

round 2

part 2

Date 19/3/23

Round 2

Part - 2

points imp.

Java program - is a file e.g., Hello.java

in Javac → C stands for compiler

Compiling a program means

High level language code
को low level language
में change करता है।

JDK → Compile

JRE → Run

JVM → calls main fun

• class
→ bytecode

JDK - bin → Javac.exe → राहि जाते हैं
file compilation के form

windows supports .exe file

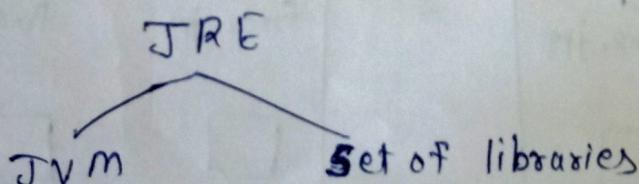
executable file.

most of the viruses are also in .exe form

Linux does not support
.exe file.

so chances of virus
attack is very less.

इसके लिए virus file बनाना
मुश्किल है।



access modifiers

& packages

access modifier - access को modify करने वाले ।

modify → changing करना, प्रियोरिटी करना, बदलना।

access → पहुंच पाना, use कर पाना, जो पाना

before it we have to understand package -

Just like ⇒ imagine you have 10 images

मतलब 10 .jpg files

2 images ⇒ 2 .-jpg files
आपकी खुद की है।

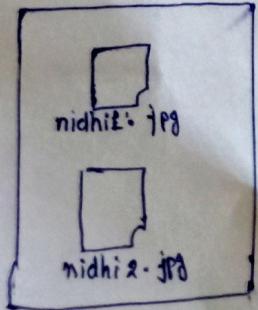
→ तो इसके लिए आपने
एक नया folder Nidhi
नाम से बना लिया।

4 images ⇒ 4 .-jpg files
आपकी Family के भाय
की है।

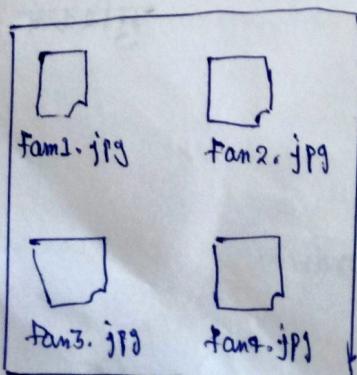
⇒ for it नया folder Family
नाम से

4 images ⇒ 4 .-jpg files
आपके friends के भाय
की है।

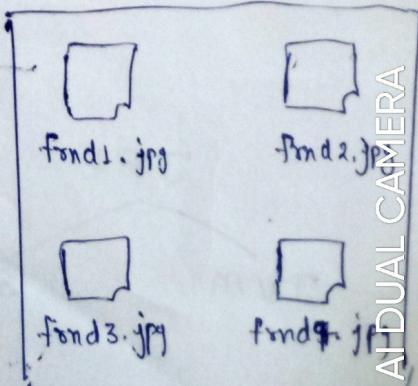
⇒ for it नया folder
Friends नाम से,



Folder 1

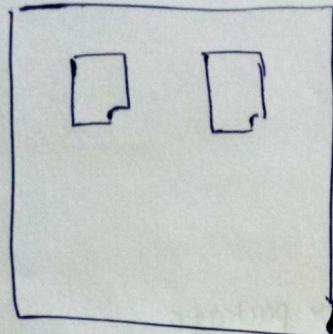


Folder 2

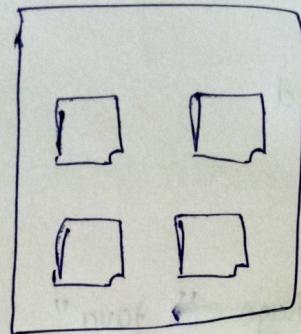


Folder 3

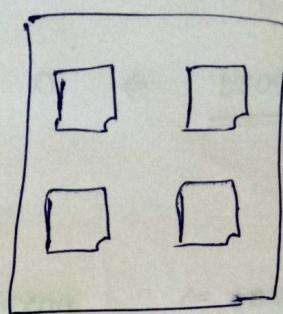
- .jpg file को एम java file की तरह समझ सकते हैं।
- folder को एम package



package 1



package 2



package 3

normal folder कैसे बनता है right click पर new folder से।

पर package बनाना बहुत आसान है -

package बनाना

- keyword - " package "

package collage;

class student {

p. s. v. m. (String [] args)

{ sop (" student class package collage");

}

}

एक
java file
के अंदर हम कितनी
मुख्य class बना
सकते हैं।

Package is a collection of similar kind of files.

```
import java.util.Scanner;
```

