Architecture Design

Mushroom Classifications

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Document Control :

Date	Version	Description	Author
12/09/2023	1.0	Abstract, Introductions, Scope	Rohan Kadam
14/09/2023	1.2	Method, architecture	Vijay Kamble
17/09/2023	1.3	Tool , Deployment	Rohan Kadam
19/09/2023	1.4	Report	Vijay Kamble

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1. Introduction

1.1 What is Architecture Design Document?

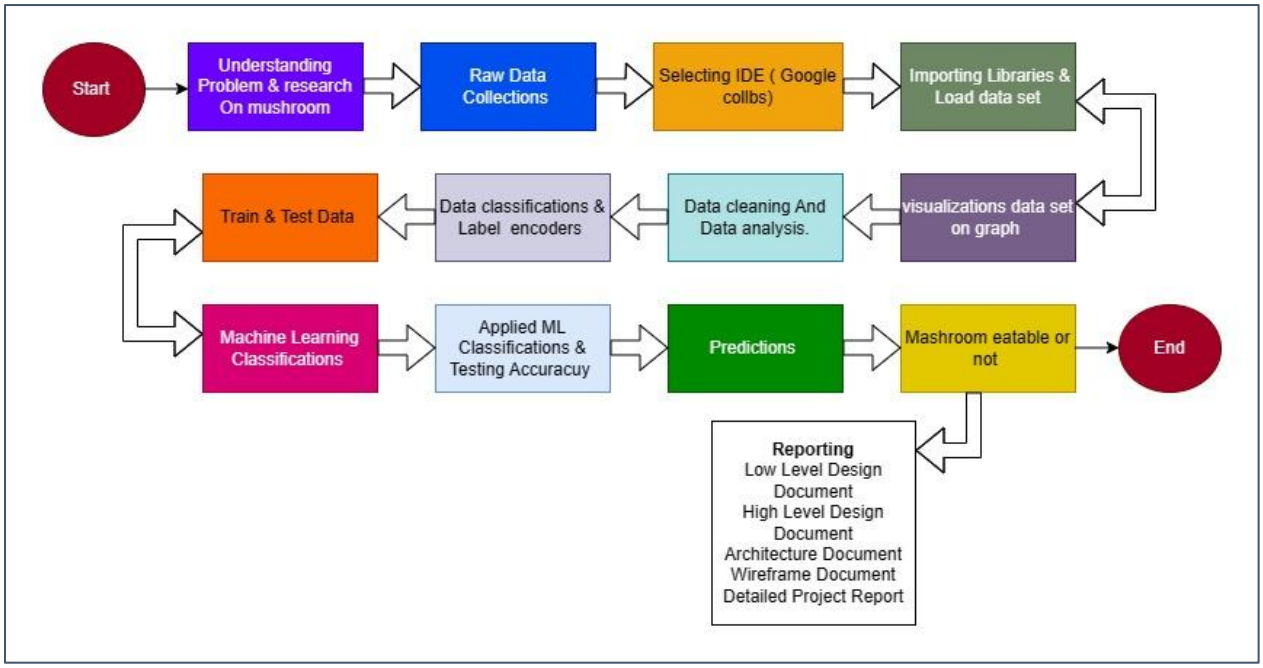
Any software needs the architectural design to represent the design of the software. IEEE defines architectural design as “the process of defining a collection of hardware and software components and their interfaces to establish the framework for the development of a computer system.” The software that is built for computer-based systems can exhibit one of these many architectures.
Each style will describe a system category that consists of:

- A set of components (eg: a database, computational modules) that will perform a function required by the system.
- The set of connectors will help in coordination, communication, and cooperation between the components.
- Conditions that how components can be integrated to form the system.
- Semantic models help the designer to understand the overall properties of the system.

