

~~V.V.T~~

throw Keyword

Q. What is throw ? full explanation .

Ans → throw keyword is used to throw the user-defined or customized exception object to the JVM explicitly for that purpose we use throw keyword .

① if ($age < 18$)

throw new InvalidAgeException ("can't
eligible for vote")

}

else

S.O.P "Eligible for vote";

S.O.P "Eligible for vote";

②

Main() {

S.O.P (iof.o);

~~1. DE~~

IVM

Main() {

throw new

ArithmaticException
(" / by zero");

2

```
1 class throwDemo
2 {
3     public static void main(String[] args) {
4         System.out.println(10/0);
5     }
6 }
```



```
1 class throwDemo  
2 {  
3     public static void main(String[] args) {  
4         System.out.println("Hello World");  
5         int result = 10 / 0;  
6     }  
7 }
```

C:\Users\lenovo\Desktop>javac throwDemo.java
C:\Users\lenovo\Desktop>java throwDemo
Exception in thread "main" java.lang.Arithm~~etic~~
ticException: / by zero
 at throwDemo.main(throwDemo.java:5)

```
1 class throwDemo
2 {
3     public static void main(String[] args) {
4         System.out.println("Hello World");
5         int a = 10;
6         int b = 0;
7         System.out.println(a / b);
8     }
9 }
```

C:\Users\lenovo\Desktop>javac throwDemo.java
C:\Users\lenovo\Desktop>java throwDemo
Exception in thread "main" java.lang.ArithmetiException
c: / by zero
 at throwDemo.main(throwDemo.java:5)

C:\Users\lenovo\Desktop>

```
1 class throwDemo
2 {
3     public static void main(String[] args) {
4         //System.out.println(10/0);
5         throw new ArithmeticException("/ by zero");
6     }
7 }
8 }
9 }
```

```
1 class throwDemo
2 {
3     public static void main(String[] args) {
4         System.out.println("Hello World");
5         int a = 10;
6         int b = 0;
7         System.out.println(a / b);
8         throw new ArithmeticException("Division by zero");
9     }
}
```

```
C:\Users\lenovo\Desktop>javac throwDemo.java
C:\Users\lenovo\Desktop>java throwDemo
Exception in thread "main" java.lang.Arithmeti
cException: / by zero
        at throwDemo.main(throwDemo.java:5)
C:\Users\lenovo\Desktop>javac throwDemo.java
```

```
1 class throwDemo {  
2 {  
3     public static void main(String[] args) {  
4         //System.out.println("Hello World");  
5         //throw new ArithmeticException("Division by zero");  
6         //throw new Exception("Division by zero");  
7         throw new ArithmeticException("Division by zero");  
8     }  
9 }
```

C:\Users\lenovo\Desktop>java throwDemo
Exception in thread "main" java.lang.ArithmeticException
: / by zero
 at throwDemo.main(throwDemo.java:5)

C:\Users\lenovo\Desktop>javac throwDemo.java

C:\Users\lenovo\Desktop>java throwDemo
Exception in thread "main" java.lang.ArithmeticException
: / by zero
 at throwDemo.main(throwDemo.java:7)

```
1 class throwDemo
2 {
3     public static void main(String[] args) {
4
5         //System.out.println(10/0);
6
7         throw new InvalidageExcept("/ by zero");
8     }
9 }
```

```
1 class throwDemo
2 {
3     public static void main(String[] args) {
4         //System.out.println(10/0);
5         throw new InvalidageException("/ by zero");
6     }
7 }
8
9 }
```