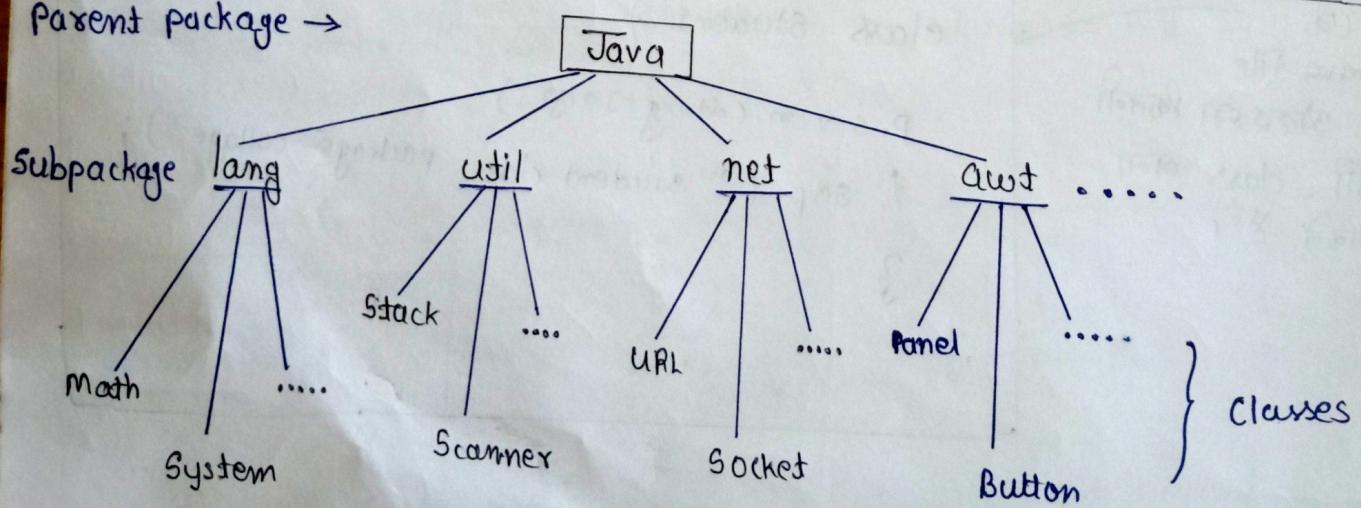
import ⇒ a keyword

java ⇒ parent package "java" / super package

util ⇒ "util" is the name of package. / sub package

Scanner ⇒ package के अंदर की class file है,
→ बनी गयी class file

Parent package →



Ritk

Rikky Sir's notes

2023/05/24 09:07

if you want to include all the class files in your program then ,

```
import java.util.*;
```

इसमें सारी class files
आ जाएंगी जो util
package के अंक में हैं।

for one file or for any specific file .

```
import java.util.Scanner;
```

अगर सारी include
करनी है तो उपर वाले
तरकी से करा सकते हैं।

Access Modifier - Access modifiers determine whether other classes can use a particular field or invoke a particular method .

Modifier	within class	within package	normal c. + child c.	outside package by child class	world outside package by normal class
Public	✓	✓		✓	✓
Protected	✓	✓		✓	✗
Default	✓	✓		✗	✗
Private	✓	✗		✗	✗

• in one .java file ⇒ we cannot make two classes of same name.

दो अलग - अलग java file के अंदर हम same name के class बना सकते हैं।

access modifiers are used with —
are associate

- variable
- function
- class

package Collage1;

S1.java
package collage1;
class ABC {
}
class xyz {
}

S2.java
package collage1;
class ABC {
}
class xyz {
}
class MNOS {
}

S3.java
package collage1;
class A {
}
class Nidhi {
}

अगर हम यही files (.java) के अंदर पहली line package collage1; लिखी है तो क्या होगा ?

इन यही files की .class files मतलब bytecode collage1 package (जो कि एक folder की तरह है) में save हो जाएगी।

अगर हमने package बना दिया तो package की कोई भी file अब हम इसे किसी अलग program में use करना चाहते हैं, तो हम इस package name collage1 की help से import करता सकते हैं।

class के साथ कभी भी private नहीं लिखते
ना ही protected लिखते

private - no need

because with final keyword
we can get a class that do
not become parent.

उसका private बनाया तो

func inheritance नहीं होगी
मतलब parent class नहीं बन
पाएगी, ← ये काम तो already final keyword की help से
हो जाता है।

और इसका बाहर से कोई भी
fun. access नहीं कर पाएगा।
class के data & fun. को।

→ मतलब बाहर object
बनी नहीं बन पाएगा। but

Java में normal रूप बात है उसका
कोई class बनी जूँ, तो उसका
object वहे उसके fun. use
हो, वहना बनाएंगे ही नहीं।

उसीले private नहीं लिखते

ये class trading भी नहीं कर पाएंगी
उसका object → private कर दिया गया।

modif java:2: error: modifier private not
allowed here. private class A
^
... error

- class को public बना सकते हैं।
- class default भी हो सकती है।
- class protected भी नहीं हो सकती। कारण ?
आगे → Answer

```
private class A
{
    int x=10;
    void f1()
    {
        System.out.println("x = " + x);
    }
}
class M2 extends A
{
    public static void main(String[] args)
    {
        new A().f1();
    }
}
```

Private Fun \Rightarrow

child class

```

class A
{
    int x = 10;
    private void f1()
    {
        System.out.println("x=" + x);
    }
}
class Main extends A
{
    public static void main(String args)
    {
        new Main().f1();
    }
}

```

error: can not find symbol

new Main().f1();

Normal class

```

class A
{
    int x = 10;
    private void f1()
    {
        System.out.println("x=" + x);
    }
}
class Main
{
    public static void main(String args)
    {
        new A().f1();
    }
}

```

error: f1 has private access in A.

new A().f1();

because private keyword has private access within class.

protected \Rightarrow

child class

```

class A
{
    int x = 10;
    protected void f1()
    {
        System.out.println("x=" + x);
    }
}
class Main extends A
{
    public static void main(String args)
    {
        new Main().f1();
    }
}

```

no error

Normal class

```

class A
{
    int x = 10;
    protected void f1()
    {
        System.out.println("x=" + x);
    }
}
class Main extends A
{
    public static void main(String args)
    {
        new Main().f1();
    }
}

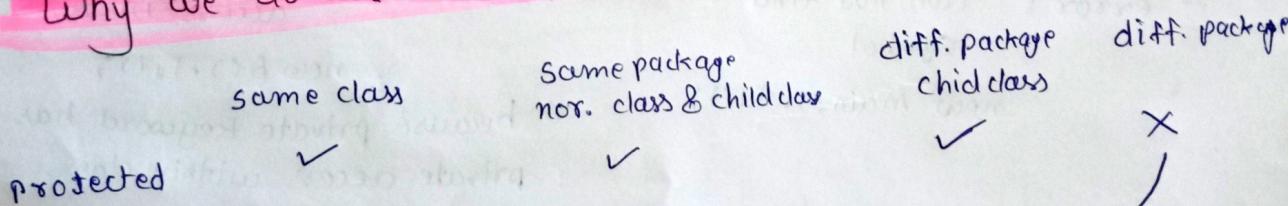
```

no error

method
signature
method
prototype

	default	private	protected	public
Same class	Yes	Yes	Yes	Yes
Same package	Yes	No	Yes	Yes
Sub class				
Same package non-sub class	Yes	No	Yes	Yes
Different package Sub class	No	No	Yes	Yes
Different package non-sub class	No	No	No	Yes

* Why we do not use protected keyword with our class.



