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Assignment No: 1
Computer Programming

1. What is programming language? Compare it to our native language.
   - Programing Language is used by the programmers to set of instructions into machine code. Since computers can't understand human language, we use programming language as a bridge to communicate to computers. In comparison to our native language which is Filipino, to understand our language other nationalities might use apps or an interpreter in translating their language to ours. Just like how we deal with computers, using a programming language that serves as the interpreter or translator of human command into the language where the computer can understand which is the binary's or 0s and 1s.

2. Hierarchy of programming language. Explain.
   - Hierarchy of programming language starts from the bottom which is the hardware or the computer itself. It is followed by machine language since it is directly representing as the machine codes (0s and 1s). Next is the assembly language which contains some human readable codes. And at the top of it is the high-level programming language which is closely resemble to human language that is written in English like words. Hierarchy was based from how the codes is similar to machine codes to human readable codes.

3. Types of programming language. Explain.
   - Low-level language – languages used are close to machine code.
     - Machine Language – it was the first type and lowest level of programming language developed. It uses codes that are written in binary digits or 0s and 1s. Programs written in machine language is easily and faster to understand by the processor of computer but typing it manually will be time consuming and errors are difficult to find.
     - Assembly Language – it is also a low-level programming language. In this language, it uses mnemonics code like add and mov in replacement to binary. Assembler is used to covert programs into machine codes.
   - High-level language – languages used are close to human language.
     - Procedural Language – is a high-level programming language. It follows a step by step process to produce the desired solution in a certain problem.
     - Object-Orient Language – is another high-level language. The programmers or users directly specify and recognize what will be the output of program should be.

4. Differentiate high level language from low level language
   - High-level language uses codes that are close to human language like simple English statements while low-level language which is basically language that is very close to machine code which is binary. Programs written in high level language is much easier to read, write and understand since it uses human

language while low-level language will be difficult because it requires deeper knowledge about machine language. High-level language is a user-friendly and low-level language is a machine friendly.

5. What is IPO? Explain.
   - IPO or also known as Input, Process, and Output is a structure on how a certain activity will processes information. The input is the data or information you want to process in order to create your target output. In the process part, it operates what you intended to do with the data. And lastly, the output which is the product of the processed in formation.

6. Differentiate pseudocode from algorithm.
   - Pseudocode is the representation of algorithm in a more programming related way while algorithm is expressed using English language but somewhat technical. Algorithm is written in more detailed than pseudocode that uses only simple words. Algorithm is a set of instruction or procedure to solve a particular problem while pseudocode doesn't follow any syntax or set of rules.

7. What C language?
   - C language is the most widely used and popular system programming language. C language is called the based language of programming language. It is also known as middle level language supports both features of high- and low-level language. This language can be used in various applications like creating new operating system, drivers, database programs and many more. It is also much easier to learn and understand among the others programming language.

8. Brief History of C/C++
   - In 1960, 'ALGOL' was introduced the first concept of programming. In 1967, 'BCPL' or Basic Combined Programming Language was introduced. It was developed and designed by Martin Richards for writing system software. Then in 1970, Ken Thompson introduced 'B' which contained features of BCPL. It was created using the UNIX operating system at AT&T and Bell Laboratories. A great computer scientist in 1972 named Dennis Ritchie created a new programming language called 'C'. It is the success of the combination of ALGOL, BCPL, and B. The features of these three is used and created new concepts that makes 'C' programming powerful. This program was strongly connected with the UNIX operating system. 'C' programming became popular and started to spread around the world. In 1989, 'C' language was defined as American National Standards Institute (ANSI). And the next year 1990, it was now called as 'ANSI C' that was approved by International Standard Organization (ISO).