Intel® Unnati Industrial Training 2024

SCANALYST

DATABASE ANALYZER

Problem Statement:

Intel Unnati PS-12
Knowledge Representation and Insight Generation Using Structured Datasets

Team:
ChainCoders

Members:
> 1 (Team Lead)

Rishi Banerjee
QwertyFusion

> 2
Kaustabh Shit
Silent18Killer

> 3
Aditya Mohanty
AdityaM2205

> 4
Apratim Dutta
Apratim23

UNIQUE IDEA BRIEF(SOLUTION)

The problem we face is the inefficiency and manual effort required to organize, search, and analyze datasets effectively. Also, sometimes logically reasoning the data set becomes challenging. Thus, we provide the following solutions:

Solution 01

SCANALYST organizes your dataset into a structured format, reducing manual effort and enhancing efficiency.

Solution 02

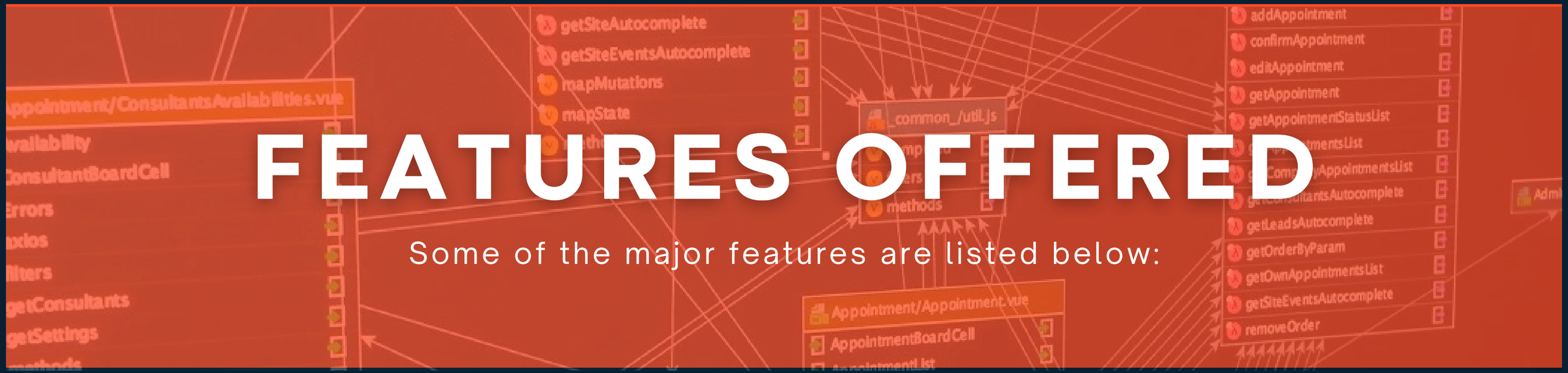
Easily search for specific entries using simple, natural language queries, saving time and effort. Get logical reasoning to your doubts and questions.

Solution 03

Get detailed insights from your data through processed queries, helping you understand and make informed decisions.

Solution 04

Create customized plots and visualizations from your CSV data for easier interpretation and presentation.



FEATURES OFFERED

Some of the major features are listed below:

Database Preview

User friendly UI which accepts the dataset and displays it in a multi-page clean and understandable format

Insight Generation

Generate required graphs, plots using Scanalyst. Plots can be made based on the csv data that has been provided by the user.

Query Bot

In-built chatbot which percerives your question in English language and gives required response to the query.

Process Flow:

01 | Data Upload

- Users upload their CSV database to the SCANALYST server.
- The system validates and organizes the data into a structured table format.

02 | Query Submission

- Users submit queries using natural language.
- The system interprets and processes the queries.

