



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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Experiment - 3

Student Name: Harjit Singh

Branch: BE-CSE

Semester: 5th

Subject Name: Project Based Learning in Java

Subject Code: 23CSH-304

UID: 23BCS10849

Section/Group: KRG-2B

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Aim: To write a Java program to calculate the square root of a number entered by the user. Use try-catch to handle invalid inputs(like negative numbers or non-numeric values).

Objective: To understand how to handle invalid inputs using try-catch blocks in java.

Input Used : Java exception classes, try-catch block, Scanner class for input.

Procedure:

1. Prompt the user to input a number.
2. Convert input to a number type using Scanner.
3. Use a try-catch block to handle NumberFormatException and check for negative values.
4. If number is negative, throw exception.
5. If number is valid, print its square root.

Sample Input -

Enter a number: -19

Sample Output -

Error: Cannot calculate square root of a negative number.

Code -

```
package intro_day1;
import java.util.List;
import java.util.Scanner;
import java.util.ArrayList;

class Notvalidinput extends Exception{
public Notvalidinput(String msg) {
super(msg);
}
```



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```
}  
class practice{  
public static void main(String args[]) {  
Scanner sc=new Scanner(System.in);  
System.out.println("Enter num: ");  
int x=sc.nextInt();  
try {  
if(x<0) {  
throw new Notvalidinput("square root not valid for negatives");  
}  
int low=1,high=x,ans=0;  
while(low<=high) {  
int mid=(low+high)/2;  
if(mid*mid>x) {  
high=mid-1;  
}  
else if(mid*mid<x) {  
ans=mid;  
low=mid+1;  
}  
else {  
System.out.println(mid);  
return;  
}  
}  
System.out.println(ans);  
}  
catch(Notvalidinput e) {  
System.out.println("error: "+e.getMessage());  
}  
}  
}
```

Output -

```
terminated> practice [java Application] C:\Users\mp\p2\p2\p  
Enter num:  
196  
square root is:14
```

```
terminated> practice [java Application] C:\Users\mp\p2\p2\p  
Enter num:  
-1788  
error: square root not valid for negatives
```