**Practical PFP191**

Programming Fundamentals with Python

**Write a program that performs the following tasks:**

**Question 1 (2 marks)**

Write a program to do the following:

## - Enter a sequence of positive integers (requirement check inputted data)

## - Print out the prime numbers in the above sequence, the largest prime number in the sequence.

**Question 2 (2.5 marks)**

## Given an array with n elements: a[0], …, a[n-1]. Is there an index of i so that the sum of the left is equal to the sum of the right (excluding the number a[i]), i.e. (a[0] + … + a[i-1]) = (a[i+1] + … + a[n-1]). If yes, print “YES”, otherwise print “NO.” Write a program to solve the above problem.

**Question 3 (2.5 marks)**

Write a program to guess a random number n (in the range 1 -> 100) generating n with the function rand. (with different n at different runs). When the user guesses the value of x:

• If x equals n, print “EXACTLY!” and end the program

• If x is greater than n, print “n < x” and then repeat the input and compare

• If x is less than n, print “n > x” and repeat the input and compare

**Question 4 (3 marks)**

## A computer attached to an electronic thermometer automatically records the temperature of the environment at different times of the day. Every day you will receive 1 such file. Information for each measurement consists of 2 lines, line 1 records the measurement time in the format dd-mm-yyyy hh:mm:ss, line 2 records a real number that is the temperature at that time.

## Write a program to read from a file with the same structure as above and calculate the average daily temperature, the average temperature in the range from 5h00 to 15h59'59', from 16h00 to 21h59'59'.

## The data is given in the file **temp.txt**

## *Requirement:*

## - Use function

## - Round results to 3 decimal places.