

HLD (High Level Documentation)



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Abstract

To predict either mushroom is poisonous or eatable. After knowing mushroom is poisonous or not person can easily eat it. Some considered variable use in this project are capshape , capcolor, stock-root etc..

Introduction

1.1 Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project
- List and describe the non-functional attributes like:
 - o Security
 - o Reliability
 - o Maintainability
 - o Portability
 - o Reusability
 - o Application compatibility
 - o Resource utilization
 - o Serviceability

1.2 Scope

The HLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

1.3 Definition

Term	Description
M.P	Mushroom Prediction
Jupyter-Notebook	It is an interactive computational environment, in which we can combine code execution, text, plots and rich media.
Heroku	It is a platform as a service (pass) that enables developers to build, run and operate applications in the cloud.

2. General Description

2.1 Product Perspective

The Mushroom prediction is a machine learning model that helps users to understand whether the mushroom is poisonous or edible based on some input data.

2.2 Problem statement

The main goal of this model is to predict whether the mushroom is poisonous or not using features such as cap-shape, capcolor, veilcolor etc..

2.3 Proposed Solution

For solving this use case we create a user interface which take file path as input and predict it by using trained ml models

2.4 Technical Requirements

As technical requirements, we don't need any specialized hardware for virtualization of the application.

The user should have a device that has the access to the web and the fundamental understanding of providing the input. And for the backend, we need a server to run all the required packages to process the input and predict the desired output.

2.5 Data Requirements

The Data requirements totally supported the matter statement and also the dataset is accessible on the Kaggle within the file format of (.zip). Because the main theme of the project is to induce the expertise of real time issues, we have a tendency to transform the information into the prophetess database and commercialize it into csv format.

2.6 Tools used



- VS Code is used as IDE.
- For visualization of the plots, Matplotlib, Seaborn are used.
- Heroku is used for deployment of the model.
- Front end development is done using HTML
- Python Flask is used for backend development.
- GitHub is used as version control system.

2.7 Constraints

The system must be user friendly, as automated as possible and users should not be required to know any of the workings.

