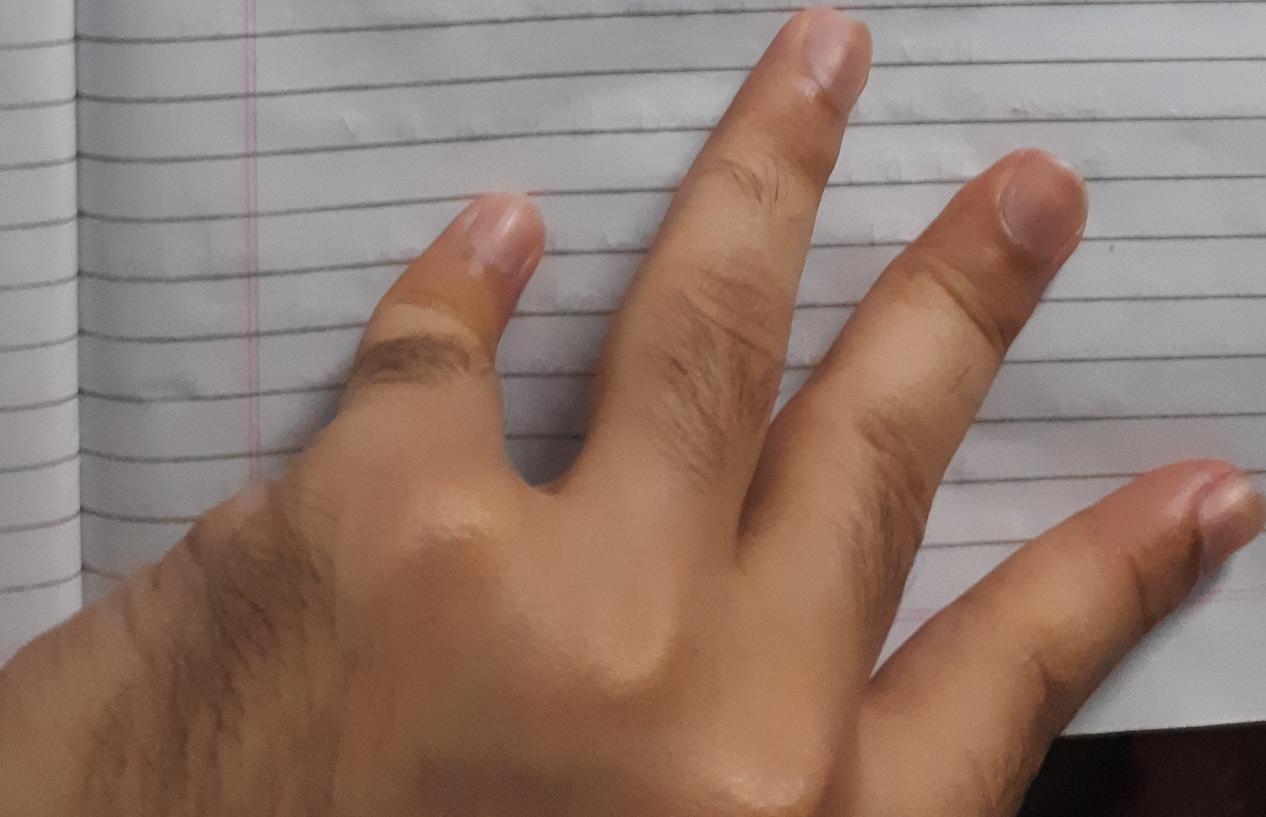


Q) What is cerebral cortex of the brain? Explain different functions of it.

- The cerebral cortex is attached at the bottom side of the brain which is close to the end of the brainstem.
- It is often called as the "little brain".
- It plays important part in memory, emotional regulation & discriminating the information coming from ~~senses~~ different sensory organs.
- It is also important in maintaining balance and voluntary movements.
- Some other functions includes helping in reasoning, higher level processes such as consciousness, thought & language.
- The cerebral cortex can be further divided into 4 lobes, each of which are associated with different tasks.
- These lobes also co-operate to do many of the above mentioned things.



5) Explain ID3 Algorithm with the help of an example.

- The algorithm for generating a decision tree for the given dataset "data" is as follows.

