

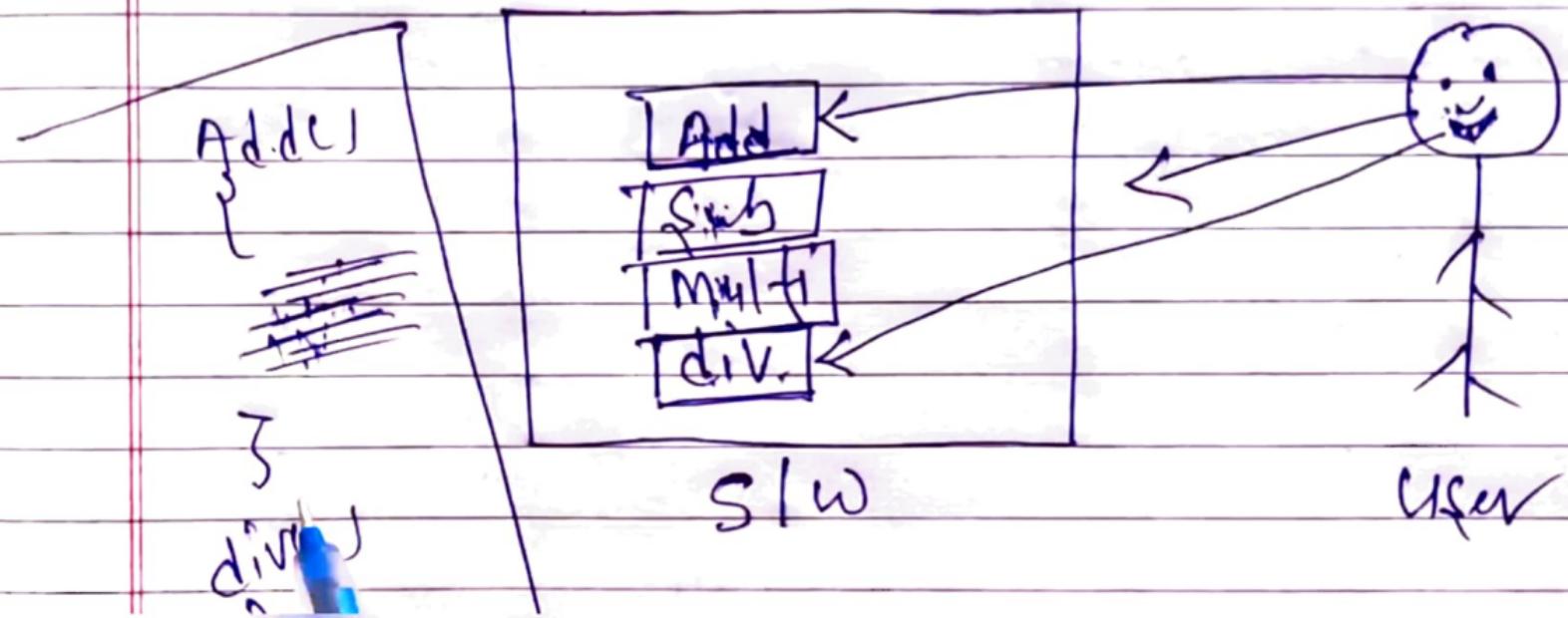
Abstraction

Q. What is abstraction? full explanation.

Ans Abstraction is a process of hiding the implementation details from the User,
Only the highlighted Set of Services provided
to the User.



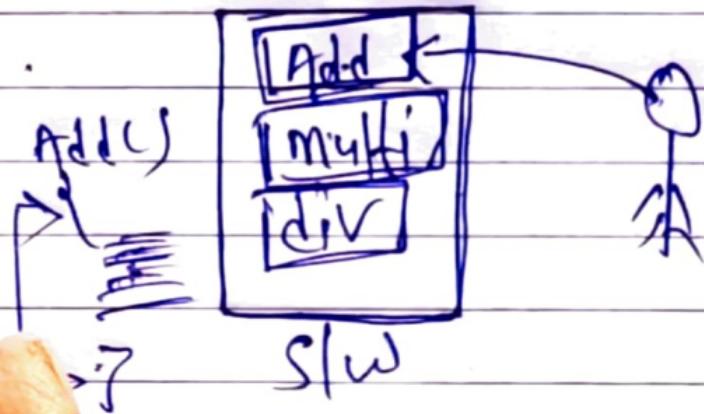
Ans Abstraction is a process of hiding the implementation details from the User,
Only the highlighted Set of Services provided
to the User.