आप class को protected बनाया
तो ये कुछ classes हमीं होगीं →
जो उसे access नहीं कर पाएंगी।
inherite

इन सभी available classes में शे इन कुछ classes को हम अपनी class के
द्वारा access करने से / inherit करने से नहीं रोक पाते।

protected का मतलब है कि diff. package / outside package की
class उसे inherit नहीं कर सकती। और यह सभा इनका कोई
भी use नहीं होता किंव।

why we do not use pro...



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हिन्दी में



Pause

Since **there is no way to restrict this class being subclassed by only few classes** (we cannot restrict class being inherited by only few classes out of all the available classes in a package/outside of a package), there is no use of protected access specifiers for top level classes. Hence it is not allowed.

06-Oct-2010

<https://stackoverflow.com/questions>

:

Why can a class not be defined as protected? - java - Stack Overflow

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Collections



String

H.W. Stack & Heap memory

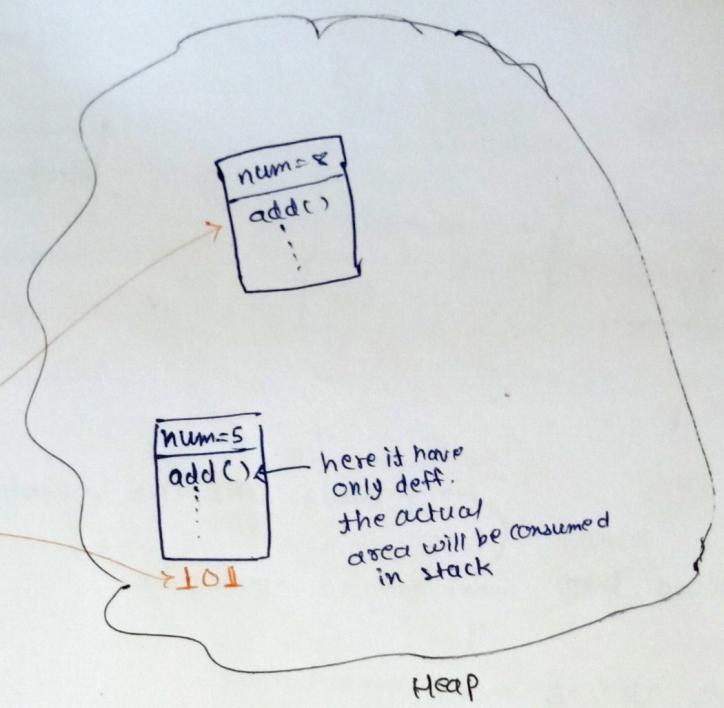
JVM

addition's stack

n_2	49
n_1	812

main stack

key	value
m_2	21
obj_2	209
obj	101
γ_1	7
data	18



Every method will have its own stack. Each stack have two column multiple rows

local variables \Rightarrow stack

instance variable \Rightarrow heap

obj_2 = new classname();
reference variable object

each reference variable will have its own address.

reference (obj) and address (101) is in stack and the object is in heap and instance variable associated with it is in heap and

class Calculator {

int num = 5 ;

int addition(int n1 , int n2)
{ return $n_1 + n_2$;
}

psvm (~ [] ~)

{ int data=18 ;
Calculator obj = new calculator();
calculator obj1 = new calculator();

γ_1 = obj.addition (n1:3, n2:4);
 γ_2 = obj1.addition (n1:9, n2:12);

obj.num = 99 ;

}

2023/05/24 09:09



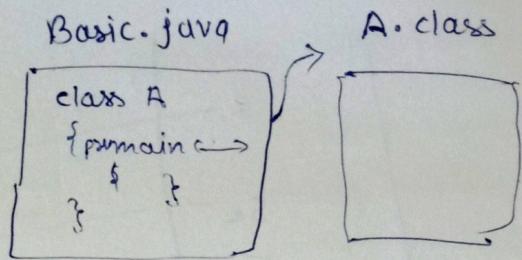
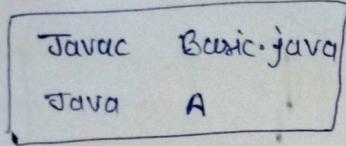
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String \Rightarrow

class file, will be with name of the class that contains main function.

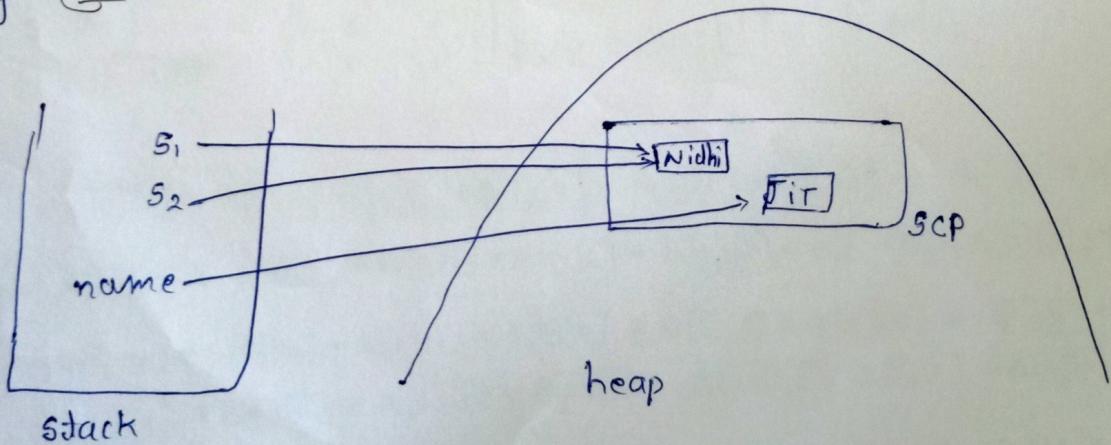
Compilation
run



String - inbuild class (इनी बनाई class)
sub package belongs from lang package
parent package Java package

string literal \Rightarrow

String name = "JIT"; String s2 = "Nidhi";
String s1 = "Nidhi";



