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# Practice Lab: Decision Trees

In this exercise, you will implement a decision tree from scratch and apply it to the task of classifying whether a mushroom is edible or poisonous.

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## 1 - Packages

First, let's run the cell below to import all the packages that you will need during this assignment.

- numpy (<https://www.numpy.org>) is the fundamental package for working with matrices in Python.
- matplotlib (<https://matplotlib.org>) is a famous library to plot graphs in Python.
- utils.py contains helper functions for this assignment. You do not need to modify code in this file.

```
In [2]: import numpy as np
import matplotlib.pyplot as plt
from public_tests import *
from utils import *

%matplotlib inline
```

## 2 - Problem Statement

Suppose you are starting a company that grows and sells wild mushrooms.





- Since not all mushrooms are edible, you'd like to be able to tell whether a given mushroom is edible or poisonous based on it's physical attributes
- You have some existing data that you can use for this task.

Can you use the data to help you identify which mushrooms can be sold safely?

Note: The dataset used is for illustrative purposes only. It is not meant to be a guide on identifying edible mushrooms.

## 3 - Dataset

You will start by loading the dataset for this task. The dataset you have collected is as follows:

	Cap Color	Stalk Shape	Solitary	Edible
	Brown	Tapering	Yes	1
	Brown	Enlarging	Yes	1
	Brown	Enlarging	No	0
	Brown	Enlarging	No	0