-- PROJECT --
MUSHROOM CLASSIFICATION

Architecture Document

By *Suyash Waykar*

🍄 Introduction

- **What is Architecture Design?**

    Architecture Design (AD) aims to give the internal design of the actual program code for the 'Mushroom Classification'.

AD describes the class diagrams with the methods and relation between classes & program specifications. It describes the modules so that the programmer can directly code the program from the document.

- **Scope**

    AD 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 and the complete workflow.

- **Constraints**

    We predict the mushroom whether it is edible or poisonous from the given features asked to do input.

🍄 Problem Statement

The Audubon Society Field Guide to North American Mushrooms contains descriptions of hypothetical samples corresponding to 23 species of gilled mushrooms in the Agaricus and Lepiota Family Mushroom (1981). Each species is labelled as either definitely edible, definitely poisonous, or maybe edible but not recommended. This last category was merged with the toxic category. The Guide asserts unequivocally that there is no simple rule for judging a mushroom's edibility, such as "leaflets three, leave it be" for Poisonous Oak and Ivy.

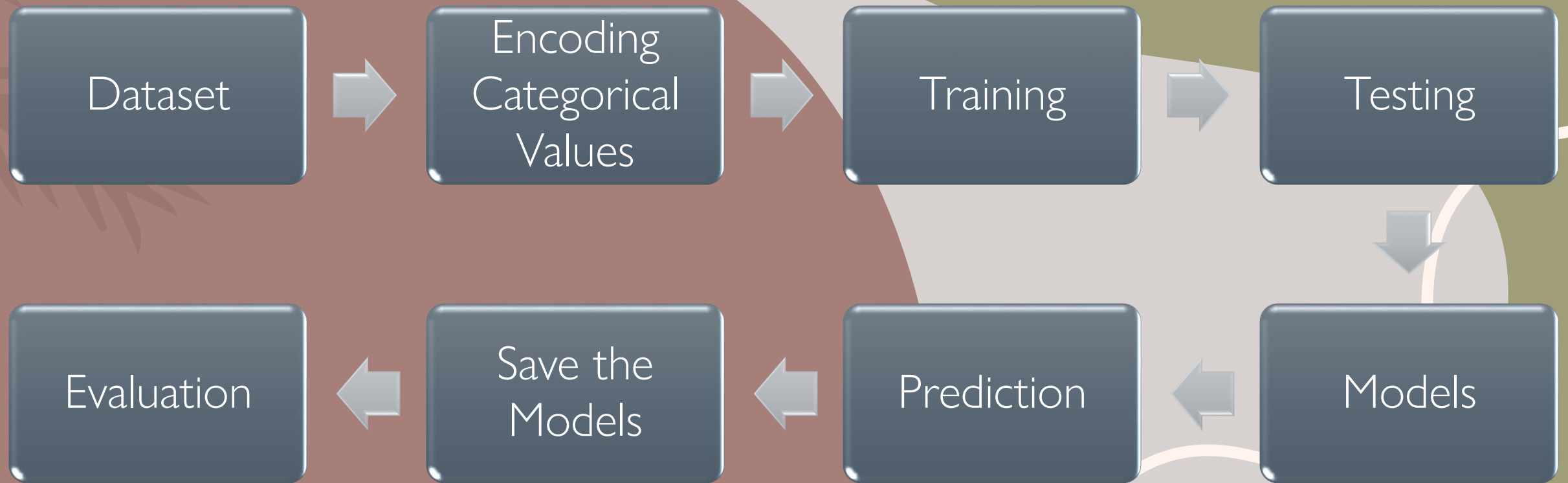The main goal is to predict which mushroom is poisonous & which is edible.

🍄 Dataset

The dataset includes categorical characteristics on 8,124 mushroom samples from various species of gilled mushrooms. The target variable assessed was a class distinction of 'edible' or 'poisonous'. The explanatory variables covered a range of descriptive and visual characteristics on the structure of each observed mushroom - such as, cap color, odor, ring number and stalk shape.
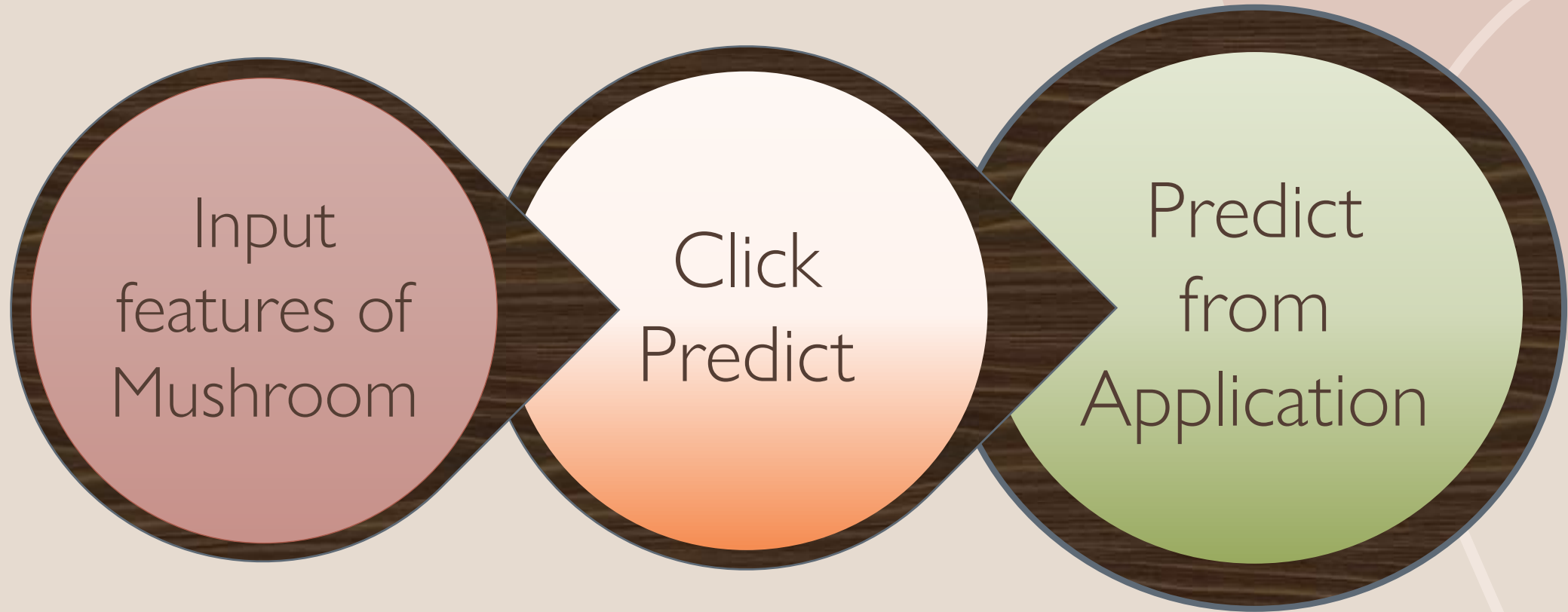
🍄 Architecture

Dataset → Encoding Categorical Values → Training → Testing

Evaluation ← Save the Models ← Prediction ← Models

User Input/Output Flow

Input features of Mushroom

Click Predict

Predict from Application

🍄 Conclusion

Our tuned classification models, all performed really well with the dataset. Random Forest Classifier, which had a score of 99% was a great choice & much better suited to classify mushrooms.

Since our models performed so well, it was clear to us that they were able to identify specific traits that greatly influenced the classification of an edible versus poisonous mushroom. And that was exactly what we were hoping for!!

THANKS !!