FUDMA Journal of Sciences (FJS)
ISSN online: 2616-1370
ISSN print: 2645 - 2944
Vol. 8 No. 1, February, 2024, pp 174 - 182
DOI: https://doi.org/10.33003/fjs-2024-0801-2261

A DECISION SUPPORT SYSTEM FOR THE IDENTIFICATION OF EMOTIONAL INTELLIGENCE

***Okonigene, I. Tracy and Imianvan, A. Anthony**

Department of Computer Science, University of Benin

*Corresponding authors' email: tracy.okonigene@physci.uniben.edu Phone: +2348139191113

ABSTRACT

Emotional intelligence is the relationships that directly impact how people relate to themselves and to others within a socio-cultural environment. A person who possesses emotional intelligence is able to communicate effectively while controlling and understanding other individual's emotional inclinations. Individuals desire to express their state of mind, worries, traumas, and obstacles in life as well as get answers and help for their problems. However, they desire security and protection for the feelings, anxieties, trauma, and life obstacles they express. Therefore, individuals require a support structure where they can discuss their problems and seek potential answers while knowing that their identities would be kept private. A "Decision Support System" (DSS) for emotional intelligence is a electronic program that supports decisions, judgments, courses of action, and the proficiency of deploying artificial intelligence (AI) to regulate both your own and those around you emotionally. In this study we use AI to help in decision making to create confidential space between user and app. The technology uses are JavaScript, HTML, openAI, Replicate, PINECONE, CSS, PHP and MySQL. This research shows how technology has the ability to improve emotional intelligence using decision support system in individual's daily lives.

Keywords: Artificial Intelligence, Emotional intelligence, Communication, Decision Support System, Organization

INTRODUCTION

Emotional intelligence defines the relationships that directly impact how people relate to themselves and to others within a socio-cultural environment. Emotional intelligence manifests in every aspect of individuals lives because they act within the capacity of their emotions and take it with them wherever they go and in whatever they do (Yilmaz et al. 2016).

According to Ozcan and Zaraaglu (2017), emotional intelligence is a result of a person's genetic make-up, early experiences, and subsequent learning. The best understanding of emotional intelligence (EI) is according to Mayer and Salovey (1997; 2016), who defined it as "the ability to perceive emotions, to access and generate emotions to assist thought, to understand emotions and emotional knowledge, and to regulate emotions to promote emotional and intellectual growth reflectively." In other words, the ability to understand and regulate one's own emotions as well as those of others around you in order to achieve a goal is known as emotional intelligence. Furthermore, emotional skills can be developed and mastered at any age. Emotional intelligence is a "must" acquired skill for positions that require coordination, even though intellect is a crucial aspect for individuals in occupations requiring a strong personality and those operating under hierarchical organizational structures. Emotional intelligence is a skill that can be developed and mastered, according to scientists (Goleman, 1999; Aldulaimi et al., 2019). EI consists of five main components: self-awareness, self-regulation, motivation, empathy, and social skills (Abdeldayem and Aldulaimi, 2018).

A computerised system called a "decision support system" (DSS) aids in decision-making within organisations. Decision support systems facilitate the retrieval of pertinent data, models, and analytical tools to managers and other decision-makers, assisting them in problem-solving on a regular basis. Depending on the exact issue that needs to be resolved, different DSSs are employed. A DSS could be used, for instance, to track inventory levels or plan production levels (Ozcan, and Zaaroglu, 2017).

A "decision support system" (DSS) for emotional intelligence is a computerised programme that supports decisions, judgments, courses of action, and the capacity to use artificial intelligence (AI) to manage both your own and those around you emotionally. The goal of DSS is to aid human decision-makers in making better decisions, not to replace them.

Understanding the capabilities of the particular system being used and how to use it to best serve the needs of the organisation are crucial when using a decision support system. A wide range of uses for decision support systems exist, including marketing, sales, operational, human resource, educational, medical, military, environmental, and sustainable development. The proper system must be chosen for the unique requirements of the organisation because each form of decision support system has its own advantages and disadvantages. Decision support tools are meant to enhance human judgement rather than to replace it (Brackett & Mayer, 2013).

