Architecture

Mushroom Classification

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Document Control

Date	Version	Author	Comments
10/06/24	Version-1.0	Amit Kumar	Introduction and Architecture Defined

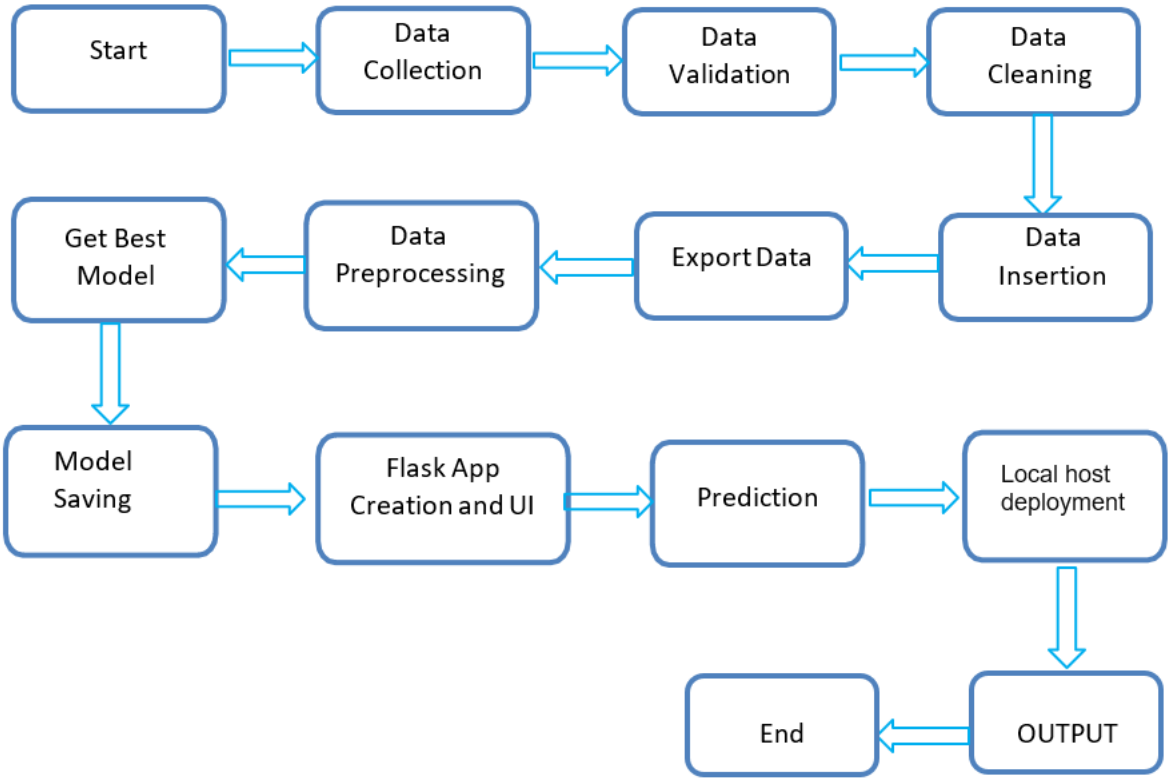
Contents

1. Introduction

1.1 Why this Architecture Design Document?

With a focus on four essential quality attributes—usability, availability, maintainability, and testab
work aims to present a complete architecture design of the Mushroom Classification.
The project's history and its architecturally significant function requirements are covered in this d
The purpose of this document is to aid the development team in choosing the system's top-level
organisational structure. Finally, during the assessment of the team's work, the project coach can
document to confirm that the development team is fulfilling the predetermined requirements.

1 Architecture



2 Architecture Description

3.1 Data Description

From the Audubon Society Field Guide to North American Mushrooms, this dataset comprise descriptions of hypothetical samples corresponding to 23 species of gilled mushrooms in the and Lepiota Family Mushroom (1981). Each species is classified as either unquestionably edib unquestionably poisonous, or maybe edible but not advised.

3.2 Import Data

Data Import from Database - The data in a stored database is imported as a CSV file to be used for Data Pre-processing and Model Training.

3.3 Data Cleaning

There are no null values in the data and all the variables are categorical, some of the observations meaningless and they are converted into meaningful observation.

Example: "?" is converted into letter "m" (Missing)

3.4 Exploratory Data Analysis

Every independent variable in the dataset is displayed by a multiple bar plot as it relates t dependent variable's classes of poisonous and edible mushrooms as part of the EDA proc

3.5 Data Preprocessing

Data preprocessing steps are converting categorical variables into numerical variable using label encoding method and train and test split of the data etc.

3.6 Model Building

Following data preprocessing, separate the data into train and test sets (using simple ran sampling), and use several machine learning algorithms for classification. The more accu the XGboost model.

3.7 Model Dump

I developed a model and used the pickle module to dump the model in a pickle file forma comparing all accuracy levels and determining the optimal model for the dataset.

3.8 Data from User

Here With the aid of the UI interface, the user must input the names of all the features in the pro
and submit it to the model. The model will be fed the data and determine whether or not the fea
depicting a mushroom is edible.

3.9 Data Validation

Here Data Validation will be done, given by the user.

3.10 Model Call for specific input

A NumPy array will be created based on the User Input and fed to our model after being sent to
in variable format. After the pickle file has been loaded, the model will determine whether the in
or not and will communicate the conclusion to our html page.

3.11 User Interface

I created a user-interactive page for our application's front end where users can submit their inp
their front-end page, I created a form with a lovely CSS design. The backend receives this HTML
data in variable format. Decoupled HTML was used to create this content.

3.12 Deployment

The deployment is done in local host.