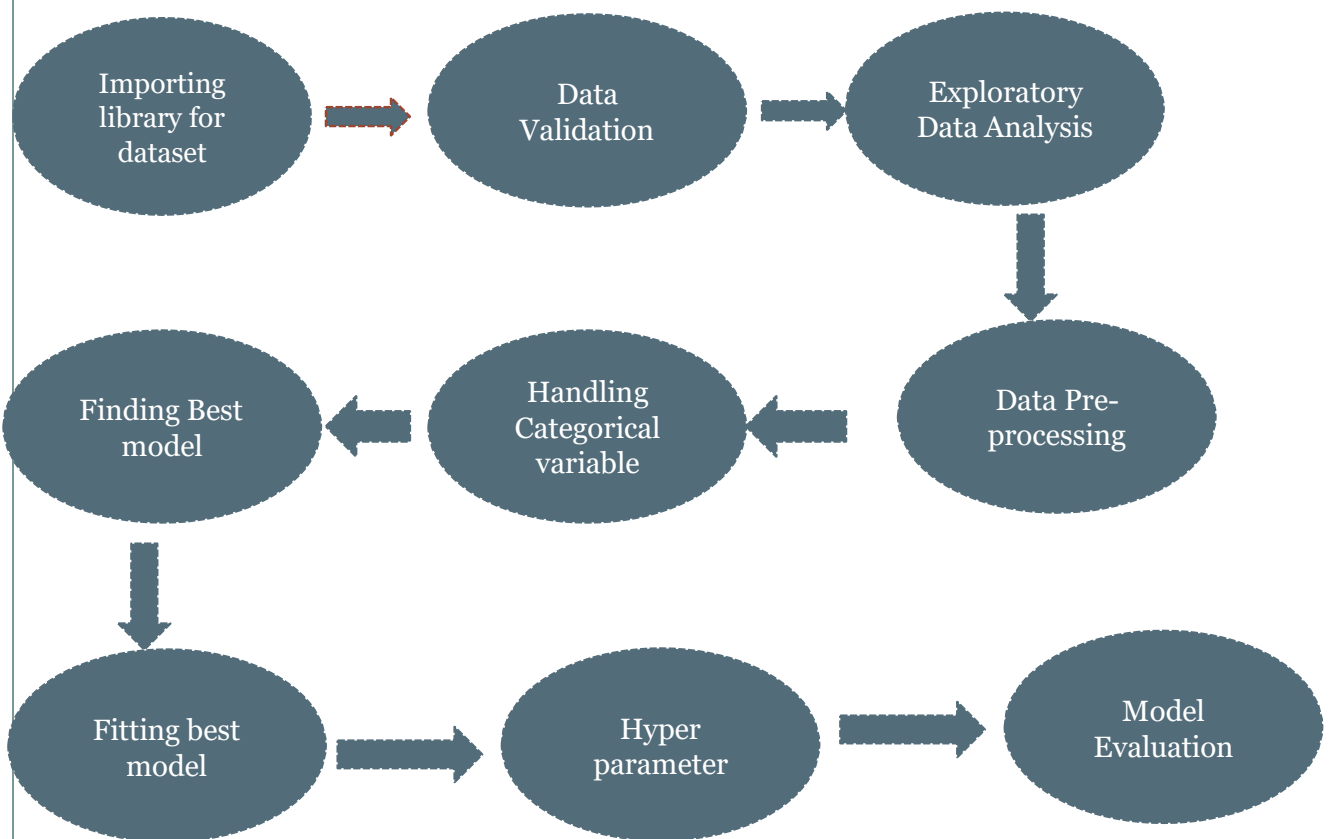
2.8 Assumptions

The main objective of the project is to implement the use cases as previously mentioned (2.2 Problem Statement) for new dataset that comes through source.

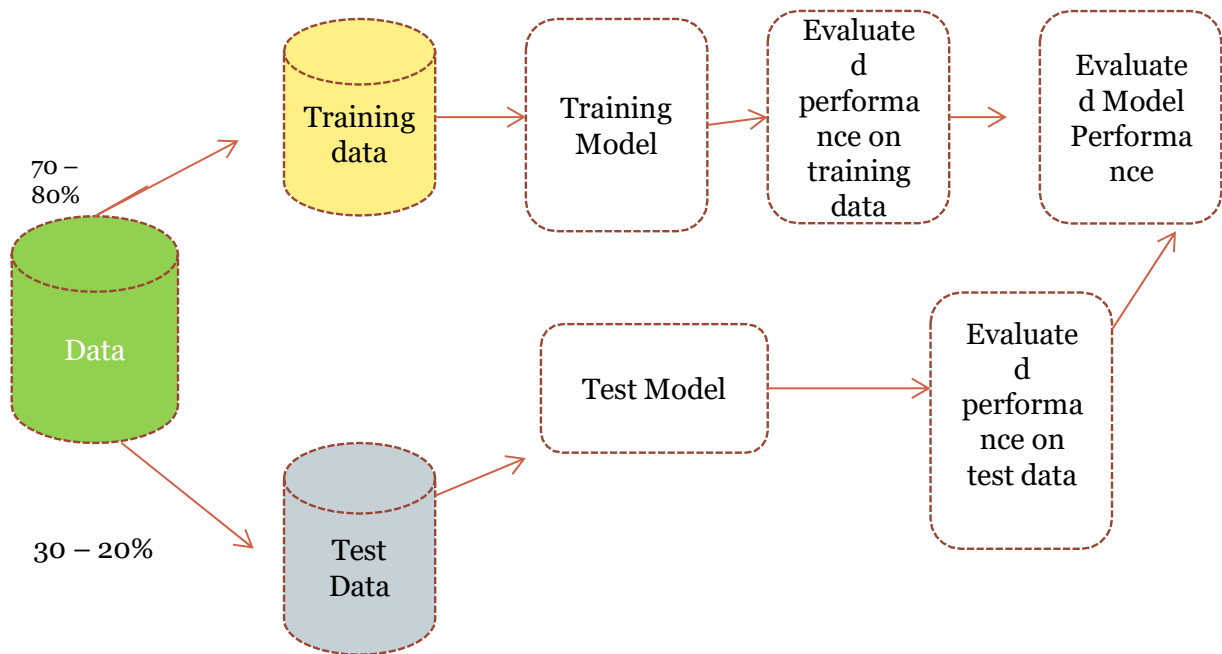
Machine Learning based model is used for detecting the above-mentioned use cases based on the input data. It is also assumed that all aspects of this project have the ability to work together in the way the designer is expecting.