The term emotional intelligence was coined by psychologists Peter Salovey and John Mayer and popularized by author Daniel Goleman, emotional intelligence has become a cornerstone in personal and professional development (Goleman, 2005; Mayer and Salovey, 2016). Emotional intelligence (EI) is seen as a type of intelligence that involves the ability to comprehend other people's emotions, particularly one's own, and to strategically employ those emotions to guide one's thoughts and actions (Morrison, 2007; Yilmaz et al. 2016; Ozcan and Zaraaglu, 2017; Goleman, 1999; Aldulaimi, Abdeldayem and Alsqer, 2019). EI consists of five main components: self-awareness, self-regulation, motivation, empathy, and social skills (Abdeldayem and Aldulaimi, 2018). A computerised system called a "decision support system" (DSS) aids in decision-making within organisations. Decision support systems facilitate the retrieval of pertinent data, models, and analytical tools to managers and other decision-makers, assisting them in problem-solving on a regular basis. Depending on the exact issue that needs to be resolved, different DSSs are employed. A DSS could be used,

for instance, to track inventory levels or plan production levels (Ozcan, and Zaaroglu, 2017). Decision support tools are meant to enhance human judgement rather than to replace it (Brackett & Mayer, 2013).

Emotional intelligence contributes to effective teamwork, as individuals can better understand and appreciate the emotions and motivations of their colleagues (Mayer, Caruso and Salovey, 2016). According to Costa et al. (2013), those with high levels of emotional intelligence may find success in life more easily. In addition, emotional intelligence plays a vital role in numerous practical fields and, more importantly, in choosing the well-being of individuals and society (Zeidner et al. 2012). A person's performance could be improved by using emotional intelligence as a consulting tool (Lam & Kirby, 2002). The growth of emotional intelligence, according to Ciarrochi et al. (2000), may be related to discontent with the conventional and constrained understanding of intelligence. The junction of the cognitive and emotional systems—two essential facets of personality—is marked by emotional intelligence (Mayer & Salovey, 1995). According to Rivers et al. (2012), the idea of emotional intelligence provides a thorough framework for examining how emotion functions in social, intellectual, and personal contexts. The trait model put forth by Petrides et al. (2017) claims that emotional intelligence is a set of emotional self-perceptions that function at the most basic levels of personality (table 1).

Table 1: Showing Types, Characteristics and Values of Emotional Intelligence

Emotional Intelligence (Types)	Characteristics	Values
Self-Awareness	i. "Emotional awareness" ii. "Accurate self-assessment" iii. "Self-confidence"	i. Being aware of a person feeling and their effects. ii. Recognising one's limitations and strong points iii. The belief in one's own skills, qualities, and the assurance that one can meet challenges and navigate life's demands effectively.
Self-Regulation	i. "Self-control" ii. "Trustworthiness" iii. "Conscientiousness" iv. "Adaptability" v. "Innovativeness"	i. Controlling erratic emotions and inclinations ii. Maintaining a decent, good and ethical principles iii. Accepting responsibility for an individual decision and behaviour iv. The capacity to survive in life and society v. The ability to emphasize on the generation of original and inventive knowledge.
Self-Motivation	i. "Achievement drive" ii. Commitment iii. Initiative iv. Optimism	i. Aiming to achieve or surpass a level of perfection ii. Aligning with the objectives of the team or establishment iii. Willingness to seize an opportunity iv. A commitment to persevere in the face of challenges and disappointments
Social Awareness	i. "Empathy" ii. "Service orientation" ii. "Developing others" iv. "Leveraging diversity" v. "Political awareness"	i. The capacity to understand, share, and resonate with the feelings and perspectives of others. ii. Acknowledging, anticipating, and meeting client demands iii. Recognising what others require to grow and supporting their potential iv. Fostering opportunity through diversity in individuals v. Recognising the value of individual's understanding the knowledge of political events, issues, and dynamics within a given society.
Social Skills	i. "Influence" ii. "Communication" iii. "Leadership" iv. "Change catalyst" v. "Conflict management" vi. "Building bonds" vii. "Collaboration and cooperation" viii. "Team capabilities"	i. Using persuasive strategies with effectiveness ii. Delivering communications that are convincing and unambiguous iii. The capacity to give direction to individuals or organizations iv. Beginning or management of change v. Bargaining and settling conflicts vi. Developing relationships that are instrumental to societal advancement vii. Collaborating with others to accomplish a common purpose and result viii. Building team cohesion to achieve shared objectives

