Task 4

The Task Is To Explore Decision Tree Algorithm For The Given 'Iris' Dataset.

Importing libraries and loading the Iris dataset

In [2]:

```
# Importing libraries in Python
import sklearn.datasets as datasets
import pandas as pd

# Loading the iris dataset
iris=datasets.load_iris()
# Forming the iris dataframe
df=pd.DataFrame(iris.data, columns=iris.feature_names)
df.head(10)
y=iris.target
```

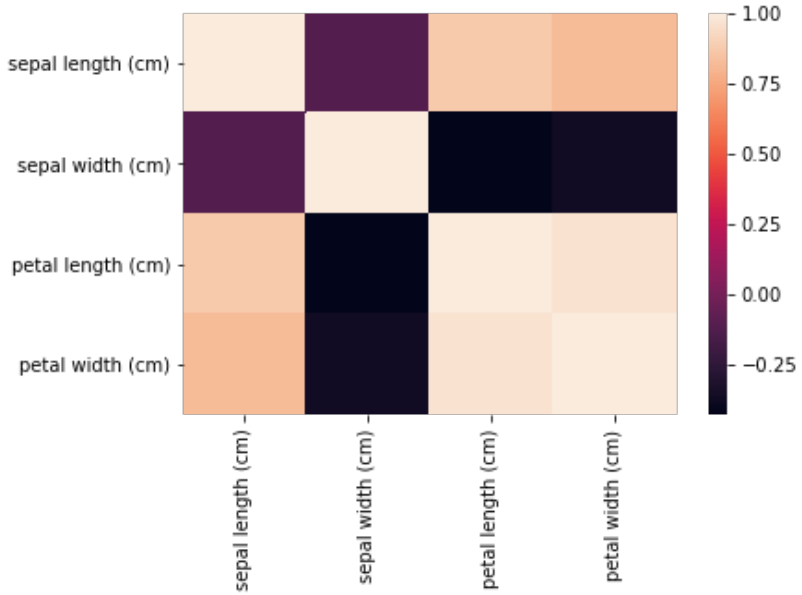
Visualizing the Iris Dataset

In [3]:

```
import seaborn as sb
sb.heatmap(df.corr())
```

Out[3]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f0aa3cdc8d0>
```



Defining the Decision Tree Algorithm

In [4]:

```
# The decision tree algorithm
from sklearn.tree import DecisionTreeClassifier
dtree=DecisionTreeClassifier()
dtree.fit(df,y)

print('Decision Tree Classifer Created')
```

```
Decision Tree Classifer Created
```

Visualizing the Decision.

In [ ]:

```
!apt-get install graphviz -y
```

In [ ]:

```
# Import necessary libraries for graph viz
from sklearn.externals.six import StringIO
from IPython.display import Image
from sklearn.tree import export_graphviz
import pydotplus

# Visualize the graph
dot_data = StringIO()
export_graphviz(dtree, out_file=dot_data, feature_names=iris.feature_names,
                filled=True, rounded=True,
                special_characters=True)
graph = pydotplus.graph_from_dot_data(dot_data.getvalue())
Image(graph.create_png())
```

Out[ ]: