UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF ENGINEERING

SCHOOL OF COMPUTING

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SCSJ 3553: ARTIFICIAL INTELLIGENCE

SECTION 07

ASSIGNMENT 3

COVID-Multi Scanner(CMS)

LECTURER NAME : DR AIDA BINTI ALI

GROUP MEMBER :

1. **MOHD ANAS BIN ADNAN** **(B19EC0043)**
2. **YAP XIN YIN** **(A18CS0276)**
3. **NURAMYRA NATASHA BINTI ISMALLUDIN** **(B19EC0035)**
4. **NUR HASANAH BINTI SARIDDON** **(B19EC0033)**

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1. Formulate The Solution By Using PEAS Model

	Before Applying Covid Multi-Scanner	**After** Applying Covid Multi-Scanner
P: Performance Measure	To enter any premises ● Need to scan using mySejahtera ● There are number of people who do not scan so we will not be able to get data of people who has ever entered the premises ● They will have to write using the pen provided ● Scan the temperature manually ● Some of them not wearing masks can enter the premises	To enter any premises ● Scan their faces for their identity and information ● Able to record their information on the day,date and time they enter the premises ● Scan their masks to make sure they come in wearing face masks ● Scan their temperature
E: Environment	● People, Guard ● MySejahtera QR Code ● Thermal scanner ● Hand sanitizer will be provided	● People or customers ● Devices that can scan ● Hand sanitizer will be provided
A: Actuators/Effectors	● Phone to scan the MySejahtera QR Code ● Scanning temperature	● Scan their identity and get their information through devices ● Scan if they are wearing face masks or not ● Scan their temperature
S: Sensors	● They have to scan QR Code using their phone ● Use thermal scanner to check the temperature of each person	● Sound detector will alarmed if they do not wear face masks ● Temperature above 37.5 will make the sound detector on

2. PEAS Model

AGENT : COVID-MULTI SCANNER(CMS)

Performance measure: Detect face, face mask and temperature.

- A face detector will detect the face of a person and the information of the person will be recorded for the use of the government.
- It will give the information of the person to be traced when the person is infected by covid.
- A face mask detector will detect the person wearing the face mask properly. It will reduce the chances of the person to get infected.
- A temperature detector will detect the body temperature of the person. It will be noticed if the person has covid symptoms.

Environment: Involved people.

- The environment involved is people.
- Thermal scanners are used to scan human temperatures.
- The people that want to enter the place such as a shop, restaurant and shopping mall need to be recorded so that it will be easy to trace the person or people.

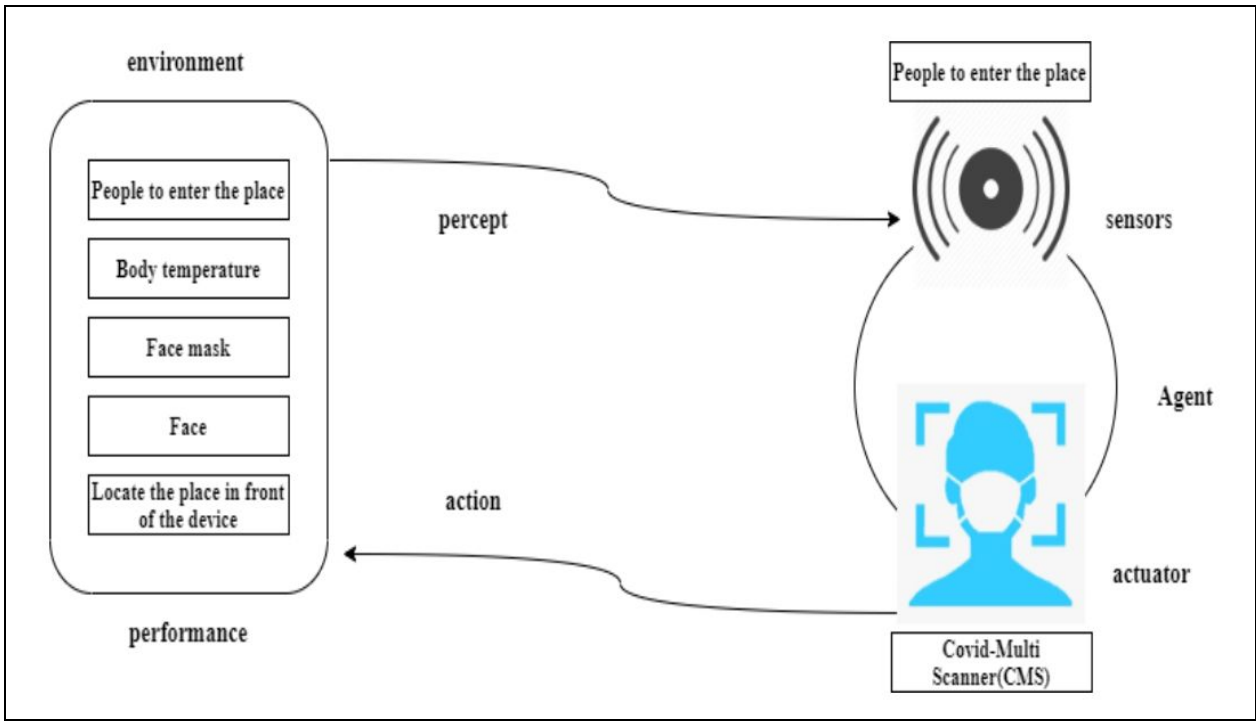
Effectors: Sound indicator.