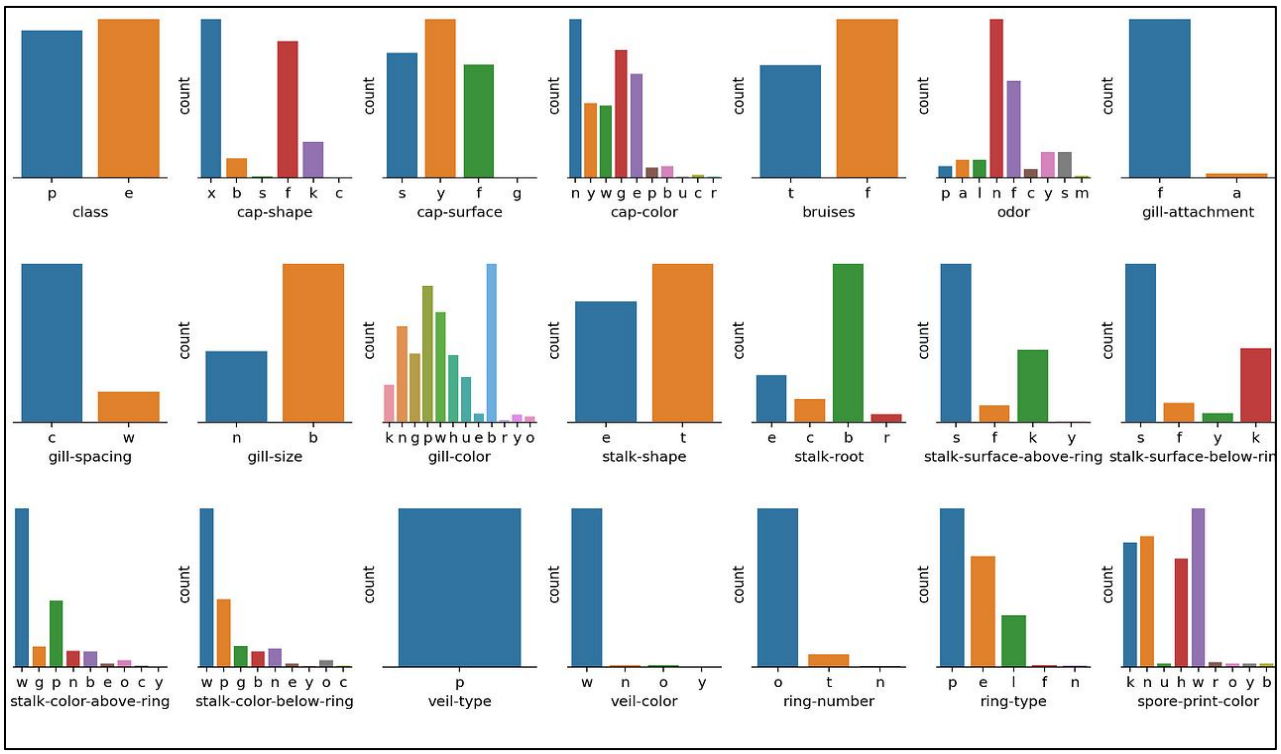
1.2 What is Scope?

Architecture Design Document (ADD) is an architectural design process that follows a step-by-step refinement process. The process can be used for designing data structures, required software architecture, source code and ultimately, performance algorithms. Overall, the design principles may be defined during requirement analysis and then refined during architectural design work.

2. Architecture



Data visualizations



3. Deployment

Deployment on Google collbs python IDE

Google Colaboratory
Colab is a hosted Jupyter Notebook service that requires no setup to use and provides free access to computing resources, including GPUs and TPUs. Colab is especially well suited to machine learning, data science, and education.

Applying Mushroom classifications

Sr.no	Classifications	Result
1	#Random Forest Classification	100%
2	#Decision tree classification	100%
3	#naive bayes classfications	91.88%
4	#SVM Classification	100%
5	#K-Nearest neighbour	100%
6	#Logistic Regressions	94%

Publish Datasets and Reports

From the confusion matrix, we saw that our train and test data is balanced.
Most of classfication methods hit 100% accuracy with this dataset.

In conclusion, the application of machine learning in mushroom classification has demonstrated its remarkable potential in automating and enhancing the accuracy of identifying mushroom species. Through the utilization of advanced algorithms and vast datasets, we have witnessed the development of robust models capable of distinguishing between edible and toxic mushrooms with a high degree of confidence. As technology continues to advance and more research is conducted, we can anticipate even greater strides in the accuracy and efficiency of mushroom classification using machine learning. This, in turn, will contribute to safer mushroom foraging practices, greater understanding of fungal biodiversity, and the preservation of ecosystems.