WIREFRAME DOCUMENT

MUSHROOM CLASSIFICATION

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CONTENTS

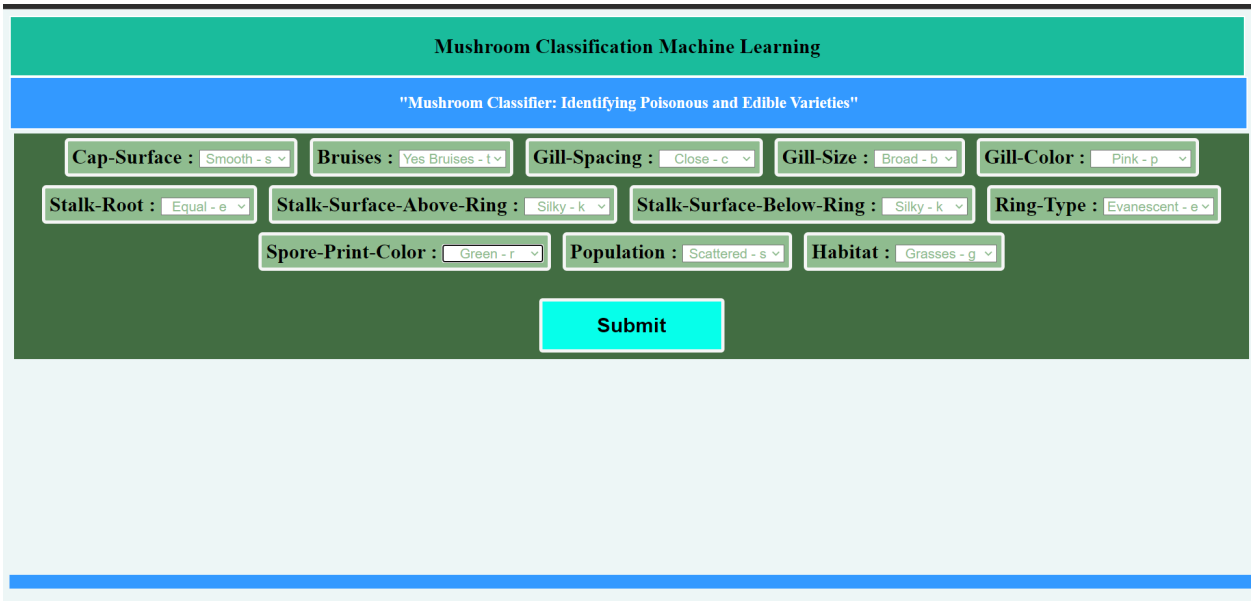
Abstract

This study focuses on the classification of mushrooms into two categories, namely Poisonous and Edible, using a machine learning model. It aims to determine the significant features that play a crucial role in predicting the edibility or toxicity of mushrooms. Mushrooms have been consumed since ancient times and are highly regarded for their nutritional value. They are low in calories, carbohydrates, fats, and sodium, while being cholesterol-free. Mushrooms offer essential nutrients such as selenium, potassium, riboflavin, niacin, Vitamin D, proteins, and fiber. They have a rich history as a food source and are also recognized for their healing properties in traditional medicine. Various health benefits and potential disease treatments have been associated with mushrooms, including their anticancer and antitumor properties. Moreover, mushrooms exhibit antibacterial effects, enhance the immune system, and assist in lowering cholesterol levels. Furthermore, mushrooms are a valuable source of bioactive compounds. Throughout this machine learning analysis, we will identify the key features that determine whether a mushroom is poisonous or edible.