03 | Data Retrieval and Organization

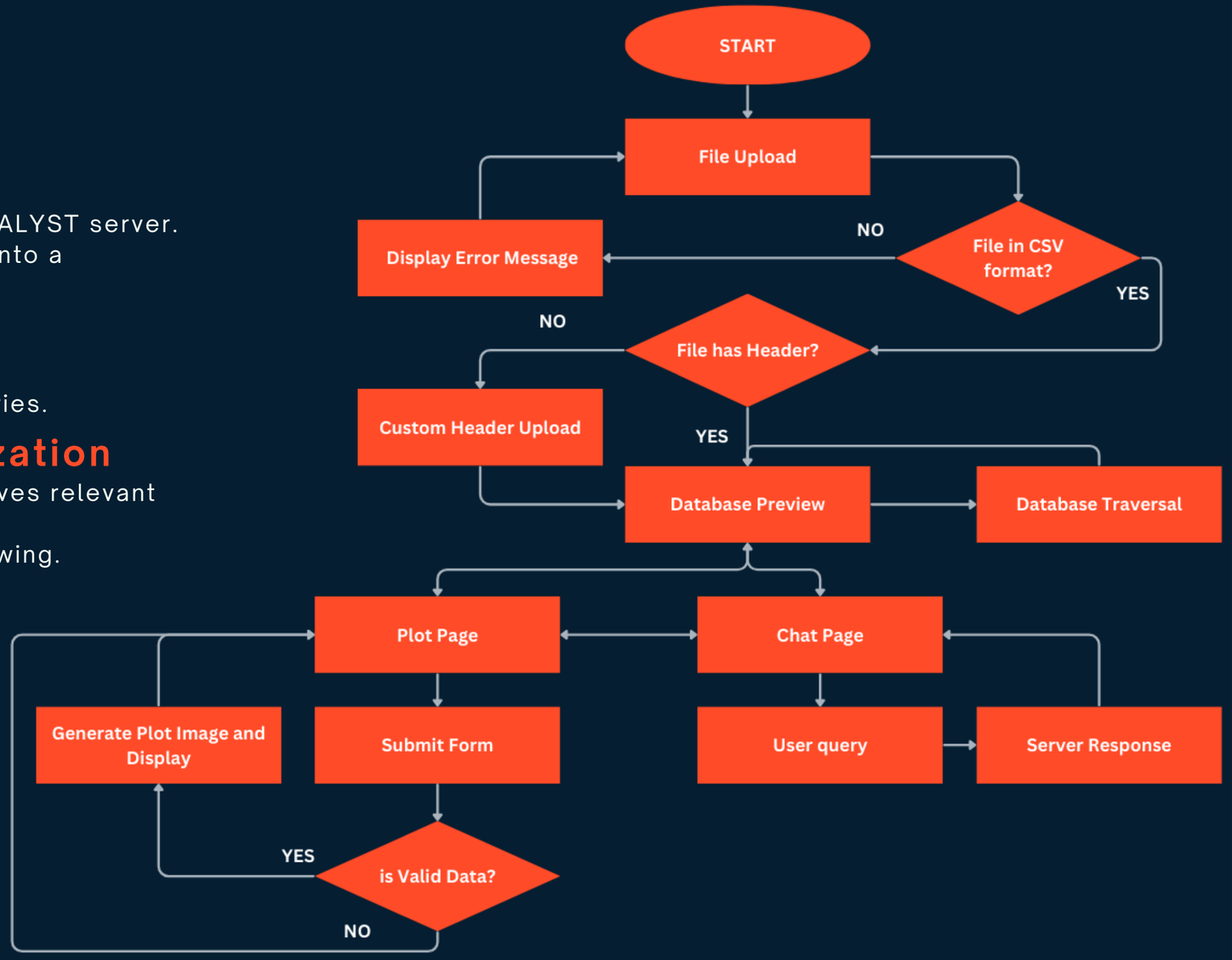
- SCANALYST searches the database and retrieves relevant data.
- The system organizes the results for easy viewing.

