Project Design Phase

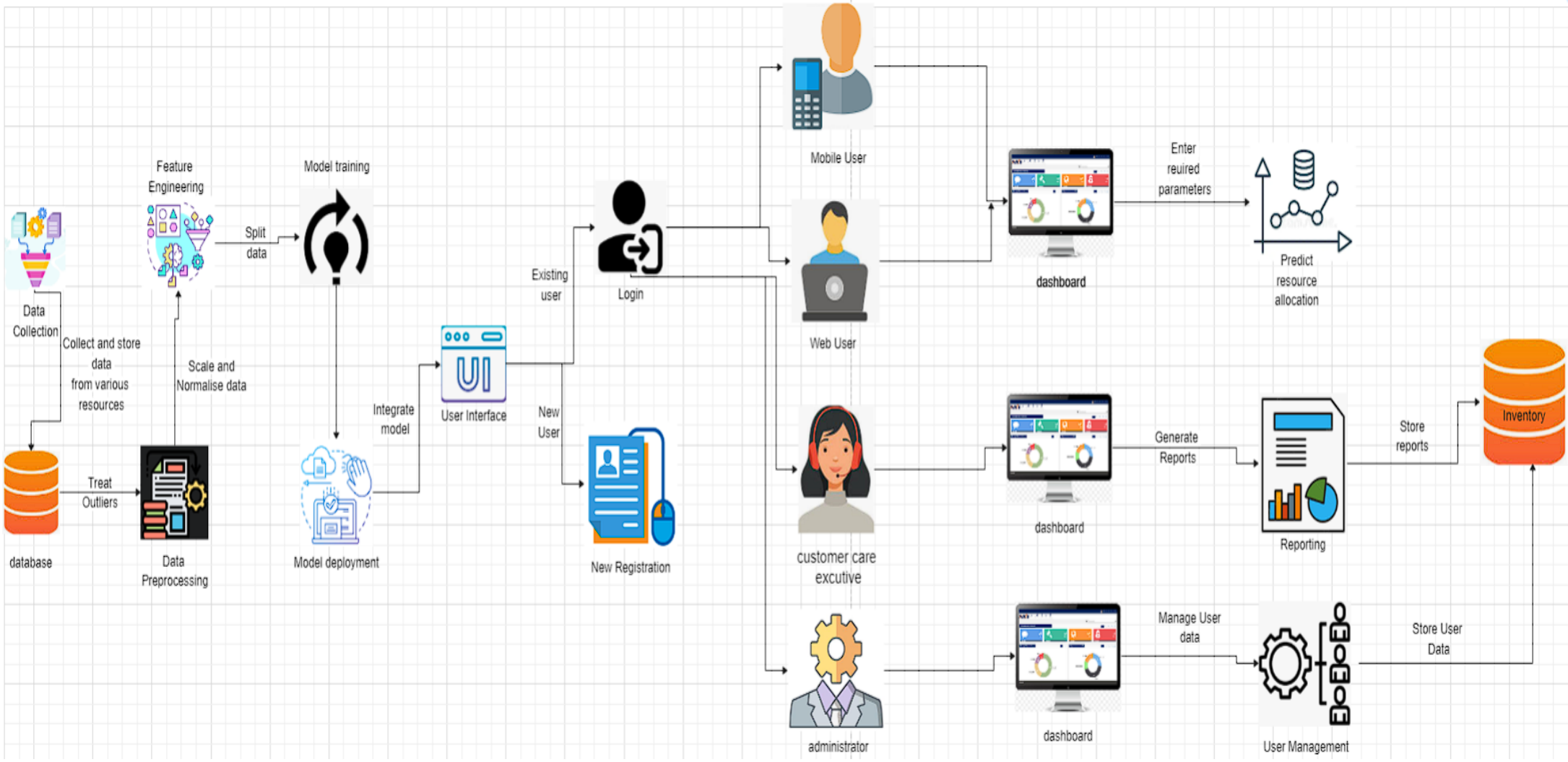
Solution Architecture

Date	23 October 2023
Team ID	NM2023TMID592348
Project Name	Project - AI-Driven Optimization of 5G Resource Allocation for Network Efficiency
Maximum Marks	5 Marks

Solution Architecture:

The proposed solution architecture for AI-Driven Optimization of 5G Resource Allocation is a comprehensive framework designed to bridge the gap between pressing business challenges in 5G network deployment and cutting-edge technology solutions. It follows a structured process that begins with the analysis of network resource allocation issues and requirements gathering from stakeholders. Data collection and preprocessing are crucial steps, ensuring the acquisition and preparation of relevant data, which is then used for feature engineering and machine learning model development. Model evaluation and selection help identify the best-performing algorithm for optimized resource allocation. A web-based user interface is created to provide users with secure access to the system, offering reporting capabilities and data export for customer care executives. Administrators can manage user accounts, system settings, and access logs, while ongoing configuration and maintenance ensure the system's continued efficiency and accuracy. Comprehensive documentation and reporting complement the architecture, providing insights into the software's structure, behavior, and characteristics.

This solution architecture embodies the holistic approach to resource allocation optimization, enabling the 5G network to deliver maximum performance and user satisfaction. It ensures that the system not only solves business problems but also complies with stringent requirements and can be effectively managed and delivered to meet the ever-evolving demands of network technology.


Feature Engineering
Model training
Split data
Data Collection
Collect and store data from various resources
Scale and Normalise data
Integrate model
User Interface
Existing user
Login
Mobile User
Web User
dashboard
Enter reuired parameters
Predict resource allocation
New User
New Registration
database
Treat Outliers
Data Preprocessing
Model deployment
customer care excutive
dashboard
Generate Reports
Reporting
Store reports
Inventory
administrator
dashboard
Manage User data
User Management
Store User Data