**Project Design Phase-II**
**Technology Stack (Architecture & Stack)**

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| Date | 10 November 2023 |
| Team ID | Team-591679 |
| Project Name | T20 TOTALITARIAN: MASTERING SCORE PREDICTIONS |
| Maximum Marks | 4 Marks |

**Technical Architecture:**

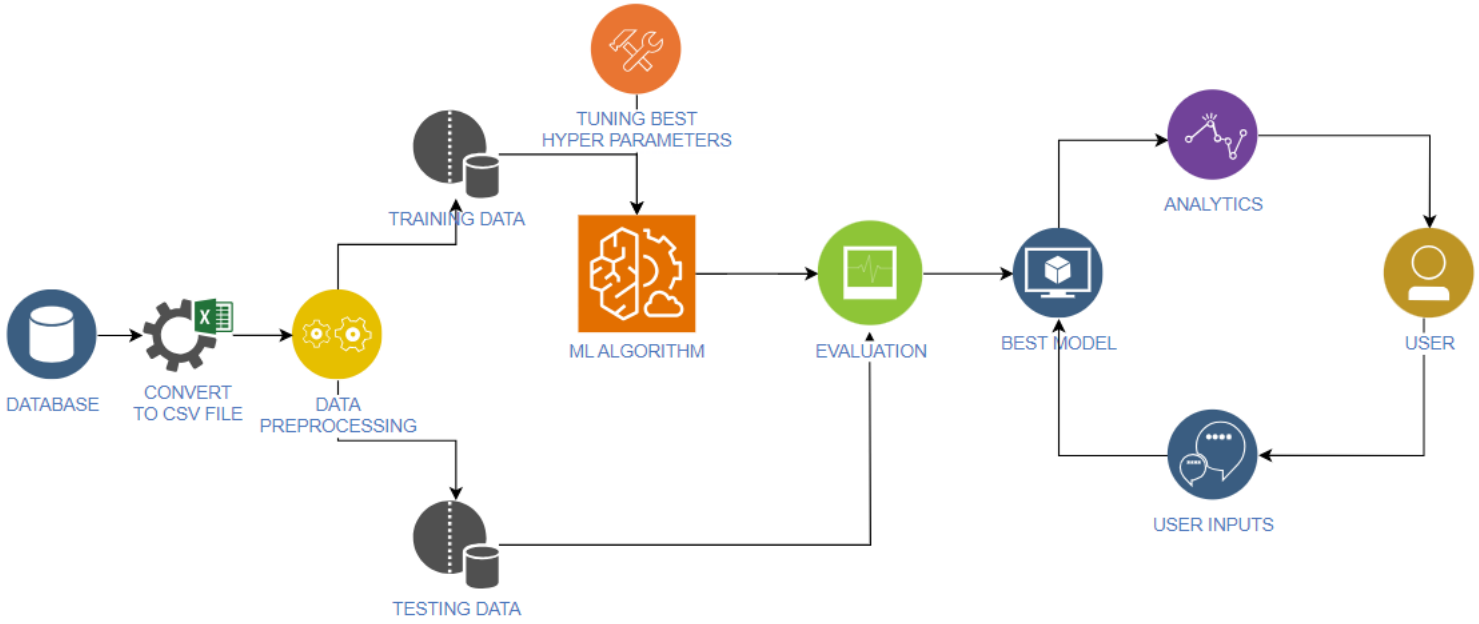

**Table-1 : Components & Technologies:**

| S. No | Component | Description | Technology |
|---|---|---|---|
| 1. | User Interface | Takes the input from the user and sends them to the machine learning model | HTML, CSS |
| 2. | Application Logic -1 | Initially, data is taken as the input from the dataset and pre-processed before sending it to the algorithm. | Python |
| 3. | Application Logic -2 | Tuning the best parameters to the algorithm and evaluating the results | Python |
| 4. | Visualization | To visualize the data in terms of various infographics | IBM Cognos |
| 5. | Dataset | To maintain the data of various matches. | MS EXCEL, IBM Cloud |
| 6. | Machine Learning Model | To make predictions of the score based on the user input | CatBoost Model, XGBoost Model, Random Forest Model, XGB-RF Model, etc.. |
| 7. | Infrastructure | Local Server Configuration: The web application is deployed and hosted on port number: 8501 | Local PC |

**Table-2: Application Characteristics:**

| S. No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Pandas, Numpy, Matplotlib, yaml, tqdm, sklearn, Seaborn, XGBoost, Catboost, Pickle, Streamlit | Python |

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|---|---|---|---|
| 2. | Scalable Architecture | The scalability of architecture depends on the implementation of cloud | IBM Cloud |
| 3. | Generalization | It has the model's ability to perform well on new, unseen data that was not part of the training set. | Python |
| 4. | Computational Complexity | Computationally more intensive as it has to deal with lots of algorithms and processing of data | Python |
| 5. | Performance | Performance can be measured in terms of r2_score, mse, and other factors. The framework used is sklearn | Python |