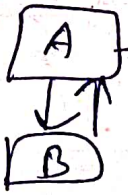
Inheritence

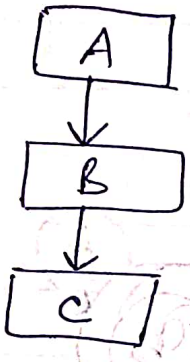
① Single



A — Super / Parent / Base class

B + A's property — Sub / child / derived class

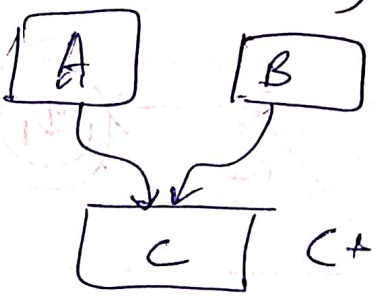
② Multi-level



B + A

C + B + A

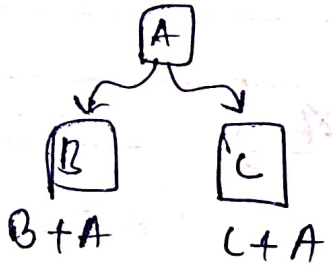
③ Multiple (not possible in java)



C + A + B

② & ③ used in network security

④ Hierarchical



B + A

C + A

HLL — compiler, interpreter, assembler converts to machine code

LLL.

Date: / /20

```
import java.io.*;
class Add
{ int x,y, sum=0;
  public
     void getdata()
```
(the last three lines are struck through)

? ?

public static void main

Types of variables

static variable — class is getting the one copy, not objects

1. Class Variable
2. Instance Variable
3. Local variable

Local variable → method এর মধ্যে যে variable

Instance variable → objects/instances এর variable গুলো personal copy পায়

Eg:
```
class Add
{
  int x,y
  :
  Add a1 = ...
  Add a2 = ...
```
a1 → x y, a2 → x y

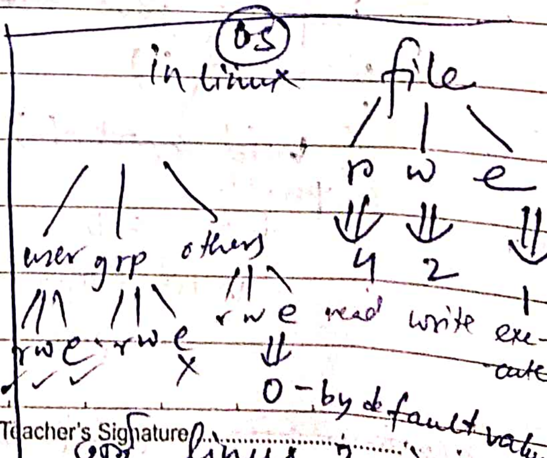
Static Data members

(static fields and static methods)

```
class Add
{
     int x;  → very obj. gets personal copies
  static int y;  → will have only one copy and all objects have to access that one copy
```

Similar func. of static (main কে access পাও সবাই না পায়)

Eg:
```
import java.io.*;
class Compare
{
   int x;
   static int y=0;
   static void getdata(int a)
   {
       x=a;
       y++;
   }
```



Teacher's Signature ....

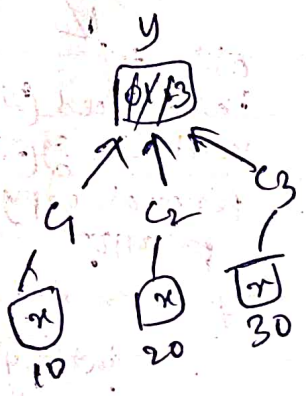
এর linux এ virus attack হয়না,

```
void display()
{
    System.out.println("x = " + x);
    System.out.println("y = " + y);
}
class Ori
{
    public static void main(String args[])
    {
        compare c1 = new Compare();
        Compare c2 = new "  ();
        compare c3 = new "  ();
        c1.getdata(10);
        c2.getdata(20);
        c3.getdata(30);
        c1.display();
        c2.display();
        c3.display();
    }
}
```

```
c1.getdata();
c1.display();
c2.getdata();
c2.display();
c3.getdata();
c3.display();
```

O/P:

```
x = 10
y = 1
x = 20
y = 2
x = 30
y = 3
```



O/P:

```
x = 10
y = 3
x = 20
y = 3
x = 30
y = 3
```

(9) WAP to count total no. of objects created

```
import java.util.Scanner;
import java.util.io.*;
class count
{ int x;
  static int c = 0;
  public void getdata()
  { x = ++c;
  }
  void display()
  {
```

```
x=7;
y=x++;
x=8
y=7
```

```
x=7;
y=++x;
x=8, y=8
```

- Inside static methods, you can't use anything except static ~~fields~~ members (static या न हो) (static)
- Static members are properties of class - not of object, so we have to call static ~~method~~ members by class name.

```
~~import~~ system.out.println ("Object number : " + x);
}
static void output ()
    { system.out.println (" Total no. of objects : " + c);
    }
}
class ori
  { public static void main (String Args[])
      { Compare c1 = new Compare ();
        Compare c2 = new Compare ();
        Compare c3 = new Compare ();
        c1. getdata ();
        c2. getdata ();
        c3. getdata ();
        c1. display ();
        c2. display ();
        c3. display ();
        Compare. output ();
      }
  }
```

o/p:

Object no : 1
" " : 2
" " : 3
Total no. of objects : 3

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