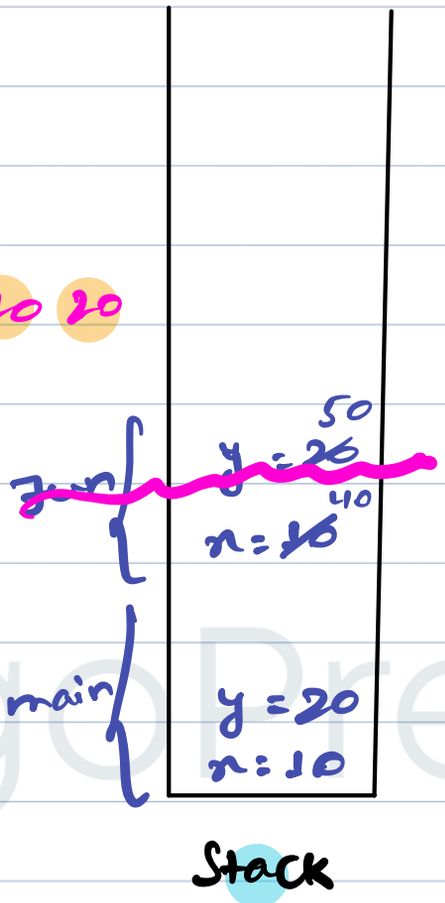
Today's agenda

- object memory
- Constructor (copy constructor)
- Access modifier
- inheritance

// Test 1

Java: Pass by value always

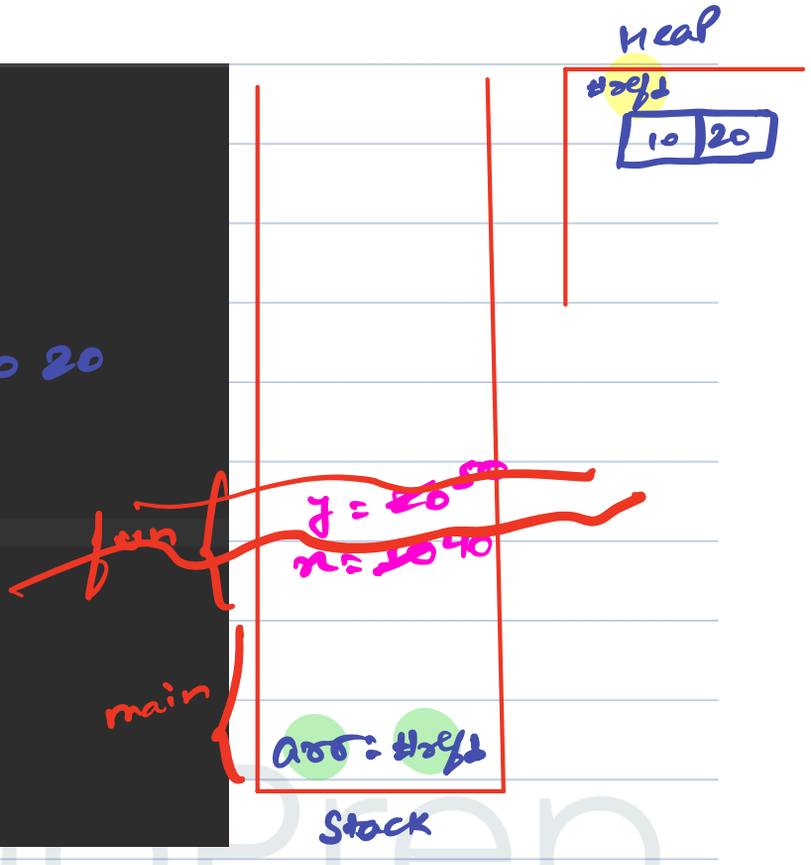
```
main() {
    int x = 10;
    int y = 20;
    fun(x, y);
    Print(x + " " + y);
}

fun(int x, int y) {
    x = 40;
    y = 50;
}
```



// Test2

```java
package Student;

public class student {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr = {10,20};

        fun(arr[0],arr[1]);

        System.out.println(arr[0]+" "+arr[1]);

    }

    public static void fun(int x, int y) {
        x = 40;
        y = 50;

    }

}
```

