Project Design Phase-II
Data Flow Diagram & User Stories

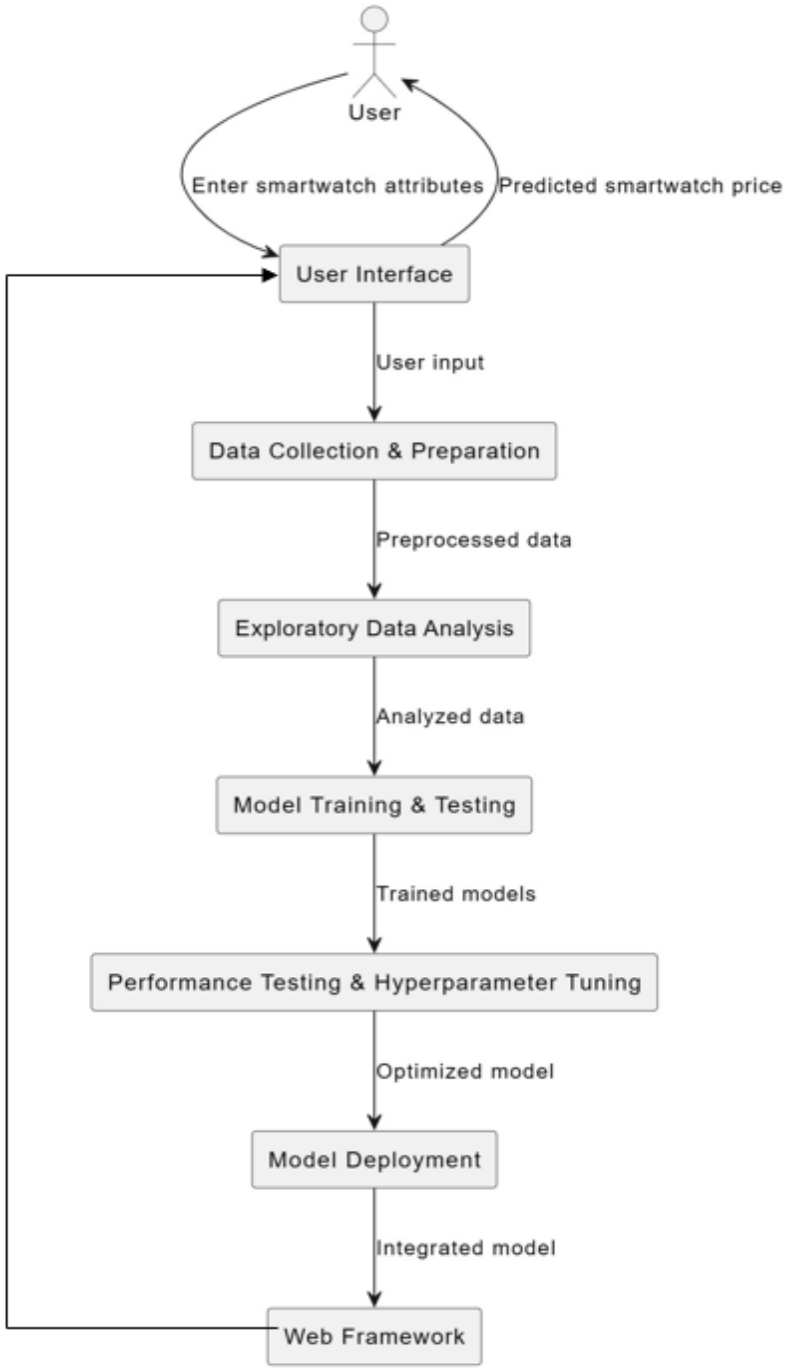
Date	4th November ,2023
Team ID	PNT2022TMID- 591758
Project Name	Horology 2.0: Forecasting the Future of Smartwatch Prices
Maximum Marks	4 Marks

Data Flow Diagrams:

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.

Data Flow Diagram of Smart Watch Price Prediction Using ML:

This diagram illustrates the flow of data in the Smartwatch Price Prediction System. The user interacts with the User Interface to input smartwatch attributes. The data flows through several processes, including Data Collection & Preparation, Exploratory Data Analysis, Model Training & Testing, Performance Testing & Hyperparameter Tuning, and Model Deployment. The final result, the predicted smartwatch price, is showcased on the User Interface.


