Lab Task 03

Name: \_\_zeesan ali haider\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Roll No: \_\_\_su92-bsaim-f24-008\_\_\_\_\_\_\_\_\_\_\_\_\_

Course: \_\_\_artifical intelligence\_\_\_\_\_\_\_\_\_\_\_

• Model-Based Reflex Agent

• This agent not only checks the current temperature but also remembers the previous action to avoid turning the heater on or off unnecessarily.

# Lab 3 - Model Based Reflex Agent

class ModelBasedReflexAgent:

def \_\_init\_\_(self, desired\_temp):

self.desired\_temp = desired\_temp

self.last\_action = None # to remember what happened before

def check(self, current\_temp):

# decide action

if current\_temp < self.desired\_temp:

action = "Turn on heater"

else:

action = "Turn off heater"

# if action is same as before, then no need to repeat

if action == self.last\_action:

result = "No change"

else:

result = action

self.last\_action = action # update memory

return result

# rooms with their current temperatures

rooms = {

"Living Room": 18,

"Bedroom": 22,

"Kitchen": 20,

"Bathroom": 24

}

# desired temperature

desired = 22

agent = ModelBasedReflexAgent(desired)

# run for each room

for room, temp in rooms.items():

action = agent.check(temp)

print(room, "->", temp, "°C,", action)

Living Room -> 18 °C, Turn on heater

Bedroom -> 22 °C, Turn off heater

Kitchen -> 20 °C, Turn on heater

Bathroom -> 24 °C, Turn off heater