Low Level Design

News Article Sorting System

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1. Introduction

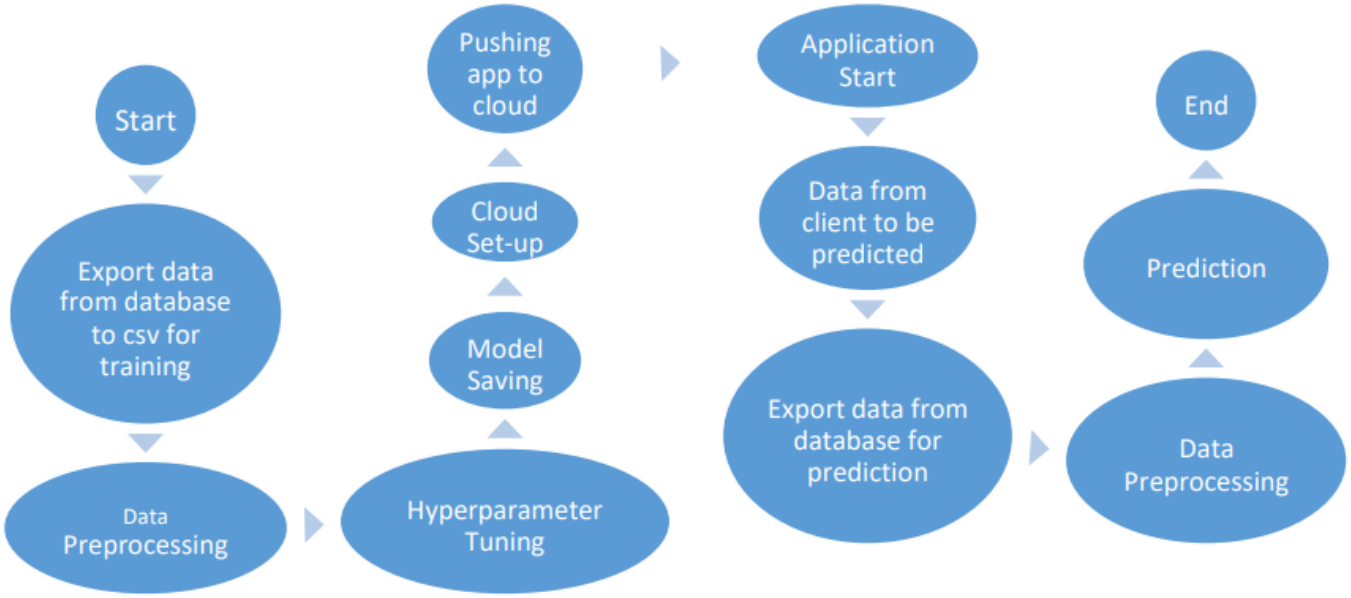
1.1 What is Low-Level design document?

The goal of LLD or a low-level design document (LLD) is to give the internal logical design of the actual program code for the News Article Sorting System. LLD describes the class diagrams with the methods and relations between classes and program specs. It describes the modules so that the programmer can directly code the program from the document.

1.2 Scope

Low-level design (LLD) is a component-level design process that follows a step-by-step refinement process. This process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the data organization may be defined during requirement analysis and then refined during data design work.

2. Architecture



3. Architecture Description

3.1 Data Description

We will be using the BBC News Classification Data Set present at Kaggle website. This Data set is satisfying our data requirement. Total 2225 instances present in different batches of data.

3.2 Export Data from database to CSV for Training

Here we will be exporting all batches of data from the database into one csv file for training.

3.3 Data Preprocessing

We will be exploring our data set here and do EDA if required and perform data preprocessing depending on the data set. We first explore our data set in Jupyter Notebook and decide what pre-processing and Validation we have to do such as imputation of null values, dropping some column, etc and then we have to write separate modules according to our analysis, so that we can implement that for training as well as prediction data.

3.4 Hyperparameter Tuning

Now, we will do hyperparameter tuning for all the models and try to increase the performance of the model.

3.5 Model Saving

After performing hyperparameter tuning for models, we will save our models so that we can use them for prediction purposes.

3.6 Cloud Setup

Here we will do cloud setup for model deployment. Here we will also create our flask app and user interface and integrate our model with flask app and UI.

3.7 Push app to cloud

After doing cloud setup and checking the app locally, we will push our app to the cloud to start the application.

3.8 Data from client side for prediction purpose

Now our application on cloud is ready for doing prediction. The prediction data which we receive from client side will be received. Client data will also go along the same process of **Exporting data from DB, Data pre-processing, Data clustering** and according to each cluster number we will use our **saved model** for prediction on that cluster.

4 Unit Test Cases

Test Case Description	Prerequisite	Expected Result
Verify whether the Application URL is accessible to the user	1. Application URL should be defined	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 visiting the site	1. Application is accessible 2. User is able to see complete site	User should be able to see input fields on visiting the site
Verify whether user is able to give inputs in input field and get some predictions for that input	1. Application is accessible 2. User has given some input in the input filled and pressed Submit button	User should be able to see some predictions regarding the input