SOFTWARE 1 PRACTICAL

BASIC SCRIPTS & SELECTION

Week 2 – Additional Exercises

Exercise 1:

Imperial to Metric converter

1. Write a series of small script that convert weight, distance, and liquid measurement from Imperial to Metric system. For example weight:
    - the script should ask the user to enter the number of stones
    - the script should ask the user to enter the number of pounds
    - The script should print the weight in Kilograms
2. Write the reverse conversion, for example
    - the script should ask the user to enter the weight in Kg
    - The script should print the closest weight in Stones and Pounds

Exercise 2:

We have used `input(str)` during the lecture. Rewrite the scripts from question 2 in order to ask the user which conversion he/she want to do. Then the user should enter the measurement values he/she want to convert.

Exercise 3:

A fruit company sells bananas for £3.00 a kilogram plus £4.99 per order for postage and packaging. If an order is over £50.00, the P&P is reduced by £1.50. Write a script that will take the number of kilo of bananas as a user input and print the cost of that order.

Exercise 4:

Write a script that take the `age` and `rate` (the heart rate) that print a description of a person's training zone based on his or her `age` and training heart rate, `rate`. The zone is determined by comparing `rate` with the person's maximum heart rate `m`:

Interval range					Training Zone
`rate`	≥	`0.9 m`			Interval training
`0.7 m`	≤	`rate`	<	`0.9 m`	Threshold training
`0.5 m`	≤	`rate`	<	`0.7 m`	Aerobic training
`rate`	<	`0.5 m`			Couch potato

The maximum heart rate in beats per minute is given by the formula:

$$m = 208 - 0.7\, age.$$

Exercise 5:

Write a script that takes the lengths of the sides of a triangle (a, b, and c) from the user and then print the area of the triangle using Heron's formula. (Look up Heron's formula if you do not remember it.). Note, to compute x^n using Python, you must use the function `pow(x,n)`.