Topic ⇒ User Defined Methods
(Instance Variable)

Lecture ⇒ 09

* Instance Variable *

* Instance variable is a non static variable declared outside the function and within the class.
* An instance variable is accessable by all the functions of the class.
* It is also accessable by other class if the variable is not private.
* An instance variable has different copy for each object.

```
Class Demo
{
  int a, b; //Instance Variable
  void assign (int x, int y)
  {
    a = x;
    b = y;
  }
  void sum( )
  {
    int s = a+b;
    System.out.println("Sum =" + s);
  }
  public static void main (String args[])
  {
    Demo ob = new Demo();
    Demo obj = new Demo();
    ob.assign(100,60);
    obj.assign(15,20);
    ob.sum(); ⟶ 160
    obj.sum(); ⟶ 35
  }
}
```

Design a class Students as follows :

Data members/Instance Variable
String n --> To store name of students
int roll --> To store roll no. of students
double p --> To store percentage marks of the students

Member methods :
i) void accept () : to input and store name, roll no. and %age of students.
ii) String grade () : to calculate the grade of a student as per the following and reutrn it

%marks	Grade
>=80%	Very Good
>=60% & <80%	Good
>=35% & <60%	Average
<35%	Poor

Answer in next Slide

Ans

```
import java.util.Scanner;
class Students
{
String n;
int roll;
double p;

void accept()
{
Scanner ob = new Scanner (System.in);
System.out.println("Enter name of student ");
n = ob.nextLine();
System.out.println("Enter roll no of student ");
roll = ob.nextInt();
System.out.println("Enter %age of student ");
p = ob.nextDouble();
}
```

```
String grade ()
{
if(p>=80)
return "Very Good";
else if(p>=60 && p<80)
return "Good";
else if (p>=35 && p<60)
return "Average";
else
return "Poor";
}

public static void main (String args[])
{
Students ob = new Students();
System.out.println(ob.n);
System.out.println("Roll no = "+ ob.roll);
System.out.println("Percentage marks = "+ ob.p);
System.out.println("Grade = " + ob.grade());
}
}
```

H/W 8

Design a class Library as follows:

Instance Variable / Data members:
int acc_num--> To store accession number of the book
String title --> To store name of the author

Member methods :
void input () : To input and store the accession no., title and author name.
void Compute () : To accept no. of days let, calculate and display the fine charged @ Rs. 2/day
void display () : To display details in the following format.

Accession no. Title Author

Homework ⇒ Do the Questions marked as **H/w**

Thank you