ISSN: **3107-6513**

AI Chatbot for Mental Health Support

Pankaj S[#1], S. Ranjani[*2]

[#1]*Student,*
M.Sc Computer Science, Department of Computer Science,
VLB Janakiammal College of Arts and Science, Kovaipudhur, Coimbatore, India.

[*2]*M.Sc., M. Phil., B.Ed., (Phd.,), Assistant Professor, Department of Computer Science,*
VLB Janakiammal College of Arts and Science, Kovaipudhur, Coimbatore, India.
[1]pankaj08062003@gmail.com, [2]sranjani.ranjani@gmail.com

Abstract:

This project presents an AI-driven chatbot designed to provide accessible mental health support through a secure, three-tier architecture. Developed using an HTML, CSS, and JavaScript frontend integrated with a SQL Server backend, the system ensures seamless data storage and retrieval of user-admin interactions. The application is organized into four core modules: User Registration, Login, a Review Analysis Dashboard, and an interactive AI Chatbot. Beyond conversation, the system leverages artificial intelligence to analyze user data and generate comprehensive health status reports. Ultimately, this framework provides a structured digital environment for monitoring mental well-being and facilitating administrative oversight.

I. INTRODUCTION

My project entitled **"AI Chatbot for mental health support"** is a project which proposes to form a process that can help to store and retrieve details regarding the all activity between user and admin.

My project has four modules, which are User registration, User Login, Dashboard (Review analysis) and AI chatbot.

It follows the three-tier architecture with front-end HTML, CSS, JavaScript and back-end SQL SERVER.

My project is capable of generating reports such as Health status by using AI etc…My project entitled **"AI Chatbot for mental health support"** is a project which proposes to form a process that can help to store and retrieve details regarding the all activity between user and admin.

My project has four modules, which are User registration, User Login, Dashboard (Review analysis) and AI chatbot.

It follows the three-tier architecture with front-end HTML, CSS, JavaScript and back-end SQL SERVER

My project is capable of generating reports such as Health status by using AI etc…

II. SYSTEM ANALYSIS

EXISTING SYSTEM

DISADVANTAGE(S) OF EXISTING SYSTEM

- They failed to understand deep emotions or complex psychological context.
- They can't handle crisis situations safely.
- Responses are often generic and not personalized to the user's real situation.
- Data privacy concerns, especially when storing sensitive mental health information.

PROPOSED SYSTEM

ADVANTAGE(S) OF PROPOSED SYSTEM

- Sentiment analysis is used to analyze the reviews and predicts the user's behavior.

- Detection process is based on the reviews posted by the user for the particular mobile app or by the system.
- It does not require internet connection.
- No much error occurs.
- Maintain security.

SYSTEM DESIGN

Data Flow Diagram (DFD) or Bubble Chart:

Software analysis and design includes all activities, which help the transformation of requirement specification into implementation. Requirement specifications specify all functional and nonfunctional expectations from the software. These requirement specifications come in the shape of human readable and understandable documents, to which a computer has nothing to do. Software analysis and design is the int Avoid combining SI and CGS units, such as current in amperes and magnetic field intermediate stage, which helps human-readable requirements to be transformed into actual code. Data Flow Diagram (DFD) is graphical representation of flow of data in an information system. It is capable of depicting incoming data flow, outgoing data flow and stored data. The DFD does not mention anything about how data flows through the system. There is a prominent difference between DFD and Flowchart. The flowchart depicts flow of control in program modules. DFDs depict flow of data in the system at various levels. DFD does not contain any control or branch elements.

Types of DFD:

Data Flow Diagrams are either Logical or Physical.

- **Logical DFD** - This type of DFD concentrates on the system process, and flow of data in the system. For example, in a Banking software system, how data is moved between different entities.

- **Physical DFD** - This type of DFD shows how the data flow is actually implemented in the system. It is more specific and closer to the implementation.

Components of DFD:

DFD can represent Source, destination, storage and flow of data using the following set of components

- **Entities** - Entities are source and destination of information data. Entities are represented by rectangles with their respective names.
- **Process** - Activities and action taken on the data are represented by Circle or Round-edged rectangles.
- **Data Storage** - There are two variants of data storage - it can either be represented as a rectangle with absence of both smaller sides or as an open-sided rectangle with only one side missing.
- **Data Flow** - Movement of data is shown by pointed arrows. Data movement is shown from the base of arrow as its source towards head of the arrow as destination.

Levels of DFD:

- **Level 0** - Highest abstraction level DFD is known as Level 0 DFD, which depicts the entire information system as one diagram concealing all the underlying details. Level 0 DFDs are also known as context level DFDs.