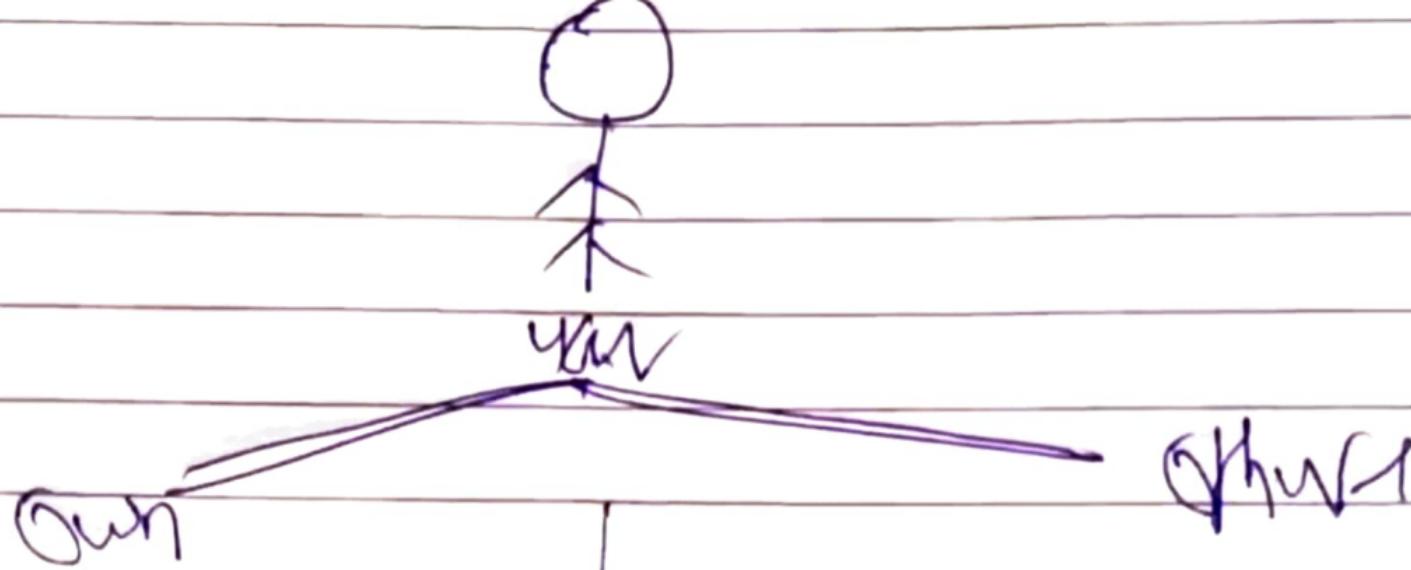
~~V.V.I~~

Date : / /

throws keyword

Q. What is throws? full explanation.

Ans → throws keyword is used when we doesn't want to handle the exception and try to send the exception to the JVM (JVM or other method)



man

Own  Share

(t, t)

main(s)



Thread.sleep(1000);
scro.p("Hello");

1 2



main() throws Hypoth



Thread.sleep(1000);
so.("Hello");

try

Thread.sleep()

Catch InterruptedException



Thread.sleep(1000);
sleep("Hello");

main1

try

Thread.Sleep(1000)

}

Catch(IntoException)

Run

main2 throat ~~try~~



Thread.Sleep(1000)
scr:pb("Hello");

```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1;i<=10;i++)
6         {
7             System.out.println(i);
8             Thread.sleep(1000);
9         }
10    }
11 }
```

```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1; i<=10; i++)
6         {
7             System.out.println("Hello " + i);
8             Thread.sleep(1000);
9         }
10    }
11 }
```

C:\Users\lenovo\Desktop>javac throwsDemo.java

throwsDemo.java:8: error: unreported exception InterruptedException; must be caught or declared to be thrown

Thread.sleep(1000); ^

1 error

C:\Users\lenovo\Desktop>

```
1 class throwsDemo
2 {
3     public static void main(String[] args) throws InterruptedException
4     {
5         for(int i=1;i<=10;i++)
6         {
7             System.out.println(i);
8             Thread.sleep(1000);
9         }
10    }
11 }
```

```
1 class throwsDemo
2 {
3     public static void main(String[] args) {
4         for(int i=1; i<10; i++) {
5             System.out.println("Iteration " + i);
6             try {
7                 Thread.sleep(1000);
8             } catch(InterruptedException e) {
9             }
10        }
11    }
}
```

C:\Users\lenovo\Desktop>javac throwsDemo.java

C:\Users\lenovo\Desktop>javac throwsDemo.java

```
1 class throwsDemo  
2  
3     public static void C:\Users\lenovo\Desktop>java throwsDemo  
4     {  
5         for(int i=1;i<10;  
6             {  
7                 System.out.  
8                 Thread.sle  
9             }  
10        }  
11    }
```

Select Command Prompt

C:\Users\lenovo\Desktop>

```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1;i<=10;i++)
6         {
7             try
8             {
9                 System.out.println(i);
10                Thread.sleep(1000);
11            }
12            catch(InterruptedException i)
13            {
14                System.|
```

```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1;i<=10;i++)
6         {
7             try
8             {
9                 System.out.println(i);
10                Thread.sleep(1000);
11            }
12            catch(InterruptedException i)
13            {
14                System.out.println(i);
15            }
16        }
17    }
```



```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1; i<10
6         {
7             try
8             {
9                 System.out.println("Hello " + i);
10            catch(InterruptedException e)
11            {
12                System.out.println("An error occurred: " + e.getMessage());
13            }
14        }
15    }
16}
```

