

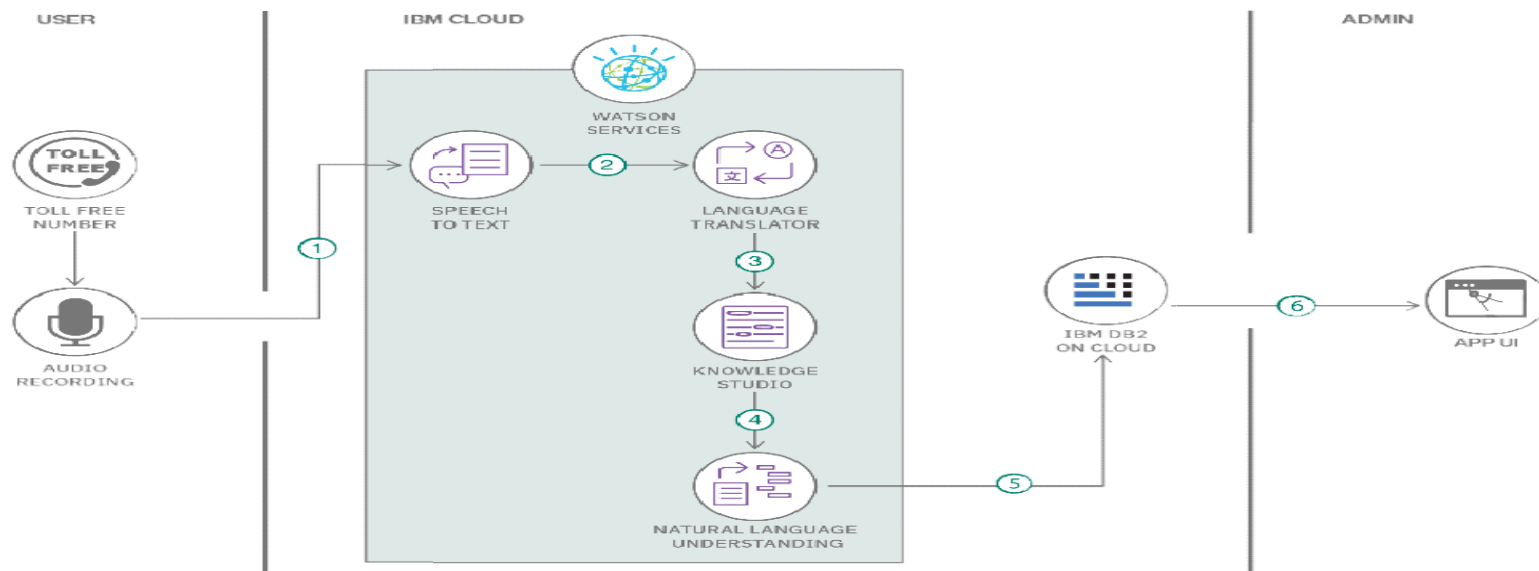
Project Design Phase-II Technology Stack

| | |
|---------------|-----------------------------|
| Team ID | PNT2022TMID44603 |
| Project Name | Car Resale Value Prediction |
| Maximum Marks | 4 Marks |

Technical Architecture:

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

Example: Order processing during pandemics for offline mode



Reference: <https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/>

Table-1 : Components & Technologies:

| S.No | Component | Description | Technology |
|------|---|---|--|
| 1. | User Interface | The application interacts with Web UI | HTML, CSS. |
| 2. | Application Logic-1 Data Pre-processing | Clean the dataset in order to remove the duplicate values, fill the missing values and replace the German words with English words. | Python |
| 3. | Application Logic-2 Build Python Flask | Load the model and initialize Flask app. To fetch the parameter values from the UI, and return the prediction. | Python |
| 4. | Application Logic-3 Build an HTML Page | To take the values from the user in a form and upon clicking on the button for submission it has to redirect to URL for “ y_predict ” which returns the predicted resale value | HTML, CSS. |
| 5. | Cloud Database | Database Service on Cloud | IBM Cloudant |
| 6. | File Storage | File storage requirements | IBM Block Storage or Other Storage Service or Local Filesystem |
| 7. | External API-1 | External API used in the application | IBM Weather API, etc. |
| 8. | Machine Learning Model | To improve the predictive accuracy and control over-fitting. | Random Forest Regressor Python |
| 9. | Infrastructure (Server / Cloud) | Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration : | Heroku Platform |

Table-2: Application Characteristics:

| S.No | Characteristics | Description | Technology |
|------|--------------------------|--|----------------------------|
| 1. | Open-Source Frameworks | To establish an connection between the flask andan HTML page. | Python Flask |
| 2. | Security Implementations | To Protect the user information as well as their car details. | SHA-256, Encryptions |
| 3. | Scalable Architecture | The model can be viewed and accessed in both computer as well as mobile phone. | Web UI, Mobile Android app |
| 4. | Availability | The model can be available anywhere at any time. | IBM Cloud |
| 5. | Performance | The model performance has high accuracy and with portable from one machine to another machine. | HTML,CSS |

References:

<https://c4model.com/>

<https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/>

<https://www.ibm.com/cloud/architecture>

<https://aws.amazon.com/architecture>

<https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d>