Shipment Pricing System

WORLD CLASS

SHIPPING SOLUTIONS

AND SERVICES

ASIA   AMERICA   AFRICA   EUROPE

Objective

Shipment pricing system are new generation of traditional shipment pricing where the whole process right from tracking the shipment package till delivery of the package to the customer. Users are able to track and find the cost of their package to be shipped by any modes. Apart from interesting real-world applications of Shipment pricing systems, the characteristics of data being generated by these systems make them attractive for the research.

Benefits :

❖ Use of logistics pricing data for accurate prediction

❖ Optimised solution

❖ Helps in increase profit rate to organisation

Data Sharing Agreement

❖ Dataset Link : https://www.kaggle.com/divyeshardeshana/supply-chain-shipment-pricing-data

❖ Column Data type : float64,int,object

❖

	ID	Project Code	PQ #	PO / SO #	ASN/DN #	Country	Managed By	Fulfill Via	Vendor INCO Term	Shipment Mode	—	Unit of Measure (Per Pack)	Line Item Quantity	Line Item Value	Pack Price	Unit Price	Manufacturing Site	C
0	1	100-CI-T01	Pre-PQ Process	SCMS-4	ASN-8	Côte d'Ivoire	PMO - US	Direct Drop	EXW	Air	—	30	19	551.00	29.00	0.97	Ranbaxy Fine Chemicals LTD	
1	3	108-VN-T01	Pre-PQ Process	SCMS-13	ASN-85	Vietnam	PMO - US	Direct Drop	EXW	Air	—	240	1000	6200.00	6.20	0.03	Aurobindo Unit III, India	
2	4	100-CI-T01	Pre-PQ Process	SCMS-20	ASN-14	Côte d'Ivoire	PMO - US	Direct Drop	FCA	Air	—	100	500	40000.00	80.00	0.80	ABBVIE GmbH & Co.KG Wiesbaden	
3	15	108-VN-T01	Pre-PQ Process	SCMS-78	ASN-50	Vietnam	PMO - US	Direct Drop	EXW	Air	—	60	31920	127360.80	3.99	0.07	Ranbaxy Paonta Shahib, India	
4	16	108-VN-T01	Pre-PQ Process	SCMS-81	ASN-55	Vietnam	PMO - US	Direct Drop	EXW	Air	—	60	38000	121600.00	3.20	0.05	Aurobindo Unit III, India	
5	23	112-NG-T01	Pre-PQ Process	SCMS-87	ASN-57	Nigeria	PMO - US	Direct Drop	EXW	Air	—	240	416	2225.60	5.35	0.02	Aurobindo Unit III, India	
6	44	110-ZM-T01	Pre-PQ Process	SCMS-130	ASN-130	Zambia	PMO - US	Direct Drop	DDU	Air	—	90	135	4374.00	32.40	0.36	MSD South Granville Australia	
7	45	109-TZ-T01	Pre-PQ Process	SCMS-140	ASN-94	Tanzania	PMO - US	Direct Drop	EXW	Air	—	60	16667	60834.55	3.65	0.06	Aurobindo Unit III, India	
8	46	112-NG-T01	Pre-PQ Process	SCMS-156	ASN-93	Nigeria	PMO - US	Direct Drop	EXW	Air	—	60	273	532.35	1.95	0.03	Aurobindo Unit III, India	

