Classes & objects

Unit-1

- A class is a collection of var & fun
- It is a blueprint.
- To use class, we can create obj
- obj is copy (instance) of a class.

Structure of a pgm

```
Class box {
        //var
        //set
        //get
        //vol
}
```

```
Class demo {
    PSV main ( )
        //create obj of box class
```

- How to create a class in java :-
- Suppose we want to create a box class, this will have some var & fun ().
- Then there will be another class called "demo" It will have the main fun.
- obj of box class will be created inside the main fun of demo class.

How to define var & fun inside box

- When creating var & fun inside box class., access specifier - public, private, protected or none (default) needs to be specified by var & fun.

eg private int l, w, h;
   public void set();

- fun & defined inside class itself & not outside class.
- var & fun can be public, private or protected or default.

How to create obj in java

- Obj of box class will be created inside demo class.
- All obj & created dynamically in java using new operator.
- box obj1 = new box(); // Create box var & box obj2 = new box(); allocate m/m using new opr.

Another way to create obj.
box obj1, obj2; // declare obj var.
// m/m not allocated
obj1 = new box(); } Allocate m/m here.
obj2 = new box();

Note:

- Obj r ref var - when they are passed to any obj, then fun is called by ref.

Should we keep var & fun as private or public

- Both var & fun can be private or public.
- However, the proper way to use a class is to keep variable as private & fun as public.
- Private variable will not be accessed outside the class. This is called Data Hiding.
- It helps to avoid unintentional modification of data.

Eg Create a box class.

Variables → l, w, h;

fun → set(), get(), volume.

```
class box {
    private int l, w, h;
    public void set(int x, int y, int z) {
        l = x;
        w = y;
        h = z;
    }
    public void get() {
        System.out.println(l);
        System.out.println(w);
        System.out.println(h);
```

var r pri

fun r pub

```
    public void volume() {
        System.out.println(l*w*h);
    }
}// box class ends.

class demo {
    public static void main(String args[]) {
        // demo class with main fun.
        // Create 2 obj.
        box obj1 = new box();
        box obj2 = new box();

        //assign value using set()
        obj1.set(1,2,3);
        obj2.set(5,6,7);

        // Print values.
        obj1.get();
        obj2.get();

        // Print vol.
        obj1.vol();
        obj2.vol();
    }
}
```