- Sound indicator will produce a sound when one of the requirements is not completed.

Sensors: Detect temperature, face, face mask detector.

- Temperature detectors that will detect the body temperature of the people.
- Face detectors that will detect the face of the person and get the information of the person.
- Face mask detectors that will detect the person that wears the mask in the proper way or not wear the face mask.

a. PEAS Model Diagram



b. Property Representation in Proof of Concept (POC)

How will every element be present in POC?

I. Performance

A. The goal is to let the uninfected people enter the mall by getting their information through scanning their face. Face masks and temperature are the conditions needed to allow them to enter the mall.

II. Environment

A. Everyone will stand within 1 meter. Everyone will have their face scanned for information. Then, the face mask will be scanned to make sure they are wearing a mask. Next, the temperature will be scanned and their temperature recorded. After that, they can enter the mall to keep all places safe without anyone infected with covid-19 from spreading to others.

III. Actuator

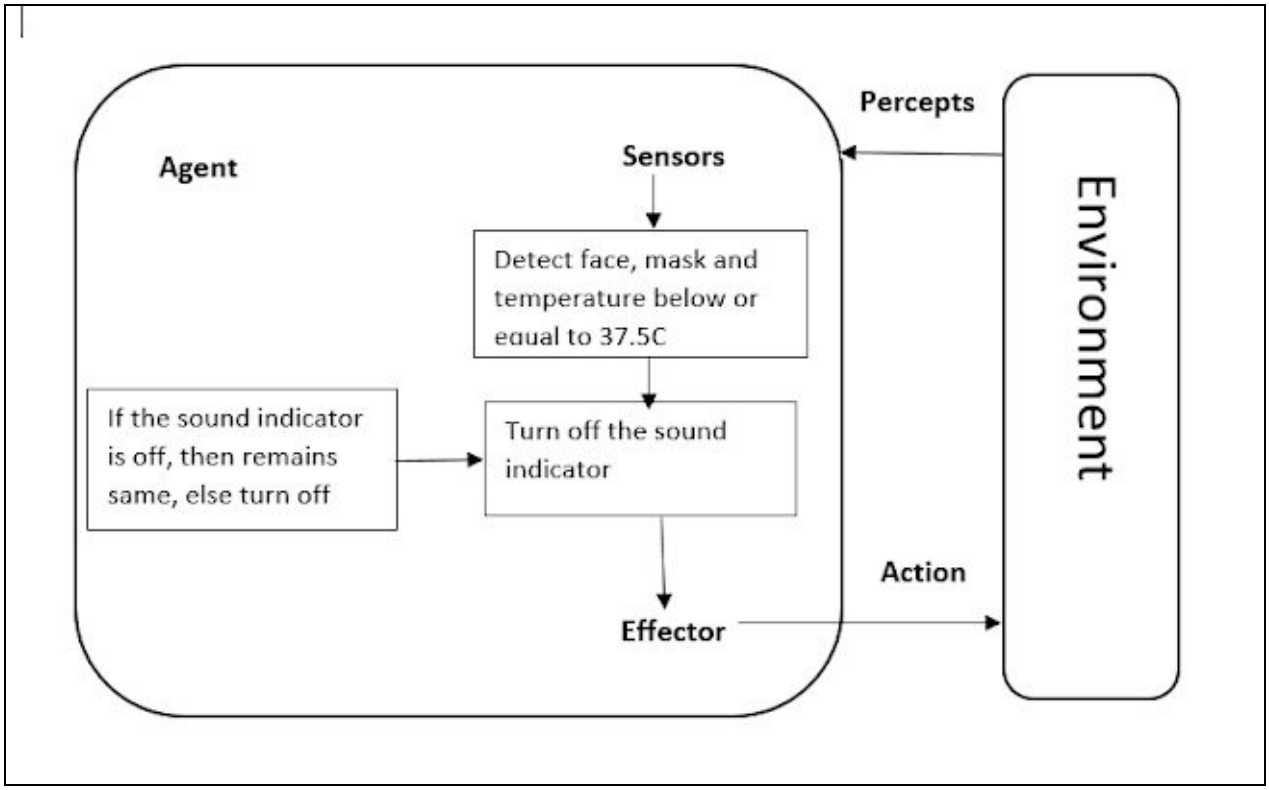
A. The actuator will begin to perform their actions, the device will be allocated at the main entrance of the mall. First, the need to get information from the faces of people who have been scanned by devices. Afterwards, the devices will scan if they wear face masks before entering the mall to make sure they cover their mouths and noses. Then, according to the set of conditions, they will only allow people with a temperature below 37.5 to enter the mall, if the temperature of the person below that voice from the device will make a noise.