$s_1 == s_2$
true

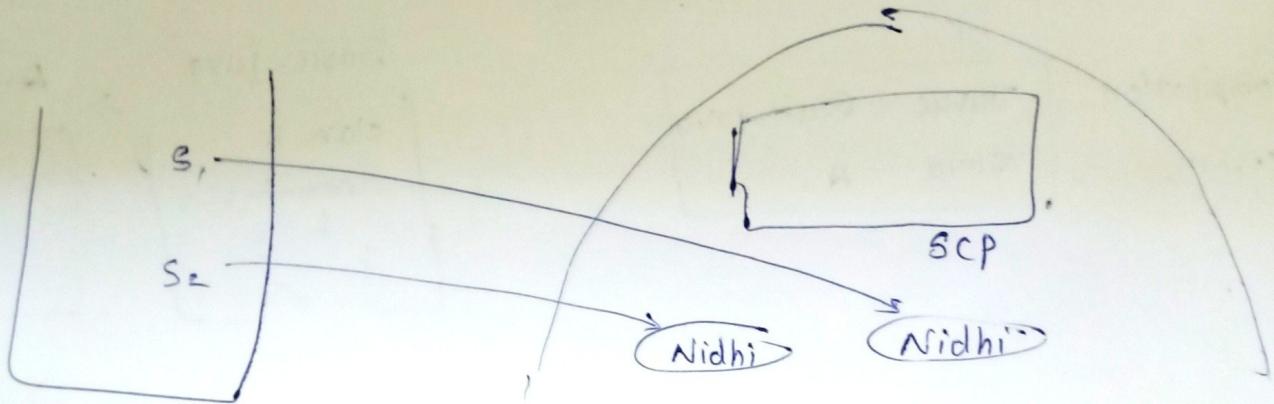


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2023/05/24 09:09

Second way

```
String s1 = new String ("Nidhi");  
String s2 = new String ("Nidhi");
```



$s_1 == s_2$ False

Stack memory vs Heap memory

all methods of String class.

**prefer rikki sir's notes
for detailed & better understanding**



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2023/05/24 09:10

File Selection View Goto Tools Project Preferences Help

TAccountTestin.java ●| TSeg.java ✘ | STThread1.java ✘ | STThreadB.java ●| untitled ●| strstr.java ●| Student2.java ✘ | Sprint.java

```
package StrStr;
public class Sprint{

    public static void main(String[]args)
    {

        String str = "Nidhi ";

        // printlning a string
        System.out.println(str);

        // hasecode methos's return type is int ; it returns the integer representation of string object;
        // printing the hascode value of a string
        System.out.println("printing the hascode value of a string ");
        System.out.println(str.hashCode());

    }

}
```

Command Prompt
C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . Sprint.java
C:\Users\Shubhams-PC\Desktop\javafolder>java StrStr.Sprint
Nidhi
printing the hascode value of a string
-1961841482
C:\Users\Shubhams-PC\Desktop\javafolder>

7/ April / 2023

What - if you try to print reference variable or (object)
through System.out.println(s1);

```
public class Student2 {
    int rollno;
    String name;
    String city;
```

Output

Student2@2e7b84de

Student2@3feef733d

Hash code
Hash value
Decipher code

classname @ Hexadecimal code

Student2 (int rollno , String name , String city)

```
{
    this.rollno = rollno;
    this.name = name;
    this.city = city;
}
```

student2.java

public static void main (String [] args)

Student2 s1 = new Student2(1 , "Chand" , "Indor");

Student2 s2 = new Student2(2 , "Moon" , "Mumbai");

System.out.println (s1); // compiler will write here s1.toString

System.out.println (s2); // compiler will write here s2.toString.

here toString method invoke indirectly.

the output will be same < sop(s1);
sop (s1.toString());

this concept is similar as super keyword

Rin AI DUAL CAMERA
Shot by Nidhu

other e.g.

HelloWorld.java

Selection Find View Goto Tools Project Preferences Help

TAccountTestin.java ●| TSeg.java ✘ | STThread1.java ✘ | STThreadBjava ●| untitled ●| strstrjava ●| Student2.java | STThread22.java ✘ | Trdeg4.java ✘ | Trd...

```

package StrStr;
public class Student2 {

    int rollno;
    String name;
    String city;

    Student2 (int rollno, String name, String city )
    {
        this.rollno=rollno;
        this.name=name;
        this.city=city;
    }

    public static void main(String[] args)
    {
        Student2 s1 = new Student2(1,"changu","INdore");
        Student2 s2 = new Student2(2,"mangu ", "mumbai");

        System.out.println(s1); //compiler writes here s1.toString
        System.out.println(s2); //compiler writes here s2.toString

        /* we are trying to print referenc variable here
           and we may expect it that we will get the adress of our object :|| or all the methods of our class will be called :||
           but not such heppens here, we get here the hashvalue // hashvalue contains classname@hexadecimalvalue for the security
           purpose*/
    }
}

```

Command Prompt

```

C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . Student2.java

C:\Users\Shubhams-PC\Desktop\javafolder>java StrStr.Student2
StrStr.Student2@2c7b84de
StrStr.Student2@3fee733d

C:\Users\Shubhams-PC\Desktop\javafolder>_

```

this is non-static version of toString method.

So now we can override toString method.

But if you are overriding toString method, \Rightarrow it must be with public keyword and also return is mandatory in the definition.

For better understanding

e.g. # student1.java

```
-->
-->
public String toString()
{
    // overriding the toString() method
    return rollno + " " + name + " " + city;
}
-->
-->
```

public string toString()
{
 sop (rollno + " " + name + " " + city);
 return " ";
}

we can modify the definition of
toString acc. to our op requirements.

