**SD1 Structured Programming**

**Programming Assignment**

1. Rewrite last term’s project to now include the following functions:
   1. **InputList** : which will populate the array with 12 integer values
   2. **Menu** : which will display the same options as before (ref. last term’s project spec.)
   3. **Display**: displays the content of the array to the screen
   4. **GetTotal**: returns the total of all of the values
   5. **GetAverage**: returns the average value to 2 decimal places
   6. **GetLargest**: returns the largest integer value
   7. **GetSmallest**: returns the smallest integer value
   8. **GetNumOccurrences**: returns the number of times a particular number appears in the array
   9. **ScaleUp**: updates the content of the array based on the scale factor entered, e.g. a scale factor of 2 will double the value of each number in the array
   10. **Reverse**: updates the content of the array such that the original set of numbers are now in reverse order
   11. **ZeroBase**: updates the content of the array such that all the values are adjusted by the same amount so that the smallest value will be zero.
2. Alter the initial code in the Project application so that the array is now filled from a file called “Input.dat” .
3. Add suitable code to the Project application as in 2. so that the contents of the array are written to a file called “Output.dat” before the application terminates.
4. Alter your solution to 3. so that the file “Output.dat” is only re-written if necessary.