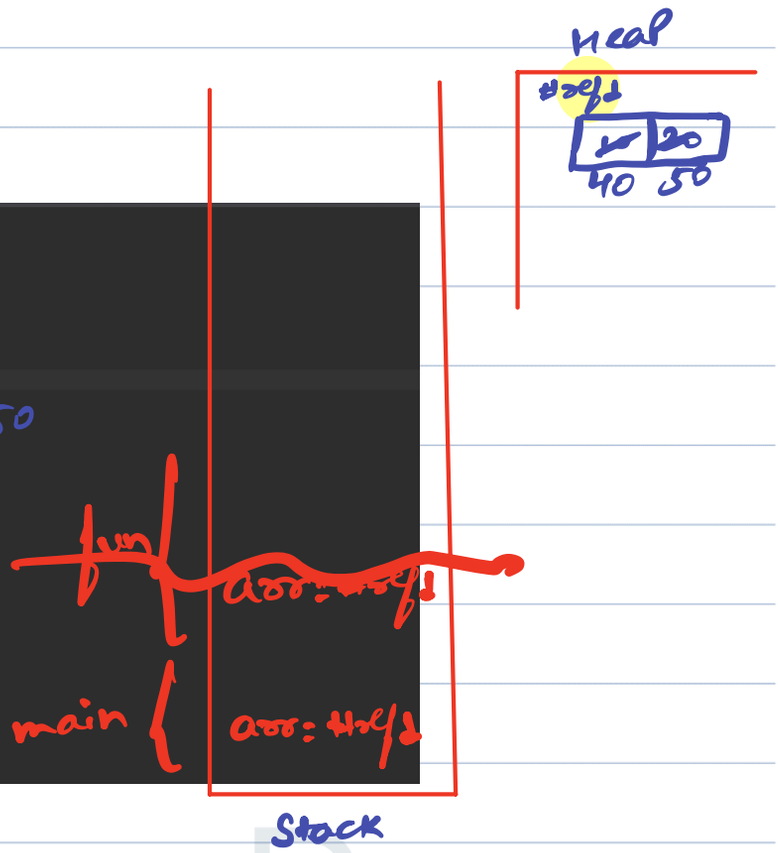
Rajiv singh . raised hand



Notes+3

```java
package Student;

public class student {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr = {10,20};

        fun(arr);

        System.out.println(arr[0]+" "+arr[1]);

    }

    public static void fun(int[] arr) {
        arr[0] = 40;
        arr[1] = 50;

    }

}
```

Rajiv singh . raised hand

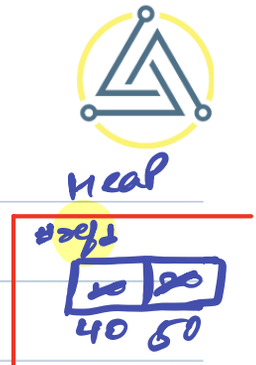


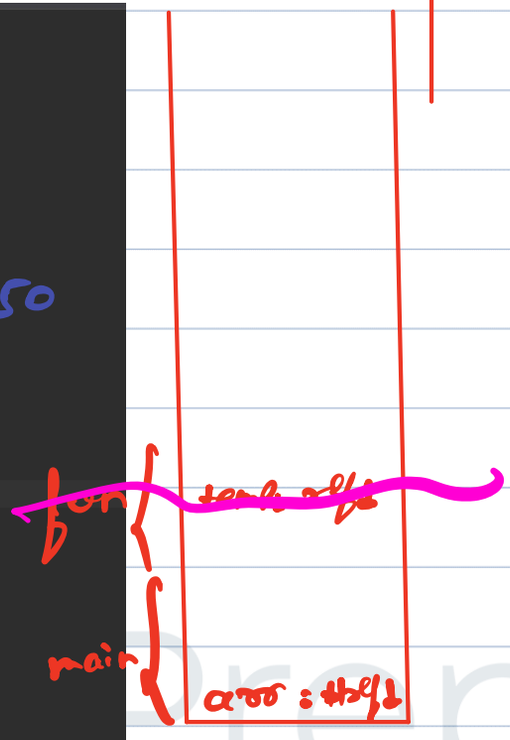
11 test 4

```java
package Student;

public class student {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr = {10,20};

        fun(arr);

        System.out.println(arr[0]+" "+arr[1]);

    }

    public static void fun(int[] temp) {
        temp[0] = 40;
        temp[1] = 50;

    }

}
```