Source: Researcher's Compilation from different Authors. (https://positivepsychology.com/emotional-intelligence-frameworks/)

Emotional Intelligence in Decision Making

According to Aldulaimi, Abdeldayem, and Alsqer (2019), EI is a crucial personal quality that is necessary for carrying out all managerial tasks in the right manner, particularly in dynamic environments where relying solely on cognitive intelligence is insufficient to help managers make the right choices and deal with unknowns. Making decisions requires a great deal of emotional intelligence. It involves the influencing individuals assess situations, weigh options, and interact with others during the decision-making journey. According to Moghadam, Tehrani, and Amin (2011), there are many different personal traits that can affect how managers make decisions, including personal value systems, self-control practises, and emotional intelligence.

A broad interpretation of emotional intelligence, which would also include empathy, time management, decision-making, and teamwork, was presented by AShkanasy et al. (2012) in contrast to the narrow interpretation, which limited emotional intelligence to the specific abilities of perception, identification, understanding, and management of emotions (Chrusciel, 2016). It is imperative for decision-makers to possess a diverse range of abilities and talents to make sound decisions in complex and dynamic internal and external contexts, particularly in high-stakes circumstances like these. In most cases, this forces managers to assess their current abilities and adopt more original strategies.

MATERIALS AND METHODS

System Analysis

This section focuses on the collation, methods used in the design and analysis of the decision support system for emotional intelligence (DSSEI). The functionality, confidentiality, scalability, security, stability, and accessibility of the system are covered, with an emphasis on the advantages it offers the emotional intelligence using a decision support system framework. The main aim of the DSSEI system is to transform emotional intelligence administration by promoting confidentiality, scalability, security, stability, and accessibility openness, effectiveness, and public confidence in individual's relating with the decision support system model.

System requirements

In this system the following are the required hardware, software, operating system, storage requirements and pictorial representation of the work for the successful implementation:

Hardware Requirement

Processor 1.87 GHz
Ram 4GB
Laptop windows 7 and above
Platform : web

Software Programming Language

Reactjs (Javascript framework)
Nextjs for frontend
Tailwindcss for styling
Clerk for authentication
Prisma for backend
AI: OPENAI, REPLICATE AND PINECONE
UPSTASH to manage the speed of the AI input request
CLOUDINARY for image upload
Mongodb for the database

Database Model

mySQL

JavaScript Library: React is a JavaScript library, which means it provides a set of pre-built functions and components that developers can use to create user interfaces.

- The model was design using Flow Chat Diagram and Use Case Diagram.
- The system was implemented using Java Script programming language, Reactjs, nextjs, tailwingcss, typescript, openai, replicate, pinecone and MYSQL.
- The system was tested using AI

Use Case Diagram

Use case diagram was used to model functionality of what the system does and used to focus on functionality from users' perspective. To the players of the system, every Use Case yielded observable and valued results. These models emphasis the significant links between systems and processes in the real world. They serve as the starting point for the creation of the more complicated models as shown in Figure 1.

