# Computer Basics

Q1)  What is a Computer?
A1) It is an electronic device that stores and processes data in binary format according to instructions given to it through a program.

Q2) What is RAM?
A2) RAM, which stands for Random Access Memory, is a hardware device generally located on a computer's motherboard and acts as an internal CPU memory. It allows the CPU to store data, program, and program results when you switch on the computer. It is volatile in nature, so if you turn off the power, all data stored in RAM is lost.

Q3) Where is data stored in a computer?
A3) Data is stored in HDD in the computer. Nowadays HDDs are replaced with SSDs. Data is generally held as files.

Q4) What is that input device used to type text and numbers on a document in the computer system?
A4) Keyboard

Q5) What are the output devices?
A5) Fax, Monitor, and Printer are some examples of output devices.

Q6) Which is the input device that allows a user to move the cursor or pointer on the screen?
A6) Mouse

Q7) Which language is directly understood by the computer without a translation program?
A7) Computer understands only 0s and 1s which is the machine-level code.

Q8) What are Input devices?
A8) Keyboard, Mouse, and Joystick are some examples of input devices.

# Fundamentals of Java

Q1) What is a Programming language?
A1) A programming language is a **computer language** that is used by **programmers (developers) to communicate with computers**. It is a set of instructions written in any specific language ( C, C++, Java, Python) to perform a specific task. Basically it’s programmers way to communicate with the computer to tell it what to do.

Q2) Why do we need a programming language?
A2) Since computer only understands binary language that is 0s and 1s, if we start providing instructions to computer in that format it will become very cumbersome and also not human

readable.That's why we need programming languages where we can write human readable code which gets compiled to machine code by compiler and computer can then execute it.

Q3) What are the features of Java?
A3) The major features are:

- Object-Oriented: Use of objects/classes. Provide all OOPS features.
- Platform Independent: It's platform independent language meaning code written in windows can also be easily run on mac.
- Portable: The byte code generated by Java compiler is secure and can be transferred over network.
- Robust: It's a strongly typed language and potential errors are caught during compile time itself unline JavaScript where we find out program errors at runtime.
- Secure: The byte code generated by Java compiler is secure and can be transferred over network.
- Multi-Threaded: Java's multithreading programming capability enables you to create a program that executes multiple tasks concurrently.

Q4) What is an object?
A4) An object is an entity with state and behaviour. In Java it is instance of a class. It represents real world entity like bike, dog, chair etc.

Q5) What is a Class?
A5) A class is a collection of items with similar characteristics. It serves as a model or blueprint from which objects are created which can be then used further in programs.

Q6) Explain the Java main () method?
A6) It is the starting point of a Java program. JVM starts executing program from this line.If you don't define it your program will not run.

The syntax of main is public static void main(String[] args)

public-> Access specifier so that JVM can find and call the main method.

Void -> The main method doesn't return any value to the caller.

Static -> The main function can be called without creating object of the class it is defined in.

String[] args -> Function parameter to take any input from command line when running this program.

# Java Variables and Data Types

Q1) What is statically typed and Dynamically typed Programming Language?
A1) if the memory of the variable is given during the compilation time itself then such types of programming languages are called as “Statically typed”. Ex: C,C++,Java
If the memory of the variable is given during the execution time itself then such types of programming languages are called as “dynamically typed”. Ex: Python, JavaScript

Q2) What is the variable in Java?
A2) A variable is the title of a reserved region allocated in memory. In other words, it may be referred to as the name of a memory location. It is a container that holds the value while the Java Program is executed.
Syntax for Declaring a Variable:
Type variable_name [= value];
The variable_name is the name of a variable. We can initialise the variable by specifying an equal sign and a value (initialization i.e. assigning an initial value, is optional).

Q3) How To Assign a Value To Variable?
A3) The assignment operator (=) is used to assign a value to variable in Java.
Ex. int a = 10;
Value can be reassigned also ex. a = 20;

Q4) What are Primitive Data types in Java?
A4) byte, short, int, long, float, double, char, boolean.

Q5) What are the Identifiers in Java?
A5) Identifiers in Java are a sequence of characters to identify something in a program. They are names given to a class, variable, package, method, or interface and allow the programmer to refer to the specific item from any place in the program.

Q6) List the Operators in Java?
A6) The operators in Java are:

- Unary Operators: ++, – etc.
- Arithmetic Operators: +, -, /, *, % etc.
- Assignment Operators: =, +=, -= etc.
- Logical Operators: &&, || etc.
- Bitwise Operators: |, &, ^ etc.
- Relational Operators: <, >, <= etc.

Q7) Explain about Increment and Decrement operators and give an examples
A7) Increment and Decrement Operators in Java are used to increase or decrease the value by 1.
Ex. int a = 10; a++; Now a has value of 11.

int b = 10;  b-- ; No b has value of 9.
int c= 13; ++c; Now c has value of 14.
int d = 67; --d; Now d has value of 66.