# Comp 1 Preliminary material Code Analysis

The aim of the document is to help YOU understand the preliminary code and prepare for the COMP1 Exam on Monday 18th May 2009

### Step 1 – READ THE EXAM BOARD “Instructions to candidates”

Here is my take …..

* Note that the format of the exam is slightly different to the mock paper!
* **Section A** will be **THEORY QUESTIONS.**
* **Print out** the Comp1 Spec and highlight any areas you are not sure about..
* The three areas most likely to be in this section are:
* Problem Solving
* Data representation
* System life Cycle (I think this will be examined in the later sections)
* **Section B**  You write a new program from scratch
* Only 20mins! So it will be a short problem (like my homeworks)
* Will be different to the skeleton program
* Could test your theory knowledge
* Could be a convert from PseudoCode/Structured English
* **Section C** Theory questions based on the skeleton code
* “What line does…..” style questions
* Explain function X questions
* What is the role of variable Y etc……
* **Section D** Altering and extending the skeleton program
* Almost half the paper
* Correcting the subtle mistake
* Possible Additional requirements (almost guaranteed to feature!)

**NB: Element zero of any array should NOT be used for this exam!!!!!!!!**

The rest of this pack is designed to help you analyse the Skeleton Code, you should type OR copy/paste your answers into the table below…You may use any resources. The code does run correctly and can be tested.

*NB: NO line numbers are used in the OFFICIAL skeleton code.
The line numbers used below are only valid for the version of the skeleton code attached to this document*.

**The following questions refer to the MAIN program**

|  |  |
| --- | --- |
| 1. Write down (copy/paste) of the **Identifiers** for variables in the program that have global Scope
 | Globals are those variable declared outside the any subroutine or function:**PlayerOneName, PlayerTwoName, XCoord, YCoord, NoOfMoves, ValidMove, GameHasBeenWon, GameHasBeenDrawn, CurrentSymbol, StartSymbol, PlayerOneSymbol, PlayerTwoSymbol,Answer, PlayerOneScore, PlayerTwoScore** |
| 1. Write down (copy/paste) all of the **Identifiers** for variables in the program that have Local Scope
 | **There are NO local variables in the MAIN program.****(in other Subs/Functions: Row, Column, X, Y, ValidMove, XOrOHasWon, RandomNo, WhoStarts)**  |
| 1. Give an example of an identifier for an array.
 | **Board** |
| 1. What is the difference between the **Char** and **String** data types?
 | **Strings store zero to many characters, whereas Chars are an empty string \store zero or a single character.** |
| 1. What does the line 31 doPlayerOneScore = 0
 | **Assign player one’s score to zero. This is a global variable which has been declared as an integer and keeps play one’s score during the match.** |
| 1. If PlayerOneSymbol holds a value of “X” . What would be the next line of code the program would run after line 37?
 | **Line 41****Loop Until PlayerOneSymbol = "X" Or PlayerOneSymbol = "O"****Next assignment is PlayerTwoSymbol = "O"** |
| 1. What **“Role”** Does the variable NoOfMoves perform on line 71
 | **Number of moves made in the current game is incremented. If this reaches 9 the game is drawn.** |
| 1. What **“Role”** Does the variable Answer perform on line 105
 | **It stores the input entered by the user which determines whether the program quits or the user get to play another game. If the user enters ‘N’ or ‘n’ then a Loop Until condition is met and the program exits.** |
| 1. Where else in the code does a variable perform the same “**role”** as in question 8
 | **‘PlayerOneSymbol on line 35 plays a similar role in that the user inputs a value which determines whether or not a loop is quit or continues to run.****Or choosing X coord – get from user and loop until is valid.** |
| 1. What is the purpose of the Do..Until Loop lines 33🡪41
 | **Keeps looping until the user enters a valid symbol (‘X’ or ‘O’.** |
| 1. What values could the variable ValidMove store?
 | **True or False** |

**The following questions refer to the Procedure: CheckValidMove**

|  |  |
| --- | --- |
| 1. List the parameters declared in the program interface of this procedure
 | **XCoordinate, YCoordinate, Board** |
| 1. Which parameter is not actually used in this Procedure?
 | **YCoordinate** |
| 1. What type of validation check is performed on line 147?
 | **A range check** |
| 1. Give an example of Normal Data to test the above validation
 | **1 (any of these 1, 2 or 3)** |
| 1. Give an example of erroneous Data to test the above validation
 | **4 (any number less than 1 or greater than 3)** |
| 1. What does line 85 do?

PlayerOneSymbol = CurrentSymbol | **Determines if player one is the winner. CurrentSymbol contains the symbol of the winning player so this is compared to player one’s symbol. If they are the same then player one has won, else player two has won.** |