Rajiv singh . raised hand

40 50

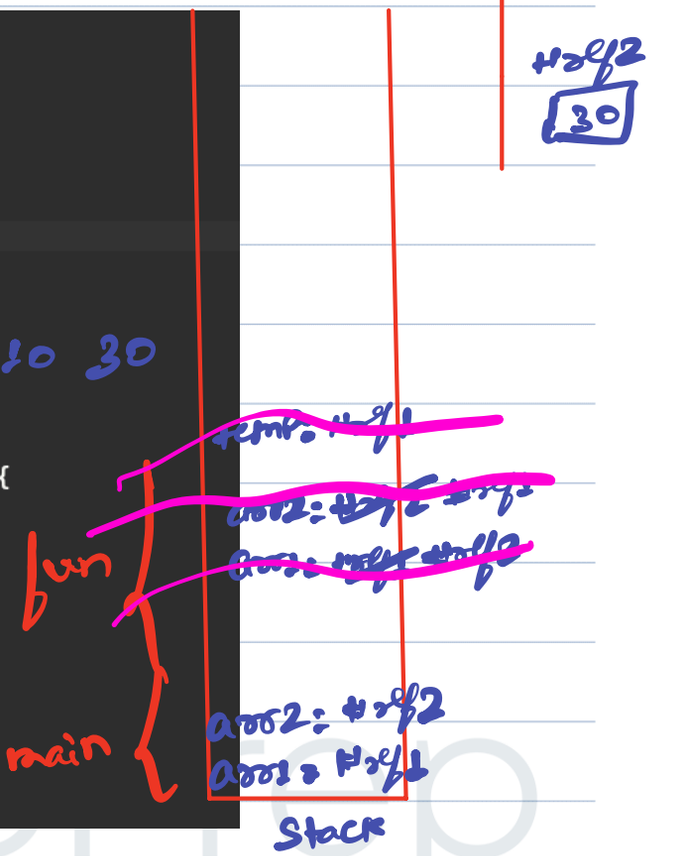


// test 4

```java
package Student;

public class student {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr1 = {10};
        int[] arr2 = {30};

        fun(arr1,arr2);

        System.out.println(arr1[0]+" "+arr2[0]);

    }

    public static void fun(int[] arr1, int[] arr2) {
        int[] temp = arr1;
        arr1 = arr2;
        arr2 = temp;

    }

}
```

Rajiv singh . raised hand

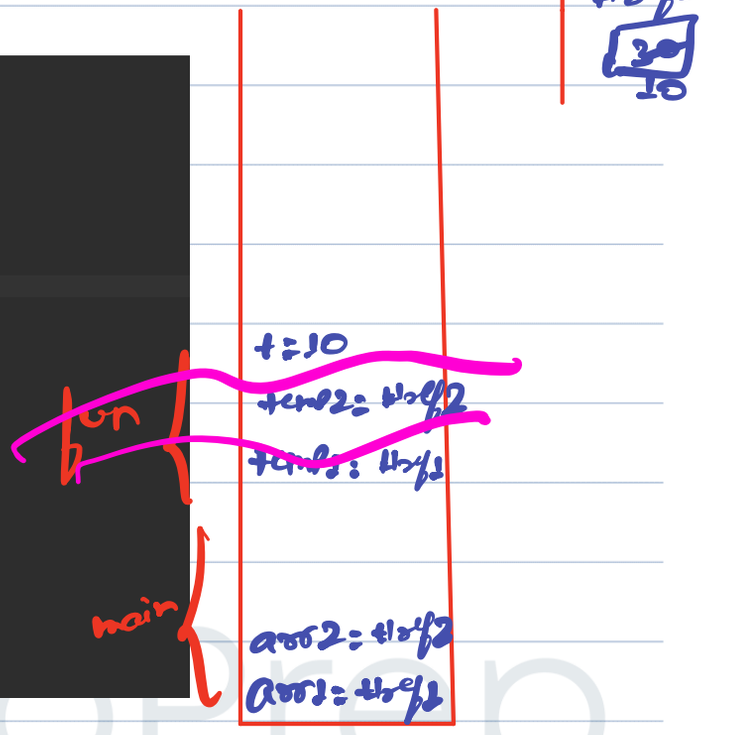


# 11test5

```java
package Student;

public class student {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
        int[] arr1 = {10};
        int[] arr2 = {30};

        fun(arr1,arr2);

        System.out.println(arr1[0]+" "+arr2[0]);

    }

    public static void fun(int[] temp1, int[] temp2) {
        int t = temp1[0];
        temp1[0] = temp2[0];
        temp2[0] = t;

    }

}
```

