# Task 1:

What does the term “Computer Programming Paradigm” mean?

*(Short paragraph)*

**Answer:**

A computer programming paradigm refers to a fundamental style or approach to programming, shaping how a programmer thinks about structing and implementing software. It defines the principles and methodologies used to write code, such as how data is organized, how tasks are performed, and how the program flow is controlled. Different paradigms offer different ways to solve problems, contribute to the design, and maintainability of programs.

# Task 2:

List three computer programming paradigms and explain each in detail.

*(Short paragraph per each paradigm)*

**Answer:**

**Procedural Programming:** is a paradigm where the code executes line by line. Once one line of code completes the next line of code is executed. It follows a top-down approach. A procedural programming, also known as *“Sequential Programming”* is one concept of “*Structured Programming”* makes use of sequences (line by line), selections (e.g. if statements) and iterations (e.g. while, for loops) to control the flow of the logic of a program. Examples of Procedural programming languages include Python, Pascal, C

**Object-Oriented Programming (OOP):** OOP is a paradigm based on the concept of “objects”, which can contain both data (attributes) and methods (functions). It makes use of encapsulation, inheritance, and polymorphism, allowing for reusable, modular, and maintainable code. In OOP, complex problems are broken down into objects that model real-world entities. Examples of OOP programming languages include C#, Java, Python

**Event-Driven Programming:** is a paradigm where the flow of the program is determined by events such as user actions(clicks, key presses). The code responds to these event handlers or callbacks. This paradigm is commonly used in graphical user interface (GUI) applications and real-time systems. Examples of Event-Driven programming languages include JavaScript

# Task 3:

List three advantages and three disadvantages of the Object-Oriented Programming paradigm.

*(Bullet points)*

**Answer:**

Advantages:

* Modularity: Objects are self-contained making it easier to manage and debug code.
* Reusability: Classes and objects can be reused across different projects.
* Secure: OOP can protect data and code by the use of access modifiers.

Disadvantages:

* Complexity: OOP can add unnecessary complexity, even to simple programs.
* High Learning Curve: Concepts like inheritance, polymorphism and abstraction can be difficult to learn.
* Larger Programs: OOP programs are normally a great deal larger than procedural programs.

# Task 4:

Why would a global software company, with offices in all the major cities of each continent on the planet, decide to use the OOP paradigm to develop its software.

*(Short paragraph)*

**Answer:**

A global software company would choose the Object-Oriented Programming (OOP) paradigm because it supports modularity and reusability, which are essential for large-scale development across distributed teams. OOP enables developers from different locations to work on separate objects independently, which is important for consistency and teamwork. The ability to reuse objects and classes across various projects and reduces development time and makes maintenance easier, which is critical for managing complex software in a global environment.