

# ARCHITECTURE

## INSURANCE PREMIUM PREDICTION

Dilip Kumar Panda

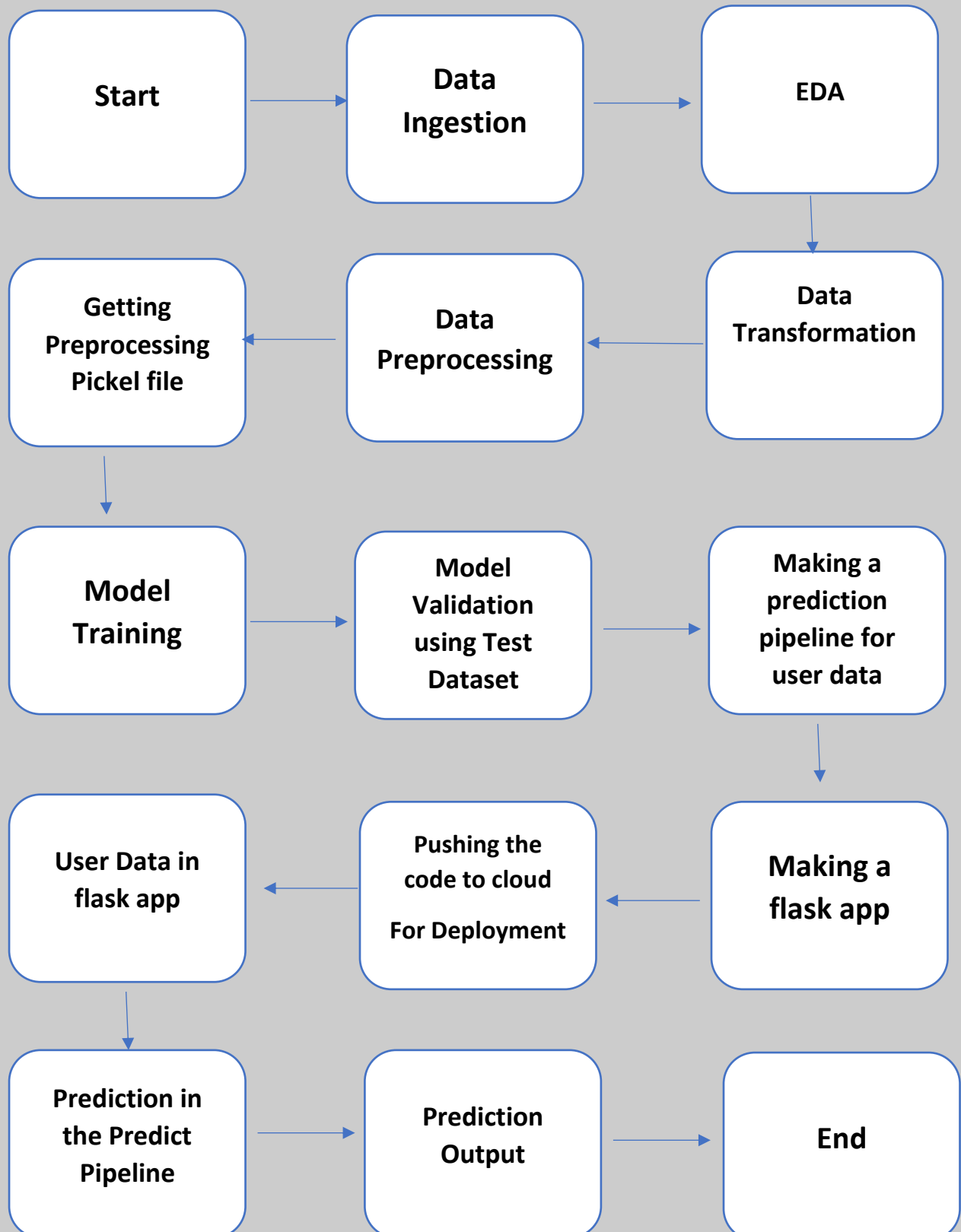
# Document Version Control

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# Architecture



# Architecture Description

## Data Description

Data was taken from Kaggle having 6 independent columns and one target column. There were about 1300 rows of data for building the model.

## EDA

Eda was performed over the data set to know relationship between all the variable and the target column, relationship between independent features, to know about missing value and duplicate value and to visualize the data.

## Data Transformation

Standardisation of data development of different pipelines for numerical and categorical column and dividing the data to train and test set was done.

## Data Preprocessing

Null value handling, applying column Transform to different pipelines and finally getting a pre-processor pickle file.

## Model Training

Different machine learning Regression model was tried over the train data set and r-square value was found out from different model.

## Model Validation

The trained model was used to predict the test dataset and similarly r-squared value was found out. Out of all the models which has the highest accuracy value that model was chosen as the best model.

## Prediction Pipeline

A prediction pipeline was made to connect the user input data to all the transformation pickle file and model training pickle file.

## Flask App

A flask app was made to take user input data for prediction.

## Deployment

The whole code was pushed to github and then deployment was done using Azure and github actions.

### Prediction

User data was taken using flask app and the data was passed over to prediction pipeline and finally prediction was made and output was shown over the same flask app to the user.

## Unit Test Cases

Test case description	Prerequisites	Expected results
Verify whether the application URL is accessible to the user or not	Application URL should be defined	The application URL should be accessible to the user.
Verify whether the Application loads completely for the user when the URL is accessed	1. Application URL is accessible 2. Application is deployed	The Application should load completely for the user when the URL is accessed.
Verify whether user is able to see input fields on accessing	Application is accessible	User should be able to see input fields on logging in
Verify whether user is able to edit all input fields	Application is accessible	User should be able to edit all input fields
Verify whether user gets Submit button to submit the inputs	Application is accessible	User should get Submit button to submit the inputs
Verify whether user get the prediction as the output.	Application is accessible	User should get the desired prediction value.

Verify whether the prediction results are in accordance to the selections user made	Application is accessible	The prediction results should be in accordance to the selections user made.
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