Project Design Phase-I
Solution Architecture

Date	24 October 2023
Team ID	Team-593067
Project Name	Horology 2.0: Forecasting The Future of Smartwatch Prices
Maximum Marks	4 Marks

Solution Architecture:

- The solution Architecture for Smartwatch prices prediction can be as followed.
- Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions.

Finding the best tech solution:

In this case the best solution is to build a machine learning model, these can handle large amount of data and complex relationships between all parameters. These machine learning models can predict accurately, and this can help both consumers to save money and manufacturer to increase their sales. This model can be trained on different parameters and algorithms to predict accurately.

Describing the Characteristics, Structure and Other Aspects:

This model consists of various features which are mandatory in smartwatch like display type and size, water resistant or not, operating system, GPS, NFC etc. The model will be trained on real-time data, and here user can input their needs and based on their needs the price will be predicted and displayed to the user.
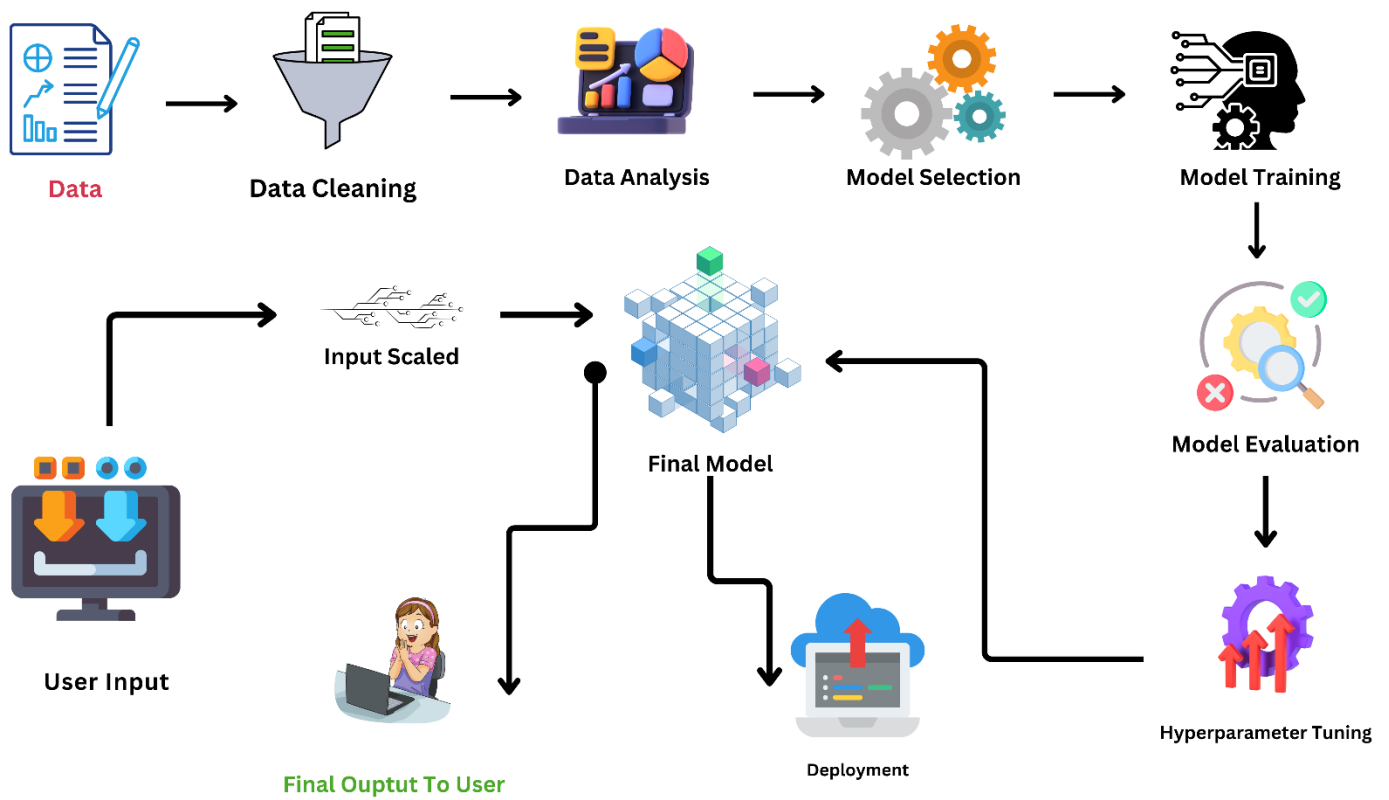
Define features, development phases, and solution requirements:

- **Features**: There are many features which will decide the price factor of the smartwatch like heart rate monitor, battery life, Operating system, display resolution etc.

- **Development Phase**: This phase consists of several sub phases which are important to model to produce accurate results. This also includes like data collection from various resources (data collection) and next, if necessary, we need to clean data (check null values and replacing or removing), data visualization, model selection, train and evaluation of model and finally the deployment phase for use.

- **Solution Requirements**: Basically, we need real-time data from manufacturers or e-commerce websites and others to give best results. Some important machine learning libraries to train and evaluate the model.

Providing specifications:

This "Providing specifications" refers or includes detailing about what exact requirements and characteristics that model will have. So, it will be followed as Data Collection, Data Cleaning, Exploratory data analysis (EDA), Feature Selection, Model Selection, Model Evaluation, Hyperparameter tuning, Deployment.

Solution Architecture Diagram:

Data → **Data Cleaning** → **Data Analysis** → **Model Selection** → **Model Training**

User Input → **Input Scaled** → **Final Model**

Model Evaluation

Hyperparameter Tuning

Final Ouptut To User

Deployment

Smartwatches: