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

Date	27 October 2023
Team ID	Team-592661
Project Name	AI-driven resource 5G optimization
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 table 2

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Team member : Rajavarapu Jaswanth Sai

Team member : Pemmana Visweshwar Reddy

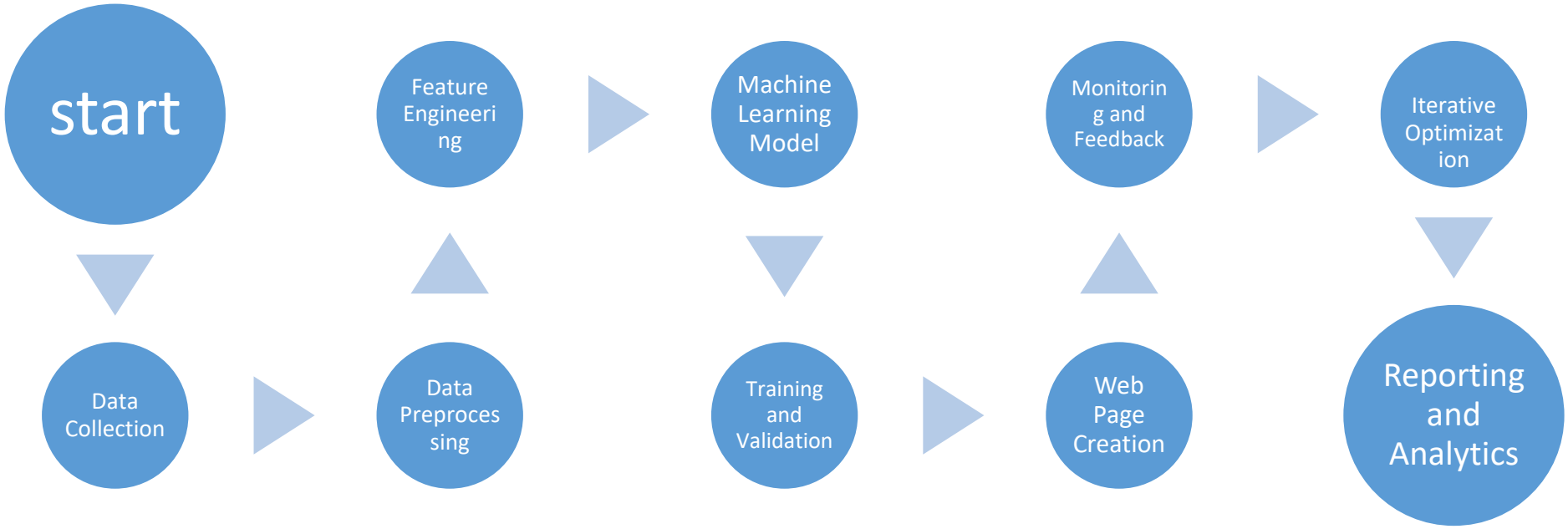
start
Data Collection
Data Preprocessing
Feature Engineering
Machine Learning Model
Training and Validation
Web Page Creation
Monitoring and Feedback
Iterative Optimization
Reporting and Analytics

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Data Collection	Gathering data for the application	External APIs, Web scraping tools, Database connectors
3.	Data Preprocessing	Cleaning and transforming the collected data	Python, Pandas, NumPy
4.	Feature Engineering	Creating new features from the collected data	Python, Pandas, NumPy
5.	Machine Learning Model	Choosing the appropriate machine learning model for the task	Python, Scikit-learn, TensorFlow, PyTorch
6.	Training and Validation	Training the machine learning model and evaluating its performance	Python, Scikit-learn, TensorFlow, PyTorch
7.	Web Page Creation	Creating web pages for the application	HTML, CSS, JavaScript, Python web frameworks
8.	Monitoring and Feedback	Monitoring the application's performance and gathering user feedback	Logging frameworks, Analytics tools
9.	Iterative Optimization	Improving the application based on feedback and performance analysis	Python, Scikit-learn, TensorFlow, PyTorch
10.	Reporting and Analytics	Generating reports and performing data analysis	Python, Data visualization libraries (e.g., Matplotlib, Plotly), Analytics tools

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	List the open-source frameworks used	Python's Flask, Scikit-learn, Tensor Flow
2.	Security Implementations	List all the security / access controls implemented, use of firewalls etc.	Encryption algorithms , IAM controls
3.	Scalable Architecture	Justify the scalability of architecture	Microservices architecture, Distributed computing frameworks
4.	Availability	Justify the availability of application	Load balancers, Distributed servers, Failover mechanisms
5.	Performance	Design consideration for the performance of the application	Caching mechanisms, Content Delivery Networks (CDNs), Performance monitoring tools