3. Design Details

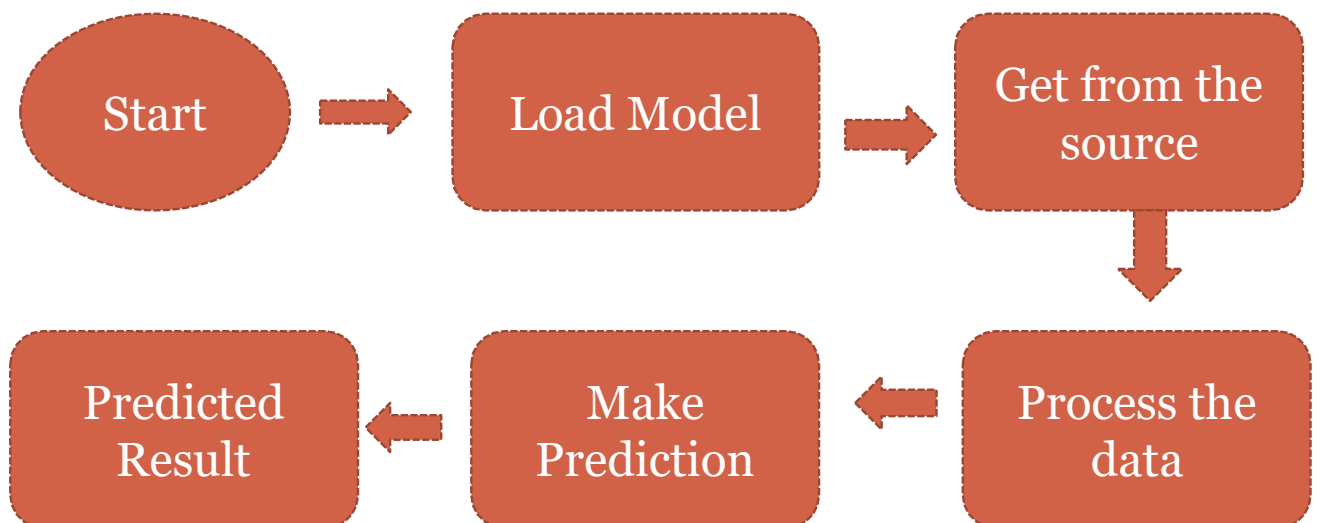
3.1 Process Flow



3.2 Model Training and Evaluation



3.3 Deployment Process



3.4 Logging

Each and every set of training and prediction is log into Log file which help developer to get where error occurred in model.

4. Performance Evaluation

The machine learning based Mushroom Prediction project predicts is poisonous or not based on some input data like cap shape ,veil color etc.

4.1 Reusability

The code written and the components used should have the ability to be reused with no problems.

4.2 Application Compatibility

The different components for this project will be using Python as an interface between them. Each component will have its own task to perform, and it is the job of the Python to ensure proper transfer of information.

4.3 Resource Utilization

When any task is performed, it will likely use all the processing power available until that function is finished.

4.4 Deployment

localhost  Azure



5. Conclusion

This app help client to know weather Mushroom is poisonous or not