SECJ 3553 (02) – ARTIFICIAL INTELLIGENCE

SEMESTER 1 2022/2023

ASSIGNMENT 3

TITLE: SKINFLEX

GROUP: PIXEL PERFECT

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1. **Formulate proposed AI solution using PEAS Model**

	Before SkinFlex	**After SkinFlex**
P: Performance Measure	● Buying a product before knowing the effectiveness on skin. ● Doing patch tests before using a new product. ● Buying an expensive product that has the same ingredients and quality as the cheaper one. ● Self assume skin type ● Get consultation from dermatologist regularly	● Get recommendations with detailed information. ● Able to check the ingredients and suitability of the product. ● Sort recommended products with your own preferences. ● Check skin types ● Get free consultation
E: Environment	● Dermatologist ● Product details on packaging ● Drug store	● Application in phone ● Drug Store or online shopping platform
A: Actuators/Effectors	● Manual patch test ● Read ingredients and instructions thoroughly at the packaging ● Visiting drug store	● Quick face scan on app ● Read suggestions on app ● Visiting drug store or online shopping platform
S: Sensors	● They have to wait for the patch test results ● Browsing about skin concern from different sources in the internet	● Sound detector will alarmed when face detected

2. **PEAS model representation**

   Agent: SKINFLEX SKIN TYPE SCANNER

   Performance Measure: Detect face and skin type

   - A device will detect client's face
   - The device will show the client's skin type, skin condition and appropriate or useful skin care product according to the client's price range.

   Environment:

   - Environment people is people
   - Phone devices is used to scan people's face to detect skin condition
   - The people who are intrigued to inspect their face conditions, suitable treatment for their skin based on a range of budget.
   - Could be used in a makeup store, skincare store, at home, and dermatologist clinic

   Effectors: Light indicator, sound indicator

   - A green light will be omitted from the device when face scanning is completed
   - A red light and beeping sound will be omitted when the device fails to detect face or needs to re-scan face.

   Sensors: Detect face, skin condition

   - The face will be scanned by device by using face detector
   - The face detector will gather information of the people's skin condition, and classify it into the 4 main skin condition