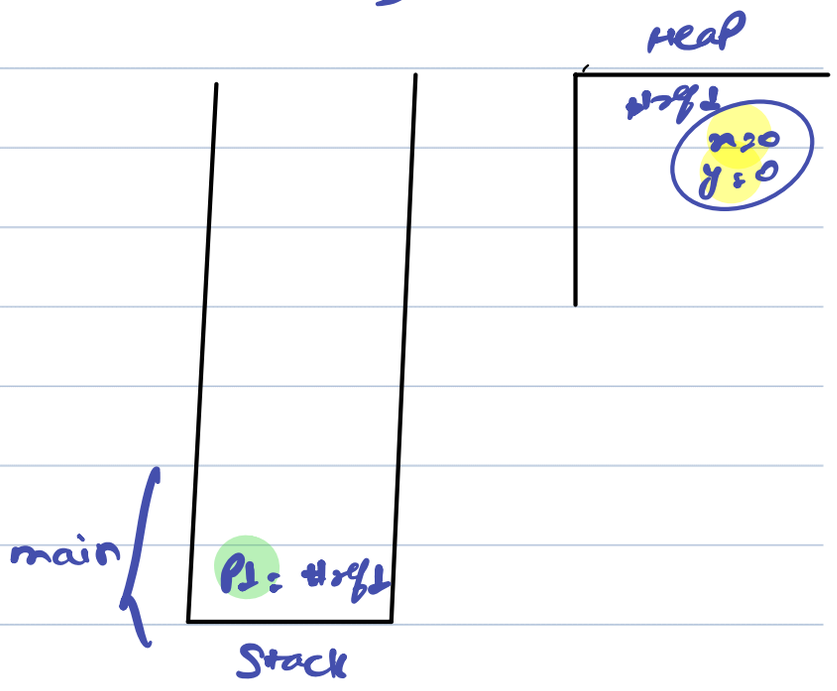
Rajiv singh . raised hand

30 10



```
Class Pair {
    int x;
    int y;

}
```

Pair p1 = new Pair();