Command Prompt - javac throwsDemo.java

```
C:\Users\lenovo\Desktop>javac throwsDemo.java
throwsDemo.java:12: error: variable i is already defined
          in method main(String[])
                           ^
C:\Users\lenovo\Desktop>javac throwsDemo.java

```

```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1; i<=10;
6         {
7             try
8             {
9                 System.out.println("Hello");
10            Thread.sleep(1000);
11        }
12        catch(InterruptedException e)
13        {
14            System.out.println("Exception caught");
15        }
16    }
17 }
```

Command Prompt - java throwsDemo

C:\Users\lenovo\Desktop>java throwsDemo

```
1 class throwsDemo
2 {
3     public static void main(String[] args)
4     {
5         for(int i=1;i<=10;i++)
6         {
7             System.out.println(i);
8             Thread.sleep(1000);
9         }
10    }
11 }
```

```
1 class throwsDemo
2
3     public static void main(String[] args) throws InterruptedException
4     {
5         for(int i=1;i<=10;i++)
6         {
7             System.out.println(i);
8             Thread.sleep(1000);
9         }
10    }
11 }
```

Q. Difference between throw & throws :

Ans →

throw

① throw keyword is used to throw an exception object explicitly.

throws

① throws keyword is used to declare an exception as well as by pass the caller.

Ex →

② throw k

② throws keyword ~~used~~ always used

throw keyword is used to throw an exception object explicitly.

void mils

Ex → throw new AE();
 { }

② throw keyword always present inside method body

③ We can handle the exception

throws keyword is used to declare an exception as well as by pass the caller.

void mils throws AE

{
 }
}

② throws keyword is always used with method signature.

③ We can handle multiple exceptions

method body

③ We can throw only one exception at a time.

throw new AEC

④ Throw is followed by an instance.

③ We can handle multiple exceptions using throws keyword.

MILS throws AEC, NPE, SQLEx

④ Throw is followed by class name



③ We can throw only one exception at a time.

throw new AEC

④ Throw is followed by an instance.

③ We can handle multiple exceptions using throws keyword.

MIL, throws A.E, N.P.E, S.Q.E

④ Throws is followed by. class.

```
1      /* throw Vs throws */  
2 class test  
3 {  
4     void div(int a,int b)  
5     {  
6         if(b==0)  
7         {  
8             throw new ArithmeticException();  
9         }  
10        else  
11        {  
12            int c=a/b;  
13            System.out.println(c);  
14        }  
15    }  
16    public static void main(String[] args) {  
17    }  
18 }
```

```
1 class test
2 {
3     void div(int a,int b)
4     {
5         if(b==0)
6         {
7             throw new A
8         }
9         else
10        {
11            int c=a/b;
12            System.out.
13        }
14    }
15
16    public static void
17    main()
18    {
19        test t=new test();
20        t.div(20,0);
21    }
22 }
```

The code is a Java program. It defines a class named 'test' with a method 'div'. The 'div' method takes two integer parameters, 'a' and 'b'. If 'b' is zero, it throws a new exception of type 'A'. Otherwise, it calculates the quotient 'c' by dividing 'a' by 'b' and prints it to the console using 'System.out.'. The main method creates an instance of 'test' and calls its 'div' method with arguments 20 and 0.

```
1
2 class test
3 {
4     void div(int a,int b)
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String args[])
17    {
18        test t=new test();
19        t.div(20,0);
20    }
21 }
```

C:\Users\lenovo\Desktop>javac test.java

C:\Users\lenovo\Desktop>java test

Exception in thread "main" java.lang.ArithmetiException

at test.div(test.java:8)

at test.main(test.java:18)