3. Define Peas Model

3.1 Peas Model Diagram

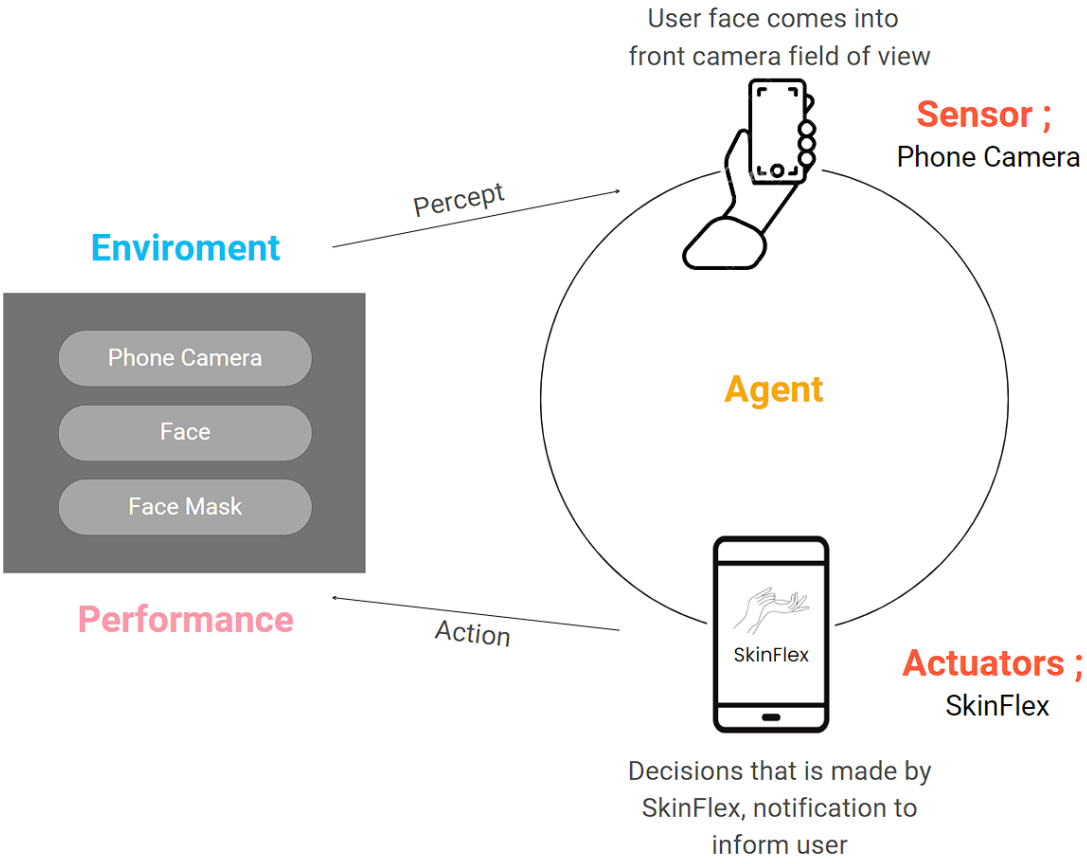

Image 1

3.2 Property representation in Proof of Concept (POC)

I. Performance

A. The ultimate objective is to ensure that people's skin type can be detected. The skin type can be determined by scanning their faces. Full face recognition is the condition required so that the skin type can be discovered.

II. Environment

A. Since it is only an application, they should just remove their face mask so that their face can be scanned. After determining the skin type, a notification will be sent to the device used.

III. Actuator

A. The actuator will start performing their assigned actions. Firstly, since it is an application, the device will scan for the face. The application will then notify the skin type and give some information about it as well as suggestions of products to the user.

IV. Sensors

A. The sensor then detects every action performed by the actuator. In this case, when the face is recognised, then an alarm will be alerted so it indicates that the face can be detected. If face is not detected, no alarm will be blasted, which means the device cannot find the face or face was not detected at all.

4. How agent in AI behaves in the proposed model

The agent of SKINFLEX is a simple reflex agent. These agents only succeed in the fully observable environment where the face should be detected first in order to detect the skin type whether it's a normal skin, dry skin, oily skin, sensitive skin, or a combination skin. It maps the current percept to action and does not consider any part of percepts history during the decision and action process. The system works on the condition-action rule which works when there is a person in front of the scanner. Every percept contains the state of incoming people where the face is detected. If the face is not detected then the sound alarm will not alarm.

