FACULTY OF Engineering & Technology

Abstract Classes and Methods

Data **abstraction** is the process of hiding details and only show fuctionality to the user.
Abstraction can be achieved with either **abstract keyword**
The abstract keyword is a non-access modifier, used for classes and methods:
Abstract class: are the classes which can not be instantiated or we can not create objects of the class (to access it, it must be inherited from another class).

Abstract method: can only be used in an abstract class, and it does not have a body. The body is provided by the subclass (inherited from).
Syntax:

```
abstract class student// abstract class student
 {}
```

```
class student
{
   abstract void display();// abstract method display()
}
```

```
abstract class car{
  abstract void run();
}
class verna extends car{
void run(){System.out.println("running safely");}
public static void main(String args[]){
 car obj = new verna();
 obj.run();
}
}
```

Here run() method is declared as abstract. If a class has at least a abstract method then the class will become abstract then it is necessary to declare class abstract as in above program otherwise compile time error will come

Abstract class:

An abstract class must be declared with an abstract keyword.

1. It can have abstract and non-abstract methods.
2. It cannot be instantiated.
3. It can have constructors and static methods also.
4. It can have final methods which will force the subclass not to change the body of the method.

Abstract Method

A method which is declared as abstract and does not have implementation is known as an abstract method.

Example of abstract method

abstract void printStatus(); //no method body and abstract

Quiz

1. Discuss Polymorphism and how it provides the flexibility?
2. Explain how Reusability concept is implemented in java?
3. Explain method overloading with its benefit?
4. Explain the role of constructor?
5. Explain why constructor of parent class is not inherited in derived class?
6. Discuss overloading of constructor?