Module 1 – Overview of IT Industry

**What is a Program?**

➢ A **program** is a set of instructions that tells a computer what to do. It’s

like a recipe that guides the computer to perform tasks, such as adding

numbers, showing a picture, or playing a video. Programs are written in

special languages like Python or Java, and once created, the computer

follows these instructions to do the job you want.

Programs can be:

1. **Executable**: Directly run by the operating system (like a software

application).

2. **Scripts**: Shorter programs typically written to automate tasks (often

executed by an interpreter).

3. **Systems**: Larger, more complex programs that manage and control

computer hardware, operating systems, or networks.

**Explain in your own words what a program is and how it**

**functions**

➢ A **program** is a collection of instructions that a computer follows to

perform specific tasks. It’s like a set of directions telling the computer

how to solve a problem or complete a job, such as displaying a webpage,

calculating numbers, or running a game.

Here’s how it functions:

1. **Writing**: A programmer writes the program using a programming

language (like Python, Java, or C++).

2. **Input**: The program may take input, like data from a user or a file.

3. **Processing**: The computer follows the instructions in the program to

process the input.

4. **Output**: The program gives results or performs actions based on the

instructions, like showing information on a screen or saving data.

**Types of Programming Languages.**

➢There are several types of programming languages, categorized based on their level of abstraction, purpose, and paradigms. Here's an organized list:

🔹 1. Low-Level Languages

These are closer to machine language and offer little abstraction.

▪Machine Language (Binary – 0s and 1s)

▪Assembly Language

▪ Uses mnemonics (like MOV, ADD, SUB)

▪ Requires an assembler to convert to machine code

🔹 2. High-Level Languages

These are human-readable and more abstract from hardware.

**Examples**:

C, C++, Java, Python, JavaScript, PHP, Ruby, Swift

🔹 3. Procedural Programming Languages

Focus on procedures or routines (functions).

**Examples**:

C, Pascal, Fortran, BASIC