ISSN: **3107-6513**

- **Level 1** - The Level 0 DFD is broken down into more specific, Level 1 DFD. Level 1 DFD depicts basic modules in the system and flow of data among various modules. Level 1 DFD also mentions basic processes and sources of information.
- **Level 2 –** At this level, DFD shows how data flows inside the modules mentioned in Level.
- Higher level DFDs can be transformed into more specific lower level DFDs with deeper level of understanding unless the desired level of specification is achieved.

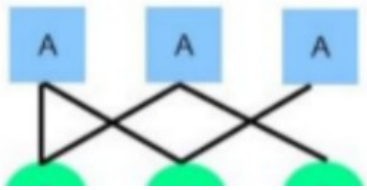
Entity Relationship Diagram (ERD)

Entity-relationship (ER) diagram, a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databases or information systems. An entity is a piece of data-an object or concept about which data is stored.

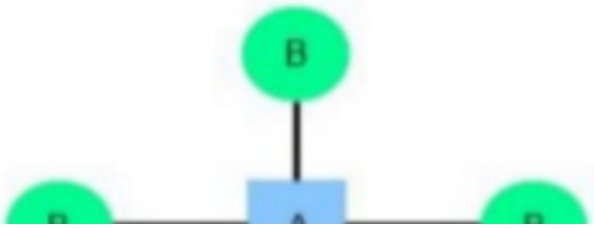
A relationship is how the data is shared between entities. There are three types of relationships between entities

One-to-One

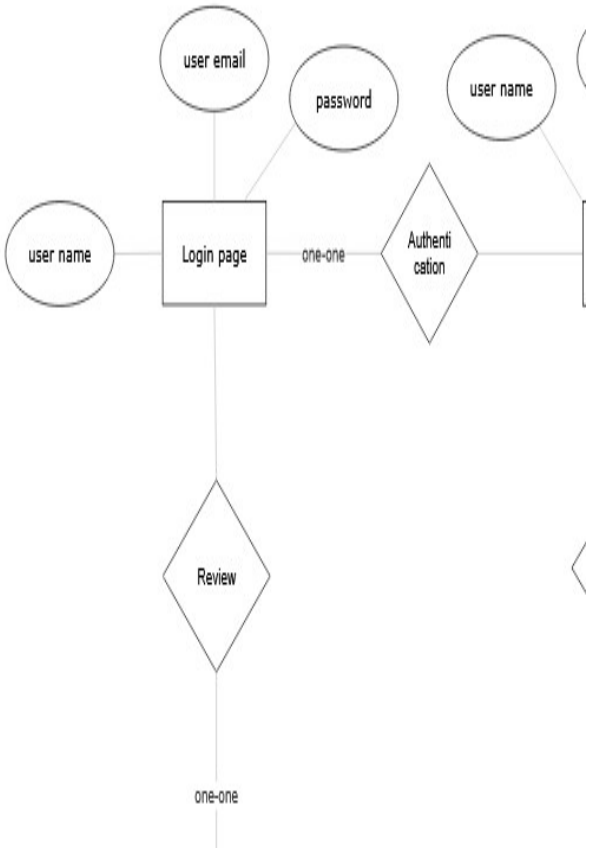
One-to-Many



Many-To-Many



ER Diagram



DATABASE DESIGN

Table Name: User Login

Primary Key: UserID

Field Name	Data Type	Width	Description
Id	Varchar(50)	15	User ID
Username	Varchar(50)	15	User Name
Password_hash	Varchar(50)	15	Password encrypted

ISSN: **3107-6513**

email	Varchar(50)	15	User Email
is_admin	Varchar(50)	15	
Created_at	timestamp	20	User Login Time Stamp

Table Name: Prompts

Primary Key: Confirm

Field Name	Data Type	Width	Description
Id	Varchar(50)	5	Sequential No.
User_id	Varchar(50)	20	User id
Prompt_text	Varchar(50)	10	User Prompt
Response_text	Varchar(50)	50	AI Response text
Is_health_query	Varchar(50)	15	Query Count
Created_at	Varchar(50)	15	User Login Time Stamp

BIBLOGRAGHY

Book References

1. Curtic L.Smith, Michel C.Amundsen, Database Programming With Visual Basic 6.0, Sams Publications, 1999(First)

2. Mike Gunderloy, ASP.NET Developers Guide To ADO,BPB Publications, I Edition.

3. Gary Cornell, Programming With Visual Basic 6.0 to VB.NET, Galgotia publications, I Edition.

4. Elias M Awad 'System Analysis and Design', Galgotia Publications (P) Ltd. (1999)

5. Glenn Johnson 'ASP.NET in 60 Minutes A Day', WILEY-Dreamtech Publications.(2003)

6. Roger S Pressman PhD (Fifth Edition), 'Software Engineering-A Practical Approach', McGraw-Hill Publishing company Ltd.

REFERENCE WEBSITES

1. www.tutorialspoint.com

2. www.wikipedia.com

3. www.asp.net

4. www.msdn.microsoft.com

1) 5. www.scribd.com