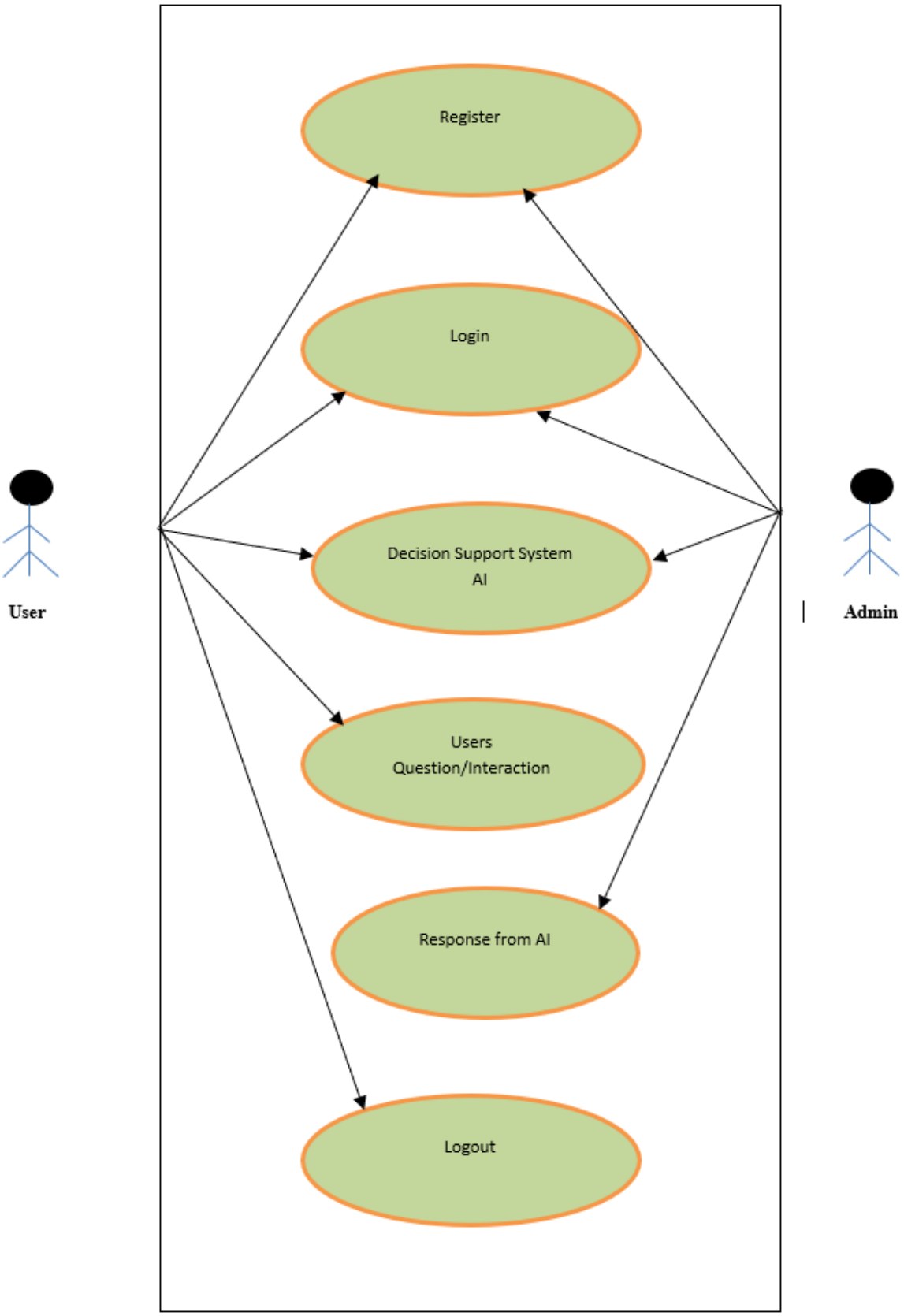

Figure 1: Use Case Diagram

Flowchart

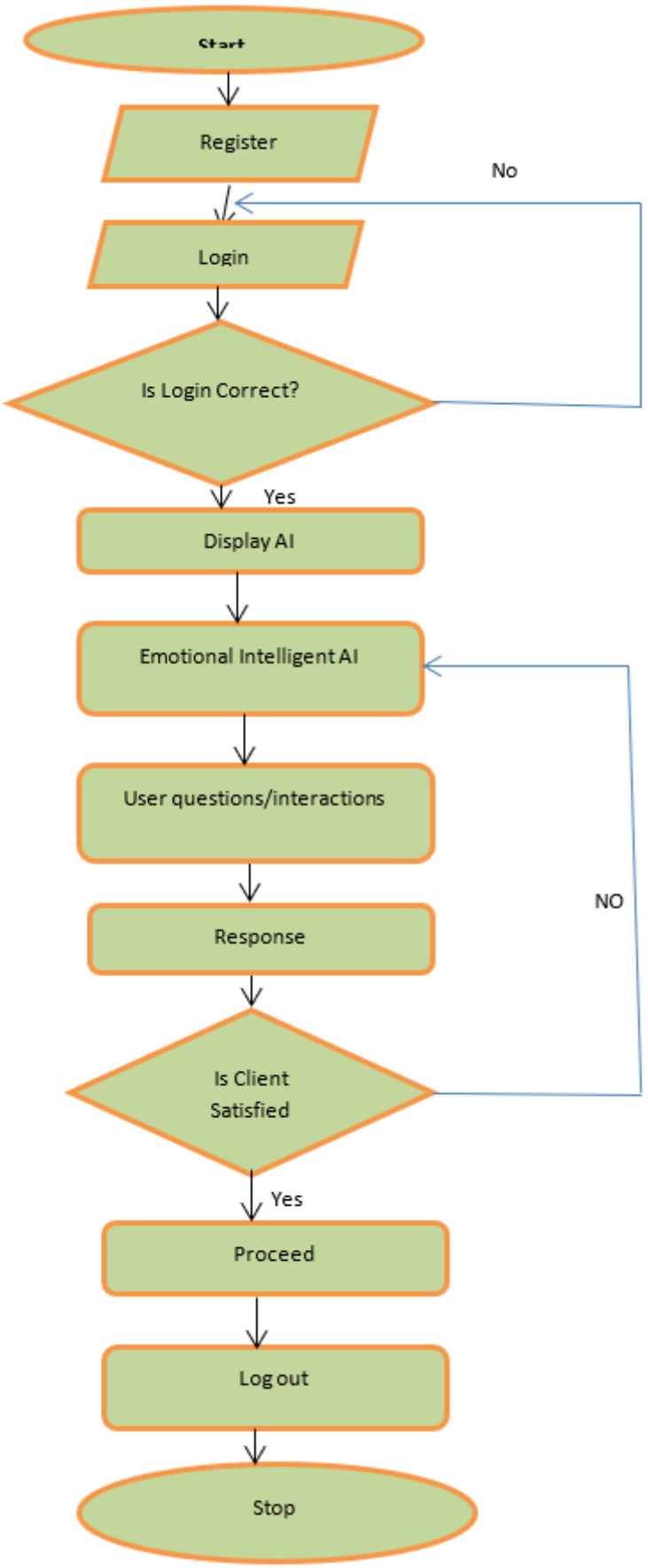

Figure 2: Flowchart

The Flowchart shown in Figure 2, depict the step-by-step procedure through which the newly implemented DSSEI works in an easy understandable manner.

Sequence Diagram

This sequence diagram is a visual representation of the dynamic behavior of the decision support system for emotional intelligence, focusing on the chronological order of interactions between human and AI. It uses activation bars to depict these interactions and can include various elements to provide a comprehensive view of the system's functionality during a specific scenario. Figure 3 is the Sequence Diagram.

