# EASTER EXPERT CODING CHALLENGE

## SCENARIO

You are a meteorologist in charge of recording daily midday and midnight temperatures in Barcelona/Florida/Sydney/North Pole <you choose!>

You have set up a Raspberry Pi with a temperature sensor attached which will record the measurements in a file called “readings.txt” every 12 hours, at midday and midnight. The format of the file will be as follows:

# Weather Monitoring Station Readings

24.2         13.4

22.7         12.9

25.5         14.0

…

The first column is the MIDDAY temperature.

The second column is the MIDNIGHT temperature.

The number of lines in the file will correspond to the number of days your weather system has taken readings for. Assume the default will be 7 days.

Your program should ignore any lines which start with # (as this is a comment line)

## DESIGN

You need to write a Python program which can store midday and midnight temperatures in separate lists, these might be in decimal form (e.g. 15.6).

Your program should calculate and output the midday average and the midnight average.

Your program should also calculate the HIGHEST midday temperature and the LOWEST midnight temperature recorded over the whole time period.

Output the range of temperatures recorded during this time.

Your program should do a ‘range check’ on the data values and reject any which fall outside a sensible range. Do not include this value when calculating the averages or highest/lowest temps.

## QUESTIONS BEFORE YOU BEGIN

Q1: How do you open a file to read the contents?

Q2: How do you separate the two values on a single line into the midday and midnight temperatures?

Q3: How do you check the first character in a line (string)?

Q4: Which variable data type would be appropriate for the temperature lists?

Q5: How would you correctly save the midday temps in the midday list and the midnight temps in the midnight list?

Q6: What temperature range do you think would constitute a ‘sensible’ range in your chosen location – which values should be rejected as ‘abnormal’?