PROJECT PLANNING PHASE

TECHNOLOGY STACK (ARCHITECTURE & STACK)

DATE	14 November 2023
PROJECT NAME	Endocrine Elegance : Classifying Thyroid Disorders with Precision.
MAXIMUM MARKS	4 Marks

TECHNICAL ARCHITECTURE:

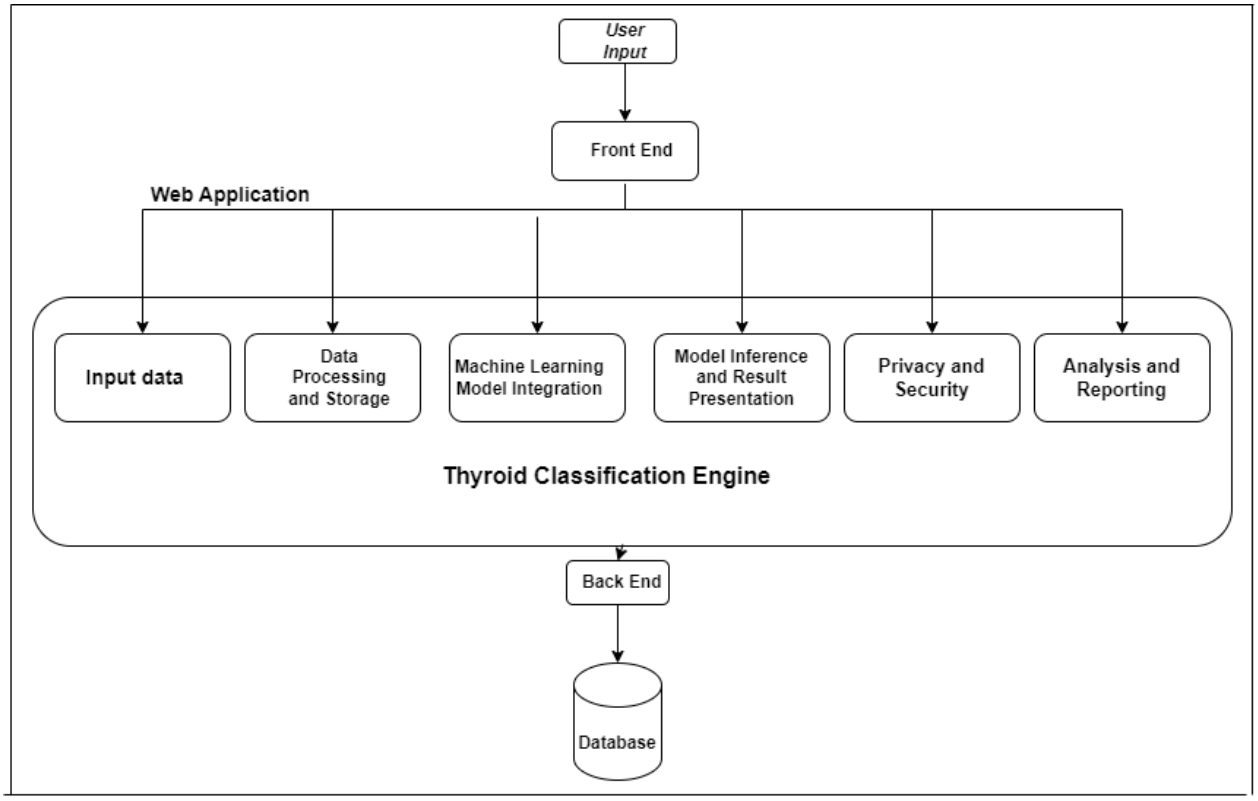

Table 1:COMPONENTS AND TECHNOLOGIES

S.NO	Component	Description	Technology Used
1	User Interface	How users interact with the application (Web UI, Mobile App, Chatbot, etc.)	HTML, CSS, JavaScript, AngularJS , ReactJS , or other frameworks
2	Data Preprocessing	Preprocessing and cleaning of input data for thyroid disorder classification	Python, Pandas, NumPY, or other data processing libraries.
3	Feature Extraction	Extracting relevant Features from input data for thyroid disorder classification.	Python , Scikit-Learn or other feature extraction libraries.
4	Machine Learning Model	Trained model for precise classification of thyroid disorders.	TensorFlow , Pytorch , Scikit – learn or other machine learning frameworks.
5	Model Inference	Performing inference on user- provided data using the integrated machine learning model.	Python , TensorFlow, PyTorch,Scikit-learn or other inference libraries
6	Result Presentation	Presenting the classification results to the user	Web UI, mobile App UI, or other presentation frameworks
7	Privacy and Security	Ensuring privacy and security of user data	Encryption algorithms , SSL/TLS protocols, data protection frame works.

8	Database	Storing and Managing user data securely	Relational databases 9e.g., MySQL, PostgreSQL),NoSQL databases (e.g., MongoDB)
9	Model Integration	Integrating the trained machine learning model into the application	Python , TensorFlow, PyTorch,Scikit-learn or other integration libraries
10	Deployment	Deploying the web app and its components to a production environment	Containerization (e.g.,Docker),cloud platforms(e.g.,AWS,Azure)
11	Monitoring and Analytics	Monitoring the performance of the application and gathering analytics	Logging frame works,analytics tools,monitoring services

Table-2: Application Characteristics

S.NO	Characteristics	Description	Technology
1	Open-Source Frameworks	the open-source frameworks used	Python's Flask
2	Security Implementations	Specific security measures for thyroid data .	SHA-256, Encryptions, IAM Controls, OWASP, etc.
3	Scalable Architecture	Architecture designed for thyroid disorder classification scalability	Micro services, Kubernetes,Docker
4	Availability	Ensuring continuous availability for the thyroid disorder classification application.	load balancers, distributed servers
5	Performance	Optimized for efficient thyroid disorder classification performance	Caching CDN's
6	Endocrine Classification	Component for classifying thyroid disorders with precision .	Machine Learning algorithms,Tensorflow ,Scikit Learn, SVM,Random Forest Classifier, XGB Classifier and ANN