04 | Insight Generation

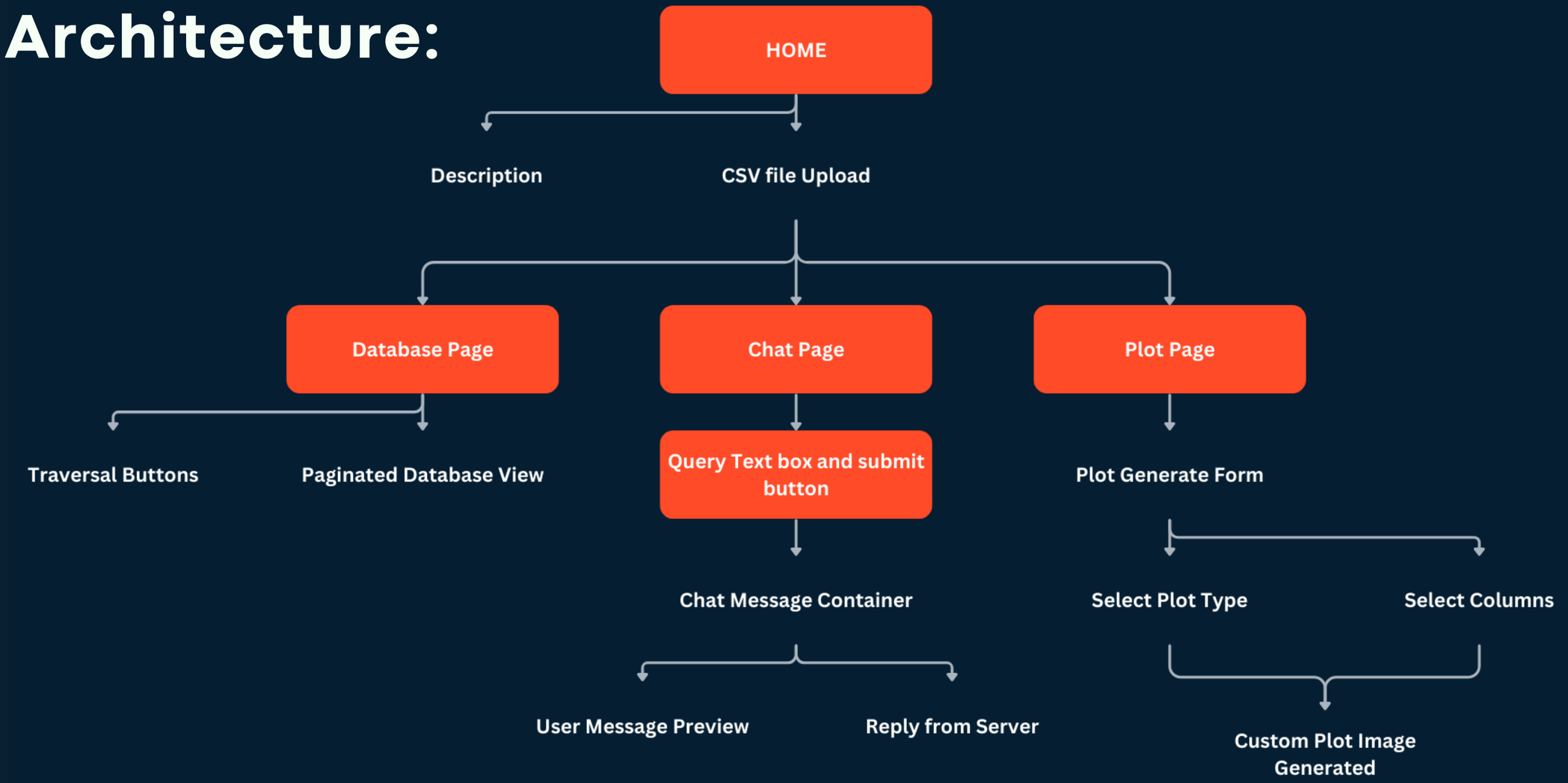
- SCANALYST analyzes the data to provide detailed insights.
- Users receive meaningful information based on their queries.

05 | Visualization

- Users request customized plots and visualizations.
- The system generates and displays charts and graphs tailored to user needs.



Architecture:



Technologies Used

01	HTML5
02	EJS
03	CSS
04	JavaScript
05	Express
06	Node
07	Python
08	Flask
09	Pandas
10	Seaborn
11	Numpy
12	Matplotlib
13	Spicy
14	Git, Github & Bash

Our Team & Contributions

Rishi Banerjee

Team Lead

UI/UX & Logo
Front End
JS Server
PPT

QwertyFusion

Kaustabh Shit

Front End
Python Server
Chat Research

Silent18Killer

Aditya Mohanty

Front End
PPT
Jupyter Notebook

AdityaM2205

Apratim Dutta

JS Server
Logo
Chat Research

Apratim23

CONCLUSION

The platform that we have created helps a user to analyze their data and ask questions on them. Even though there are a lot more features to be implemented, we have added the basic functionality.

We have added:

- File Checker - To check if a valid CSV file has been uploaded.
- Simple chat section - Specific commands/ english words can be recognized.
- Plot Section - Any type of plot can be generated based on the database.
- Database Preview - Shows the database in an organized way for efficient traversal.

Future Upgrades:

- NLP Implementation - Implementing NLP will enable the chat bot to take any query and execute it.
- Logic Analysis - Logical Reasoning of why the datasets are the way they are. This upgrade will make the server a personal detective for the user.

Intel Unnati

THANK YOU

Team: ChainCoder

Rishi Banerjee (Lead)
Kaustabh Shit
Aditya Mohanty
Apratim Dutta