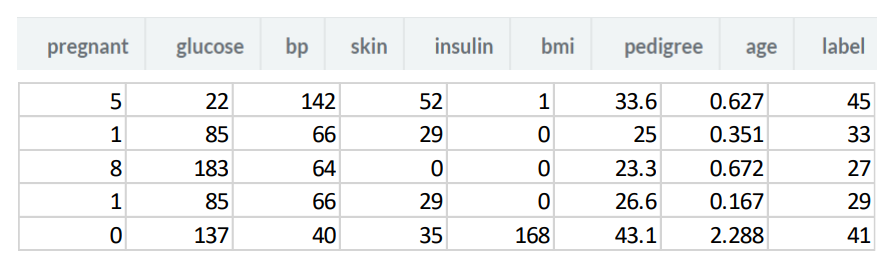
**TASK 1:**

**Train the decision tree using the dataset provided in the lab also given below.**



**CODE:**

# Owned  
\_\_author\_\_ = "Qaiser Abbas"  
\_\_copyright\_\_ = "Copyright 2020, Artificial Intelligence lab-13"  
\_\_email\_\_ = "qaiserabbas889@yahoo.com"  
#===============================================================  
# {code}  
import os  
import pandas as pd  
from sklearn.tree import DecisionTreeClassifier  
from sklearn.model\_selection import train\_test\_split  
from sklearn import metrics  
from sklearn.tree import export\_graphviz  
from six import StringIO  
from IPython.display import Image  
import pydotplus  
col\_names = ['patient', 'glucose', 'bp', 'skin', 'insulin', 'bmi', 'pedigree', 'age', 'label']  
pima = pd.read\_csv("test.csv", header=None, names=col\_names)  
pima.head()  
feature\_cols = ['patient', 'insulin', 'bmi', 'age','glucose','bp','pedigree']  
X = pima[feature\_cols]  
y = pima.label  
X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.3, random\_state=1) # 70% training and 30% test  
clf = DecisionTreeClassifier()  
clf = clf.fit(X\_train,y\_train)  
y\_pred = clf.predict(X\_test)  
print(y\_pred)  
dot\_data = StringIO()  
export\_graphviz(clf, out\_file=dot\_data,  
 filled=True, rounded=True,  
 special\_characters=True,feature\_names = feature\_cols,class\_names=['0','1'])  
graph = pydotplus.graph\_from\_dot\_data(dot\_data.getvalue())  
  
graph.write\_png('qaiser.png')  
Image(graph.create\_png())

**OUTPUT:**

