

HAS-A Relation [composition] :

- 1.Has-a relationship is the process of creating an object of the super class into subclass
- 2.By the reference of the super class we can access the properties of the super into sub class

Syn For Has-a Relationship:

```
=====
[modifiers] <class> <SuperClassName>
{
    Fields
    Methods
}

[modifiers] <class> <SubClassName>
{
    <SuperClassName> <supref>=
        new <SuperClassName>([list of args]);
    Fields
    Methods
}
```

Has_A Examples:

```
class SuperA{
    int x=100; //instance field
}

class SubB
{
    SuperA sa=new SuperA();
    //here sa is also an instance field
    int y=200; //instance field
}

class Has_A1
```

```
{
    public static void main(String args[])
    {
        SubB sb=new SubB();
        System.out.println("y val is : "+sb.y);
        System.out.println("x val is : "+sb.sa.x);
    }
}
```

Example 2:

class Master

```
{
    void print() //non static mtd
    { System.out.println("U r Osm..!"); }
}
```

class Systems{

```
    static Master out=new Master();
    //out non static is reference variable of Master class
}
```

class Testing

```
{
    public static void main(String args[ ])
    {
        Systems.out.print();
    }
}
```

Why to write System.out Before println() ?

```
java.io
class PrintStream {
    p v println(String x){....}
    p v println(int i){....}
    p v println(float j){.....}
}

java.lang
class System {
    static PrintStream out;
    static PrintStream err;
}

class Testing
{
    p s v main(String args[ ])
    {
        System.out.println("Sai");
        System.out.println(10);
        |           |           |
        clsname  object  method
                ref
        System.err.println("invalid");
    }
}
```

out and err are Object references of PrintStream class and those are defined as static members of java.lang.System class

System.out.println() and System.err.println() technically both are same but while write industry program, in order make the difference between Normal messages and Error messages then we to use System.err for Error Messages.