

**Task 2-1**

The decision tree generated by the data provided in credit.txt (in the form of an indented tree):

income = high : low

income = low

| married = no

|| debt = low : low

|| debt = medium

||| gender = female : low

||| gender = male : high

| married = yes : high

income = medium : low

Applying the decision tree to determine the credit risk of Tom and Ana gave the following results:

- Tom: low risk

- Ana: low risk

A snapshot of the decision tree and output:

```
C:\Users\Przemek\AppData\Local\Programs\Python\Python37\python.exe C:/Users/Przemek/Desktop/hwl/run_test.py
income = high : low
income = low
| married = no
|| debt = low : low
|| debt = medium
||| gender = female : low
||| gender = male : high
| married = yes : high
income = medium : low
low
low
```

**Task 2-2**

If Sophia's credit risk is changed to high, the resulting tree changes to the following:

income = high : low

income = low

| debt = high : high  
| debt = low  
| | married = no : low  
| | married = yes : high  
| debt = medium : high  
income = medium : low

The following features changed:

- The 'married' attribute was moved to be a leaf node and child node to debt = low
- The 'debt' attribute was moved up a level in the tree
- The 'gender' attribute was removed