

Problem-1: Inheritance and Object Reference Manipulation in Java.

Code:

```
Main.java x
Source History
1 package inheritance;
2
3
4 class Animal {
5     String name = "unknown";
6     String food = "null";
7     int age = 0;
8
9     public void display() {
10         System.out.println("Name : " + name);
11         System.out.println("Food : " + food);
12         System.out.println("Age : " + age);
13     }
14 }
15
16 class Cat extends Animal {
17     Animal an1 = new Animal();
18
19     public void change() {
20         an1.name = "Jerry";
21         an1.food = "Cat";
22         an1.age = 2;
23     }
24 }
25
26 public void displayInfo() {
27     System.out.println("Name : " + an1.name);
28     System.out.println("Food : " + an1.food);
29     System.out.println("Age : " + an1.age);
30 }
31
32
33 public class Main extends Cat {
34
35     public static void main(String[] args) {
36         Main obj1 = new Main();
37
38         obj1.display();
39         obj1.change();
40         obj1.displayInfo();
41     }
42 }
43
```

Output:

```
--- exec:3.1.0:exec (default-cli) @ Lab_04_21.04.2025 ---
Name : unknown
Food : null
Age : 0
Name : Jerry
Food : Cat
Age : 2
-----
BUILD SUCCESS
-----
Total time: 0.496 s
Finished at: 2025-04-27T23:01:51+06:00
-----
```

Problem-2: Accessing Members of Inner Classes in Java

Code:

```
1 package InnerOut;
2
3 class Outer {
4
5     int A = 455;
6
7     class Inner {
8
9         int B = 545;
10    }
11 }
12
13 public class Main {
14
15     public static void main(String[] args) {
16         Outer obj1 = new Outer();
17
18         Outer.Inner obj2 = obj1.new Inner();
19
20         System.out.println("Sum : " + (obj1.A + obj2.B));
21     }
22 }
23
```

Output:

```
Compiler:3.10.0:compile (default-compile) @ Lab_04_21.04.2025 ---
Recompiling the module because of changed source code.
Compiling 2 source files with javac [debug release 24] to f
--- exec:3.1.0:exec (default-cli) @ Lab_04_21.04.2025 ---
Sum : 1000
-----
BUILD SUCCESS
-----
Total time: 0.817 s
Finished at: 2025-04-27T23:05:58+06:00
-----
```