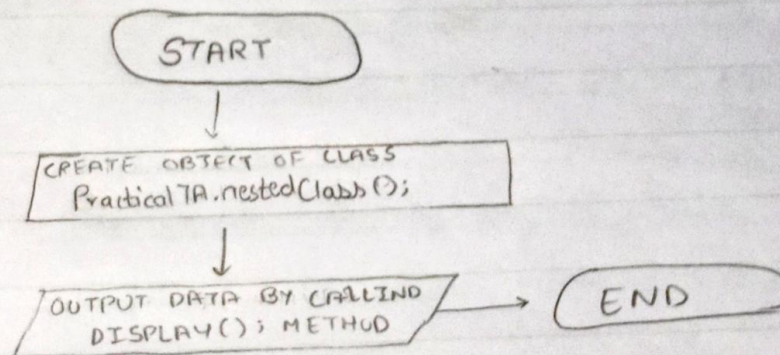


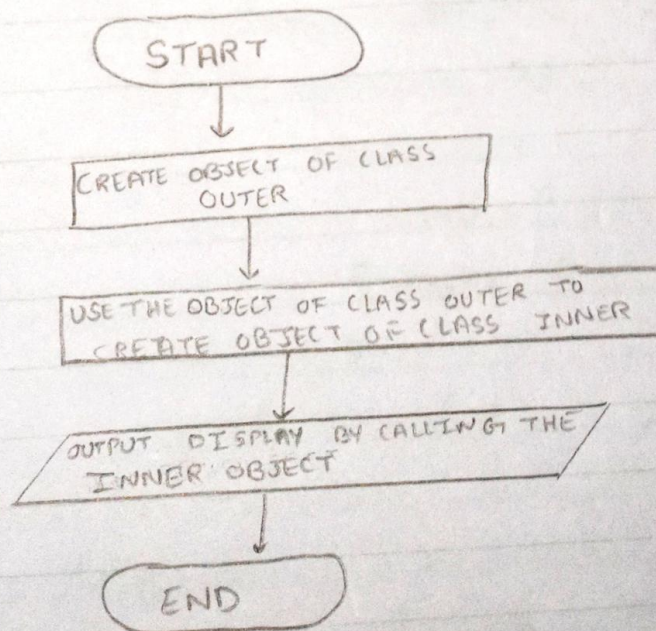
Practical No. 07

Aim : Create, debug and run java programs based on Nested and Inner classes

Flow chart :



Code 1: Nested Class



Code 2: Inner classes

Practical No. 07

Aim: Create, debug and run java programs based on Nested and Inner classes.

Theory:

What is a nested class?

- • A class which is defined within another class is called as nested class.
- The scope of the nested class is bounded by the scope of the ~~inner~~ enclosing classes.
- Example:

```
public class School {
    class student {
        String name;
        student() {
            name = "User";
            marks = 0;
        }
        private int marks;
    }
    School() {
    }
}
```


What is an Inner class?

- • An inner class is nested but non-static and it is the most important of all nested classes.
- It has access to all the members of the outer classes
- Example,

```
class Outer {  
    int x = 5;  
    class Inner {  
        int y;  
    }  
}
```

```
class Main {
```

```
    public static void main (String[] args) {  
        Outer out = new Outer();  
        Outer.Inner Inn = out.new Inner();  
        System.out.println(out.x + Inn.y);  
    }
```


Conclusion:

Hence, I learnt the concepts of Inner classes and nested classes and thus created, developed and executed java programs based on Nested and Inner classes.

Code:

```
//nested class

class Practical7A{

    static int age = 18;
    String phoneNo = "9022137587";
    static private String name = "Pratyay";

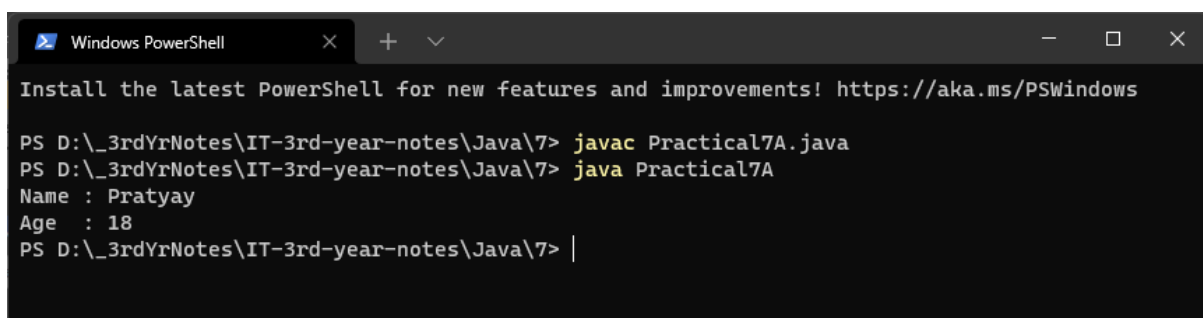
    static class nestedClass{
        void display(){
            System.out.println("Name : " + name);
            System.out.println("Age : " + age);

            // Can't access non static variables
            // System.out.println("Phone no : " + phoneNo);
        }

    }

    public static void main(String[] args){
        Practical7A.nestedClass nestedObject = new Practical7A.nestedClass();
        nestedObject.display();
    }
}
```

Output:



```
Windows PowerShell
Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS D:\_3rdYrNotes\IT-3rd-year-notes\Java\7> javac Practical7A.java
PS D:\_3rdYrNotes\IT-3rd-year-notes\Java\7> java Practical7A
Name : Pratyay
Age : 18
PS D:\_3rdYrNotes\IT-3rd-year-notes\Java\7> |
```

Code:

```
//nested class

class Outer{

    static int age = 18;
    String phoneNo = "9022137587";
    static private String name = "Pratyay";

    class innerClass{
        void display(){
            System.out.println("Name : " + name);
            System.out.println("Age : " + age);
            System.out.println("Phone no : " + phoneNo);
        }
    }
}

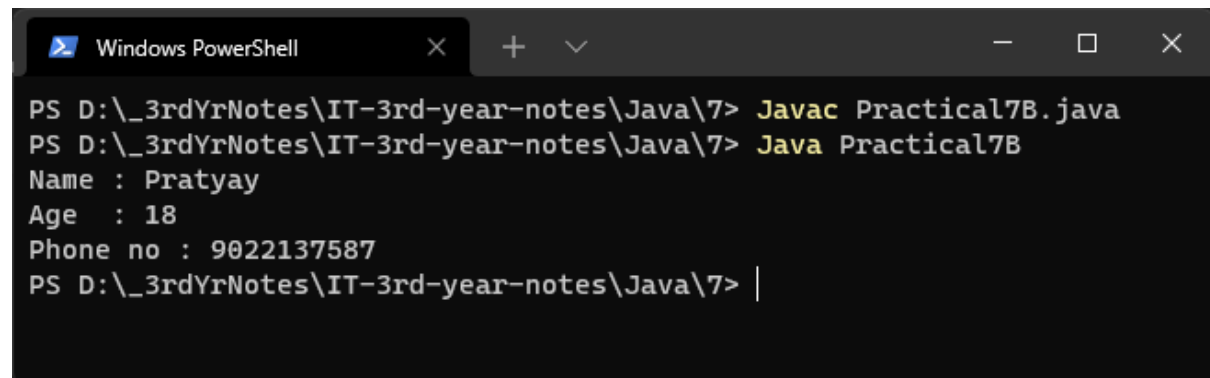
class Practical7B{

    public static void main(String[] args){
        Outer outerObj = new Outer();
        Outer.innerClass innerObj = outerObj.new innerClass();
        innerObj.display();

    }

}
```

Output:



```
Windows PowerShell
PS D:\_3rdYrNotes\IT-3rd-year-notes\Java\7> javac Practical7B.java
PS D:\_3rdYrNotes\IT-3rd-year-notes\Java\7> java Practical7B
Name : Pratyay
Age : 18
Phone no : 9022137587
PS D:\_3rdYrNotes\IT-3rd-year-notes\Java\7> |
```


Conclusion:

Hence, I learnt the concepts of Inner classes and nested classes and thus created, developed, and executed java programs based on Nested and Inner classes.