Architecture
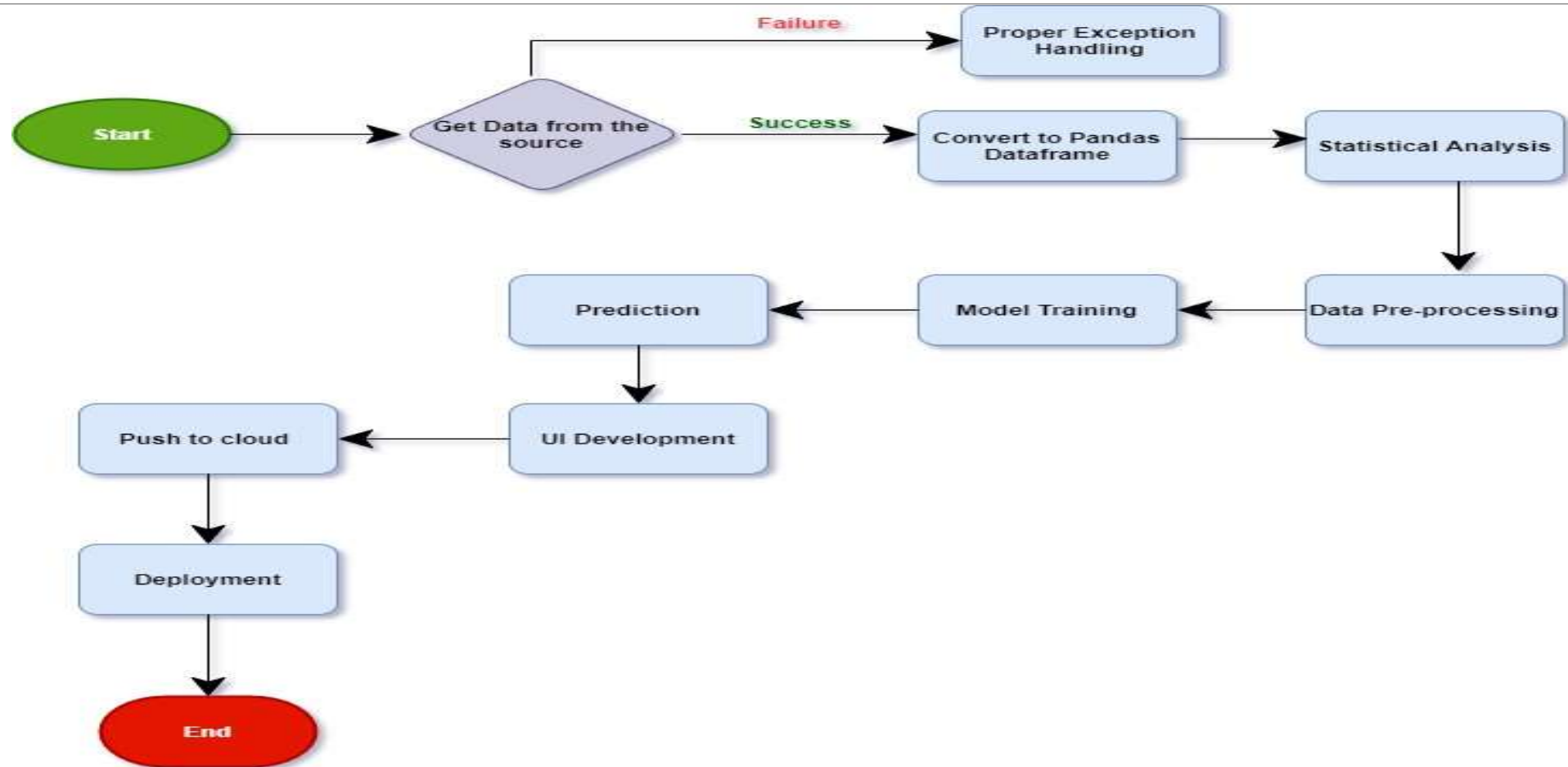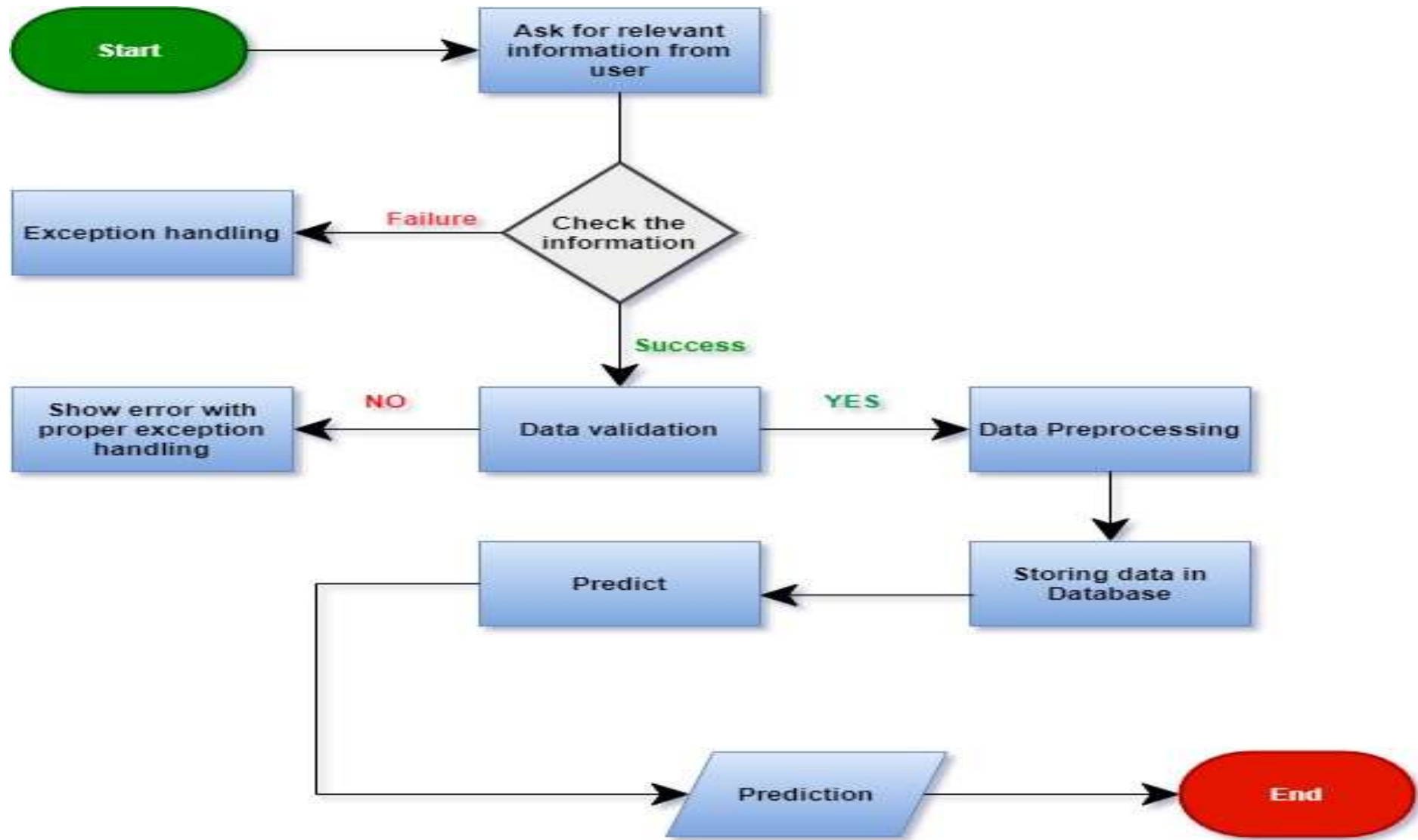
Model Training

