# 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 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
 | **Row, Column, X, Y, ValidMove, XOrOHasWon, RandomNo, WhoStartsParameters that are passed by value such as XCoordinate and YCoordinate in function CheckValidMove() also have local scope.** |
| 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 store zero characters or a single character.** |
| 1. What does the line 27 doPlayerOneScore = 0.0

(VB: Line 31 C# : Line 40) | **Assign player one’s score to zero. This is a global variable which stores player one’s score during the match.** |
| 1. If PlayerOneSymbol holds a value of “X” . What would be the next assignment statement after line 81?(VB: Line 37 C# : Line 47)
 | **Next assignment is PlayerTwoSymbol = "O" (line 84)** |
| 1. What **“Role”** Does the variable NoOfMoves perform on line 111(VB: Line 71 C# : Line 84)
 | **The role is a “gatherer”. It increments when either player moves in the current game. If the value reaches 9 the game is drawn.** |
| 1. What **“Role”** Does the variable Answer perform on line 105(Python: 137)
 | **The role is “most recent holder”. It stores the input entered by the user which then determines whether the program quits or the user plays another game. If the user enters ‘N’ or ‘n’ then the while condition evaluates to False and the program exits.** |
| 1. Where else in the code does a variable perform the same “**role”** as in question 8
 | **A similar recent holder role is choosing X coordinate (line 46)****Also lines 110, 114, 81, 54** |
| 1. What is the purpose of the while/Until Loop lines 78🡪82

(VB: Lines 33🡪41 C# : Lines 42🡪52) | **Code validation. Keeps looping until the user enters a valid symbol from a list of codes (‘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 parameters are not actually used in this Procedure?
 | **YCoordinate and Board** |
| 1. What type of validation check is performed on line 53?(VB: 147

C#: 173) | **Range check** |
| 1. Give an example of a value that will pass the validation check
 | **1 (1, 2 or 3)** |
| 1. Give an example of a value that will fail the validation check (i.e. is ‘erroneous’)
 | **4 (any number less than 1 or greater than 3)** |
| 1. What does line 121 do?If PlayerOneSymbol = CurrentSymbol Then(VB: 85

C#: 101) | **Determines if player one is the winner at the end of a non-drawn game. CurrentSymbol contains the symbol of the last player to move so this is compared to player one’s symbol. If they are the same then player one has won, else player two has won.** |