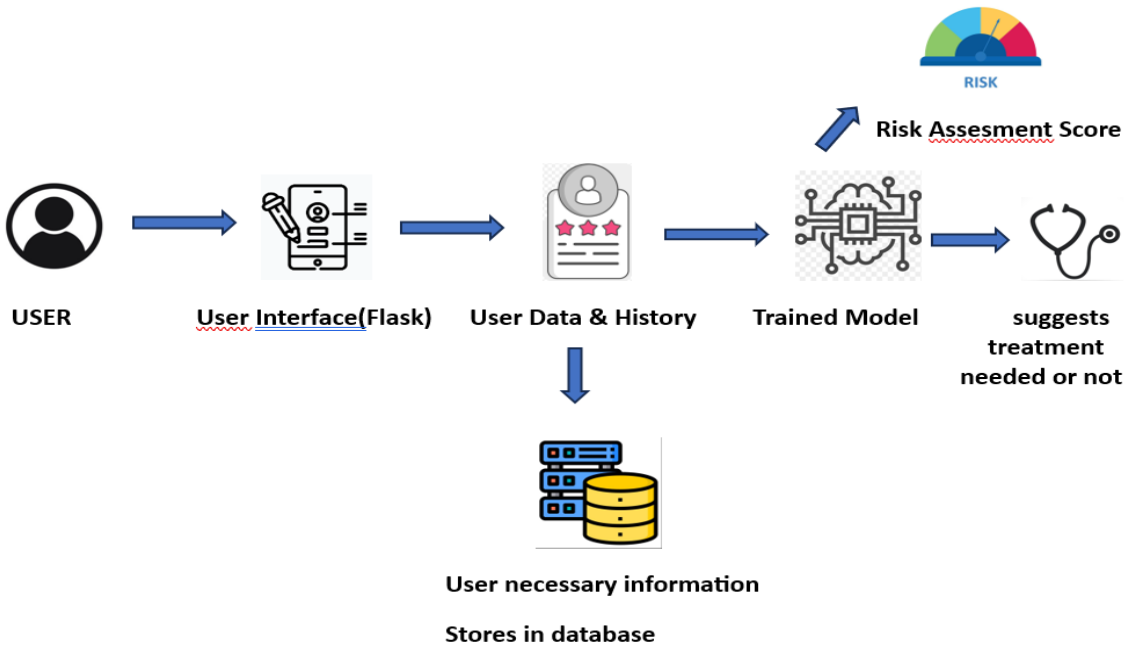
Project Design Phase-I
Solution Architecture

Date	19 September 2022
Team ID	Team591803
Project Name	Project - Mental health Prediction using Machine Learning
Maximum Marks	4 Marks

Solution Architecture:

Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. Its goals are to:

- Find the best tech solution to solve existing business problems.
- Describe the structure, characteristics, behavior, and other aspects of the software to project stakeholders.
- Define features, development phases, and solution requirements.
- Provide specifications according to which the solution is defined, managed, and delivered.



Predictive Model:

Early Intervention: It allows for early identification of individuals at risk, enabling timely intervention and support to improve mental health.

Resource Allocation: Businesses and healthcare providers can allocate resources more effectively by targeting those who are at higher risk.

Stigma Reduction: By using data-driven assessments, your model helps reduce the stigma associated with mental health treatment. Decisions are based on objective scoring rather than subjective judgments.

Data-Driven Insights: The model generates insights into the factors influencing mental health risk. These insights can guide employers and policymakers in implementing mental health programs and policies.

User Empowerment: Users gain insight into their own mental health status and can take proactive steps towards treatment and self-care.

Structure:

Data Handling: This part manages data collection, preprocessing, and feature engineering. It takes in data from various sources and prepares it for analysis.

Feature Engineering: This component assigns scores to specific risk factors like 'work_interfere' and combines them to calculate a cumulative risk score.

Machine Learning Model: The core of your software is the machine learning model. It's responsible for training on historical data and making predictions.

User Interface: To interact with your model, there's a user interface. Users input their data, and the model provides predictions and feedback.

Characteristics:

Data-Driven: The software relies on data to make assessments and predictions about mental health.

Scalable: It can potentially handle a growing number of users as more

people use the system.

Privacy-Focused: Protects user data and complies with data privacy regulations.

Interactive: Provides a user-friendly interface for easy interaction and feedback.

Predictive: Utilizes historical data to predict future mental health needs.

Behavior:

Data Processing: It collects data from users, prepares it for analysis, and assigns scores to relevant risk factors.

Model Training: The software trains the machine learning model on historical data, helping it learn patterns and make predictions.

User Interaction: Users input their information, and the software calculates their cumulative risk score and predicts their need for mental health treatment.

Feedback and Communication: The model's predictions are communicated to users, offering insights into their mental health risk.

In simple ,user goes through with flask application for giving information ,based on information our trained model predicts whether he needs a treatment or should consult medical professional or not and show him how much he is at risk and precautions to be take care