Data : Dataset for decision tree

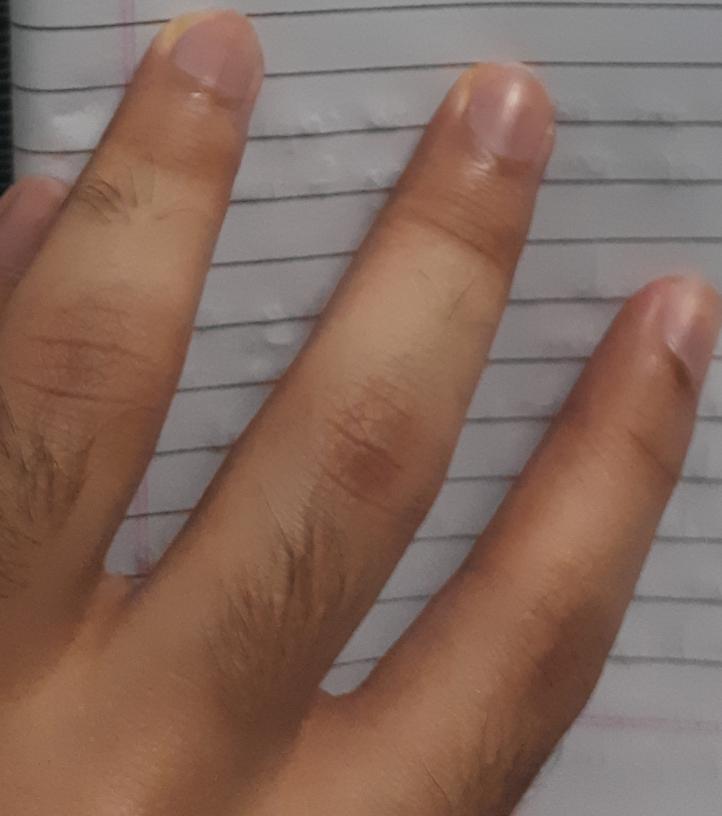
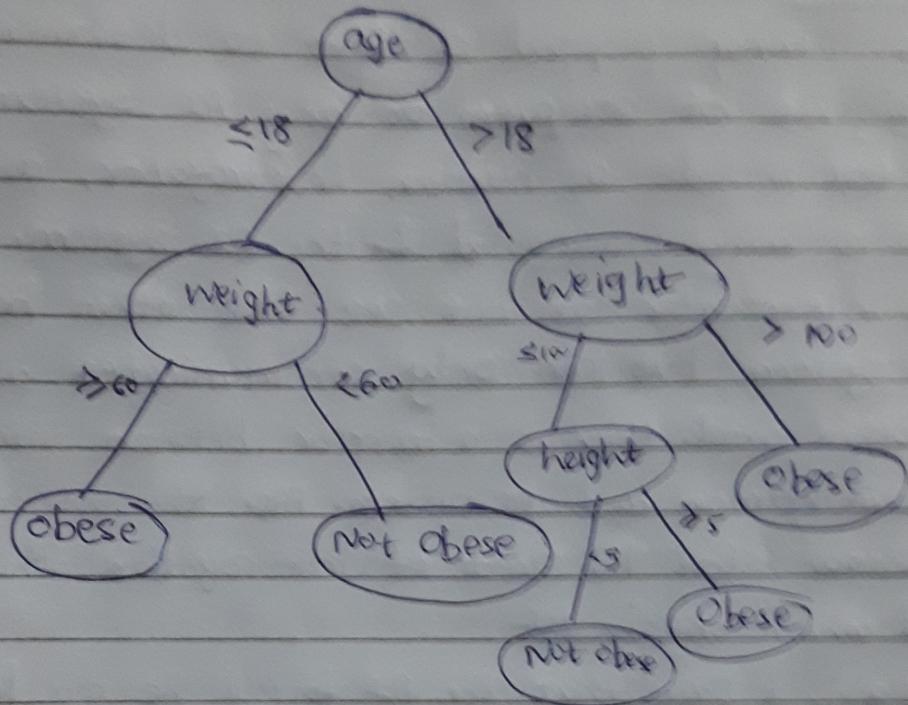
Target-Feature : The feature for which we want to predict

Features : The set of all remaining features of the dataset

Algo  $\rightarrow$  ID3(Data, Target-Feature, Features) :

1. If all examples are +ve then create a node with label of positive and return.
2. If all examples are -ve then create a node with label of negative and return
3. If ~~attributed~~ Features is empty then return a node with label = most common value of Target-Feature. and return
4. Otherwise do
  - 4.1  $A \leftarrow \underset{\text{first}}{\text{create}}$  a feature from "Features" which best classifies the dataset
  - 4.2 For every possible value  $v$  of  $A$ ,
    - 4.2.1 Add a new branch below  $\underset{\text{current}}{\text{root node}}$  for  $A=v$
    - 4.2.2 Create a new dataset  $D'$  when  $A=v$
    - 4.2.3 If  $D'$  is empty
      - 4.2.3.1 Then below this newly created branch add a new label node with label having most common value of Target feature in  $D'$
      - 4.2.3.2 Otherwise below this branch add the subtree :  $ID3(D', \text{Target-Feature}, \text{Features} - A)$

Ex. Weight, height, age are features here.



→ Explain Turing test. What was the Dreyfus attack?

### Turing Test :

- Alan Turing proposed a test to determine the intelligence of computer or any AI system.
- The test include a human interrogator, another human who is being interrogated & the AI system.
- The interrogator can not see the other human or the AI system but can only communicates with them.
- In other words there is a barrier between interrogator and other human and AI system. Also, the interrogator do not know before the start of interrogation which one is human and which one is AI.
- Turing test says that the AI will be considered intelligent when the interrogator can't tell which one is human and which is AI even after many series of questions.
- The questions are also not bounded to a particular domain and the question could be asked on anything.

### Dreyfus Attack:

- Dreyfus attack states that the AI fails to capture the common-sense knowledge of our society & human in general.
- He states that "If background understanding is a skill and these skills are based on the patterns and not on rules then the symbolic representations would fail to capture the commonsense understanding".
- He claims that not every domain is rule describable.
- Tienson offers basketball as a domain where it is not very clear when to pass the ball to whom.
- He didn't prove that it is impossible to describe it using rules but he placed the onus on the proponents to come up with such rules.

2) What was Searle's Chinese Room Thought Experiment?

What do you understand by degrees of understanding, Searle's Chinese room Thought Experiment?

- Searle's claims that machines just don't understand the language.
- He did a thought experiment for this.
- He ~~went to a test~~ puts himself in a closed room.
- A story and a question on it were passed ~~as~~ under the to him. It was written in Chinese. He doesn't understand any Chinese.
- He was given an algorithmic way to translate the Chinese into English and uses it to answer the question.
- He passes the answer which was written in Chinese.
- He claims that just how he was able to translate Chinese to English and back to Chinese without understanding it, in the same way machines don't understand the languages.

Degree of understanding:

