Programming Refresher Workshop

Session 2 Exercises

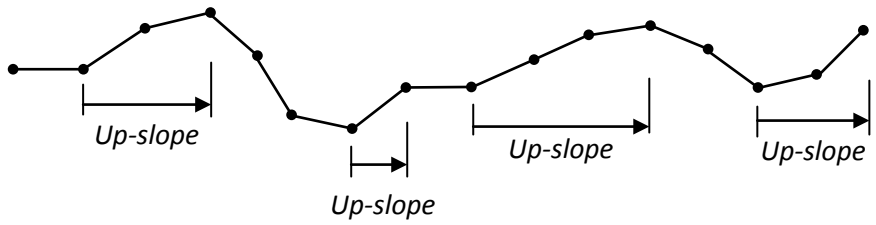
Learning objectives:

- Using selection and repetition statements
- Writing functions/methods
- Applying neat logic in problem solving

Exercise 4 (ex4): Up-slopes

You are an avid runner. Given a running route consisting of heights of points at regular interval on the route, you want to find out the number of up-slopes in the route. An up-slope is a contiguous group of heights of increasing values.

For example, the diagram below (not drawn to scale) shows a route with 4 up-slopes.



Write a program that reads in a list of non-negative values representing the heights, terminated by a negative value which is not part of the data, and computes the number of up-slopes in the route. Your program should include a module (function or method) to read the input data and return the answer.

For the example above, the input data are as shown on the right.

```
3
3
4
4.4
3.28
2
1.8
2.8
2.8
3.2
3.6
3.71
3.53
2.7
2.9
3.65
-1
```

Sample run

```
Enter data:
3
3
4
:          (some input data omitted for brevity)
2.9
3.65
-1
Number of up-slopes = 4
```

Testing

What are the cases you should test your program with? Can you list out the cases?