Hash value | Hash code | decypher code

sop (s₁); where s₁ is a reference variable

(?) what do we expect \rightarrow my all func. will be called b/c of it.
 \rightarrow or I got the address of the object.

but for the security purpose it gives us a hash code
it includes classname @ hexadecimal value



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2023/05/24 13:46

:\\Users\\Shubhams-PC\\Desktop\\javafolder\\Student2.java - Sublime Text (UNREGISTERED)

Edit Selection Find View Goto Tools Project Preferences Help

TAccountTestin.java •| TSeg.java ✘ | STThread1.java ✘ | STThreadB.java •| untitled •| strstr.java •| Student2.java | Student11.java ✘ | STThread22.java | Tr
package StrStr;
public class Student2 {

int rollno;
String name;
String city;

Student2 (int rollno, String name, String city)
{
 this.rollno=rollno;
 this.name=name;
 this.city=city;
}

public static void main(String[] args)
{
 Student2 s1 = new Student2(1, "changu", "INdore");
 Student2 s2 = new Student2(2, "mangu ", "mumbai");

 System.out.println(s1); //compiler writes here s1.toString
 System.out.println(s2); //compiler writes here s2.toString

/* we are trying to print referenc variable here
and we may expect it that we will get the adress of our object :|| or all the methods of our class will be called :||
but not such heppens here, we get here the hashvalue // hashvalue contains classname@hexadecimalvalue for the security
purpose*/

Command Prompt

C:\\Users\\Shubhams-PC\\Desktop\\javafolder>javac -d . Student11.java

C:\\Users\\Shubhams-PC\\Desktop\\javafolder>java StrStr.Student11
1 Rikky INdore
2 chiku mumbai
3 NIdhni dewas

C:\\Users\\Shubhams-PC\\Desktop\\javafolder>

7 Apr. 2023

All fun. of String class.

in Java folder

#StrStr.java

all fun. are available.

Java phase 2.1

Java String class methods

total 20

most importants -

String s = "Nidhi";

String s1 = "YADAV";

sprint.java

Strcon.java

* int compareTo(string)

diff. of Ascii values of
first character's of both the strings

int i = s.compareTo(s1);

Strcomp.java

its return type is int,

* boolean equals (string);

boolean b = s.equals(s1);

it will return

true or false

* string trim()

StrTrim.java

returns string

(leading and trailing
white space removed)

* string[] split (string delimiter)

Strsplit.java

returns an array
of strings

strings between
occurrences of
delimiter.

* int hashCode()

integer representation of string object.



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2023/05/24 10:22

TAccountTest.java | TSeg.java | STThread1.java | STThreadB.java | untitled | strstr.java | STThread22.java | Trdeg4.java | Trdeg2.java

```

package StrStr;
public class strstr{ // Most Important program;

public static void main(String[]args)
{
    String s1 = "nidhi";
    System.out.println(s1.length());
    System.out.println(s1.charAt(0));
    String s= "i am NIIdhi Yadav ... i am Nidhi ... i am Nidhi ";
    String ss= "i am Sourabh Yadav ...";
    System.out.println(s.substring(6, 12));
    System.out.println( s.contains( "am"));
    System.out.println( s.startsWith(" "));
    System.out.println( s.endsWith("."));
    System.out.println(s.replace("I","i"));
    System.out.println( s.concat(s1));
    System.out.println(s1.toUpperCase());
    System.out.println(s.toLowerCase());
    System.out.println(s.trim());
    System.out.println(s.equals(s1)); // imp
    System.out.print( ss.compareTo(s)); // imp
    System.out.println(s.hashCode());
    System.out.println(s1.indexOf("i")); //?
    // self notes + class notes explaination milljayga 7 April
    // split method ,
    System.out.println("output of split method ");
    String str[]= s.split("am");
    for(String p : str)
        System.out.println(p);
    /*String(String s)
     String (char[] a)
     indexOf(Srtring pattern ,int i);
     matches(String regexp);
    */}}

```

Command Prompt

```

1
i
NIIdhi Yadav ... i
Nidhi ... i
Nidhi

C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . st
5
n
Idhi Y
true
false
false
i am Nidhi Yadav ... i am Nidhi ... i am Nidhi
i am NIIdhi Yadav ... i am Nidhi ... i am Nidhi nidhi
NIDHI
i am nidhi yadav ... i am nidhi ... i am nidhi
i am NIIdhi Yadav ... i am Nidhi ... i am Nidhi
false
5-1931135230
1
output of split method
i
NIIdhi Yadav ... i
Nidhi ... i
Nidhi

```

C:\Users\Shubhams-PC\Desktop\javafolder>

TAccountTest.java

TSeg.java

STThread1.java

STThreadB.java

untitled

strstr.java

Student2.java

Sprint.java

StrStr

```

  Strcomp{

public static void main(String[]args)
{
    String s = new String("Unknown ");
    String ss = new String( "unknown ");
    /*
        compareTo() method is used for comparing two strings
        and its return type is int , it returns the difference of the ascii values
        of the first different characters of both strings
        for eg. in this -
        Ascii value of U=85
                    u=117
                    now the answer of compareTo()method will be = 85-117= -32;
    */
    int i = s.compareTo(ss);

    System.out.println(i);
/* boolean equals(); method have return type boolean //&& the major difference between equals and compa
   equals method will return true or false;
*/
    boolean b = s.equals(ss);
    System.out.println(b);
    // or we can directly print it ;
    System.out.println(s.equals(ss));
}
}

```

Command Prompt

```

C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . Str
C:\Users\Shubhams-PC\Desktop\javafolder>java StrStr.St
-32
false
false

C:\Users\Shubhams-PC\Desktop\javafolder>

```

C:\Users\Shubhams-PC\Desktop\javafolder\Strcon.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

TAccountTestin.java ●| TSeg.java ✘ | STThread1.java ✘ | STThreadB.java ●| untitled ●| strstr.java ●| Student2.java ✘ | Sp

```
1
2 package StrStr;
3
4 class Strcon
5
6 {
7
8     public static void main(String[]args)
9     {
10
11         String s = "nidhu ";
12         System.out.println(s.concat("yadav "));
13
14     }
15
16 }
17 }
```

Command Prompt

```
false
C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . Strcon.java
C:\Users\Shubhams-PC\Desktop\javafolder>java StrStr.Strcon
nidhu yadav
C:\Users\Shubhams-PC\Desktop\javafolder>
```

C:\Users\Shubhams-PC\Desktop\javafolder\StrTrim.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

TAccountTestin.java TSeg.java STThread1.java STThreadB.java untitled strstr.java Student2.java Sprint.java

```
package StrStr;

class StrTrim{

    public static void main(String[]args)
    {
        String ss = "      it will remove all the leading and      trading whitespaces      ";
        System.out.println();
        System.out.println(ss);
        System.out.println();

        // using trim method
        System.out.println(" ye sari aage or piche ki space ko remove kr dega");
        System.out.println(" after using trim method ");
        System.out.println(ss.trim());
    }
}
```

