Developing it - software development that is!

Science, Computer Science

The Software Development Life Cycle

Analysis: This stage of the cycle is used to plan what the program will be able to do. Developers will brainstorm ideas about the types of people that will be using their program and how they will be accessing it. They will also think about what information will be inputed and about the output.

Design and Development: This stage of the cycle is where the details of how the program will be able to complete its tasks are produced. It will be produced by creating algorithms and deconstructing the program into sizes that are easily understandable.

Implementation: This stage of the cycle is where the magic happens. Programmers start to code the program while referring to the plans created in the previous parts of the cycle. They also have to make sure their code is created in a certain way so that it is easy for other programmers to understand.

Testing: This stage of the cycle is where programmers test their program to make sure everything is working correctly. They use many different inputs and test every button and operation and usually will ask a small group of people to help the testing. Once everything has been tested the program is released to the public.

Maintenance: This part of the cycle is where the program has been released and changes are made to the program. These are usually known as updates and usually occur when errors are found in the program and need to be fixed.

The Difference Between Source Code and Machine Code

Machine code and source code are very similar. They both are able to tell a program to do specific tasks however, there is one major difference and that is in the way the program receives this information. Machine code uses binary language and is considered as the “ lowest level programming language”. This language only uses the values of 0 and 1s. Due to how it is only written with two different characters, it is hard for humans to understand however, this is the only language understood by computers. Source code on the other hand is quite the opposite. Source code uses english to tell the computer what to do. The english characters or phrases are turned into binary code so that the computer can read it. Since source code uses english characters it is easy for humans to understand and is considered as a “ high level programming language”.

The Difference Between an Interpreter and Compiler

An interpreter analyzes code of a program by one line at a time. It does not look at anything else and does not need to do anything else. A compiler however, analyzes the entire code and converts it into object code. The program is only able to run after it has been converted because object code is very similar to machine code, the only language computers can recognize.

Are there any advantages/disadvantages related to using an interpreted programming language over a compiled language?

There are many advantages when using an interpreted programming language over a compiled language. One of them is that an interpreted programming language stops right after the first error is found. This makes finding bugs very easy as the program will be able to notify you where errors

are. Another advantage is that since the language is interpreted, no object code needs to be created. This will cause the computer to require less memory in order for the program to be executed. There are however, a few disadvantages. One of which is that it takes a longer amount of total time to complete. Since the program must go through one line of code at a time, it is slower than a compiler that goes through the entire code at the same time. Another disadvantage is how an interpreter can only be run using the same program. This makes it not very efficient if you have to switch computers when working.