Assignment 1

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Q1: What is the logical difference between a compiler and an interpreter, and which one is better in different situations?

Ans: The primary difference between a compiler and an interpreter is, the compiler executes the complete code at once and coverts it into machine language. However the interpreter converts the code into machine language line by line.

Interpreter or Compiler, which one is better?

The answer relies on the specific scenerio you are in, they both have their own merits and demerits.

Compiler: Compilers are good where we need fast execution of the program. It may reduce the time cost and it coverts the high level code into machine code at once. But it does not provide good debugging and error detection features. It compiles the whole code even if there are errors in the code.

Interpreter: Interpreters are better where we need debugging and error detection in the program. It is good for the development processes of the project. As it coverts the high level code one by one that is why it is slower than the compiler. It stops executing the code on the line where there is an error.

Q2: What is JIT, and in what conditions does it work better than a compiler and when is it not as good as a compiler?

JIT stands for Just in Time. It is a combination of Compiler and interpreter. When the program executes using JIT initially it is interpreted and then the frequent parts of the code are compiled. It is a scenerio based dynamic code converter, it makes the decisions at the runtime. It is faster than the interpreter based on execution time.

When JIT is not good?

As the JIT interpretes the code in the begining that is why it uses more time, that may create an overhead. Due to this the program ma execute slower than the compiler.

My Compiler Output:

```
E:\1 Study\7th Semester\CCL\Lecutre 1>compiler.exe myFile.txt
Hello my name is mustafa, and I am testing my first compiler.
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