1. Web Interface

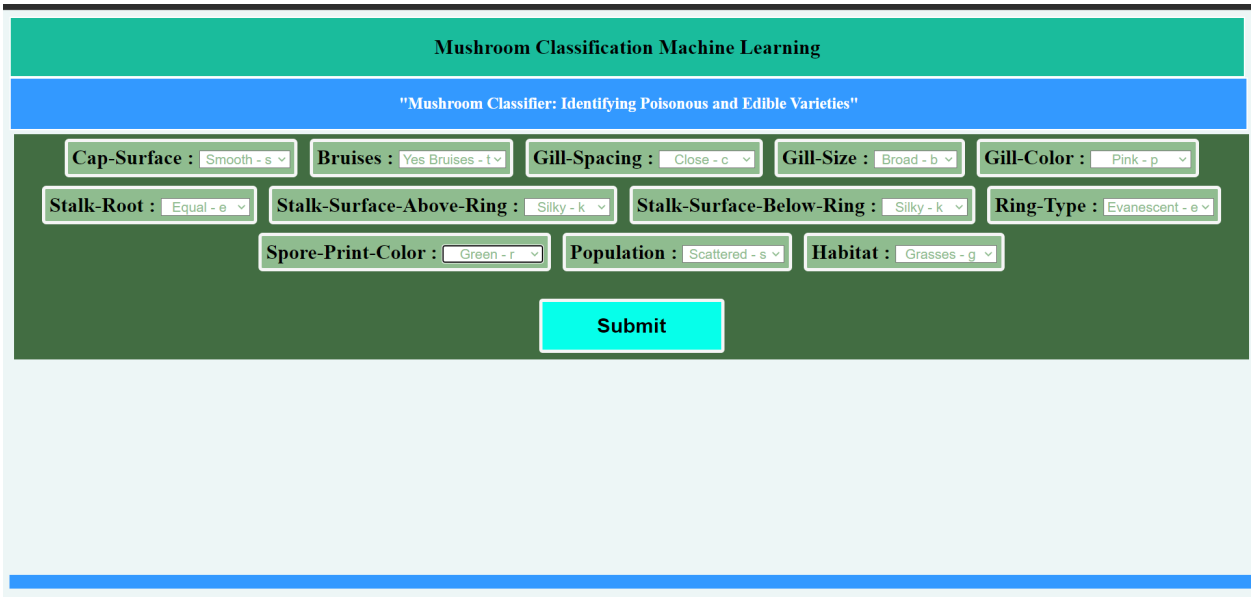
1.1 Home Page

When the user taps on the app link, they will be redirected to our homepage, which is displayed as follows:



In the provided interface, there are a total of 12 input fields (dropdown menus) that need to be selected based on the characteristics of the mushroom in order to determine if it is edible or poisonous. Once the selections are made, clicking the "Submit" button will redirect the user to the results page, which will indicate whether the mushroom is poisonous or edible.

1.2 How to use?

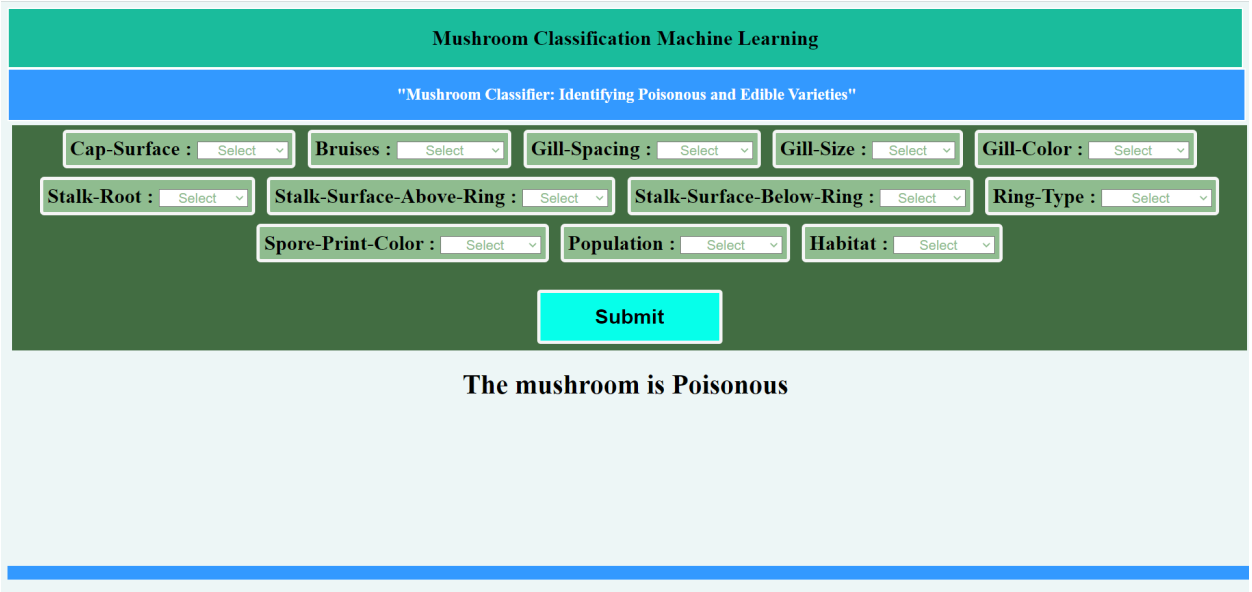


In the given image, you can observe that the characteristics of the mushroom need to be selected using the provided dropdown menus for each input field. For the example mentioned, the following selections were made:

Cap-Surface: Smooth - s
Bruises: Yes Bruises - t
Gill-Spacing: Close - c
Gill-Size: Broad - b
Gill-Color: White - w
Stalk-Root: Rooted - r
Stalk-Surface-Above-Ring: Fibrous - f
Stalk-Surface-Below-Ring: Fibrous - f
Ring-Type: Flaring - f
Spore-Print-Color: White - w
Population: Several - v
Habitat: Grasses - g

Once all the input fields have been selected, you simply need to click on the "Submit" button, which will lead you to the results page.