/* throw Vs throws */

```
1
2 class test
3 {
4     void div(int a,int b)
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String[] args) {
17        test t=new test();
18        t.div(20, 0);
19    }
}
```

```
1  /* throw Vs throws */
2 class test
3 {
4     void div(int a,int b) throws ArithmeticException
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String[] args) {
17        test t=new test();
18        t.div(20,0);
19    }
}
```

```
8     throw new ArithmeticException();
9 }
10 else
11 {
12     int c=a/b;
13     System.out.println(c);
14 }
15 }
16 public static void main(String[] args) {
17     test t=new test();
18     try
19     {
20
21     }
22     t.div(20,0);
23 }
24 }
```

```
1     /* throw Vs throws */
2 class test
3 {
4     void div(int a,int b) throws ArithmeticException
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String[] args) {
17        test t=new test();
18        try
19        {
20            t.div(20,0);
21        }
22        catch(Exception e)
23        {
24            System.out.println("The value of b is zero");
25        }
26    }
27 }
```

```
1  class test
2  {
3      void div(int a,int b) throws
4      {
5          if(b==0)
6          {
7              throw new ArithmeticException();
8          }
9          else
10         {
11             int c=a/b;
12             System.out.println(c);
13         }
14     }
15
16     public static void main(String[] args)
17     {
18         test t=new test();
19         try
20         {
21             t.div(20,0);
22         }
23         catch(Exception e)
24         {
25             System.out.println("The value of b is zero");
26         }
27     }
28 }
```

at test.main(test.java:18)

C:\Users\lenovo\Desktop>javac test.java

C:\Users\lenovo\Desktop>java test

10

C:\Users\lenovo\Desktop>javac test.java

C:\Users\lenovo\Desktop>java test

The value of b is zero

```
1      /* throw Vs throws */
2 class test
3 {
4     void div(int a,int b) throws ArithmeticException
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String[] args) throws ArithmeticException {
17        test t=new test();
18        t.div(20,0);
19    }
}
```

```
1 class test
2 {
3     void div(int a,int b)
4     {
5         if(b==0)
6         {
7             throw new A
8         }
9     }
10    else
11    {
12        int c=a/b;
13        System.out.println("The value of b is zero");
14    }
15 }
16 public static void main()
17 {
18     test t=new test();
19     t.div(20,0);
}
```

C:\Users\lenovo\Desktop>javac test.java

C:\Users\lenovo\Desktop>java test

10

C:\Users\lenovo\Desktop>javac test.java

C:\Users\lenovo\Desktop>java test

The value of b is zero

C:\Users\lenovo\Desktop>javac test.java

```
1
2 class test
3 {
4     void div(int a,int b)
5     {
6         if(b==0)
7         {
8             throw new A
9         }
10        else
11        {
12            int c=a/b;
13            System.out.
14        }
15    }
16    public static void C:\Users\lenovo\Desktop>
17    test t=new test();
18    t.div(20,0);
19 }
```

C:\Users\lenovo\Desktop>java test
The value of b is zero

C:\Users\lenovo\Desktop>javac test.java

C:\Users\lenovo\Desktop>java test
Exception in thread "main" java.lang.Arithme^tcException
at test.div(test.java:8)
at test.main(test.java:18)

```
1      /* throw Vs throws */
2 class test
3 {
4     void div(int a,int b) throws ArithmeticException
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String[] args) throws ArithmeticException {
17        test t=new test();
18        t.div(20,0);  |
19    }
```

```
1      /* throw Vs throws */
```

```
2 class test
3 {
4     void div(int a,int b) throws ArithmeticException
5     {
6         if(b==0)
7         {
8             throw new ArithmeticException();
9         }
10        else
11        {
12            int c=a/b;
13            System.out.println(c);
14        }
15    }
16    public static void main(String[] args) {
17        test t=new test();
18        t.div(20,0);
19    }
}
```

```
/* try-catch Vs throws */
```

```
1 class Demo
2 {
3     public static void Wait()
4     {
5         for(int i=1;i<=10;i++)
6         {
7             System.out.println(i);
8             Thread.sleep(1000);
9         }
10    }
11
12    public static void main(String[] args) {
13
14    }
15 }
```

```
1      /* try-catch Vs throws */
2 class Demo
3 {
4     public static void Wait()
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) {
13        Wait();
14    }
15 }
```

```
1      /* try-catch Vs throws */  
2  class Demo  
3  {  
4      public static void main(String[] args)  
5      {  
6          for(int i=0; i<5; i++)  
7          {  
8              System.out.println("Hello "+i);  
9              Thread.sleep(1000);  
10         }  
11     }  
12     public static void main(String[] args)  
13     {  
14         try  
15         {  
C:\Users\lenovo\Desktop>javac Demo.java  
Demo.java:9: error: unreported exception InterruptedException;  
                         must be caught or declared to be thrown  
                         ^  
1 error  
C:\Users\lenovo\Desktop>
```