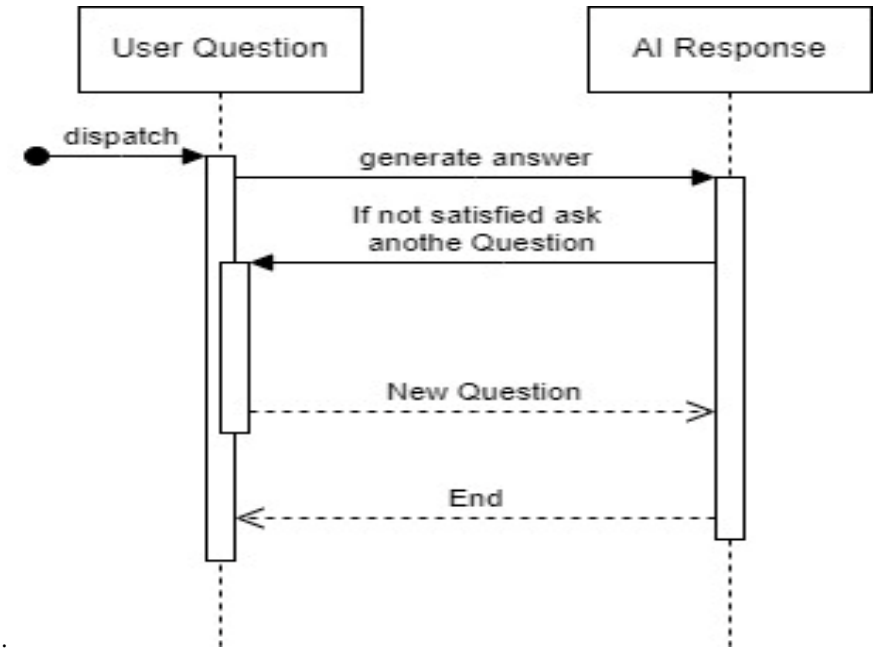

Figure 3: Sequence Diagram

RESULTS AND DISCUSSIONS

The Unified Modelling Language (UML) was utilised to analyse the user requirements. UML assisted in modelling the precise operations of the system, understanding how the system will operate, and providing the user with a list of duties. Additionally, UML assisted in simplifying the processes involved in this work that results in the breakdown for development..The Use Case Diagram played a very important role in this work design and it's implementation. The Use Case Diagram presents the actors involved. Thus, it describes the interaction between the external users called the actors and the software itself. Figure 4 to Figure 14 shows the screen shots of some the results obtained.

