Q1] DECISION TREES:

---Decision Tree using Information Gain---

maintenance=low:yes

maintenance=med

|price=low:no

|price=med

    |airbag=no:no

    |airbag=yes:yes

|price=high:yes

maintenance=high

|capacity=4:no

|capacity=2:no

|capacity=5:yes

---Decision Tree using Gini Index---

maintenance=low:yes

maintenance=med

|price=low:no

|price=med

    |airbag=no:no

    |airbag=yes:yes

|price=high:yes

maintenance=high

|capacity=4:no

|capacity=2:no

|capacity=5:yes

Q2] (a) MY MODEL

Information gain of root node = 0.186063560079

Gini Index of Root Node: 0.49382716049382713

(b) Via Scikit Learn

Information gain of root node = 0.186063560079

Gini Index of Root Node: 0.49382716049382713

Q3] (a) My model:
Information Gain: Labels = ['yes', 'yes']
Accuracy = 100%
Gini: Labels = ['yes', 'yes']
Accuracy: 100%

(b) Sci-Kit Learn:
Information Gain: Labels = ['no', 'yes']
Accuracy = 50%
Gini: Labels = ['yes', 'yes']
Accuracy: 100%