/* try-catch Vs throws */

```
1
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) {
13        Wait();
14    }
15 }
```

```
1      /* try-catch Vs throws */  
2 class Demo  
3 {  
4     public stat  
5     {  
6         C:\Users\lenovo\Desktop>javac Demo.java  
7             Demo.java:9: error: unreported exception InterruptedException;  
8                 must be caught or declared to be thrown  
9                     Sys  
10                    Thread.sleep(1000);  
11                ^  
12     }  
13     1 error  
14 }  
15 }
```

Command Prompt - javac Demo.java

```
1      /* try-catch Vs throws - */
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) throws InterruptedException {
13        Wait();
14    }
15 }
```

```
1      /* try-catch Vs throws */
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) throws InterruptedException {
13        Wait();
14    }
15 }
```

```
/* try-catch Vs throws */
```

```
1 class Demo
2 {
3     public static void main(String[] args) {
4         int i;
5         for(i=1; i<10; i++) {
6             System.out.println("This is iteration " + i);
7         }
8         synchronized(this) {
9             try {
10                 wait();
11             } catch(InterruptedException e) {
12                 System.out.println("Exception caught: " + e);
13             }
14         }
15     }
}
```

C:\Users\lenovo\Desktop>java Demo

C:\Users\lenovo\Desktop>

```
1      /* try-catch Vs throws */
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) throws InterruptedException {
13        Wait();
14        System.out.println("main method ended");
15    }
16 }
```

```
/* try-catch Vs throws */
```

```
1 class Demo
2 {
3     public static void main(String[] args) {
4         int i = 0;
5         for(i = 0; i < 5; i++) {
6             System.out.println("This is iteration " + i);
7         }
8     }
9     public static void main() {
10    System.out.println("main method ended");
11 }
12 }
```

```
C:\Users\lenovo\Desktop>
```

```
1      /* try-catch Vs throws */
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) throws InterruptedException {
13        Wait();
14        System.out.println(10/a);
15        System.out.println("main method ended");
16    }
17 }
```

```
1      /* try-catch Vs throws */
2 class Demo
3 {
4     public static void main(String[] args) {
5         int i = 0;
6         for(i=0; i<10; i++) {
7             System.out.println("This is iteration " + i);
8             if(i == 5) {
9                 throw new ArithmeticException("zero");
10            }
11        }
12    }
13    public static void main(String[] args) {
14        System.out.println("Hello World!");
15    }
16 }
17 }
```

Command Prompt - javac Demo.java

Exception in thread "main" java.lang.ArithmetiException: / by zero
at Demo.main(Demo.java:14)

C:\Users\lenovo\Desktop>javac Demo.java

```
1      /* try-catch Vs throws */
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) {
13        try
14        {
15            }
16        }
17
18        System.out.println("main method ended");
19    }
```

```
3 {  
4     public static void Wait() throws InterruptedException  
5     {  
6         for(int i=1;i<=10;i++)  
7         {  
8             System.out.println(i);  
9             Thread.sleep(1000);  
10        }  
11    }  
12    public static void main(String[] args) {  
13        try  
14        {  
15            Wait();  
16            System.out.println(10/0);  
17        }  
18        catch(Exception e)  
19        {  
20            System.out.println("Exception Handled..!");  
21        }  
22        System.out.println("main method ended");  
23    }  
}
```

```
3 {  
4     public static void Wait() throws InterruptedException  
5     {  
6         for(int i = 0; i < 5; i++)  
7         {  
8             System.out.println("at Demo.main(Demo.java:14)  
9             Thread " + i);  
10        }  
11    }  
12    public static void main(String[] args) throws InterruptedException  
13    {  
14        try  
15        {  
16            Thread.sleep(1000);  
17            System.out.println("1");  
18            Wait();  
19            System.out.println("2");  
20        }  
21        catch(InterruptedException e)  
22        {  
23            System.out.println("3");  
24            e.printStackTrace();  
25            System.out.println("4");  
26        }  
27        System.out.println("5");  
28        System.out.println("6");  
29    }  
30    System.out.println("main method ended");  
31 }
```

