1. **Choose your dataset**

I have chosen the mushroom classification dataset from the list of pre-approved project ideas. This dataset comes from Kaggle (<https://www.kaggle.com/uciml/mushroom-classification>) and is titled “Mushroom Classification”. My interest in this topic stems from being surrounded by many passionate hikers and outdoor enthusiasts. Foraging, however, can be a very dangerous outdoor activity so I would like to use the aforementioned dataset to create an application that would be useful to avid hikers and foragers.

1. **Methodology**
   1. **Data Preprocessing**

The dataset is organized into 23 columns. The first column predicts whether the mushroom is edible or poisonous based on the subsequent 22 parameters (columns). I plan on removing parameters such as “veil-type” as 100% of the data in this dataset is classified as “partial” in the veil-type column. It might also be useful to eliminate a few other parameters as some characteristics may be difficult to physically observe on the fungi; moreover, having fewer parameters will allow for a simpler and more efficient model.

* 1. **Machine Learning Model**

From this dataset, I want to use the given parameters to predict whether a mushroom should be classified as edible or poisonous. The accuracy of the prediction will be dictated by the number of mushroom attributes a user is able to provide. Because this is a discrete problem, it makes sense to implement a classification algorithm. As to which one, I think future lectures will equip me with the knowledge needed to make a more educated decision.

* 1. **Final Conceptualization**

As a final project, I would like to create a web or mobile app. The goal of the app is to inform users on the safety of any given mushroom. To do so, the app will need to receive as input the attributes of a given mushroom. There are two ways in which I think this could be done. The first would involve users inputting the characteristics of a given mushroom through a series of drop-down menus. The second is for users to submit a picture which the app will then analyze to collect the input data. In general, the more information that the user is able to give about the mushroom, the more accurate the classification will be.