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| Date | 17th November 2023 |
| Team ID | SI-GuidedProject-610171-1701658790 |
| Project Name | FetalAI: Using Machine Learning to predict and monitor Fetal Health |
| Maximum Marks | 4 Marks |

Project Design Phase-II

Technology Stack (Architecture & Stack)

Technical Architecture

A diagram of a company

Description automatically generated

Table -1: Components &Technologies:

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| --- | --- | --- | --- |
| S.No | Component | Description | Technology |
| 1. | User Interface | User interacts to the model using Streamlit | Streamlit |
| 2. | Application Logic-1 | Use libraries such as numpy, pandas,  Seaborn in model building | Jupyter Notebook |
| 3. | Application Logic-2 | User libraries such as pickle and streamlit to pick the best accuracy and connect to the server | Python |
| 4. | Database | Used the dataset from the Kaggle to train and process the data | Fetal\_health.csv |
| 5. | External API | Used external server to run the model | Streamlit |
| 6. | Machine Learning Model | Used model such as Random Forest Classifier, Decision Tree Classifier, K Neighbors Classifier to test in highest probability | Jupyter notebook |

Table-2: Application Characteristics:

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| --- | --- | --- | --- |
| S.No | Characteristic | Description | Technology |
| 1. | Availability | Ensuring consistent access to the model | Redundant storage, local servers |
| 2. | Performance | Efficient data processing and predictions | Optimized algorithms, efficient code |
| 3. | Scalability | Handling larger datasets and user demands | Scalable code, optimized algorithms |
| 4. | Interpretability | Explaining model predictions for understanding | Feature importance, model explainers |
| 5. | User Interface | Intuitive platform for easy user interaction | Streamlit, interactive visualization |
| 6. | Data Handling | Effective data management and processing | Pandas, NumPy, data preprocessing |
| 7. | Model Accuracy | Ensuring reliable predictions for fetal health | Fine-tuning, ensemble methods |