Command Prompt - java Demo

C:\Users\lenovo\Desktop>javac Demo.java

C:\Users\lenovo\Desktop>java Demo

```
1  /* -try catch Vs throws */
2 class Demo
3 {
4     public static void Wait() throws InterruptedException
5     {
6         for(int i=1;i<=10;i++)
7         {
8             System.out.println(i);
9             Thread.sleep(1000);
10        }
11    }
12    public static void main(String[] args) {
13        try
14        {
15            Wait();
16            System.out.println(10/0);
17        }
18        catch(Exception e)
19        {
20            System.out.println("Exception Handled..!");
21        }
22    System.out.println("main method ended");
23 }
```

```
1      /* throw Vs throws & try-catch */
2 class test
3 {
4     public static void main(String[] args) {
5
6     }
7
8     public static void vote() throws InvalidAgeException
9     {
10        if(age<18)
11        {
12            throw new InvalidAgeException("Not eligible for voting");
13        }
14        else
15        {
16            System.out.println("Eligible for voting");
17        }
18    }
19 }
```

```
1          /* throw Vs throws & try-catch */
2 class test
3 {
4     public static void main(String[] args) {
5
6         try
7         {
8             vote(12);
9         }
10        catch(Exception e)
11        {
12            System.out.println(e)
13        }
14    }
15
16    public static void vote() throws InvalidAgeException
17    {
18        if(age<18)
19        {
20            throw new InvalidAgeException("Not eligible for voting");
21        }

```

```
1      /* throw Vs throws & try-catch */
```

```
2 class InvalidAgeException extends Exception
3 {
4     InvalidAgeException(String msg)
5     {
6         System.out.println(msg);
7     }
8 }
9 class test
10 {
11     public static void main(String[] args) {
12         try
13     {
14         vote(12);
15     }
16     catch(Exception e)
17     {
18         System.out.println(e)
19     }
20 }
```

```
/* throw Vs throws & try-catch */
```

```
1 class InvalidAgeException extends Exception
2 {
3     InvalidAgeException(String msg) { System.out.println(msg); }
4 }
5
6 class test
7 {
8     public static void main(String[] args)
9     {
10         try
11         {
12             vote(12);
13         }
14         catch(Exception e)
15         {
16             System.out.println(e);
17         }
18     }
19
20     public static void vote() throws InvalidAgeException
21     {
22         if(age<18) { throw new InvalidAgeException("Age is less than 18"); }
23         else
24         {
25             System.out.println("Eligible for voting");
26         }
27     }
28 }
```

Command Prompt

```
C:\Users\lenovo\Desktop>javac test.java
test.java:19: error: ';' expected
                                System.out.println(e)
                                         ^
1 error
```

```
C:\Users\lenovo\Desktop>javac test.java
```

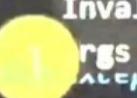
```
7 }  
8 }  
9 class test  
10 {  
11     public static void main()  
12     {  
13         try  
14         {  
15             vote(12);  
16         }  
17         catch(Exception e)  
18         {  
19             System.out.print  
20         }  
21     }  
22     public static void vote()  
23     {  
24         if(age<18) ^  
25         {  
26             throw new InvalidAgeException();  
27         }  
28         else  
29         {  
30             System.out.println("You can vote");  
31         }  
32     }  
33 }
```

Command Prompt

```
required: no arguments  
found: int  
reason: actual and formal argument lists differ in length  
test.java:25: error: cannot find symbol  
        if(age<18)  
                ^  
symbol: variable age  
location: class test  
2 errors
```