❖ Data export from csv :

         1) Loading csv data using python and extracting all the features

❖ Data Pre-processing :

         1) Perfoming EDA to get insight of data like identifying distribution, outlier, trend among the data .

         2) Check null values in the columns. If present impute the values

         3) Perform feature selection and extract all necessary features from the data

Feature selection

❖ In feature selection we have selected the required feature from the dataset on basis of :

1) Based on Co-relation

2) Based on Multicollinearity

3) Based on common input feature

❖ Train And Test Split

1) Train and test data is split into 70:30 ratio

2) There is no validation data available

❖ Model Selection:

As this is the regression problem use case we have used linear regression and followed by the other regression algorithms such as ensemble algorithm. Where linear regression was not giving accuracy so we use Ensemble algorithm such as decision tree and random forest among both Decision tree was giving better result approximate (80%) accuracy and least error comparison to random forest.

❖ Prediction:

1. Loading CSV data using python pandas and extracting all the data into python file
2. We are perform data pre-processing techniques on the data loaded.
3. We have use Decision tree regression algorithm for creating model for prediction .
4. Based on the Decision tree algorithm respective model is loaded and is used to predict the outcome from the data
5. Prediction of Model is done on the specific climate condition as available in dataset as input variable
6. Prediction of the Model is done given specific amount of records
7. We can not add any other feature in same running Model without getting this model application down and have to retrain the Model on new feature
8. Model is giving approx. 80% accuracy with Decision tree algorithm
9. Once the Prediction is Done it will save in Mongo DB database

Data Insertion In Database

After the Model is created and prediction is done the result is inserted into MongoDB(non sequential) Database in order to Keep records of result

- Database :-

    Database is be created with name (shipment),scalable, flexible NOSQL format.

- Collection:-

    Collection is similar to table as we see in SQL database, collection (user details) is been created under the data base name (shipment) , which can stored in any form. Where the records can be independent to each other.

❖ Deployment

❖ We have deployed the model using AWS instance.

THANK YOU