Can We Eat It?

Classification of Edible and Poisonous Mushrooms.

What are Mushroom?

- Mushrooms are a type of fungi that grows from the ground.
  - There are two types
    - Edible
    - Poisonous

Fun Fact

According to the U.S. Department Of Agriculture, each American consumes approximately 3 pounds of mushrooms per year.

The Problem:

The problem is deciding which mushrooms are good to eat and which are not.

The Solution:

Create a computer system that can learn and adapt without following explicit instructions, also known as a machine learning model that is efficient at determining if a mushroom is edible or poisonous.
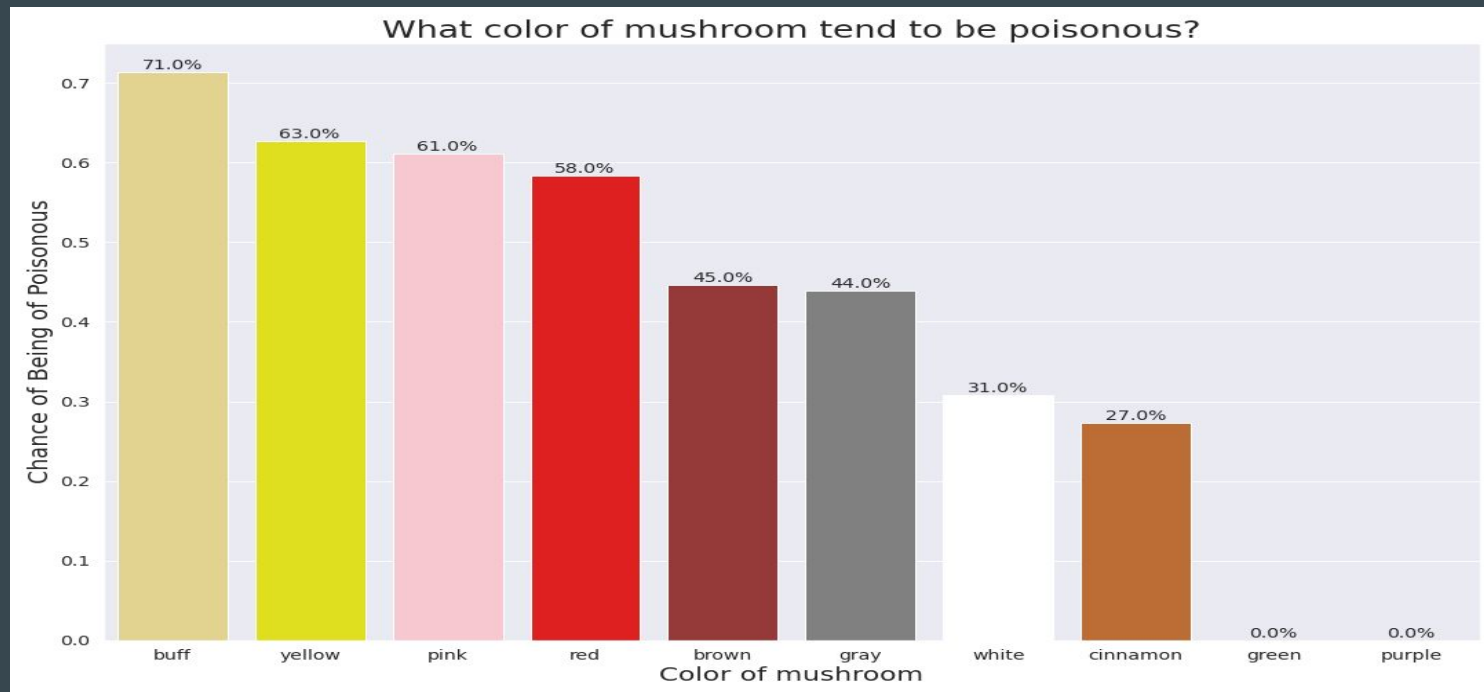
The Training Data

- We are training our model on the UMI mushroom dataset.
- This dataset consists of hypothetical samples corresponding to 23 type of gilled mushrooms.