Abstraction

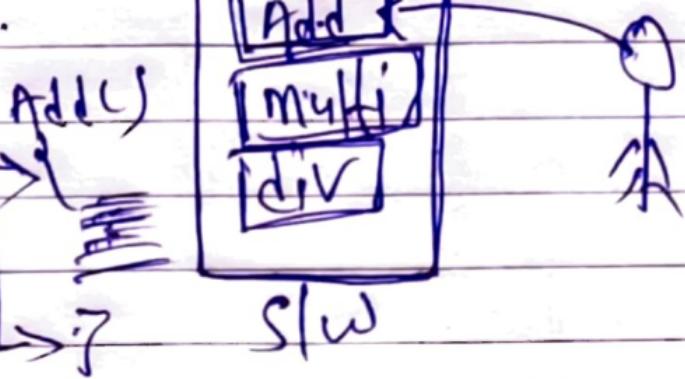
Advantage :- i) Security .

ii) Enhancement .



Abstraction

ii) Enhancement :-



Abstraction :-

- abstract class 90% → 80%
- interface

Q. What is Abstract Class? in Detail.

Ans → A class which contains the abstract keyword in its declaration is called abstract class.

Note - We can't create object of abstract class.

abstract class A
{

}

}

may not contain abstract

Ans → A class which contains the abstract keyword in its declaration is called abstract class.

Note:- 1) We can't create object for abstract class.

abstract class A

{

 |
 |
 |

}

ii) It may or may not contain abstract methods

iii) It can contain abstract methods

- abstract

SUBSCRIBE

C:\Users\WIN10\Desktop\Demo.java - Sublime Text (UNREGISTERED)

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Demo.java

```
1          /* abstract class */
2 abstract class animal
3 {
4
5 }
6 class Demo
7 {
8     public static void main(String args)
9         animal r=new animal();
10    }
11 }
```

Select Command Prompt

```
C:\Users\WIN10\Desktop>javac Demo.java
Demo.java:9: error: animal is abstract; cannot be instantiated
        animal r=new animal();
                           ^
1 error
```

C:\Users\WIN10\Desktop>

Type here to search

Line 9, Column 31

Tab Size: 4

SUBSCRIBE

C:\Users\WIN10\Desktop\Demo.java - Sublime Text (UNREGISTERED)

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Demo.java

```
1          /* abstract class */  
2 abstract class animal  
3 {  
4 }  
5 class Dog extends animal  
6 {  
7 }  
8  
9 }  
10 class Demo  
11 {  
12     public static void main(String[] args) {  
13         animal r=new Dog();  
14     }  
15 }
```

Line 13, Column 19

Type here to search

Command Prompt

```
C:\Users\WIN10\Desktop>javac Demo.java  
Demo.java:9: error: animal is abstract; cannot be instantiated  
                                animal r=new animal();  
                                         ^  
1 error  
  
C:\Users\WIN10\Desktop>javac Demo.java  
  
C:\Users\WIN10\Desktop>javac Demo.java  
  
C:\Users\WIN10\Desktop>
```

Tab Size: 4 SUBSCRIBE

negative in its declaration is called
abstract class.

abstract class A

Note:- 1) We can't create object
for abstract class.



2:

i) It may or may not contain abstract
methods.

ii) It can have abstract
methods.

iv) To use an abstract
inherit it from some

SUBSCRIBE

2.

- ii) It may or may not contain abstract methods.
- iii) It can have abstract & non-abstract methods.
- iv) To use an abstract class, you have to inherit it from sub classes.
- v) If a class contains partial implementation then should declare a class as

iv) To use an abstract class, you have to inherit it from Sub classes.

v) If a class contain partial implementation then we should declare a class as abstract.

Ex \Rightarrow abstract clo A ||- class A

iv) To use an abstract class, you have to inherit it from sub classes.

v) If a class contain partial implementation then we should declare a class as abstract.

Ex \Rightarrow abstract class A

> 3

abstract void
MIC;

~~abstract~~
Class A
2

public void mic()

~~abstract~~ class animal

public ~~abstract~~ void eat();

2
class Dog extends animal



?

2
class Tiger extends animal



?

SUBSCRIBE

C:\Users\WIN10\Desktop\Test.java • Sublime Text (UNREGISTERED)

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Test.java

```
/* abstract class program */
abstract class animal
{
    public abstract void sound();
}
class Dog extends animal
{
    public void sound()
    {
        System.out.println("Dog is Barking");
    }
}
class Lion extends animal
{
    public void sound()
    {
        System.out.println("Lion is Roar");
    }
}
class Test
```

2 lines, 8 characters selected

Tab Size: 4 Java

Type here to search

C:\Users\WIN10\Desktop\Test.java • Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

Test.java

```
10     System.out.println("Dog is Barking");
11 }
12 }
13 class Lion extends animal
14 {
15     public void sound()
16     {
17         System.out.println("Lion is Roan");
18     }
19 }
20 class Test
21 {
22     public static void main(String[] args) {
23         Dog d=new Dog();
24         Lion l=new Lion();
25         d.sound(); l.sound();
26     }
27 }
```

Line 25, Column 31

Tab Size: 4 Java

Type here to search

C:\Users\WIN10\Desktop\Test.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

Test.java

```
1      /* abstract class program */
2 abstract class animal
3 {
4     public abstract void sound();
5 }
6 class Dog extends animal
7 {
8     public void sound()
9     {
10        System.out.println("Dog is Barking");
11    }
12 }
13 class Lion extends animal
14 {
15     public void sound()
16     {
17        System.out.println("Lion is Roar");
18    }
19 }
20 class Test
21 {
22     public static void main(String[] args) {
23         Dog d=new Dog();
```

Select Command Prompt

C:\Users\WIN10\Desktop>javac Test.java

C:\Users\WIN10\Desktop>java Test

Dog is Barking

Lion is Roar

C:\Users\WIN10\Desktop>

Line 25, Column 31

Tab Size: 4 Java

Type here to search

C:\Users\WIN10\Desktop\Test.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

Test.java

```
1      /* abstract class program */
2 abstract class animal
3 {
4     animal()
5     {
6         System.out.println("All animals ....!");
7     }
8     public abstract void sound();
9 }
10 class Dog extends animal
11 {
12     Dog()
13     {
14         super();
15     }
16     public void sound()
17     {
18         System.out.println("Dog is Barking");
19     }
20 }
21 class Lion extends animal
22 {
23     Lion()
```

Command Prompt

```
C:\Users\WIN10\Desktop>java Test
Dog is Barking
Lion is Roar

C:\Users\WIN10\Desktop>javac Test.java

C:\Users\WIN10\Desktop>java Test
All animals ....!
All animals ....!
Dog is Barking
Lion is Roar

C:\Users\WIN10\Desktop>
```

Line 25, Column 17

Tab Size: 4 Java

19:04 17-02-2021

Q. What is abstract method? full explanation.

Ans → A method which contains abstract modifier at the time of declaration is called abstract method.

Note :- ① It can only be used in abstract class.

② It doesn't contain any body "S f" and always with either

③ Not in

class A

{

abstract void m1();

}

SUBSCRIBE

abstract method.

Note:- ① It can only be used in abstract class.

② It doesn't contain any body "S f" and always ends with ";" .

③ Abstract method must be overridden in Sub-classes otherwise it will also become a abstract class.

④ Whenever the action is common but b
are different then also should

class A

{

abstract void m1();

}

SUBSCRIBE

abstract class.

- ④ Whenever the action is common but implementation are different then we should use abstract method.

Ex:-

abstract class Figure

abstract void draw();



abstract

class

Vehicle

abstract void wheel();



```
1      /* abstract method program */
2 class Progamming
3 {
4     public abstract void Developer();
5 }
6 class HTML extends Progamming
7 {
8     @Override
9     public void Developer()
10    {
11        System.out.println("Tim Berners Lee");
12    }
13 }
14 class Java
15 {
16 }
17 }
```

5 lines, 81 characters selected; Copied 81 characters

Tab Size: 4

Java



Type here to search

07:31
18-02-2021

```
1          /* abstract method program */
2
3 abstract class Progammimg
4 {
5     public abstract void Developer();
6 }
7 class HTML extends Progammimg
8 {
9     @Override
10    public void Developer()
11    {
12        System.out.println("Tim Berners Lee");
13    }
14 }
15 class Java extends Progammimg
16 {
17     @Override
18     public void Developer()
19     {
20         System.out.println("James Gosling");
21     }
}
```



```
8     @Override
9     public void Developer()
10    {
11        System.out.println("Tim Berners Lee");
12    }
13 }
14 class Java extends Progammig
15 {
16     @Override
17     public void Developer()
18    {
19        System.out.println("James Gosling");
20    }
21 }
22 class Main
23 {
24     public static void main(String[] args) {
25         HTML h=new HTML();
26         h.Developer();
27         Java j=new Java();
28         j.Developer();|
```

```
1      /* abstract method program */
2  abstract class Progammig
3  {
4      public abstract void Developer();
5  }
6  class HTML extends Progammig
7  {
8      @Override
9      public void Developer()
10     {
11         System.out.println("Tim Berners Lee");
12     }
13 }
14 class Java extends Progammig
15 {
16     @Override
17     public void Developer()
18     {
19         System.out.println("James Gosling");
20     }
21 }
22 class Main
23 {
24     public static void main(String[] args) {
25         HTML h=new HTML();
```

Command Prompt

C:\Users\WIN10\Desktop>javac Main.java

C:\Users\WIN10\Desktop>java Main
Tim Berners Lee
James Gosling

C:\Users\WIN10\Desktop>



```
4     public abstract void Developer();
5     public abstract void Rank();
6 }
7 class HTML extends Progammimg
8 {
9     @Override
10    public void Developer()
11    {
12        System.out.println("Tim Berners Lee");
13    }
14 }
15 class Java extends Progammimg
16 {
17     @Override
18     public void Developer()
19     {
20         System.out.println("James Gosling");
21     }
22 }
23 class Main
```

C:\Users\WIN10\Desktop\Main.java - Sublime Text (UNREGISTERED)

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Main.java

```
19 }  
20 class Java extends Progammimg  
21 {  
22     @Override  
23     public void Developer()  
24     {  
25         System.out.println("James Gosling");  
26     }  
27 }  
28 class Main  
29 {  
30     public static void main(String[] args) {  
31         Progammimg h=new HTML();  
32         h.Developer(); h.Rank();  
33         Progammimg j=new Java();  
34         j.Developer();  
35     }  
36 }
```

Line 33, Column 16

Type here to search

Command Prompt

```
C:\Users\WIN10\Desktop>java Main  
Tim Berners Lee  
James Gosling  
  
C:\Users\WIN10\Desktop>javac Main.java  
Main.java:20: error: Java is not abstract  
override abstract method Rank() in Progam  
class Java extends Progammimg  
^  
1 error  
  
C:\Users\WIN10\Desktop>
```

Tab Size: 4 Java 07:35 18-02-2021

Main.java

```
19 }  
20 class Java extend  
21 {  
22     @Override  
23     public void D  
24     {  
25         System.out  
26     }  
27 }  
28 class Main  
29 {  
30     public static  
31         Progammin  
32             h.Develop  
33                 C:\Users\WIN10\Desktop>  
34                 Progammimg j=new Java();  
35                 j.Developer();  
36 }
```

Command Prompt

```
C:\Users\WIN10\Desktop>java Main  
Tim Berners Lee  
James Gosling  
C:\Users\WIN10\Desktop>javac Main.java  
Main.java:20: error: Java is not abstract and does not  
override abstract method Rank() in Progammimg  
class Java extends Progammimg  
^
```

```
19 }
20 abstract class JaMain.java:20: error: Java is not abstract and does not
21 {
22     @Override
23     public void D^
24     {
25         System.out
26     }
27 }
28 class MainC:\Users\WIN10\Desktop>javac Main.java
29 {
30     public static Tim Berners Lee
31     Progammin
32     h.Develop3rd
33 }
34 }
```

```
12     System.out.println("Tim Berners Lee");
13 }
14 @Override
15 public void Rank()
16 {
17     System.out.println("3rd");
18 }
19 }
20 abstract class Java extends Progammimg
21 {
22     @Override
23     public void Developer()
24     {
25         System.out.println("James Gosling");
26     }
27 }
28 class Main
29 {
30     public static void main(String[] args) {
31         Progammimg h=new HTML();
32     }
33 }
```

Select Command Prompt

Main.java:20: error: Java is not abstract and
override abstract method Rank() in Progammimg
class Java extends Progammimg
^
1 error

C:\Users\WIN10\Desktop>javac Main.java

C:\Users\WIN10\Desktop>java Main
Tim Berners Lee
3rd

C:\Users\WIN10\Desktop>



```
1      /* abstract method program */
2 abstract class Progammimg
3 {
4     public abstract void Developer();
5     public abstract void Rank();
6 }
7 abstract class HTML extends Progammimg
8 {
9     @Override
10    public void Developer()
11    {
12        System.out.println("Tim Berners Lee");
13    }
14 }
15 }
16 abstract class Java extends Progammimg
17 {
18     @Override
19     public void Developer()
20     {
```

```
1      /* abstract method program */
2 abstract class Progammig
3 {
4     public abstract void Developer();
5     public abstract void Rank();
6 }
7 abstract class HTML extends Progammig
8 {
9     @Override
10    public void Developer()
11    {
12        System.out.println("Tim Berners Lee");
13    }
14 }
15 }
16 class Java extends HTML
17 {
18     @Override
19     public void Rank()
20     {
21         System.out.println("3rd");
22     }
23 }
24 class Main
25 {
```

```
10  public void Developer()
11  {
12      System.out.println("Tim Berners Lee");
13  }
14
15 }
16 class Java extends HTML
17 {
18     @Override
19     public void Rank()
20     {
21         System.out.println("3rd");
22     }
23 }
24 class Main
25 {
26     public static void main(String[] args) {
27         Progammimg h=new Java();
28         h.Developer(); h.Rank();
29     }
30 }
```

Command Prompt

```
Main.java:20: error: Java is not abstract and
override abstract method Rank() in Progammimg
class Java extends Progammimg
 ^
1 error
```

```
C:\Users\WIN10\Desktop>javac Main.java
```

```
C:\Users\WIN10\Desktop>java Main
Tim Berners Lee
3rd
```

```
C:\Users\WIN10\Desktop>javac Main.java
```



Type here to search



```
10 public void Developer()
11 {
12     System.out.println("Tim Berners Lee");
13 }
14 }
15 class Java extends HTML
16 {
17     @Override
18     public void Rank()
19     {
20         System.out.println("2nd");
21     }
22 }
23 }
24 class Main
25 {
26     public static void main(String[] args) {
27         Progammimg h=new Java();
28         h.Developer(); h.Rank();
29     }
30 }
```

Select Command Prompt

C:\Users\WIN10\Desktop>javac Main.java

C:\Users\WIN10\Desktop>java Main

Tim Berners Lee

3rd

C:\Users\WIN10\Desktop>javac Main.java

C:\Users\WIN10\Desktop>java Main

Tim Berners Lee

2nd

C:\Users\WIN10\Desktop>