

## Exercise – Control Flow

### Objective

The objective of this exercise is to reuse the equality and boolean statements from before to write some more complicated programs using if, switch and looping!

### Overview

Create a new class to put your code in. Remember we need a main method for the code to run

### Looping

1. Write a while loop that prints out pairs of numbers that show the current value of  $n$  and the value of  $n + 10$  as long as  $n$  is less than 10
2. Then, write a while loop that prints out pairs of numbers that show  $n$  and  $2^n$  as long as  $n$  is less than 10
  - a. You don't need to use the Math.pow function for this, just base it on the previous value and multiply it by 2
  - b. Remember how scoping works when saving a value between one loop and the next
3. Rewrite these two loops using the for loop
4. Which do you prefer?

### Conditionals

5. Write an if statement that based on a number between 1 and 7 prints out if today is a week day or a weekend.
6. Now rewrite this as a switch statement.
7. If you don't use the break keyword in a switch statement, the execution continues onto the next case regardless of whether it applied. Can you use this to make your switch statement simpler?
8. Write a loop which goes from 1 to 7 and prints out if today is a week day or the weekend!

### If we get time...

The rules for working out if a particular year is a leap year are:

- If the year is divisible by four AND
  - The year is not divisible by 100 OR
  - The year is divisible by 400

Write some code that prints out the year and whether it was a leap year between 1900 and today.