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

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|---|---|
| Date | 15 October 2022 |
| Team ID | PNT2022TMID08581 |
| Project Name | Car Resale Value Prediction |
| Maximum Marks | 4 Marks |

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

| S.No | Component | Description | Technology |
|---|---|---|---|
| 1. | User interface | User interacts with the prediction model through website to predict the Car resale value . | HTML, CSS, JavaScript, Bootstrap. |
| 2. | Database | The place where data can be stored and retrieved during the execution of the application. | Mysql |
| 3. | Cloud Database | User for interaction components while using python flask. | IBM Cloud DB |
| 3. | API | Used to call the function in order to access the execution in another framework | Python flask |
| 4. | Application Logic | Logic for each and every process in the application | Python |
| 5. | Machine Learning Model | This model is developed to predict the resale value of the car using random forest regressor algorithms | Sklearn, Algorithms – Random Forest Regressor |

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|---|---|---|---|
| 6. | Data processing | The available data is converted into the format which will be suitable for the ML model. | Pandas, Numpy, Matplotlib, Seaborn |

**Table-2: Application Characteristics:**

| S.No | Characteristics | Description | Technology |
|---|---|---|---|
| 1. | Open-Source Frameworks | Backend Framework, CSS Styling framework, Relational Database | Python Flask, Mysql, CSS3, IBM Cloud DB |
| 2. | Security Implementations | Email verification and authentication. Authentication and authorisation using Json object by comparing the data exists in database. | Direct verification using Backend Framework |
| 3. | Scalable Architecture | Support for Multiple Sample prediction using Excel File | Pandas, Numpy |
| 4. | Availability | The website will be made available by hosting it in cloud hosting platforms | IBM Cloud Hosting |
| 5. | Performance | Multiple prediction requests should be handled simultaneously without affecting the speed and accuracy of prediction | Load Balancers, Distributed Servers |

## Technical Architecture: