[redacted]

10/07/2017

ABSTRACTION

[redacted] DEFINITION

General English

Show functionality and [redacted] hide complexity.

OR

आम खा गुठलियाँ मत गिन।

Need in Prog. Language

Example →

```
class Bird
{
    abstract void fly();
}
```

Here this 'fly' is abstract. It is overRided but is Ran by 'Bird' class only

```
class Flying Bird          class Non Flying Bird
{                          {
}                          }
```

this class can OverRide 'fly' f^n according to ~~their~~ its need.

[redacted]

Implementation / Ways to Achive Abstraction

(i) OOPs has implemented in Abstract Class

(ii) Java also achived Abstraction via Interface.

Abstraction Via Class

✓ Rule

1. Abstract Class can't be instantiated that means you can't create the object of the abstract class.
becoz if we, will try to create object 4 use a the 'Abstract Method', we will have compil^{n} error
↳as Abstract Method don't have any code

2. Only a Abstract Class can have a Abstract Method.

Example

```
abstract class Base
{
int x;
int y;
void show ()
{
Sop(x);
Sop(y);
}
}}
```

```
class Child extends Base
{
void get (int x, int y)
{
this.x =x;
this.y=y;
}
```

```
psvm()
{
Child c1 = new child();
C1.get(10,20);
c1.show();
}
}
```

- This is like 1st example of Inheritance.
- Here we see that the abstract class dont have any Abstract Method.

So this Proves

★ Rule

Imp It is not mandetory to have at least 1 (one) abstract method in a abstract class.

11-07-2017 Now Coming to REGISTRATION.

```
abstract class Base
 {
 int x;
 int y;
Done void show()
 {
 Sop(x);
 Sop(y);
 }
abstract void display();
 }
```

```
Class Child extends Base
 {
void get(int x, int y)
{
this.x=x;
this.y=y;
}
 void display()
 {
 sop("display");
 }
```

```
psvm()
child c1 = new child
c1.display();
```

In this program Abstraction is not achived as ~~xx~~ "display()" method is ran by 'child class' not 'Base class'

Rule

Child class has to overRide all the abstract method of an Abstract class otherwise it has to make it-self as a abstract.

Now, we will try to run method from abstract class

★ Imp. Golden Pt.

1. In case abstraction, a child class has to register register itself with a parent class by passing its reference to a parent class.

2. For Registration, a parent class has to provide a method, in which child is going to pass their reference.

Page No.
Date : / /20

```
abstract class Base
{


void show( )
{
Sop("show");
}

abstract void display( );

void register( )
{
}
}
```

Done

Method to pass Ref.

```
class Child
extends Base
{
void display
{
Sop("display")
;
}
```

```
psvm
{
Child c1 = new chil
c1 . register(c1)
}
}
```

Above Program will give compilaⁿ error as :-

- {Here we see that parent class don't ~~name~~ have ~~name~~ class name so can't eat catch passed argument 'c1'.}

So, Using Upcasting,

```
abstract class
          Base
{

abstract void
      display();
void register(Base
              b)
{
b. display( );
}
}
```

Done

```
class Child
extends Base
{
Void display
{
Sop ("display")
}
```

```
psvm
{

Child c1 = new
        Child();
c1. register(c1);

}
```

Iq Can you make a 'private' method as abstract?

Ans → NO, becoz 'private' methods are not copied to child class hence can't be overRiden.

Iq Can you make a 'Static' method as abstract?

Ans → No, not allowed as there will be no Dynamic binding. And Static members are not overriden they show F^n Hiding.

Iq Can we keep a Constructor in a abstract class?

Ans → Yes, we can keep an Constructor, but without 'new'.