COMP 10280
Programming I (Conversion)

Practical Sheet 8
Tuesday, 17 October 2017

For each of the following questions, write an algorithm in pseudocode first before writing a Python program. Submit your algorithms in psuedocode as well as your Python programs.

1. Write a program that uses a `while` loop to prompt the user for a series of numbers, check whether each number is divisble by 2, 3, 5 or 7 and print out which of 2, 3, 5 or 7 it is divisible by. Execution of the program continues until a negative number is entered.

   Save this program as `p8p1.py`.

2. Write a program that prompts the user for a number and uses a `while` loop to generate the "multiplication table" for that number from 1 up to the number. For example, if the user were to enter "5", the following table would be generated:

1	2	3	4	5
2	4	6	8	10
3	6	9	12	15
4	8	12	16	20
5	10	15	20	25

   Save this program as `p8p2.py`.

3. Write a program that uses a `while` loop to generate a simple multiplication table from 0 to 20. For example, were the user to enter "6", the following table would be generated:

Times 6 Table	
0	0
1	6
2	12
3	18
4	24
5	30
6	36
7	42
8	48
9	54
10	60
11	66
12	72
13	78
14	84
15	90
16	96
17	102
18	108
19	114
20	120

   Save this program as `p8p3.py`.

4. Write a program that uses a `while` loop to prompt the user for a series of integers and check whether each number is in one of the specified ranges:

   - Number is equal to 0
   - Number is greater than 0 and less than or equal to 20
   - Number is greater than 20 and less than or equal to 40
   - Number is greater than 40 and less than or equal to 60
   - Number is greater than 60 and less than or equal to 80
   - Number is greater than 80 and less than or equal to 100
   - Number is greater than 100

   The program should also count the number of numbers in each range.

   The program should continue until the user enters a number that is less than 0. Before finishing, the program should print out the analysis of the input, ie the number of numbers in each range.

   Save this program as `p8p4.py`.

Please upload your work to the Moodle site before Wednesday evening.

You should keep a copy of your programs for your portfolio.