Module 3-3 Exercises

Now let's combine everything that we learned into one large program! The goal of this predictions.

Right now, all of our predictions are hard-coded into our programs. This means that yo change the values everytime you want to predict something new. Instead, a better appr the data themselves, and the program will do the rest of the work for them.

Now let's apply this to our machine learning program from earlier. Let's ask the user ab predict, and then make the prediction based on the user's input.

Copy the code from the following replit into your own replit. You must import the iris d

Python

```
from sklearn import svm
import pandas as pd
from sklearn.preprocessing import LabelEncoder


print("Welcome to the Iris Flower Prediction Program! \n")
print("We will use Support Vector Machines to predict what kind of
print("All you need to do is supply some information about the flow

while True:
  print("1. Make a prediction")
  print("2. Exit the program")

  choice = input("")
  if choice == "1":
    sepalLength = float(input("What is the Sepal Ler                ) \n")
    sepalWidth = float(input("What is the Sepal Wid                 "))
    petalLength = float(input("What is the Petal Length in cm? \n")
    petalWidth = float(input("What is Petal Width in cm? \n"))

    df = pd.read_csv("Iris.csv")
    X = df[['SepalLengthCm', 'SepalWidthCm', 'PetalLengthCm', 'Peta
```

```
    Y = df[['Species']]

    le = LabelEncoder()
    yEncoded = le.fit_transform(Y['Species'])

    irisPredictionModel = svm.SVC()
    irisPredictionModel.fit(X, yEncoded)

    prediction = irisPredictionModel.predict([ [ sepalLength,  sepa

    returnToOriginal = le.inverse_transform(prediction)
    print("The type of iris flower is " + returnToOriginal[0])
  elif choice == "2":
    break

print("Goodbye!")
```

This is the final output of our flower prediction program.

```
Welcome to the Iris Flower Prediction Program!

We will use Support Vector Machines to predict what kind of iris fl

All you need to do is supply some information about the flower!

1. Make a prediction
2. Exit the program
1
What is the Sepal Length in cm?
3
What is the Sepal Width in cm?
3
What is the Petal Length in cm?
4
What is Petal Width in cm?
4
The type of iris flower is Iris-virginica
1. Make a prediction
2. Exit the program
1
What is the Sepal Length in cm?
1
What is the Sepal Width in cm?
1
```