C:\Users\Shubhams-PC\Desktop\javafolder>java StrStr.StrTrim

it will remove all the leading and trading whitespaces

ye sari aage or piche ki space ko remove kr dega
after using trim method

it will remove all the leading and trading whitespaces

C:\Users\Shubhams-PC\Desktop\javafolder>



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C:\Users\Shubhams-PC\Desktop\javafolder\StrSplit.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

TAccountTestin.java TSeg.java STThread1.java STThreadBjava untitled strstr.java Student2.java Sprint.java Strcomp.java Str

```
1 package StrStr;
2 import java.util.*;
3 class StrSplit{
4
5     public static void main(String[]args)
6     {
7         String ss = "not intrusted in studies anymore";
8         String str[]={ss.split("i")};
9
10        //for each loop for printnting string array . inhaned for loop
11        for(String se:str)
12            System.out.print(se);
13
14        System.out.println();
15        // toString method from util package for printing String array
16
17        System.out.println(toString(str));
18    }
19
20 }
```

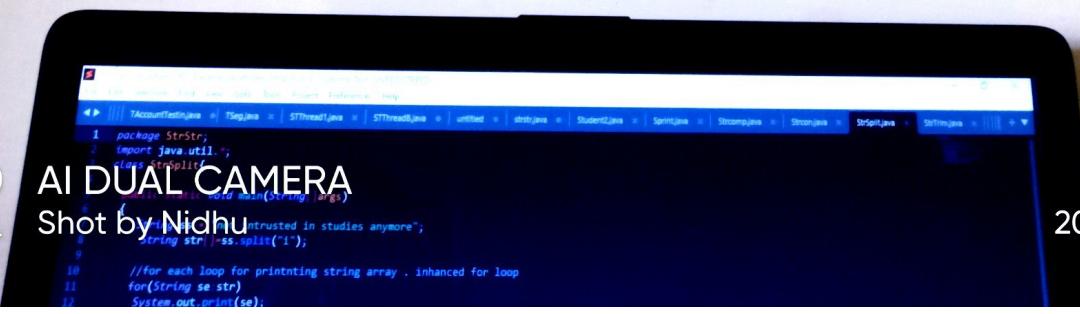
Command Prompt

```
C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . StrSplit.java
C:\Users\Shubhams-PC\Desktop\javafolder>java StrStr.StrSplit
not ntrusted n studes anymore
[not , ntrusted , n stud, es anymore]
```



classes in java

wrapper classes



The image shows a smartphone screen displaying a Java code editor. The code is as follows:

```
1 package Str5Str;
2 import java.util.*;
3
4 public class Str5Str {
5     public static void main(String args) {
6         String ss="I am intrusted in studies anymore";
7         String str[]=ss.split(" ");
8
9         //for each loop for printning string array . enhanced for loop
10        for(String se : str)
11            System.out.println(se);
12    }
13 }
```

At the bottom left of the phone screen, there is a watermark that reads "AI DUAL CAMERA Shot by Nidhu". At the bottom right, the date and time are displayed as "2023/05/24 10:23".

9 April 2023

Classes in Java

Wrapper classes belongs from **lang package**

Folder ⇒ JavaClasses

Wrapper class

Primitive data type

we want them to behave like a class.

Wrapper classes comes with a lot of advantages, we will study in Collection Framework.

Basic concepts of wrapper class -

#[# WrapperEx.java]

- // Java Program to convert primitive into objects (of primitive classes)
- // Autoboxing example of int to integer.

```

class WrapperEx
{
    public static void main()
    {
        // converting int into Integer
        int a = 20;
        Integer i = Integer.valueOf(a);
        // converting int into Integer explicitly
        Integer j = a;
        // autoboxing, now compiler will write
        // Integer.valueOf(a) internally
        System.out.println(a + " " + i + " " + j);
    }
}

```

* Autoboxing Important concept

lange package



8 wrapper class



Integer,, etc

(a) data
primitive ~~data~~ type's ~~value~~
converts into

Wrapper's (Integer's)
object



TAccountTestin.java

TSeg.java

STThread1.java

STThreadB.java

untitled

strstr.java

Student2.java

Sprin

```
package JavaClasses;
// program to convert primitive into object (Wrapperclass's object)

class WrapperE1{
public static void main(String[] args)
{
    int a=20;
    // converting int to Integer
    Integer i = Integer.valueOf(a); //converting primitive to object explicitly
    // valueOf is method of Integer Wrapper class it is a static method
    //it takes primitive as parameter

    Integer j= a; // Autoboxing , here compiler will write Integer.valueOf(a) internally
    System.out.println(a+" "+i+" "+j);
}
```

C:\ Command Prompt

```
Microsoft Windows [Version 10.0.18362.1256]
(c) 2019 Microsoft Corporation. All rights reserved.
```

```
C:\Users\Shubhams-PC>cd C:\Users\Shubhams-PC\Desktop\javafolder
```

```
C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . WrapperE1.java
```

```
C:\Users\Shubhams-PC\Desktop\javafolder>java JavaClasses.WrapperE1
20 20 20
```

```
}
```

```
C:\Users\Shubhams-PC\Desktop\javafolder>
```



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Ex # WrapperEx.java

// Java program to convert object into primitives

// Unboxing example of Integer to int

```
class WrapperEx
{
    public static void main(String[] args)
    {
        // Converting Integer to int
        Integer a = new Integer(3);

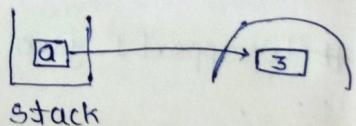
        int i = a.intValue();
        // converting Integer to int explicitly
        int j = a;

        // unboxing, now compiler will write
        // a intValue() internally.
        System.out.println(a+" "+i+" "+j);
    }
}
```

* O/P → 3 3 3

String s1 = new String("Nidhi");

Here we create an object of wrapper class through new keyword.



and then converting the object into primitive.

