**1)What are the four access modifiers available in Java and what is their significance in terms of class, method and variable accessibility?**

The access modifiers in Java are Public, Private, Protected and Default.

**Public-** The public access modifier allows unrestricted access to a class, method or variable from any other class or package. Classes, methods, package marked as “public” can be accessed by any code in your program.

**Protected-** The private access modifier allows access to a class, method or variable within the same package or by subclasses in different packages. A protected member can be accessed by classes in the same package or by subclasses of the class, regardless of the package they are.

**Private-**The private access modifier restricts the access to a class, method or variable within the same class. The code within the same class can access the private member. It is mostly used to encapsulate data and provide controlled access through methods.

**Default**- If no access modifier is specified, the default access modifier is applied. It allows access to a class, method or variable within the same package but restricts access from classes in different packages.

The significance of these access modifiers in terms of class, methods and variables are as follows.

Class Accessibility: - Classes can have public or default modifier access. Public class can be accessed from anywhere in the program while Default class can only be accessed within the same package.

Method Accessibility: - It can have any one of these four modifiers. Public methods can be accessed anywhere while protected can be accessed within the same package and by subclasses. Private methods can only be accessed within the same class and methods within the default access can be accessed within the same package.

Variable Accessibility: - It can have any one of the four access modifiers. The rules for variables are similar to methods. Public can be accessed anywhere, while protected can be accessed within the same package and by subclasses. Private variables can only be accessed within the same class and variable within the default access can be accessed within the same package.

**2)What is the difference between Error and Exception?**

**Error:** They are typically severe issues that occur at lower level of the java runtime environment. They indicate problem that are generally beyond the control of the application and cannot be recovered from. Errors are often caused by the system or external factors and are not meant to be caught or handled by application code. Types of Errors are **OutofMemoryError , StackOverflowError , VirtualMachineError.** When an error occurs, it is highly recommended not fix the error as it will lead to unpredictable behaviors.

**Exceptions:** It represents exceptional conditions that can occur during the normal execution of the program. They are typically caused by problems within the application code or by exceptional scenarios that the application can reasonably except and recover from. Exception is categorized by two types such as Checked and Unchecked Exceptions.

Checked Exception: They are exceptions that are checked at compile time, and the complier enforces the handling or declaration of these exceptions. Methods that can throw checked exceptions must declare them in their method signature or handle them using try-catch blocks. Examples of checked exceptions are **IOEException, SQLException, ClassNotFoundException.**

Unchecked Exception: They are also known as runtime exceptions and they do not need to be declared or caught explicitly. They are not checked at compile time and the programmer is not required to handle them. Unchecked exceptions usually indicate programming errors or unexpected conditions that the application might not be able to recover from. Examples of unchecked exceptions are **NullPointerException, ArrayIndexOutofBoundsException** and **IllegalArgumentException**.