User
Enter smartwatch attributes
Predicted smartwatch price
User Interface
User input
Data Collection & Preparation
Preprocessed data
Exploratory Data Analysis
Analyzed data
Model Training & Testing
Trained models
Performance Testing & Hyperparameter Tuning
Optimized model
Model Deployment
Integrated model
Web Framework

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Smartwatch manufactures and Retailers	Project Setup & Infrastructure	USD-1	As a smartwatch manufactures, I like to set up the development environment with the required tools and frameworks to start the smartwatch price prediction project.	Successfully configured with all necessary tools and frameworks.	Medium	Sprint-3
Developers	Development Environment	USD-2	As a developer, I like to have use new technologies and develop an application that can help for most of the people.	The development environment should be successfully configured with all necessary tools and frameworks, such as a Python interpreter, machine learning libraries, and data visualization tools.	Medium	Sprint-4
Researches	Data Collection	USD-3	As a researcher, I like to gather a diverse dataset of smartwatch prices and features from various sources (e.g., online retailers, manufacturer websites, etc.) for training the machine learning model.	The dataset should be diverse and representative of the smartwatch market, with a wide range of prices and features. It should also be cleaned and preprocessed to ensure that it is suitable for machine learning	High	Sprint-1
Data Scientists	Data Preprocessing	USD-4	As a data scientist, I like to preprocess the collected dataset by cleaning and normalizing the data, and splitting it into training and validation sets.	The dataset should be cleaned and normalized to ensure that it is consistent and easy for the machine learning model to understand. It should also be split into training and validation sets so that the model's performance can be evaluated.	High	Sprint-2

Machine learning Engineers	Model development	USD-5	As a Machine Learning Engineer, I like to explore and evaluate different machine learning algorithms (e.g., linear regression, decision trees, random forests, etc.) to select the most suitable model for smartwatch price prediction.	A variety of machine learning algorithms should be explored and evaluated to select the one that performs best on the smartwatch price prediction task. This may involve tuning the hyperparameters of each algorithm to optimize its performance.	Medium	Sprint-2
Tech Enthusiasts	Training	USD-6	As a Tech Enthusiasts, I like to train the selected machine learning model using the preprocessed dataset and monitor its performance on the validation set. As a tech enthusiast, I want to be able to learn about the different features of smartwatches and how they affect their price, so that I can make an informed decision about which smartwatch to buy.	The selected machine learning model should be trained on the preprocessed dataset. The model's performance should be monitored on the validation set to ensure that it is generalizing well and is not overfitting to the training data.	High	Sprint-1
Outdoor Adventurers	Model deployment & Integration	USD-7	As an Outdoor Adventurers, I like to deploy the trained machine learning model as an API or web service to make it accessible for smartwatch price prediction. As an outdoor adventurer, I want to be able to see reviews of smartwatches before I buy one, so that I can get an idea of what other people think of the smartwatch and its features, especially features that are important to outdoor adventurers.	The trained machine learning model should be deployed as an API or web service so that it can be used by others to predict smartwatch prices. This may involve using a cloud computing platform, such as Google Cloud Platform or Amazon Web Services.	Medium	Sprint-2
Students	Testing & quality assurance	USD-8	As a student I like to develop, a user-friendly interface to allow users to interact with the machine learning model and get smartwatch price predictions. As a student, I want to be able to use a smartwatch price prediction model to estimate the price of a smartwatch before I buy it, so that I can make an informed decision	The trained machine learning model should be deployed as an API or web service so that it can be used by others to predict smartwatch prices. This may involve using a cloud computing platform, such as Google Cloud Platform or Amazon Web Services.	Medium	Sprint-3

Business Professionals	User input and predicti on	USD-9	As a Business professionals, I like to give the Specific features as input and predict the cost of the smart watch. As a business professional, I want to be able to receive notifications when the smartwatch price prediction model is updated with new data or feedback.	A user-friendly interface should be developed to allow users to interact with the machine learning model and get smartwatch price predictions. This interface may be a web application.	High	Sprint-4