1.3 Results Page

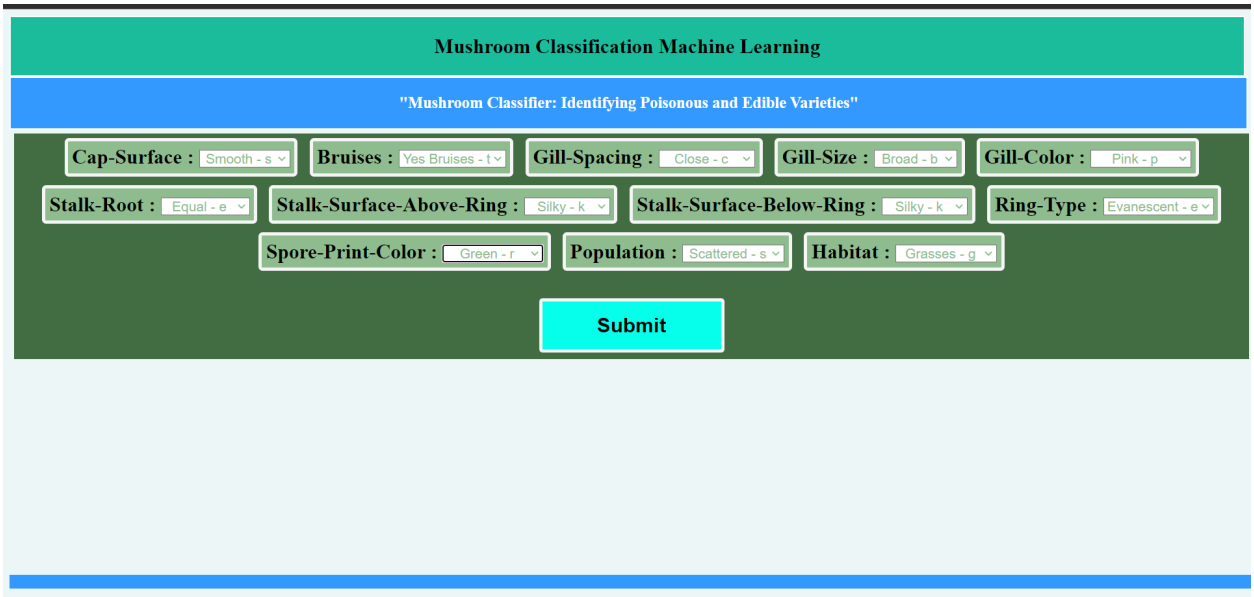


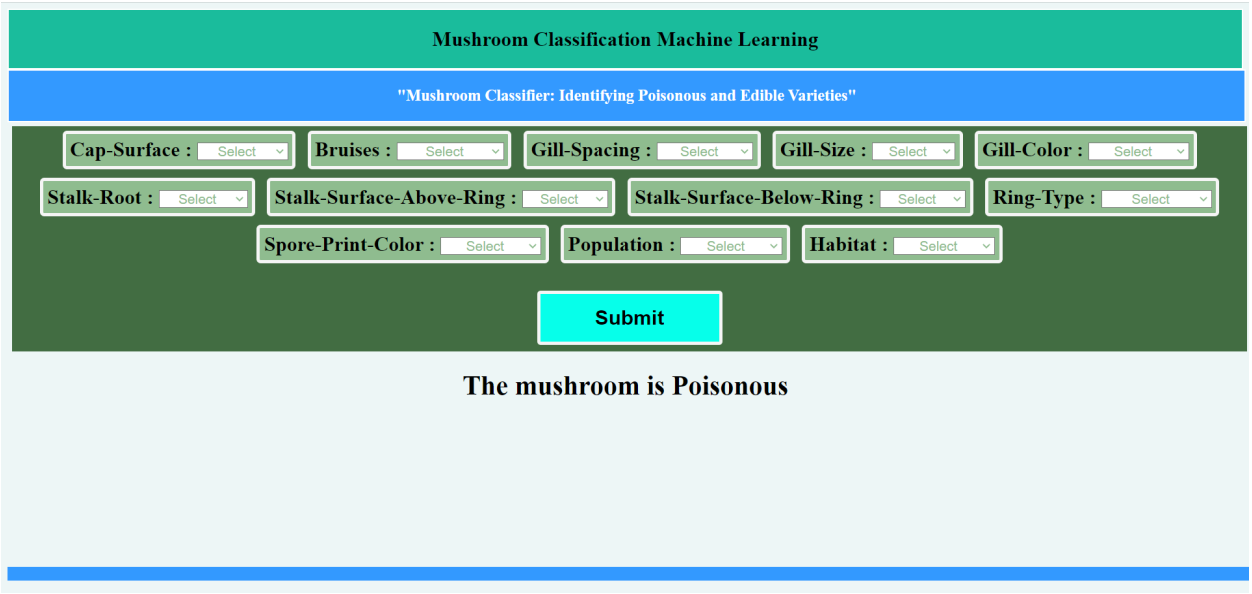
Based on the selected inputs, it can be determined that the mushroom in question is classified as poisonous.

2. Example Cases:

Now I will demonstrate both outputs, namely Poisonous and Edible, using different input field selections.

2.1 Poisonous Mushroom Example





2.2 Edible Mushroom Example