

→ General discussion:

- ◆ What is a program?
 - A **computer program** is a list of instructions that tell a computer what to do.
- ◆ What is an algorithm?
 - a process or set of rules to be followed in calculations or other problem-solving operations, especially by a computer.
- ◆ What is a compiler?
 - A compiler is a software program that converts computer programming code written by a human programmer into binary code (machine code) that can be understood and executed by a specific CPU.
 - <https://www.quora.com/What-does-a-machine-language-code-look-like>
- ◆ What is the meaning of “Compiling a program”?
- ◆ What is the meaning of “Running a program”?
- ◆ What is terminal/cmd?
 - the **Terminal** is an interface that allows you to access the command line from the **GUI**.
 - A **command-line interface (CLI)** processes commands to a computer program in the form of lines of text. The program which handles the interface is called a **command-line interpreter**.
- ◆ What is JAVA?
- ◆ Writing first java program*
- ◆ What is IDE (Integrated development environment)
 - Writing same code in an IDE and showing how it helps in autocomplete, compile error, showing project structure and other features.
 - <https://www.quora.com/What-is-IDE-1>
- ◆ Program Structure*
- ◆ Packages and classes

- ◆ Difference between JDK, JRE, and JVM
 - JVM -> Virtual machine not physically exists. Runs byte code on top of physical machine.
 - JRE -> JVM + Libraries
 - JDK -> JVM + JRE + Development tools like javac
 - Use Javatpoint for the diagram

→ Introduction to java:

- ◆ Java class (general idea)
- ◆ Java methods (general idea)
- ◆ What is a method?
 - Use class PPT
 - Introduce method of overloading
- ◆ Datatypes in java
 - **Primitive data types:** The primitive data types include boolean, char, byte, short, int, long, float and double.
 - **Non-primitive data types:** The non-primitive data types include **Classes**, **Interfaces**, and **Arrays**. (You will learn about scanner class object in data input section).
- ◆ Variables and arithmetic operations
 - Arithmetic operators: +, -, *, /, % (pseudo code for even odd)
 - **Unary Operator : ++, --**
- ◆ Order of precedence ()
- ◆ Variables, constants and assignment statements
- ◆ Getting input from user
- ◆ Shorthand Operators
 - <https://www.w3schools.in/java-tutorial/operators/compound-assignment/>
 - Give example of counter (Pseudo code only, full code after conditional loops)
- ◆ Passing variables to methods.

→ At the end of session develop a calculator program (for int) that uses method overloading, Input output from the user, arithmetic operations.

→ unary operations like increase/decrease a number by 1 (++) , Shorthand Operators like a method that increase the number by a certain number,