University College Dublin
MIS3011S Introduction to Programming
Practical 6

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1. Download the `rental2.py` file from Blackboard.

   (a) Change the code, so that the menu is printed again after each operation (rental, return, t&c, etc).

   (b) Change the code, so that empty lines from the terms and conditions file are not printed.

2. Write a UML Activity Diagram for the following Python code:

```python
income = float(input("What is your income? (0 to quit): "))
while income != 0:
    married = input("Are you part of a married couple (Y/N)? ")
    one_parent = input("Are you a single parent (Y/N)? ")
    if married == "Y":
        limit = 42800
    elif one_parent == "Y":
        limit = 37800
    else:
        limit = 33800
    tax = .20 * min(income, limit)
    tax += .40 * max(0, income - limit)
    print("Your total income tax is {}.".format(tax))
    income = float(input("What is your income? (0 to quit): "))
```

3. Write a python function that checks whether a year (passed as an argument) is a leap year or not.
   Leap year: `https://www.timeanddate.com/date/leapyear.html`

4. Write a Python program which counts the number of occurences of a character in a file.
   Example execution:
   (`http://www.gutenberg.org/cache/epub/120/pg120.txt`)

```
$ python ./char_counter.py x pg120.txt
271 occurences.
```