Homework Set 8

Problem 1 (Decision tree)
Assuming we conducted a survey to some random students in the class on some random days, and we want to know if there's a decision model can predict whether a student wants to go BBQ after class based on the attributes: 1) **Temp**: the highest temperature of that day, 2) **Midterm**: the midterm grade this student get, 3) **Homework_done**: the home work is done or not for this week, and 4) **Quiz**: the self-evaluation of the quiz in the class on that day.

Temp	Midterm	Homework_done	Quiz	Go_BBQ
<15°C	High	No	Bad	No
<15°C	High	No	Good	No
16-25°C	High	No	Bad	Yes
>26°C	Medium	No	Bad	Yes
>26°C	Low	Yes	Bad	Yes
>26°C	Low	Yes	Good	No
16-25°C	Low	Yes	Good	Yes
<15°C	Medium	No	Bad	No
<15°C	Low	Yes	Bad	Yes
>26°C	Medium	Yes	Bad	Yes
<15°C	Medium	Yes	Good	Yes
16-25°C	Medium	No	Good	Yes
16-25°C	High	Yes	Bad	Yes
<15°C	Medium	No	Good	No

Construct a decision tree model based on the table to predict whether a student wants to go BBQ. Use information gain as criteria.