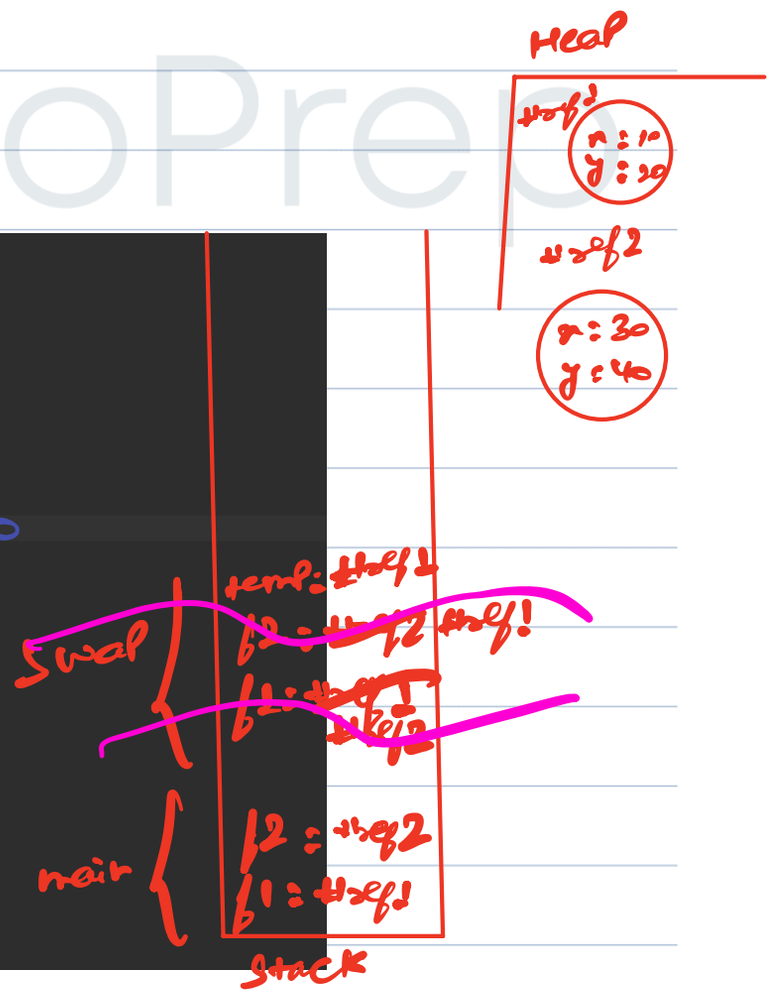



Q test 6

```
1  package Student;
2
3  public class student {
4
5      public static void main(String[] args) {
6          // TODO Auto-generated method stub
7          Fun f1 = new Fun(10,20);
8          Fun f2 = new Fun(30,40);
9
10         Swap(f1,f2);
11
12         System.out.println(f1.x +" "+f2.x);
13     }
14
15     public static void Swap(Fun f1, Fun f2) {
16         Fun temp = f1;
17         f1 = f2;
18         f2 = temp;
19
20     }
21
22
23 }
24
```

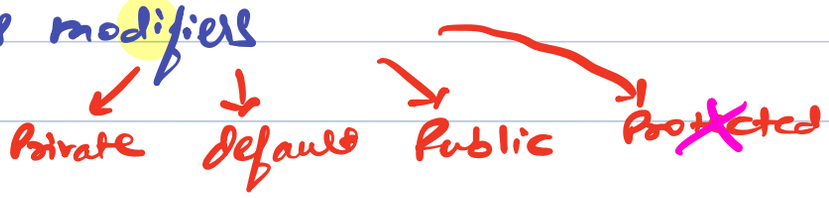
Rajiv singh . raised hand  View

10 30




Break till 9:15 Pm

→ Access modifiers




```
class BankAccount{
    int accountno;
}
```

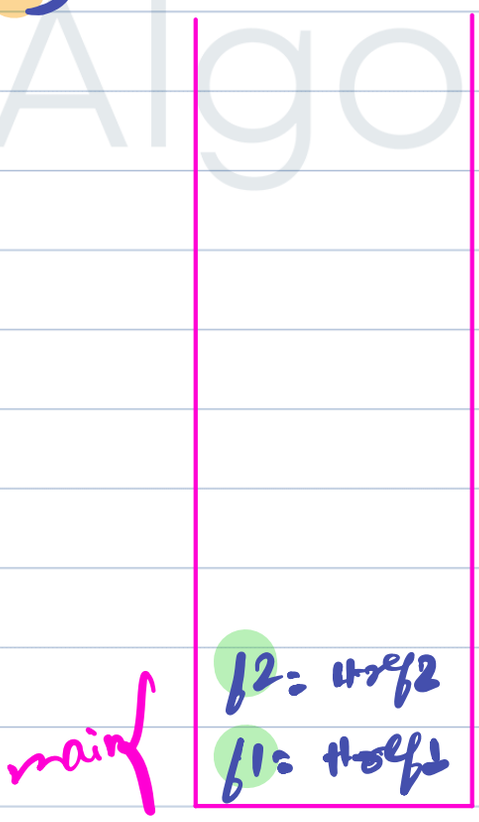
| | within the class | across class but within same package | across class and across package |
|---|---|---|---|
| Private | ✓ | ✗ | ✗ |
| default | ✓ | ✓ | ✗ |
| Public | ✓ | ✓ | ✓ |

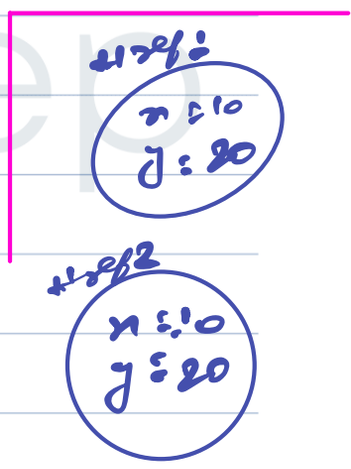
# * Copy Constructor

```
Fun f1 = new Fun();
f1.x = 10;
f1.y = 20;

Fun f2 = new Fun(f1);
```

↑ Deep copy

```
class Fun {
    private int x;
            int y;

    Fun (Fun f) {
        x = f.x;
        y = f.y;
    }

    void value_of_x () {
        s.o.p (x);
    }
}
```



→ Shallow Copy

```
class Fun {
    private int x;
            int y;

    Fun (Fun f) {
        x = f.x;
        y = f.y;
    }

    void value_of_x () {
        S.O.p (x);
    }
}
```

```
Fun f1 = new Fun ();
f1.x = 10;
f1.y = 20;

Fun f2 = f1;
```