**Day 15\_Java Assignment**

**1. Problem Description:**

What is the diamond problem in multiple inheritance and give an example?

**2. My Solution:**

Diamond Problem is a problem faced during Multiple Inheritance in Java. when one class can inherit properties from more than one class. It is known as the diamond problem and Java does not allow such this multiple inheritance.

Example:

**package** daily\_assesment;

**class** Family1 {

**void** fun() {

System.***out***.println("Family1");

}

}

**class** Family2 {

**void** fun() {

System.***out***.println("Family2");

}

}

**public** **class** Parents1 **extends** Family1, Family2

{

**public** **static** **void** main(String[] args) {

Parents1 p = **new** Parents1();

p.fun();

}

}

Output:

Exception in thread "main" java.lang.Error: Unresolved compilation problems:

Syntax error on token "]", :: expected after this token

Syntax error, insert "SimpleName" to complete Type

at daily\_assesment.Parents1.main(Parents1.java:16)

* To address the above issue, we can use interfaces as interfaces support multiple inheritance. Interface are created by using interface keyword. It contains all methods by default as abstract we don’t need to declared as abstract ,compiler will do it implicitly. We can’t instantiate interface for this we have to use a class which will implement the interface and will write the definitions of its all functions.

**Example:**

**package** daily\_assesment;

**interface** Parent3 {

**void** fun();

}

**interface** Parent4 {

**void** fun();

}

**class** test **implements** Parent3, Parent4 {

**public** **void** fun()

{

System.***out***.println("fun function");

}

}

**public** **class** Diamond1 {

**public** **static** **void** main(String[] args) {

test t = **new** test();

t.fun();

}

}

Output:

fun function