[Ravi Patel] Instructor: Dr. Thamira Hindo

[CPSC 230]

Chapter 1- lab assignment part 1

(15 points)

Due time: End of the class

Note: Submit your assignment in the inbox (chapter 1 assignment).

If the assignment includes writing program code, then show your programs implementation to the instructor before leaving the class.

Part1

Q1- The five components of a computer are: 1. Input Devices

2. Output Devices
3. Processor (CPU)
4. Main Memory
5. Secondary Memory

Q2- If a program to is divide two numbers, then the data is the numbers (what the program is dividing, and what is being interpreted)

Q3- The type of the input code to the high level language is similar to human language (more complicated instructions than the CPU can follow, must be translated into machine code by a compiler, consists of English and mathematical symbols) while the type of the code for the assembly language is a set of symbols and letters (can be translated by an assembler into machine code that the CPU can follow).

Q4- The high level language program is easy to read and write, and interpreted into machine code while the low level language program is hard to write, but has superb performance & deals with direct memory management (close to the machine)

Q5- The compiler is used to translate high-level language into machine language (source code to machine language, or object code) and does so with the program as a whole, making debugging harder) while the interpreter is also used to translate source code into object code, it does so one statement at a time, until the interpreter runs into an error in which case it stops (making debugging easier). The interpreter is memory efficient while the compiler generates intermediate object code which further requires linking, so it is not memory efficient. Overall execution time is slower with an interpreter and overall execution time is much faster with a compiler.

Q6- The function of the operating system is to allow us to communicate with the computer, and respond to user requests to run other programs for task and memory management while the function of the program is to do real work for the users, as in word processing, spreadsheets, and database management.

Q7- The computer resources are the devices connected to the computer system, including all of the internal system components, such as the CPU, video card, hard drive, and memory

Q8- The operating System is used to allocate the memory among all running processes

Q9- The compiler program generates source code into object code

Q10- The linker program generates all the object code into an executable program

Q11- The program design includes designing objects and their algorithms. A problem solving phase (result is an algorithm that solves the problem - problem definition, algorithm design, desktop testing) and an implementation phase (of which the result is an algorithm translated into a programming language - translating to C++, testing the translated code). A program is an algorithm expressed in a language the computer can understand.

Q12- The most important steps to write a program is problem solving (problem definition, algorithm design, desktop testing) and implementation (translating to C++, testing the translated code)

Q13- What is the output of a program step cout << "'4+3= \n" and what does \n mean? The output would be what is between quotation marks, with an extra line added afterwards ('4+3=

)

\n is an escape sequence, and stands for newline

Q14- The three main kinds of program errors are 1. Syntax Errors
2. Run-time Errors
3. Logic Errors

Q15- The compiler detect Syntax error, but not Run-time or Logic errors.

Q16- If the program is to assigns letter to students in a class, then the data is the students