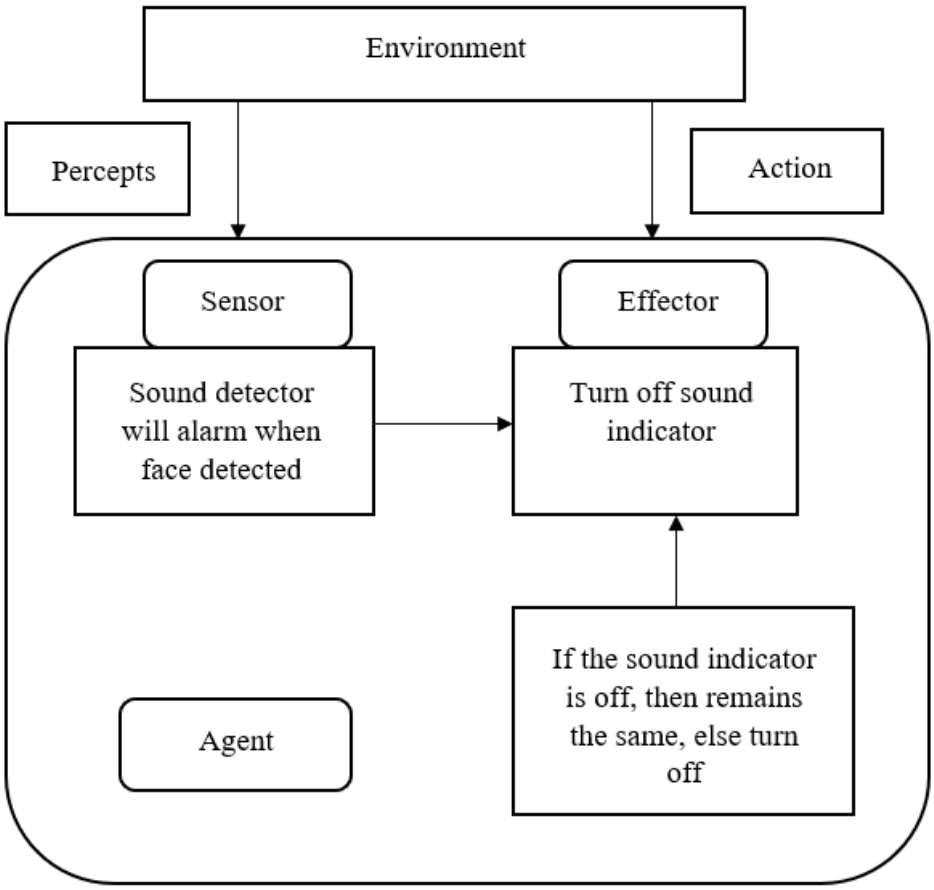

Image 2

Task Distribution

TERENCE LOORTHANATHAN	Peas Model Diagram
RISHMA FATHIMA BINTI BASHER	How agent in AI behaves in the proposed model
MADINA SURAYA BINTI ZHARIN	Formulate proposed AI solution using PEAS Model.
ADRINA ASYIQIN BINTI MD ADHA	PEAS model representation
NAYLI NABIHAH BINTI JASNI	Property representation in Proof of Concept (POC)

Reflection

MADINA SURAYA BINTI ZHARIN

Big thanks to everyone on my team who has worked hard on this project. Overall, I believe that assignments 1 through 3 gave me excellent guidance on how to begin an AI project. These methods also show me how to effectively generate ideas for our proposed solutions. When we work as a team, all of the chores seem relatively simple to me, especially when everyone pitches in with their finest ideas. By completing this task, we also get to assess our understanding in class. We owe a huge debt of gratitude to our lecturer, who taught us a lot. I want to congratulate my team members once again and I hope that this proposed AI will work well in the future.

ADRINA ASYIQIN BINTI MD ADHA

I had gained much knowledge through the assignments given by our lecturer. It was in great honor to participate in this project with all my team members. Everyone had managed to accomplish the assignments in an appropriate manner. The team members had been very involved from the beginning of the project by giving endless ideas and support. I would also thank the lecturer that had helped us complete the assignments. It has been a journey and I can confirm it will be helpful during my internship years.

NAYLI NABIHAH BINTI JASNI

This is the one and only project for this course for the whole semester. Surely, there is a lot more new knowledge that I successfully obtained throughout this project. A huge appreciation should I offer to my teammates and obviously our lecturer. All the guidance and help from all of them had opened my mind more on this course and helped me think through a new point of view. I hope that this kind of project will still be implemented in the future, so the students can understand more about the syllabus in the artificial intelligence course. Many suggestions have been provided by my coworkers as well, and we must choose the finest ones to include in our task.

RISHMA FATHIMA BINTI BASHER

First off, based on this project, I'd like to express my gratitude to all of my team members for sticking with me through good times and bad. In particular, I'd like to thank everyone for being so cooperative and for devoting a lot of time to finishing this project. Additionally, the most crucial lessons I took away from this assignment were time management and teamwork. Without these two abilities, I believe our group won't be able to complete this project on time, which could cause an issue. Most importantly I have gained a lot of knowledge directly and indirectly about AI while working on this project. Guidance by our lecturer helped my team and I to complete this project successfully.

TERENCE LOORTHANATHAN

At the beginning of this assignment we all distributed our tasks very well, because my group mates and I knew very well that as the semester was ending our individual schedules will be different. That decision was very commendable, and also I would like to add that even though everyone did our parts of the assignment in our own timings, we managed to complete it soon. Soon enough to refine our work and tweak some parts of the assignment. Overall, I would like to thank my group mates for their effort and dedication throughout this assignment. Additionally, I also would like to thank our lecturer, Dr. Norsham Binti Idris for the guidance throughout this project.