Diploma in Python Programming

Weather Analyser

1)

The following code creates a list of size 30 with random integers between 0 and 35 using the randint() function from the random library. The list represents daily temperatures between 0°C and 35°C for a month (30 days).

```
import random
daily_temperatures = [random.randint(0, 35) for _ in range(30)]
```

Run this code and print the **`daily_temperatures`**. (The values will be different every time you run the code).

Using this list of daily temperatures, write separate **for-loops** to do the following. You can use the **enumerate** method in the for-loop statement to keep track of the days.

- Find the day with the lowest temperature.
- Find the day with the highest temperature.
- Find the days where the temperature rises above 20°C.
- Find the days where the temperature drops below 10°C.
- Find the days where the temperature increased from the day before.
- Find the days where the temperature was hotter than any of the days previous in the month.

2)

Now generate another list for rainfall values between 0mm and 10mm for a month (30 days). Imagine these are the same 30 days as the daily temperatures list. For example, one day could have a temperature of 11°C and a rainfall of 3mm.

```
daily_rainfall = [random.randint(0, 10) for _ in range(30)]
```

Using the list of daily temperatures and daily rainfall, write separate **for-loops** to do the following. You can use the **zip** method in the **for-loop** statements to traverse through both lists simultaneously.

- Record the amount of 'bad weather' days, the number of days that the rainfall is above 3mm and the temperature is below 10°C.
- Record the amount of 'average weather' days, the number of days that the rainfall is between 1mm and 5mm and the temperature is between 10°C and 18°C.
- Record the amount 'good weather' days, the number of days that the rainfall is below 2mm, and the temperature is above 18°C.

Remember, the random generator code will change your lists every time you run your program so expect different lists each execution.

Cooperation for this assignment is permissible but copying is not tolerated
You must understand each line of your code upon submission.
You may use chat bots or the internet to help your understanding of Python but refrain from using these tools to directly answer any part of the assignment as this will only damage your learning of the subject.
Submit your .py file through the assignment submission link on Moodle.