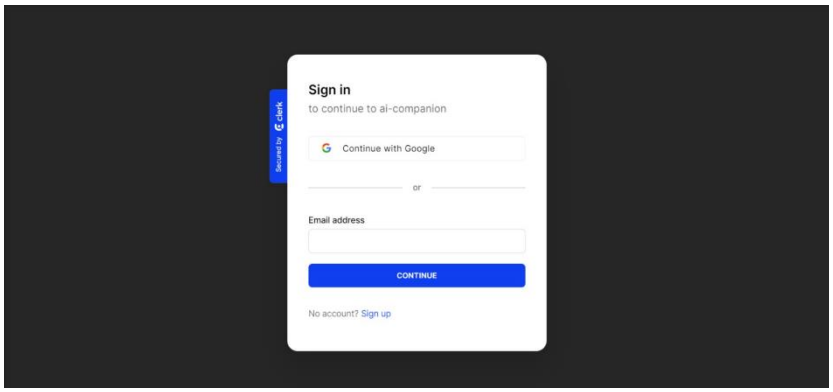

Figure 4: Registration Interface

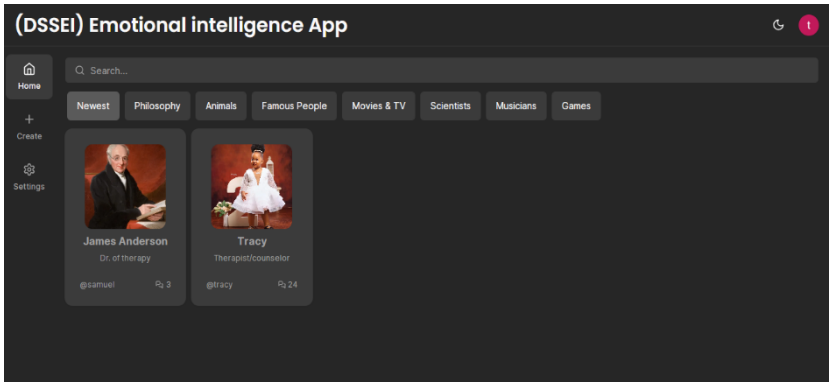

Figure 5: Emotional intelligence and decision support system home page

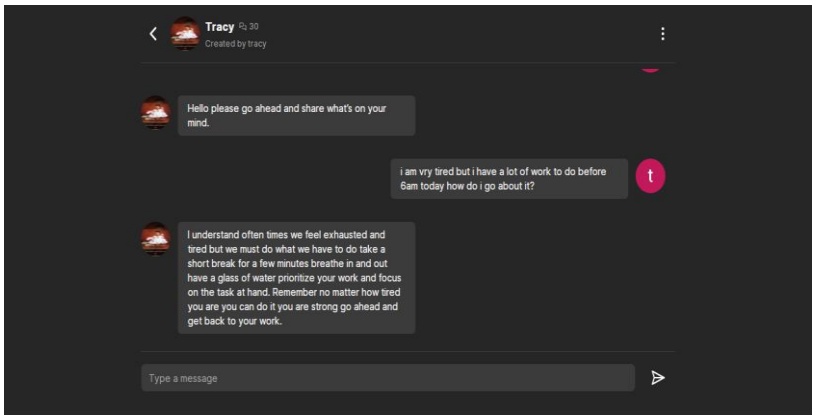

Figure 6: Confidential Interaction between AI and human

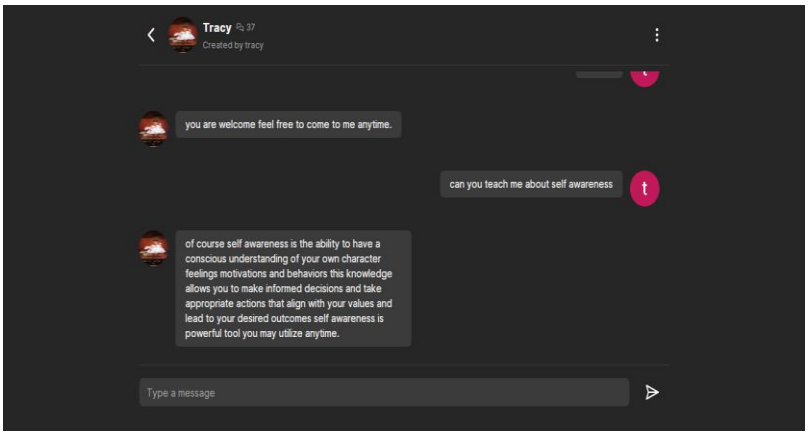

Figure 7: Further conversations

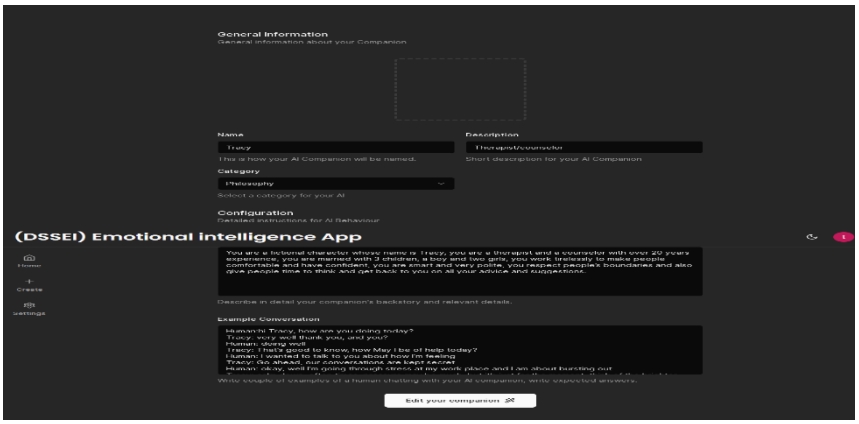

Figure 8: General information about my AI

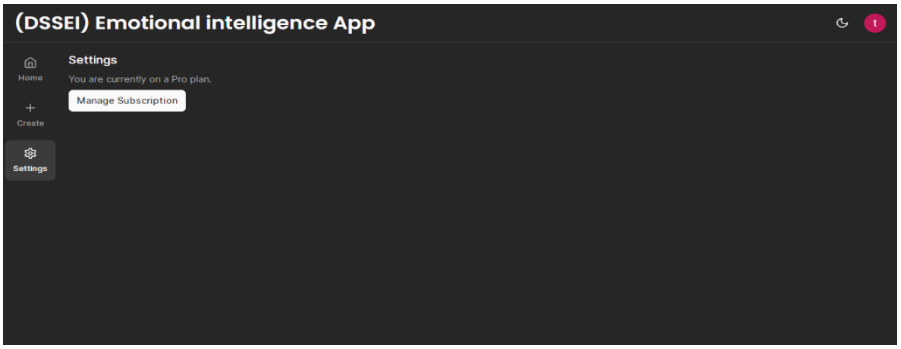

Figure 9: Settings

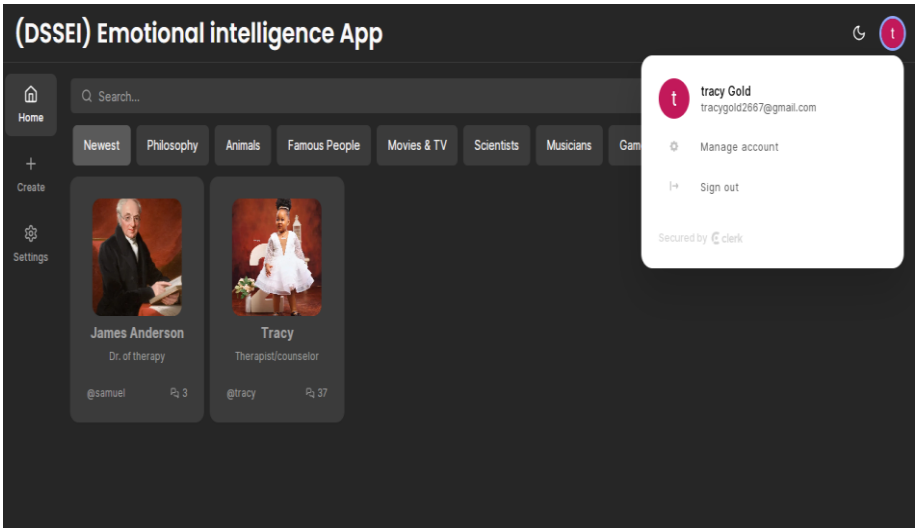

Figure 10: Sign out page

CONCLUSION

The purpose of this work was to create a decision support system for emotional intelligence to be sued by individuals to discuss their emotions and how intelligent they are. The project goal and objective were successfully achieved.

However, various solution were found to the problem that arose throughout the coding and implementation phase. Accordingly, the project relies on a number of artificial intelligence and data base management tools. The final result is that people may use their devices to interact with artificial intelligence, keeping their discussion private and also confidential, saving them lots of money that would have been spent on third party. Creating a unique profile and a one month free subscription are two examples of the newer and more efficient approach of the decision support system that have been used. If a client does not have access to his/her device, they can as well use a friends own by logging unto the website with their username and password. Almost all the outcome and result of the implementation were successfully realized.

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