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| **Hands-on Assignment** |
| Get an input String from user and parse it to integer, if it is not a number it will throw number format exception Catch it and print "Entered input is not a valid format for an integer." or else print the square of that number. (Refer Sample Input and Output).  Sample input and output 1:  Enter an integer: 12  The square value is 144  The work has been done successfully  Sample input and output 2:  Enter an integer: Java  Entered input is not a valid format for an integer.  **package** B;  **import** java.util.Scanner;  **public** **class** ExceptQuestion {  **public** **static** **void** main(String[] args) {  // **TODO** Auto-generated method stub  Scanner sc=**new** Scanner(System.***in***);  **try** {  System.***out***.println("enter an integer");  String str=sc.next();  **int** num=Integer.*parseInt*(str);  System.***out***.println("the sqr of the number"+(num\*num));  System.***out***.println("The work has been done successfully");  }  **catch**(NumberFormatException e)  {  System.***out***.println("enter input is not a valid format for an integer");;  }  }  } |
| Write a program that takes as input the size of the array and the elements in the array. The program then asks the user to enter a particular index and prints the element at that index.  This program may generate Array Index Out Of Bounds Exception. Use exception handling mechanisms to handle this exception. In the catch block, print the class name of the exception thrown.  Sample Input and Output 1:  Enter the number of elements in the array  3  Enter the elements in the array  20  90  4  Enter the index of the array element you want to access  2  The array element at index 2 = 4  The array element successfully accessed  Sample Input and Output 2:  Enter the number of elements in the array  3  Enter the elements in the array  20  90  4  Enter the index of the array element you want to access  6  java.lang.ArrayIndexOutOfBoundsException  **package** B;  **import** java.util.\*;  **public** **class** exceptArray {  **public** **static** **void** main(String[] args) {  // **TODO** Auto-generated method stub  Scanner sc=**new** Scanner(System.***in***);  **int** n,i=0,k;  **try** {  System.***out***.println("Enter the number of elements in the array");  n=sc.nextInt();  System.***out***.println("enter the array elements");  **int** []a=**new** **int**[n];  **for**(i=0;i<n;i++)  {  a[i]=sc.nextInt();  }  System.***out***.println("Enter the index of the array element you want to access");  k=sc.nextInt();  System.***out***.println("The array element at index k = "+a[k]);  System.***out***.println("The array element successfully accessed");  }  **catch**(ArrayIndexOutOfBoundsException e)  {  System.***out***.println(e);  }  }  } |

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| A student portal provides user to register their profile. During registration the system needs to validate the user should be located in India. If not the system should throw an exception.  Step 1: Create a user defined exception class named “InvalidCountryException”.  Step 2: Overload the respective constructors.  Step 3: Create a main class “UserRegistration”, add the following method,  void registerUser(String username,String userCountry) with the below implementation  • if userCountry is not equal to “India” throw a InvalidCountryException with the message “User Outside India cannot be registered”  • if userCountry is equal to “India”, print the message “User registration done successfully”  Invoke the method registerUser from the main method with the data specified and see how the program behaves.  Example1)  i/p:Mickey,US  o/p:InvalidCountryException should be thrown.  The message should be “User Outside India cannot be registered”  Example2)  i/p:Mini,India  o/p:User registration done successfully   |  | | --- | |  | | package com; | |  |  | |  | public class UserRegistration { | |  |  | |  | public void registerUser(String username, String userCountry) throws InvalidCountryException { | |  | if (!userCountry.equals("India")) | |  | throw new InvalidCountryException(); | |  | else | |  | System.out.println("User registration done successfully"); | |  |  | |  |  | |  | } | |  |  | |  | public static void main(String[] args) { | |  | UserRegistration registration = new UserRegistration(); | |  |  | |  | try { | |  | registration.registerUser("Srimukhi", "India"); | |  | } catch (InvalidCountryException e) { | |  | } | |  | } | |  |  | |  | } | |  | class InvalidCountryException extends Exception { | |  | public InvalidCountryException() { | |  | super(); | |  | System.out.println("InvalidCountryException occured"); | |  | System.out.println("User Outside India cannot be registered"); | |  | } | |  | } | |  |  | |  |  | |
| Write a program to accept name and age of a person from the command prompt(passed as arguments when you execute the class) and ensure that the age entered is >=18 and < 60.  Display proper error messages.  The program must exit gracefully after displaying the error message in case the arguments passed are not proper.  (Hint : