Date
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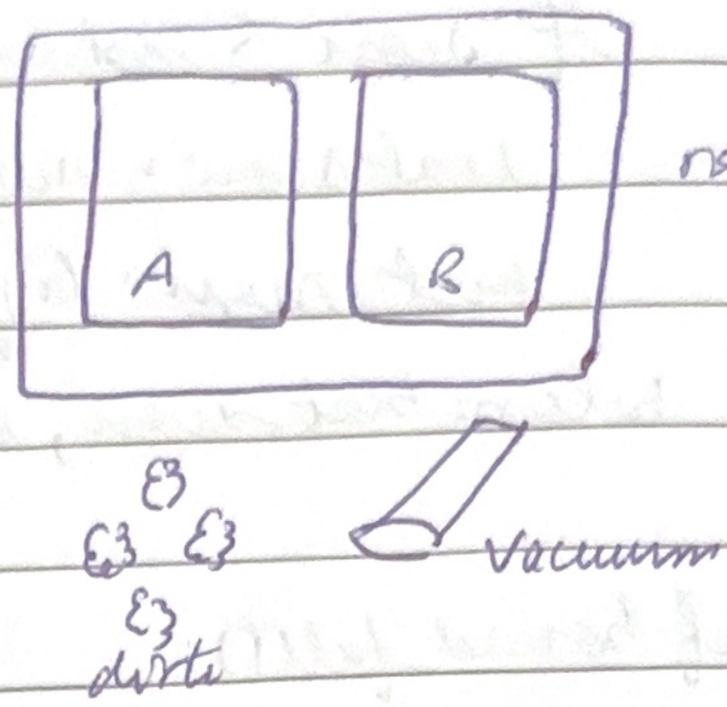
1st October, 2024 Tuesday Laboratory - 2

2) Implement the working of vaccuum cleaner agent for two rooms.



Algorithm for implementing the vacuum cleaning for two rooms A and B

Step 1: Input the data from sensors whether the room is dirty or clean

Step 2:
```
while ( room != clean)
  {
    if (current room = dirty)
       clean();
    else if ( current room = clean)
       {
         if (agentpresentin = room A)
            move right;
         else if ( agentpresentin = room B)
            move left;
       }
  }
```

Step 3: Output the status of room cleanliness

Percept Sequence	
[A, clean]	right
[A, dirty]	suck
[B, clean]	left
[B, dirty]	suck

[A, clean] [A, clean]	left
[A, clean] [A, dirty]	suck
[B, clean] [B, clean]	right
[B, clean] [B, dirty]	suck
[A, clean] [B, clean]	exit

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Source Code (in python)

```
class VacuumCleaner:
  def __init__(self):
    self.rooms = {'A': 'dirty', 'B': dirty, 'C': 'dirty', 'D': dirty'}
        # All rooms start dirty
    self.position = 'A' # Start from A
    self.room_order = ["A', 'B', 'C', 'D'] # order of the rooms
    self.current_index = 0  # start with first room in list order

  def status(self):
    print(f"In Current Position : {self.position}")
    for room, state in self.rooms.items():
      print(f"Room {room}: {state}")

  def suck(self):
    if self.rooms[self.position] == 'dirty':
      self.rooms[self.position] = 'clean'
      print(f"Sucking in room {self.position}. Room
      {self.position} is now clean.")
    else:
      print(f"Room {self.position} is already clean.")
```

```
def move_clockwise(self):
    self.current_index = (self.current_index + 1) % len(self.room_order)
    self.position = self.room_order[self.current_index]
    print(f"Moved clockwise to room {self.position}.")

def move_counterclockwise(self):
    self.current_index = (self.current_index - 1) % len(self.room_order)
    self.position = self.room_order[self.current_index]
    print(f"Moved counterclockwise to room {self.position}.")

def run(self):
    while 'dirty' in self.rooms.values():
        self.status()
        if self.rooms[self.position] == 'dirty':
            self.suck()
        else:
            if self.position == 'D':
                self.move_counterclockwise()  #
            else:
                self.move_clockwise()  #
    print("All rooms are clean!")

# You can move the vacuum cleaner based on your preference of choice.

if __name__ == '__main__':
    vacuum = VacuumCleaner()
    vacuum.run()
```