Insight from Data Sets

Which odor tend to be poisonous?
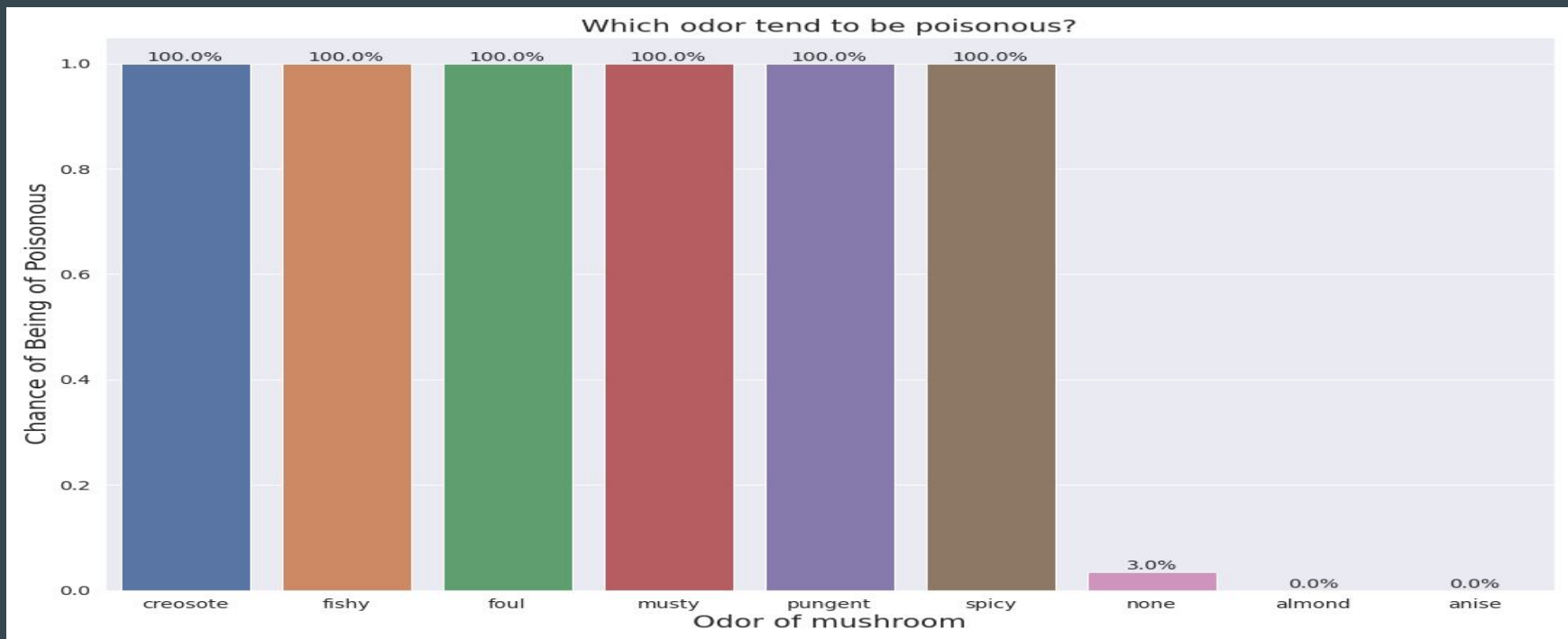
More Insight

Info on the Model

- The model I recommend for production is a Logistic Regression that was hyperparameter tuned and preprocessed with the Principal Component Analysis algorithm to increase performance.

- The model has an accuracy of 100%.

The reason for my recommendation

- The model is the fastest out of all my models.
- It determines if mushrooms are edible or poisonous with 100% precision.

Conclusion

In Conclusion, The goal is to make the most optimal model to determine if a mushroom is poisonous or edible based on a synthetic mushroom dataset. The final model was the fastest and had an accuracy of hundred percent, but because the data set is based on a hypothetical data set. I can not fully support putting it in production because I am still determining how it will fare with real mushrooms.