

Mental Health Tracker Using Mobile Application

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Abstract: The project focuses on building a mental health tracker. You will try to get an idea of the mental state of your user (in the least intrusive ways), find out if they are suffering and then suggest measures they can take to get out of their present condition. A user answers some questions and based on the answers that they provide, you will suggest tasks to them and maintain a record of their mental state for displaying on a dashboard. —Mental disorders are widespread in countries all over the world. Nevertheless, there is a global shortage in human resources delivering mental health services. Leaving people with mental disorders untreated may increase suicide attempts and mortality. To address this matter of limited resources, conversational agents have gained momentum in the last years. In this work, we introduce, a mobile application with integrated chatbot that implements methods from cognitive behaviour therapy (CBT) to support mentally ill people in regulating emotions and dealing with thoughts and feel with that implements methods from cognitive behaviour therapy (CBT) to support mentally ill people in regulating emotions and dealing with thoughts and feelings. Application asks the user on a daily basis on events that occurred and on emotions. It determines automatically the basic emotion of a user from the natural language input using natural language processing and a lexicon-based approach. Depending on the emotion, an appropriate measurement such as activities or mindfulness exercises are suggested by application

Keywords: Emotional well-being, Machine learning, Authentication, Suggestion

INTRODUCTION

The project focuses on building a mental health tracker. You will try to get an idea of the mental state of your user (in the least intrusive ways), find out if they are suffering and then suggest measures they can take to get out of their present condition. A user answers some questions and based on the answers that they provide, you will suggest tasks to them and maintain a record of their mental state for displaying on a dashboard. —Mental disorders are widespread in countries all over the world we introduce, a mobile application

MOTIVATION

The undertaking centers around building a psychological well-being tracker. You will attempt to find out about the psychological condition of your client (at all meddling ways), see whether they are enduring and afterward recommend measures they can remove to get from their current condition. A client responds to certain inquiries and in light of the appropriate responses that they give, you will recommend assignments to them and keep a record of their psychological state for showing on a dashboard. —Mental issues are broad in nations from one side of the planet to the other we present, a portable application with that carries out strategies from intellectual conduct treatment (CBT) to help insane individuals in directing feelings and managing considerations and sentiments.

LITRATURE SURVEY

Shaheen Mondal, Diksha Maheshwari, Nilima Pai, Ameyaa Biwalka, 2019, "Life satisfaction and mental health of Chinese older adults in different living arrangements" [1]

In this paper in order to compare life satisfaction and mental health status of older adults in different living arrangements, we investigated a sample of 1,915 Chinese older adults using Satisfaction with Life Scale and Mental Health Inventory for the Urban Elderly. Difference in life satisfaction between three living arrangements is significant even after controlling age, education and income. Life satisfaction of older adults living in elderly apartments is better than those living at home. Income and co-residence with children interact to influence life satisfaction. Among older adults with high income, older adults living alone or with spouse have the greater life satisfaction than those living with children; while among older adults with average and low income, living with or separate from children have no difference on life satisfaction. The result indicates that institutionalized older adults have equal mental health with those living at home and even greater life satisfaction.

Mahajan Mayuri Vilas, Kakade Prachi Ghansham, Sawant Purva Jaypralash, Pawar Shila, 2019, "Data Science in Public Mental Health: A New Analytic Framework" [2]

In this paper, Understanding public mental health issues using data science and finding solutions based on the findings from the data science projects can be complex and requires advanced techniques, compared to conventional data analysis projects. It is important to have a comprehensive project management process to ensure that project associates are competent and have enough knowledge to implement the data science process. Therefore, this paper presents a new framework that mental health professionals can use to solve challenges they face using data science. Although a large number of research papers have been published on public mental health, few have addressed the use of data science in public mental health. Recently, Data Science has changed the way we manage, analyze and leverage data in health care industry. Data science projects differ from conventional data analysis, primarily because of the scientific approach used during data science projects. One of the motives for introducing a new framework is to motivate healthcare professionals to use "Data Science" to address the challenges of mental health. Having a good data analysis

framework and clear guidelines for a comprehensive analysis is always a plus point. It also helps to predict the time and resources needed in the early in the process to get a clear idea of the problem to be solved.