C:\Users\lenovo\Desktop>javac test.java

```
13
14
15     try
16     {
17         vote(12);
18     }
19     catch(Exception e)
20     {
21         System.out.println(e);
22     }
23
24     public static void vote(int ag) throws InvalidAgeException
25     {
26         if(age<18)
27             throw new InvalidAgeException("Age below 18 is not eligible for voting");
28     }
29     else
30     {
31         System.out.println("Eligible for voting");
32     }
33 }
34 }
```



```
7 }  
8 }  
9 class test  
10 {  
11     public static void main(String[] args) {  
12         int age; // Line 12 highlighted with a yellow circle  
13         try {  
14             vote(12);  
15         }  
16         catch(Exception e)  
17         {  
18             System.out.println(e);  
19         }  
20     }  
21 }  
22  
23 public static void vote(int age) throws InvalidAgeException  
24 {  
25     if(age<18)  
26     {  
27         throw new InvalidAgeException("Not eligible for voting");  
28     }  
29     else  
30     {  
31         System.out.println("Eligible for voting");  
32     }  
33 }  
34 }
```

```
7 }  
8 }  
9 class test  
10 {  
11     public static void main(String[] args) {  
12         try  
13         {  
14             vote();  
15         }  
16         catch(Exception e)  
17         {  
18             System.out.println(e);  
19         }  
20     }  
21 }  
22  
23     public static void vote(int age) throws InvalidAgeException  
24     {
```

```
10 {  
11     public static void main(String[] args)  
12     {  
13         try  
14         {  
15             vote();  
16         }  
17         catch(Exception e)  
18         {  
19             System.out.println("Not eligible for voting");  
20         }  
21     }  
22     public static void vote()  
23     {  
24         if(age<18)  
25         {  
26             throw new InvalidAgeException("Not eligible for voting");  
27         }  
28     }  
29 }  
C:\Users\lenovo\Desktop>javac test.java  
C:\Users\lenovo\Desktop>java test  
Not eligible for voting  
C:\Users\lenovo\Desktop>javac test.java  
C:\Users\lenovo\Desktop>java test  
Eligible for voting
```

```
16 }
17     catch(Exception e)
18     {
19         System.out.println(e);
20     }
21 }
22
23 public static void vote(int age) throws InvalidAgeException
24 {
25     if(age<18)
26     {
27         throw new InvalidAgeException("Not eligible for voting");
28     }
29     else
30     {
31         System.out.println("Eligible for voting");
32     }
33 }
```

```
1      /* throw Vs throws & try-catch */  
2  class InvalidAgeException extends Exception  
3 {  
4     InvalidAgeException(String msg)  
5     {  
6         System.out.println(msg);  
7     }  
8 }  
9 class test  
10 {  
11     public static void main(String[] args) {  
12         try  
13         {  
14             vote(20);  
15         }  
16         catch(Exception e)  
17         {  
18     }  
19 }
```

Definition:

InvalidAgeException test.java:4

```
1  * throw Vs throws & try-catch */
2  class InvalidAgeException extends Exception
3  {
4      InvalidAgeException(String msg)
5      {
6          System.out.println(msg);
7      }
8  }
9  class test
10 {
11     public static void main(String[] args) {
12         try
13         {
14             vote(20);
15         }
16         catch(Exception e)
17         {
18             System.out.println(e);
19         }
20     }
21 }
22
23 public static void vote(int age) throws InvalidAgeException
24 {
25     if(age<18)
26     {
27         throw new InvalidAgeException("Not eligible for voting");
28     }
29     else
30     {
31         System.out.println("Eligible for voting");
32     }
33 }
```

Exception Propagation

Q. What is exception propagation?

Ans → Exception propagation is a technique through which we can handle the exception in the caller method.

\Rightarrow $\{ \text{magis} \}$

$\{ \text{mics; } \text{all} \}$

mics

m_{1LS}

m_{LS}i // GII

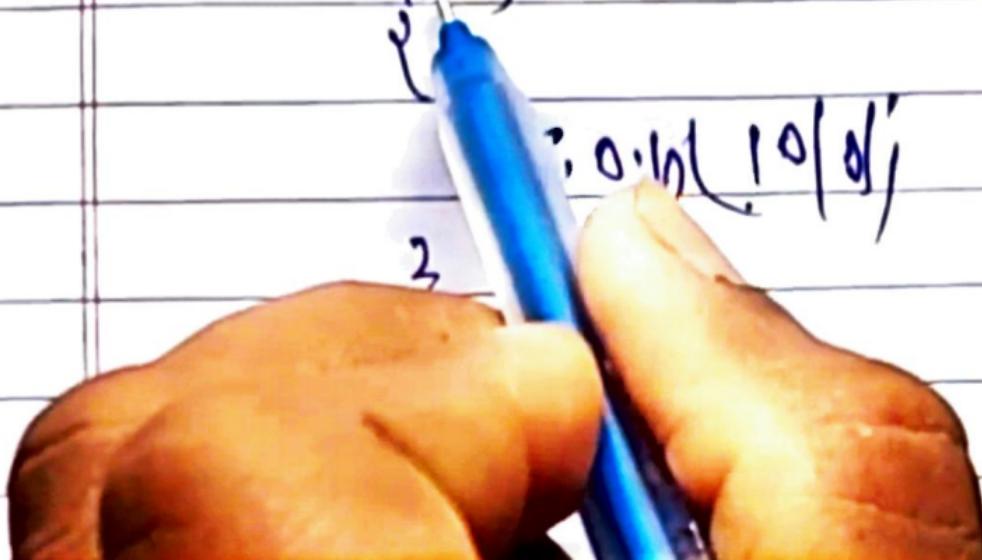
}

m_{2LS}

}

: 0.1n(10/s)

2



~~Q2~~ main()