// explicitly and implicitly

intValue();'s work

- जो भी reference variable के control में है उसे primitive में change कर देता है।

primitive data type → Variable एक time पर एक ही value रखता है, अगर नयी देने की कोशिश की तो previous को replace कर देता है और नयी देते हैं।

Wrapper class में जो reference variable बनेगा ये एक time पर एक ही value लेगा। It's nature is similar to variable

```
C:\Users\Shubhams\PC\Desktop\javafolder\WrapperE2.java [Sublime Text (UNREGISTERED)]
File Edit Selection Find View Goto Tools Project Preferences Help
TSeq.java x | STThread1.java x | STThreadB.java ● | untitled ● | strstr.java ● | Student2.java x | Sprint.java x | Strcomp.java x | Strcon.java
1 package JavaClasses;
2 // java program to convert object into primitives
3 // unboxing example of Integer to int
4 class WrapperE2{
5     public static void main(String[]args)
6     {
7         // converting Integer to int
8         Integer a = new Integer(3);
9         int i=a.intValue(); // converting Integer to int explicitly
10
11        int j= a;
12        // Unboxing now compiler will write a intValue() internally
13        System.out.println(a+" "+i+" "+j);
14    }
15 } Command Prompt
16
17 }

C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . WrapperE1.java
C:\Users\Shubhams-PC\Desktop\javafolder>java JavaClasses.WrapperE1
20 20 20

C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . WrapperE2.java
WrapperE2.java:8: warning: [removal] Integer(int) in Integer has been deprecated and marked for removal
    Integer a = new Integer(3);
                           ^
1 warning

C:\Users\Shubhams-PC\Desktop\javafolder>java JavaClasses.WrapperE2
3 3 3

C:\Users\Shubhams-PC\Desktop\javafolder>
```

in a normal class \Rightarrow Member function and member data.

there can be many static variables, instance variable and various methods.

* But this all will occupy space in memory when we create object of that class.

and we have to create a reference variable that can control all this methods & variables.

क्या एमेशा बनाना चाहिए हैं?

[new Nidhi().f();]

[new Nidhi().a;]

बिना reference
बनाये भी काम
नहीं आयता है।

Nidhi n1 = new Nidhi();

n1.f();

n1.x;

n1.y;

n1.z;

→ this single reference variable can handle value x, y, z (जोतनी भी हो) and can handle functions (f, ...)

But wrapper class's reference variable stores only single value.

e.g.

int j = a;

we have write here a only
we have not use . operator
it simply means that a is pointing to a single value.

Unboxing

without writing intValue(); method explicitly, we can convert wrapper class's object into primitives

primitive \rightarrow object valueOf(a);
object \rightarrow primitive intValue();

without calling specific function (that are responsible for conversion) doing conversion just by using assignment operator.

Autoboxing / Unboxing

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wrapper variable = primitive variable

primitive variable = wrapper variable (reference type object)

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- 3] # WrappeE3.java
- // Java Program to convert all primitives into its corresponding object (wrapperclass's object)
 - // wrapper objects and vice-versa
 - // Autoboxing : Converting primitives into objects
 - // printing objects
 - // Unboxing : Converting objects to primitives
 - // Printing primitives
 - # Understand it through code

C:\Users\Shubhams-PC\Desktop\javafolder\WrapperE3.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

STThread1.java STThreadB.java untitled strstr.java Student2.java Sprint...

```
package JavaClasses;
class WrapperE3{

    public static void main(String[]args)
{
    byte b=10;
    short s=20;
    int i =30;
    Long l=40;
    float f = 50.0F;
    double d=60.0D;
    char c = 'a';
    boolean b2 = true;

    Byte byteobj = b;
    Short shortobj = s;
    Integer intobj = i;
    Long longobj = l;
    Float floatobj = f ;
    Double doubleobj = d;
    Character charobj = c;
    Boolean boolobj = b2;

    System.out.println("----Printtin object values ----\n");
    System.out.println("Byte object "+ byteobj);
    System.out.println("short object "+ shortobj);
    System.out.println("Integer object "+ intobj);
    System.out.println("Long object "+ longobj);
    System.out.println("Float object "+ floatobj);
    System.out.println("Double object "+ doubleobj);
    System.out.println("CharObj object "+ charobj);
    System.out.println("Boolean object" + boolobj);

    byte bytevalue = byteobj;
    short shortvalue = shortobj;
}
```

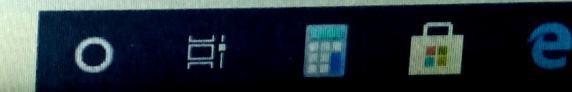
Line 33, Column 1



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C:\Users\Shubhams-PC\Desktop\javafolder\WrapperE3.java - Sublime Text (UNREGISTERED)

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STThread1.java STThreadB.java untitled strstr.java Student2.java Sprint.java

```
System.out.println("Float object " + floatobj);
System.out.println("Double object " + doubleobj);
System.out.println("CharObj object " + charobj);
System.out.println("Boolean object " + boolobj);

33 byte bytevalue = byteobj;
34 short shortvalue = shortobj;
35 int intvalue = intobj;
36 long longvalue = longobj;
37 float floatvalue = floatobj;
38 double doublevalue = doubleobj;
39 char charvalue= charobj;
40 boolean boolvalue = boolobj;

41
42
43 System.out.println("-----printin primitive values");
44 System.out.println("byte value " + bytevalue);
45 System.out.println("short value " + shortvalue);
46 System.out.println("integer value " + intvalue);
47 System.out.println(" long value " + longvalue);
48 System.out.println("float value " + floatvalue);
49 System.out.println("double value " + doublevalue);
50 System.out.println("char value " + charvalue);
51 System.out.println("boolean value " + boolvalue);

52
53
54
55
56 }
57
58 }
```

older\WrapperE3.java • - Sublime Text (UNREGISTERED)
File Tools Project Preferences Help

```
    float object "+ floatobj);  
    Double object "+ doubleobj);  
    CharObj object "+ charobj);  
    Boolean object "+ boolobj);
```

```
obj;  
ortobj;  
;  
obj;  
oatobj; Byte object 10  
doubleobj; short object 20  
bj; Integer object 30  
oolobj; Long object 40  
Float object 50.0  
Double object 60.0  
-----print  
yte value CharObj object a  
hort value Boolean object true  
ninteger value-----printin primitive values  
nteger val byte value 10  
long valueshort value 20  
loat val integer value 30  
ouble val long value 40  
har value float value 50.0  
oolean val double value 60.0  
char value a  
boolean value true
```

```
C:\Users\Shubhams-PC\Desktop\javafolder>
```

