



BAIT2203 HUMAN COMPUTER INTERACTION
ASSIGNMENT PROPOSAL

Programme : **RSW(Intake:2023/2024)**

Tutorial Group : **G6**

Prototype name: **Mood Mentor**

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Introduction

Depression disorder also known as depression is a type of common but serious mood disorder. It involves a depressed mood, sadness, anxiety, hopelessness, or loss of interest in any desired activities for long periods of time (*Depressive Disorder (Depression)*, 2023). In other words, depression disorder eventually will cause an individual's mood changes and consequently, aspects of life to be fainted. Besides, depression can vary in severity of symptoms that change an individual's emotions, relationships, friendships, family, and daily routine activities such as working, sleeping, eating, and more behavioural activities. This results in problems to an individual's productive life such as studying, working, and physical well-being. Therefore, by developing the proposed project, which is a mobile application called “***Mood Mentor***” will definitely solve or even enhance the situation of depression in the society.

The target market benefits only college students. Students always face a variety of stress including pressure from academics, family, stressful studying environment, social isolation, financial problems, and future consideration. To give an illustration, 88% of college students reported being stressful enough during school life. Education and medical majors reported the highest levels of stress (*School Stress for College Students and Unhealthy Coping Mechanisms*, 2023). From that, the proposed application may reduce the stress level and pressure by recommending ways to reach out to students with difficulties with depression and their mental health conditions from now on. To prevent students from carrying depression disorder after graduation or entering the working community in the future.

In the perspective of the proposed system, there are a total of 6 modules that are included. The modules are register module, login module, depression diagnosis module, mood summary module, recommender module and a chatbot module as *Table 1.1* shown below. These modules build and lay the foundation of the proposed system as these modules will help and reduce the symptoms of a depressive individuals and early depression symptoms avoidance.

In the perspective of the user:

Module	Description	Responsibility
Login and Registration Module	Users can register with their credentials to create an account.	Kwo Chun Kit
User Profile Module	Registered users can log in using Facial Recognition Login as alternative or typical email and password.	Kwo Chun Kit
Depression Diagnosis Module	Users diagnose symptoms of depression through Facial Expression Recognition via camera, then depression test.	Hue Zhen Wei
	The system displays test results for reference.	
Mood Summary Module	Users select an emoji to represent their mood and can enter additional text to express their feelings.	Hue Zhen Wei
	The system recommends activities based on the selected mood.	
	Seeks feedback on recommended activities	
Recommender Module	Utilizes depression diagnosis and mood data to suggest personalized self-help resources.	Lee Wee Harn
Chatbot Module	Users can express their feelings to the chatbot without judgment or privacy concerns.	Lee Wee Harn
	The chatbot responds with appropriate and supportive answers to help clam users' moods and promote a healthy mindset.	

Table 1.1

Therefore, this will enable depression disorder to stop being a silent and unstoppable enemy. Digital mental health solutions, telemedicine, and advances in artificial intelligence have all created new avenues for the diagnosis, care, and support of people suffering from depression. As technology advances, its integration with mental health services holds out hope for a better future in which depression will be better understood and treated, ultimately improving the mental health of countless people around the world.

PACT Analysis

People

The ages of Depression Assistant System users can range widely as depression is a problem that might be faced by anyone at any time no matter how old you are or what background you come from. It does not discriminate based on age, gender, race, or social status. Depression can affect anyone, regardless of their circumstances or achievements in life. Therefore, from the perspective of physical differences, users might range from 18 years old to 60 years old. Besides that, the use of a Depression Assistant System can elicit various psychological differences in individuals. For instance, teenagers and young adults who are using the system might find that the usability of the system is high as they are more familiar with the technology and applications nowadays. On the other hand, older users might find the usability of the system is low as they are not familiar with technology and more preferable to the traditional depression treatment. Moreover, there are social differences among users of the depression assistant system. Cities are associated with higher rates of mental health problems compared to rural areas which state an almost 40% higher risk of depression (*How the City Affects Mental Health, 2019*). Therefore, users of the depression assistant system will therefore mainly reside in cities with larger population densities, better access to technology and the internet, and perhaps higher levels of stress as a result of the fast-paced urban lifestyle. These elements could be part of the reason why depression and other mental health issues are more common in urban environments. The convenience, anonymity, and round-the-clock accessibility of the depressive assistance system make it appealing in cities where busy, technologically connected lives are common. On the other hand, the system might fill the gap and offer crucial support in rural areas where mental health resources might be more limited.