 R
 m1(); // Call

 m1();

 m2(); // Call

 m2();

 m2();

 main();

m2()

 m1();

 main();



m1.cs || Call
3
m1.cs

m2.cs || Call
3
m2.cs

s.o.println()

3

main() ← Calling
stack

```
1  /* Exception Propagation */
2  class liveDemo
3  {
4      public static void main(String[] args) {
5          m1();
6      }
7      public static void m1()
8      {
9          m2();
10     }
11     public static void m2()
12     {
13         System.out.println(10/0);
14     }
15 }
```

```
1      /* Exception Propagation */
2 class liveDemo
3 {
4     public static void m1();
5 }
6     public static void
7     {
8         m2();
9     }
10    public static void
11    {
12        System.out.pr
13    }
14 }
15 }
```

Command Prompt - javac liveDemo.java

C:\Users\lenovo\Desktop>javac liveDemo.java

```
1      /* Exception Propagation */
2 class liveDemo
3 {
4     public static void m1();
5     }
6     public static void C:\Users\lenovo\Desktop>javac liveDemo.java
7     {
8         m2();           Exception in thread "main" java.lang.ArithmetricException:
9         m2();           / by zero
10    }
11    public static void
12    {
13        System.out.pr
14    }
15 }
```

C:\Users\lenovo\Desktop>java liveDemo

Exception in thread "main" java.lang.ArithmetricException:
at liveDemo.m2(liveDemo.java:13)
at liveDemo.m1(liveDemo.java:9)
at liveDemo.main(liveDemo.java:5)

C:\Users\lenovo\Desktop>-

```
1      /* Exception Propagation */
2 class liveDemo
3 {
4     public static void m1();
5     public static void m2() / by zero
6     {
7         System.out.println("Exception in thread " + Thread.currentThread().getName() + " " + e);
8     }
9     public static void main(String[] args)
10    {
11        m1();
12        m2();
13    }
14 }
15 }
```

C:\Users\lenovo\Desktop>javac liveDemo.java

C:\Users\lenovo\Desktop>java liveDemo

Exception in thread "main" java.lang.ArithmetiException:
at liveDemo.m2(liveDemo.java:13)
at liveDemo.m1(liveDemo.java:9)
at liveDemo.main(liveDemo.java:5)

```
1      /* Exception Propagation */
2 class liveDemo
3 {
4     public static void main(String[] args) {
5         m1();
6     }
7     public static void m1() {
8     try
9     {
10        m2();
11    }
12    catch(ArithmeticException a)
13    {
14    }
15}
16}
17}
18public static void m2()
19{
```

```
4 public static void main(String[] args) {
5     m1();
6 }
7 public static void m1()
8 {
9     try
10    {
11        m2();
12    }
13    catch(ArithmeticeException a)
14    {
15        System.out.println("Exception ");
16    }
17 }
18 public static void m2()
19 {
20     System.out.println(10/0);
21 }
22 }
```

```
4 public static void main(String[] args) {
5     m1();
6 }
7 public static void
8 {
9     try
10    {
11        m2(); // by zero
12    }
13    catch(Arithme
14    {
15        System.out
16    }
17 }
18 public static void
19 {
20     System.out.pr
21 }
22 }
```

Command Prompt - java liveDemo

C:\Users\lenovo\Desktop>javac liveDemo.java

C:\Users\lenovo\Desktop>java liveDemo

Exception in thread "main" java.lang.ArithmetiException:

at liveDemo.m2(liveDemo.java:13)

at liveDemo.m1(liveDemo.java:9)

at liveDemo.main(liveDemo.java:5)

C:\Users\lenovo\Desktop>javac liveDemo.java

C:\Users\lenovo\Desktop>java liveDemo

```
4 public static void main(String[] args) {
5     try
6     {
7         m1();
8     }
9     catch(ArithmeticException a)
10    {
11        System.out.println("Exception Handled by main method..!");
12    }
13 }
14 public static void m1()
15 {
16     m2();
17 }
18 public static void m2()
19 {
20     System.out.println(10/0);
21 }
22 }
```

```
1      /* Exception Propagation */
2 class liveDemo
3 {
4     public static void main(String[] args) {
5         try
6         {
7             m1();
8         }
9         catch(ArithmeticeException a)
10        {
11             System.out.println("Exception Handled by main method..!");
12         }
13     }
14     public static void m1()
15     {
16         m2();
17     }
18     public static void m2()
19     {
20         System.out.println(10/0);
21     }
22 }
```