Paul Crann – CS 539 HW 1 Part 2
Task 2-1
Attribute Income
| Value = low
| Attribute Married?
| | Value = no
| | Attribute Debt
| | | Value = low
| | | Leaf: Predicted Label = low
| | | Value = medium
| | | Attribute Gender
| | | | Value = male
| | | | Leaf: Predicted Label = high
| | | | Value = female
| | | | Leaf: Predicted Label = low
| | Value = yes
| | Leaf: Predicted Label = high
| Value = high
| Leaf: Predicted Label = low
| Value = medium
| Leaf: Predicted Label = low
[Tom Risk, Ana Risk] = ['low' 'low']

Task 2-2
Attribute Income
| Value = low
| Attribute Debt
| | Value = low
| | Attribute Married?
| | | Value = no
| | | Leaf: Predicted Label = low
| | | Value = yes
| | | Leaf: Predicted Label = high
| | Value = medium
| | Leaf: Predicted Label = high
| | Value = high
| | Leaf: Predicted Label = high
| Value = high
| Leaf: Predicted Label = low
| Value = medium
| Leaf: Predicted Label = low
[Tom Risk, Ana Risk] = ['low' 'low']

By changing Sophia's credit risk to ‘high', we swap the second node attribute from Married to Debt and vice versa for
the third node. The original tree then needs the gender attribute to further split our training data, while the second tree gains no information by doing so.
In our original decision tree, the property attribute is not used.
In our second decision tree, the property and gender attributes are not used.