Activities

The Depression Assistant System offers a wide range of activities to support individuals in managing their depression effectively. The system facilitates mood tracking and analysis, enabling users to regularly record and monitor their emotions, thoughts, and feelings. By tracking their mood patterns over time, users gain valuable insights into their emotional well-being and can identify triggers, trends, and patterns that may impact their mental health. In addition to mood tracking, the system provides symptom monitoring capabilities. Users can track their depression symptoms, such as changes in appetite, sleep patterns, energy levels, and motivation. This allows users to have a comprehensive overview of their symptoms and helps them identify any worsening or improvement in their condition. Goal setting and progress tracking such as the Mood Summary module is another essential activity provided by the system. This process setting helps individuals establish a sense of purpose and direction, while progress tracking provides positive reinforcement and motivation.

The system also offers guided self-help exercises such as Recommender module to assist users in implementing evidence-based techniques and strategies to manage their depression effectively. These exercises may include cognitive-behavioral therapy techniques, relaxation exercises, mindfulness practices, and stress management strategies. By providing step-by-step guidance and resources, the system empowers users to actively participate in their own mental health care. Open communication and collaboration between users and mental health professionals are facilitated by the system. Users can securely communicate with chatbot from the Chatbot module, share their progress, discuss challenges, and receive guidance and feedback. By offering these diverse activities, the Depression Assistant System provides a holistic approach to depression management, combining self-monitoring, goal setting and self-help exercises. This comprehensive approach supports individuals in taking an active role in their mental health care and enhances their overall well-being.

Contexts

Variety of activities constantly to be carried out in a context. The context type that firstly affects the Depression Assistant System is the physical environment. Physical environments involve surrounding changes, visibility problems and language barriers. To give an illustration, users will access the system in different places such as educational institutions, public areas, home, workplace and internet areas. Thereafter, when the users log on to the system in an area that provides slow internet connection access, there will be problems in taking time to login and etc. Besides, there are visibility problems such as background surroundings or weather conditions emitted to be shining or dim results in a system operated in a mobile phone may make it unreadable from users' sights. Language barriers can lead to translation and ambiguity issues. The user might not understand the system language well, which results in miscommunication (*PACT ANALYSIS, 2021*). Subsequently, language built-in from the system with different symbols or characters potentially makes users vulnerable and misunderstand.

Without a doubt, the system utilized by users in a **physical environment** is inevitable. Unaware of the surroundings between users within a public area that is crowded with people, the mobile phone could be stolen or robbed if the users leave the phone unattended. In any case being careless or not paying attention to the surroundings, immediately leaves opportunities for the bad people such as pickpocketing or thief.

Despite the physical environment, from the context, the **social context** within which the activities take place is vital. A supportive environment will offer plenty of opportunities of help for the activities (*PACT Analysis. The Main Idea of PACT Analysis Is... | by Rashmini Nayanathara | Bootcamp, 2021*). The system may provide available user guide manuals, navigation guides such as chatbot, diagnosis questions that are prepared and validations check results in creating a sense of reliable and trustworthiness. Aside from a supportive environment, privacy issues are equally important to consider, as the users do not wish any of their information privacy being compromised, a privacy policy about not selling and sharing to third parties is declared to protect users' privacy.

Organizational context suggest factors such as disorganization (*PACT ANALYSIS, 2021*). Being disorganized can result in procrastination. Factors such as not taking anything seriously, lack of planning, hopeless and lack of navigational sense using the system. Eventually, users may result in deskilling, shiftless and excessive dependency.

Technologies

Technologies are the medium that interactive system designers work with (*PACT Analysis. The Main Idea of PACT Analysis Is... | by Rashmini Nayanathara | Bootcamp, 2021*). Depression assistant systems can be emphasised as highly interactive system for college students that typically communicate input data and output data. Therefore, the system that is engaged by the users have to be various degrees of style and aesthetics (*PACT Analysis. The Main Idea of PACT Analysis Is... | by Rashmini Nayanathara | Bootcamp, 2021*). It is also very difficult to classify technologies, as they are continually being packaged in new ways and different combinations facilitate quite different types of interactions (*PACT Analysis. The Main Idea of PACT Analysis Is... | by Rashmini Nayanathara | Bootcamp, 2021*).

As software engineers, there are considerations to be aware of technologies such as input, output and communication during system development to ensure high quality assurance products.

