☐ Task 6.1

Write a program which prints the sequence 1, 2, 3, . . . , 9, 10 to the screen, each on a new line, using a while loop (and only one print statement).

Hint: Use a while loop with a counter variable.

Once, you have done this **extend** your program to print a second sequence of numbers: 10, 9, 8, . . . , 2, 1 to the screen, each on a new line, using a while loop (and only one print statement).

☐ Task 6.2

Write a program which prints the sum of numbers from 0 to 10 (inclusive) using a while loop (and only one print statement).

Hint: You need a variable to keep a running total.

☐ Task 6.3

Write a program which prompts the user to enter ten numbers. Once the user has entered all ten numbers the program should calculate the average of them (i.e., the sum divided by the count). Each prompt should state which occurrence the user is entering, e.g., a sample run might be

```
Enter number 1: 23
Enter number 2: 45
...
Enter number 10: 23
Average: 22.54
```

Here the user entered the numbers 23, 45, . . . , 23, and the average was calculated to be 22.54.

Hint: Keep a running total in a while loop. You should only have one input statement in your program.

Hint: In order to produce the string `Enter number x:` in the `input` statement, you can use the format specifier `%d`, similar to how you have been using it in `print` statements – it can be used outside a print statement.

☐ Task 6.4

A *palindrome* is a word that is spelt the same forwards and backwards. Example of palindromes are "noon", "madam", and "racecar". Write a program that allows the user to input a word and outputs whether it is a palindrome or not.

Hint: The are various ways to do this, but an easy way involves keeping two "pointers" referencing the positions in your string. The pointers start at the beginning and end of the string. You bring them in (towards the middle) each time that you find matching characters. If you find non-matching characters you know the string is not a palindrome.

☐ Challenge Task 6.5

Modify Task 6.3 (copy it first) so that the user can enter as many numbers as they wish. The user should indicate they have entered enough numbers by entering -1 (this value should not be considered for the calculation of the average).