```
In [20]:
          from sklearn import datasets
          from sklearn.tree import DecisionTreeClassifier
          from sklearn.model_selection import train_test_split
In [21]:
          iris = datasets.load_iris()
          x_train, x_test, y_train, y_test = train_test_split(iris.data, iris.target, random_state = 1)
In [22]:
          clf = DecisionTreeClassifier()
          clf.fit(x_train, y_train)
         DecisionTreeClassifier()
Out[22]:
In [23]:
          y_train_pred = clf.predict(x_train)
         y_test_pred = clf.predict(x_test)
In [24]:
          from sklearn.metrics import confusion_matrix
In [25]:
          confusion_matrix(y_train, y_train_pred)
         array([[37, 0, 0],
Out[25]:
                [ 0, 34, 0],
                [ 0, 0, 41]], dtype=int64)
In [26]:
          confusion_matrix(y_test, y_test_pred)
         array([[13, 0, 0],
                [ 0, 15, 1],
                [ 0, 0, 9]], dtype=int64)
In [35]:
          from sklearn.tree import export_graphviz
In [37]:
          dot_data = export_graphviz(clf, out_file=None,
                                   feature_names=iris.feature_names,
                                   class_names=iris.target_names, filled=True, rounded=True)
In [38]:
          import pydotplus
          from IPython.display import Image
In [39]:
          graph = pydotplus.graph_from_dot_data(dot_data)
In [40]:
          Image(graph.create_png())
Out[40]:
                                             petal length (cm) <= 2.6
                                                    gini = 0.665
                                                  samples = 112
                                                ∨alue = [37, 34, 41]
                                                 class = virginica
                                                                 False
                                             True
                                                           petal width (cm) <= 1.65
                                       gini = 0.0
                                                                  gini = 0.496
                                     samples = 37
                                                                 samples = 75
                                   value = [37, 0, 0]
                                                              value = [0, 34, 41]
                                     class = setosa
                                                                           petal length (cm) <= 4.85
                                          petal length (cm) <= 4.95
                                                 gini = 0.193
                                                                                  gini = 0.051
                                                samples = 37
                                                                                 samples = 38
                                               value = [0, 33, 4]
                                                                               value = [0, 1, 37]
                                                                                class = virginica
                                              class = versicolor
                                          sepal length (cm) <= 6.05
                                                                           sepal width (cm) <= 3.1
                                                                                                              gini = 0.0
                      gini = 0.0
                                                  gini = 0.32
                                                                                  gini = 0.375
                    samples = 32
                                                                                                            samples = 34
                                                 samples = 5
                                                                                  samples = 4
                  value = [0, 32, 0]
                                                                                                           value = [0, 0, 34]
                                                value = [0, 1, 4]
                                                                                value = [0, 1, 3]
                  class = versicolor
                                                                                                           class = virginica
                                               class = virginica
                                                                                class = virginica
                 petal length (cm) <= 5.05
                                                     gini = 0.0
                                                                                 gini = 0.0
                                                                                                         gini = 0.0
                          gini = 0.5
                                                                                                       samples = 1
                                                    samples = 3
                                                                               samples = 3
                        samples = 2
                                                  value = [0, 0, 3]
                                                                              value = [0, 0, 3]
                                                                                                     value = [0, 1, 0]
                      value = [0, 1, 1]
                                                  class = virginica
                                                                                                    class = versicolor
                                                                             class = virginica
                     class = versicolor
              gini = 0.0
                                      gini = 0.0
            samples = 1
                                    samples = 1
          value = [0, 0, 1]
                                  value = [0, 1, 0]
          class = virginica
                                 class = versicolor
```