**4 Classes and Objects**

• **Theory:**

1. **Defining a Class and Object in Java: -**

* **Class :-** Class is a collection of objects and it does not take any space on memory , class is also as blueprint/logical entity.
* **Two parts:**-

1.pre-defined:- Scanner , Console , System , String.

2.user-defined:- A class which is created by java programmer is called user-defined class.

**Syntax:-** class class\_name{

-----------//data

-----------//methods

}

* **Object:-** object is an instance of class that executes the class .once the object is created , it takes us space like other variable in memory.

**Syntax:-** class\_name obj\_name=new

class\_name()

**2.Constructors and Overloading:-**

**Constructor:-** A constructor is a special type of method whose name is same as class name.

**Syntax:-** class class\_name{

Class\_name(){

}

}

* **Types of constructor :**

1.Default constructor :- A constructor which does not have any parameter is called default constructor.

**Syntax:-** class A{

A(){

}

}

2.perametrise constructor:- A constructor through which we can pass one or more parameters is called parametrise constructor.

**Syntax:-** class A{

A(int x, string y){

}

}

3.copy constructor:-Whenever we pass object refrence to the constructor then it is called copy constructor.

**Syntax:-** class\_name{

class\_name(obj ref){

}

}

**Overloading:-** Whenever a class contain more than one method with same name and different types of parameters is called method overloading.

**Syntax:-** return\_type method\_name(param 1);

Return\_type method\_name(param,param2);

**4. This Keyword**:-

* this keyword refers to the current object inside a method or constructor .

**Eg:** class A{

}

* It is also used when we want to call the default constructor of its own class.

**Eg:** classA{

A(){

}

A(int a){

This();

}

}

* It is also called parametrised constructor of its own class.

**Eg:** class A{

A(){

}

A(int a){

}