IV. Sensors

A. The sensor will detect the action performed by the actuator, for example the actuator will move and scan the person's face mask and temperature. if the predetermined conditions do not meet all of them, the sensor will issue an alarm sound which means that the person is not allowed to enter the mall.

3. How the agent in Artificial Intelligence behaves and achieve the goal in the proposed system

The agent of COVID-Multi Scanner is a **simple reflex agent**. These agents only succeed in the fully observable environment as the face detector, mask detector and temperature detector must be taken to fulfil the condition for entering a place. It maps the current percept to action and does not consider any part of percepts history during their decision and action process. The system will loop again with different people. The system works on the Condition-action rule which works when that is a people in front of the scanner. Every percept contains the state of incoming people which is face detected, mask detected and temperature below 37.5C or either one of the conditions is not fulfilled and it decides whether to turn on the sound indicator or remain off.


Agent
Sensors
Percepts
Environment
Detect face, mask and temperature below or equal to 37.5C
If the sound indicator is off, then remains same, else turn off
Turn off the sound indicator
Action
Effector

Team Self-reflection

YAP XIN YIN

For the team working, every group member can express the role in making the team to successfully work thus completing the task. My teammates and I have the collaborative skill and complete the task within the decided time. For the meeting session, my teammates and I were willing to spend our time to discuss the project and help others with facing difficulties. I have shared the idea and at the same time, accepted the other's opinion and finally concluded the idea.

MOHD ANAS BIN ADNAN

First of all, I would like to thank you for assigning us to be in a team which has different gender and backgrounds. My teammates have shown their commitment to make all the assignments to be successful within the time that Dr Aida has given to us. Each of the teammates have tried to help each other when they are facing difficulties to complete the assignment. The process to complete the assignment becomes easier when working together. My teammates also have given a lot of ideas and we have to select the best ideas to be used in our assignment. In my opinion this will be the best team to be working with.

NUR HASANAH BINTI SARIDDON

Firstly, based on this project i would like to thank all my team members for being through thick and thin until the end of this project, and especially to everyone because being a very cooperative person and have given all of the commitment and spent the time during finishing this project. Moreover, the very important things that I have learnt from this assignment is about time management and team working, without these two skills I think our group cannot settle up this project on time and it might lead to a problem. Once again, I want to say thank you so much to all my team members because they are very supportive.

NURAMYRA NATASHA BINTI ISMALLUDIN

First of all, I would like to thank you for assigning us all to group four. All matters regarding activities, assignments, and projects are very easy when we do it together. My team

members have provided excellent cooperation in completing all the activities provided. The assignment provided became easy when we were able to discuss together. We are able to generate different ideas and accept each other's opinions and views. Group members provide the best collaboration involving meetings to discuss assignments and activities given.