Input is vital to be facilitated in the depression assistant system for users to input/enter the data following the instruction correctly. Since the system is developed in mobile devices platform, the input functions consist of web controls and validations. Web controls are input text box, drop down list, tick box and more controls which facilitate a straightforward and effortless process for collecting input data. Moreover, validations specifically as a guidance or instruction for users inputting.

Besides, as the system is operated using mobile devices. **Output** from the touchscreen is most suitable for users. They function through either infrared sensitivity or electrical capacitance (*PACT Analysis. The Main Idea of PACT Analysis Is... | by Rashmini Nayanathara | Bootcamp, 2021*). Because of their lack of moving or detachable parts, they are suitable for applications intended for public places and provided the interface is well designed they present an appearance of simplicity and ease of use (*PACT Analysis. The Main Idea of PACT Analysis Is... | by Rashmini Nayanathara | Bootcamp, 2021*). To illustrate one example from the system, a biometric authentication is implemented. Facial Recognition as Facial login is implemented to capture the user's face as an alternative login method.

Output from the system to be displayed for users obviously via mobile screen monitors. Not only primarily rely on vision, yet on the abilities of sound and buzzing. In order to create a user-friendly system, a user interface is to display the communication between function and users. The user interface displayed must fulfill the consideration such as user familiarity, user friendly, user diversity and consistency.

Apart from that, output of information such as notifications and alerts from the system is to notify the users or correct the users from the validations check.

Communication can take place in the system through wireless connections using WIFI or LAN. In condition, the system is encouraged to be facilitated by the users using stable internet connection for communication between the users and server. Accordingly, the login function as mentioned above requires users to login using a stable internet connection to communicate with the system server.

Usability Goals

- **Effectiveness**

The effectiveness of a Depression Assistant System lies in its ability to provide meaningful support and assistance to individuals experiencing depression symptoms. It should enable users to accurately track and analyse their moods, monitor their symptoms, set achievable goals, and review their progress over time. The system should also facilitate effective communication between users with chatbot and recommender modules, allowing for a seamless exchange of information and insights. By providing a comprehensive set of features that cater to the specific needs of individuals with depression, the system can help users gain a better understanding of their condition and make informed decisions about their mental health.

- **Efficiency**

Efficiency is crucial in a Depression Assistant System to ensure that users can easily and seamlessly navigate through the various functionalities of the system. It should be designed to minimise the cognitive load on users and streamline their interactions. The system should be intuitive, with clear and concise instructions for how to use its features. Additionally, the system should leverage technology to automate tasks where possible, such as chatbot and recommender modules providing personalised recommendations based on user data. By optimising the user experience and reducing unnecessary steps or complexities, the system can maximise efficiency and save users time and effort in managing their depression.

- **Satisfaction**

User Satisfaction is paramount in a Depression Assistant System to encourage engagement, adherence, and overall well-being. The system should be designed to create a positive and supportive user experience. This can be achieved by employing a user-centred design approach, incorporating features that promote a sense of autonomy, control, and personalization. Visual aesthetics, user interface, and interactive elements should be carefully crafted to be visually appealing, relaxing, and emotionally supportive. Additionally, the system should provide constructive feedback, acknowledge user accomplishments, and offer encouragement throughout the user's journey. By fostering a sense of satisfaction and fulfilment, the system can help empower users and improve their overall mental health and well-being.

- **Privacy and Security**

A depressive assistant system must prioritise privacy and security to protect user data confidentiality and system integrity. Users must have absolute faith that their private data and communications will be protected from any unauthorised access or breaches. To accomplish this, strong encryption techniques and stringent access controls are put in place to shield private information from prying eyes. The system is made to comply with legal requirements for data protection as well as industry best practices. Users are given a sense of comfort and trust by the emphasis placed on user consent and transparency surrounding data usage. Users are reassured that their safety and privacy are of the utmost significance in the functioning of the system through routine security audits and proactive monitoring, which are done to quickly detect and resolve any potential weaknesses.

- **Empathy and Sensitivity**

The depression assistant system is built on empathy and sensitivity, creating a welcoming and accepting atmosphere for users. The system expresses its deep respect and compassion for each person by acknowledging their complicated feelings and problems using carefully chosen words and a non-judgmental tone. It works to establish a secure environment where users can express their emotions without worrying about judgement or misunderstanding. The responses from the system are intended to be understanding, verifying the user's experiences, and providing sincere support. The system builds a strong connection with users by acknowledging the particular difficulties faced by persons who are coping with depression. This encourages trust and openness in user interactions. Users are comforted and encouraged by this empathic approach, which reassures them that they are not alone in their effort for greater mental health.

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