Jan Bohacik, Ivan Skula, Michal Zabovsky, 2020, "Benefiting from online mental status examination system and mental health diagnostic system" [3]

In this really hectic world, quite a number of people are exposed to situations where mental stress is unavoidable. This leads to people having all kinds of mental health problems that eventually may turn to chronic mental disorders. People with mental health problems normally have the tendency of not admitting their health problems because of the stigma attached to these kinds of illnesses. Most of them are in denial state, and this situation may cause very serious social problems since people with mental problems will develop some kind of mental disorders, and as a result, they might be harmful to others around them. People with mental health problems must receive proper treatments and medications. If their mental status can be assessed and examined easily, then most probably their mental problems can be detected at a very early stage, and can be easily controlled and cured. The above scenarios become the motivation for conducting this research. This research paper presents some findings on mental health and disorders on past research study's results and also proposes an online mental status examination (MSE) system that examines individuals' mental health status. The result of the MSE system is used in determining whether the respective person needs to undergo a more detailed diagnosis for more specific mental disorders. It is hoped that the outcomes of this research study are able to assist new psychotherapists and psychiatrists in examining and diagnosing those who are affected by some kind of mental disorders in a more efficient manner

Jilayat Khan, Aakash Ahmad, Aamir Qamar, Muhammad Kamran, Muhammad Altaf, 2021, "SMental Health: An Analysis of the Health Information National Trends Survey" [4]

Determinants of user mental health are diverse, interrelated, and often multifaceted. This study explores how internet use, perceived care quality, patient education, and patient centered communication influence mental health, using structural equation modeling. Findings suggest that increased internet use even for health purposes negatively impacts mental health ($\beta = -0.087$; $\beta = -0.065$; $P < 0.001$). On the other hand, education level, patient centered-communication (PC-Com) and perception of care quality impact mental health positively ($\beta = 0.082$; $\beta = 0.146$; $\beta = 0.077$; $P < 0.001$; respectively). Moreover, we also explored the changes across various demographics. The influence of patient education on PC-Com was only significant for Hispanic respondents ($\beta = -0.160$; $P < 0.001$). Internet use for health purposes influenced PC-Com negatively for White American respondents ($\beta = -0.047$; $P = 0.015$). The study reinstated that the internet use, patient centered communication, patient education, and perceived care quality might influence mental health. The society will increasingly seek health information from online sources, so our study provides recommendations to make online health information sources more user friendly and trustworthy, ultimately to minimize negative impact on mental health.

LIMITATION OF EXISTING SYSTEM

- Costing: The Existing system is high cost and this is main reason most of the system is failed.
- Technology Complexity: Most of system is the complex to understand, Not user friendly as compare to our proposed system
- Time Consuming Feature: In existing system, the performance is low and most of the time system gets hanged due to load.
- Not Easy to Understand: Systems are complex to understand and they were not user friendly

EXPERIMENTAL SETUP

Validation checks that the product design satisfies or fits the intended use (high-level checking), i.e., the software meets the user requirements. This is done through dynamic testing and other forms of review. Verification and validation is not the same thing, although they are often confused. Boehm succinctly expressed the difference between

- Validation: Are we building the right product? (This is dynamic process for checking and testing the real product. Software validation always involves with executing the code)
- Verification: Are we building the product right? (This is static method for verifying design, code. Software verification is human based checking of documents and files) According to the Capability Maturity Model (CMMI-SW v1.1),
- Software Validation: The process of evaluating software during or at the end of the development process to determine whether it satisfies specified requirements. item Software Verification: The process of evaluating software to determine whether the products of a given development phase satisfy the conditions imposed at the start of that phase. In other words, software validation ensures that the product actually meets the user's needs, and that the specifications were correct in the first place, while software verification is ensuring that the product has been built according to the requirements and design specifications. Software validation ensures that "you built the right thing";, Software verification ensures that "you built it right";, Software validation confirms that the product, as provided, will fulfill its intended use. From testing perspective:
 - Fault – wrong or missing function in the code.
 - Failure – the manifestation of a fault during execution.
 - Malfunction – according to its specification the system does not meet its specified functionality.

