1.2 Assignment

(1) Explain the term "programming"
A set of instructions for computer to perform specific task and solve problems.

→ Programming impacts our world in countless ways:
- From the websites you visit,
- The apps you use.
- The games you play and the AI assistances you interact with.

Steps in programming:
1. Problem definition
2. Algorithm design
3. Coding
4. Compilation | Interpretation
5. Testing
6. Debugging
7. Documentation
8. Maintance

(2) Describe the history and importance of C++.

History:

→ C++ programming language was developed in 1979 by bjarne Stroustrup at bell laboratories of AT&T (American Telephone & Telegraph located in U.S.A.

→ Bjarne Stroustrup is known as the founder of C++ language.

→ It was develop for adding a feature of OOP (Object Oriented programming) in C language.

→ C++ programming is "relative" (called a superset) of C, it means any valid C program is also a valid C++ program.

Importance:

C++ is a powerful & versatile language with a crucial role in various invenations.

→ It's performance, versatility and established community make it a valuable skill for the programmers seeking to take a complex projects and pass the boundaries of software developments

1. Performance & efficiency
2. Versatility and natural purpose.
3. Object oriented programming (OOP) support
4. Large community
5. Legacy codebase & compatibility
6. low-level language.

(3) State the difference between compiler and interpreter.

Comp^{n}	Compiler	Interpreter
Input	It takes an entire programe at a time	It takes a single line of code at a time.
Output	It generates intermediate object code.	It does not produce any intermediate object code.
Working mechn^{m}	The compilation is done before execution	Compilation & execution takes place simulancously.
Speed	Comperatively faster	Slower
Memory	Memory requirement is more due to the creation OF object code.	It requires less memory as it does not create interme diate object code.

Errors	Display all errors after compilation, all at the same time.	Display error of each time one by one.
Error detectin	Difficult	Easier compaaratively.
Pertain progrn lang.	C, C++, C#, Scala, typescript uses compiler.	PHP, perl, Python, Ruby, uses an interpreter.