Command Prompt

```
C:\Users\Shubhams-PC\Desktop\javafolder>java JavaClasses.WrapperE3  
---Printin object values ---
```

rikk.java

most important

// creating the custom wrapper class

```
class rikk
```

```
{
```

```
private int i;
```

```
rikk (int i)
```

```
{ this.i = i; }
```

```
int getValue ()  
{ return i; }
```

```
void setValue (int i)
```

```
{ this.i = i; }
```

// @ overriding toString

```
public String toString ()
```

```
{ System.out.println (" i using toString = "); }
```

```
return Integer.toString (i);
```

static version of
toString (p);

with parameter (primitive type)

use have to give primitive
as parameter and
it will return us an
object e.g.

```
psvm (~~~ )  
{ rikk r = new rikk(10);  
System.out.println(r);  
}
```

ch = 'A'
you have pass ch
it will return "A"



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C:\Users\Shubhams-PC\Desktop\javafolder\rikk.java - Sublime Text (UNREG STERED)

File Edit Selection Find View Goto Tools Project Preferences Help

SThreadB.java | untitled • | strstr.java • | Student2.java ✘ | Sprint.java ✘ | Strcomp.java ✘ |

```
1 package JavaClasses;
2 class rikk{
3
4
5     private int i;
6     rikk(int i)
7     {
8         this.i=i;
9     }
10    int getValue()
11    { return i; }
12
13    void setValue(int i)
14    { this.i=i; }
15
16    public String toString()
17    {
18        System.out.print("i using toString = ");
19        //return i;
20        return Integer.toString(i);
21    }
22
23
24    public static void main(String[] args){
25        rikk r= new rikk(10);
26        System.out.println(r);
27    }
28
29 }
```

Command Prompt

C:\Users\Shubhams-PC\Desktop\javafolder>javac

C:\Users\Shubhams-PC\Desktop\javafolder>java J
i using toString = 10

C:\Users\Shubhams-PC\Desktop\javafolder>

Line 29, Column 2

Type here to search



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12/4/2023

Methods of wrapper class

Integer i = Integer.valueOf(a); // Integer i = a

Autoboxing

int i = a.intValue();

String s1 = Integer.toString(i);

int i = Integer.parseInt("10");

* #XIKK.java
Folder #WrpMethods.java
Java classes #WrapperE1.java
#WrapperE2.java

int a = 10;

Integer i = Integer.valueOf(a);

float f = 20.3f;

Float fr = Float.valueOf(f);



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Shubhams PC Desktop/javafolder/WrpMethods.java Sublime Text (UNREGISTERED)

Selection Find View Goto Tools Project Preferences Help

untitled ● | strstr.java ● | Student2.java ✘ | Sprint.java ✘ | Strcomp.java ✘ | Strcon.java ✘ | StrSplit.java ✘ | WrapperE1.java ✘ | WrapperE2.java ✘ | WrapperE3.java ● | nikk.java ✘ | /rpM

```
package JavaClasses;
import java.util.Scanner;
class WrpMethods{

    public static void main(String[] args)
    { Scanner sc = new Scanner(System.in);

        System.out.println("Enter a string to for converting it into primitive ");
        String s = sc.next();

        // here you can pass only String that are made with integers
        // "s", "nidhi" , "3.4" , "true" , "2147483648" will give run time error
        int i = Integer.parseInt(s);
        System.out.println("from string "+s+" converted integer number is " +i);

        // similarly Byte.parseByte( --) methods will take parameter string which is made of
        // s>= "-128" && s<= "127"
        System.out.println("Enter a string to for converting it into primitive ");
        String s1 = sc.next();
        byte b1 = Byte.parseByte(s1);
        System.out.println("from string "+s1+" converted byte number is "+b1);

        // for Float.parseFloat(--) method parameter string should be within the float range
        // and with f suffix;
        System.out.println("Enter a string to for converting it into primitive ");
        String s2 = sc.next();
        float f1 = Float.parseFloat(s2);
        System.out.println(f1);

    }
}
```

Command Prompt

```
C:\Users\Shubhams-PC\Desktop\javafolder>java JavaClasses.WrpMethods
Enter a string to for converting it into primitive
22
from string 22 converted integer number is 22
Enter a string to for converting it into primitive
1
from string 1 converted byte number is 1
Enter a string to for converting it into primitive
2.33f
2.33

C:\Users\Shubhams-PC\Desktop\javafolder>
```

C:\Users\Shubhams-PC\Desktop\javafolder\WrapperE1.java - Sublime Text (UNREGISTERED)

File Edit Selection Find View Goto Tools Project Preferences Help

untitled • | strstr.java • | Student2.java ✘ | Sprint.java ✘ | Strcomp.java ✘ | Strcon.java ✘ | StrSplit.java ✘ | WrapperE1.java

```
1 package JavaClasses;
2 // program to convert primitive into object (Wrapperclass's object)
3
4 class WrapperE1{
5     public static void main(String[]args)
6     {
7         Command Prompt
8         Caused by: java.lang.ClassNotFoundException: JavaClasses.WrpperE1
9
10        C:\Users\Shubhams-PC\Desktop\javafolder>javac -d . WrapperE1.java
11
12        C:\Users\Shubhams-PC\Desktop\javafolder>java JavaClasses.WrapperE1
13        20.3 20.3
14        43 12
15
16        C:\Users\Shubhams-PC\Desktop\javafolder>_
17
18        float f= 20.3f;
19        Float f1 = Float.valueOf(f);
20        Float f2 = f;
21        System.out.println(f1+ " "+f2);
22        byte b = 12;
23        Byte b2 = Byte.valueOf(b);
24        Byte b1 = 43;
25        System.out.println( b1+ " "+ b2);
26
27    }
28 }
```

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