Hardware and Software Requirements

- Hardware Requirements
 1. Android Mobile
 2. Processor : Intel (R) Core (TM) i3 CPU
 3. Installed RAM : 1 GB

4. Hard Disk : 60 GB
5. Keyboard : Standard Windows Keyboard
6. Mouse : Two or three button mouse
7. Monitor : SVGA Software Requirements

- Software Requirements

1. Operating System : Windows 2000/XP/7/8
2. Front end : Android Studio/ IDE

- Operating System: Windows 8 and above Windows is the most widely used operating system for desktop and laptop computers. Develop by Microsoft, Windows preliminary runs on x86 based computers . Windows provides Graphical User Interface and desktop Environment in which application displayed in resizable,movable windows on screen.

SCOPE:

The project focuses on building a mental health tracker. You will try to get an idea of the mental state of your user (in the least intrusive ways), find out if they are suffering and then suggest measures they can take to get out of their present condition

PROBLEM STATEMENT:

Mental health is an important issue in the world today. With a large population now working from home and staying away from loved ones, the mental health situation has deteriorated. As such, it becomes important to track and remedy any problems before they get too serious. We try achieving this using the Companion App. Keeping in mind that users might be suffering from mental illness and wouldn't want to engage much with an app, you'll have to design the app to be very friendly and welcoming

SYSTEM ARCHITECTURE

User firstly Login to the system after that system will authenticate user with match id and password once user is authenticated , he should select the Interest , based on his interest user has a set questions which he has to answers , based on his answers system will predict his Mental state and show suggestion to improve the health

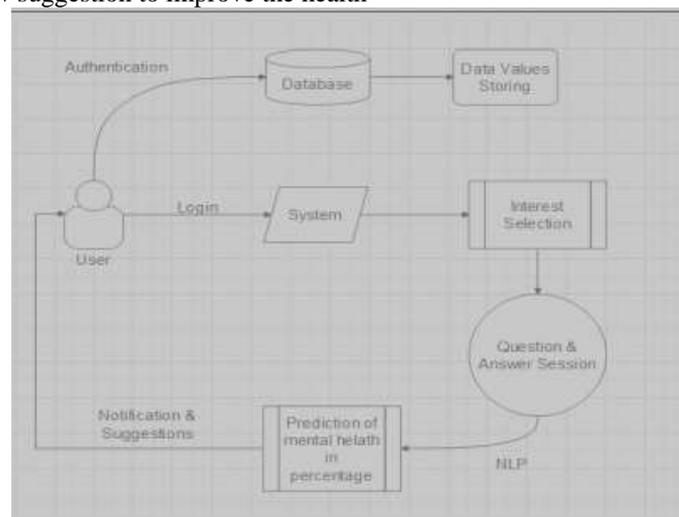


Fig -1: System Architecture Diagram

ADVANTAGES

1. Easy to use
2. High Performance
3. Scalable

METHODOLOGY

The single problem can be solved by different solutions. This considers the performance parameters for each approach. Thus considers the efficiency issues.

- Problem Solving Methods are concerned with efficient realization of functionality. This is an important characteristics of Problem Solving Methods and should be deal with it explicitly.
- Problem Solving Methods achieve this efficiency by making assumptions about resources provided by their context (such as domain knowledge) and by assumptions about the precise definition of the task. It is important to make these assumptions explicit as it give the reason about Problem Solving Methods.
- The process of constructing Problem Solving Methods is assumption based. During this process assumptions are added

that facilitate efficient operationalization of the desired functionality

CONCLUSION

We are overcoming the drawback of existing system, and providing a smart system that will not only monitor user mental health with security but also show recommendation whenever necessary. The undertaking centers around building an emotional wellness tracker. You will attempt to find out about the psychological condition of your client (at all meddling ways), see whether they are enduring and afterward propose measures they can remove to get from their current condition. A client responds to certain inquiries and in view of the appropriate responses that they give, you will recommend errands to them and keep a record of their psychological state for showing on a dashboard

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