# Programming 3

## Techniques

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| **FOR & NEXT loops** | For & Next loops are called this because they being and end with these words. All of the statements written between these lines are repeated. |

* Present your work on these tasks in a single Word document. Make sure that the document is saved with the filename **Programming 3 Username**, replacing ‘username’ with your username.
* Each time you complete a part of the task, you will need to record that in your document.
* Use task numbers and letters as well as headings and make sure you present your work clearly.
* Use copy and paste to put your code for the programming parts of the task.
* Type your answers to the other questions.

## Task 1

 For i As Integer = 1 To 12

 Console.WriteLine(i)

 Next

 Console.ReadLine()

1. Change the program so that it outputs the numbers from 1 to 20.
2. Change the program so that it outputs the numbers from 5 to 15.
3. Change the program so that it counts from 1 to 12 and outputs the 2 times tables (i\*2).
4. Change the program so that the variable **counter** is used instead of **i**.
5. Change the program so it outputs the 7 times tables.
6. Change the program so that it outputs the first 10 terms of the sequence **n+3**.

## Task 2

 Console.WriteLine("Countdown")

 For i As Integer = 10 To 0 Step -1

 Console.WriteLine(i)

 Next

 Console.ReadLine()

1. Add a line to the program to output the phrase “Lift Off” when the countdown is finished. You MUST check that this line is only displayed once.
2. Make the countdown start at 100 and go down in multiples of 10.

## Task 3

 Console.WriteLine("Countup")

 For i As Integer = 0 To 10 Step 2

 Console.WriteLine(i)

 Next

 Console.ReadLine()

1. Change the program so that it counts up to 100 in 5s, starting with the number 5.
2. Change the program so that it outputs the phrase “Done” when the counting is done. You MUST check that this line is only displayed once.
3. Change the program so that the 13 times tables are displayed.

## Task 4

 Dim numtests As Integer

 Dim average As Double

 Dim tmptest As Integer

 Dim total As Integer

 numtests = 3

 total = 0

 For testnum As Integer = 1 To numtests

 Console.Write("Enter score for test {0}: ", testnum)

 tmptest = Console.ReadLine()

 total = total + tmptest

 Next

 average = **?**

 Console.WriteLine("Average test score: {0}", **?**)

 Console.ReadLine()

1. Complete the program by replacing the question marks with the correct code. The average is calculated by dividing the total by the number of tests.
2. Change the program so that the user can enter the number of tests they want to average.
3. Add another variable to the program called **maximum**. Make it equal to 0 below the statement that makes **total** equal to 0. Immediately after the line **tmptest = Console.Readline()**, write an IF statement that makes maximum equal to **tmptest** if tmptest is larger than maximum. (IF tmptest>maximum Then maximum=tmptest). Output the highest test score when all of the test scores have been entered. You MUST check that this line is only displayed once.
4. Change the program so that, at the start of the program, the user has to enter a name. Display the name alongside the average and highest test scores at the end of the program.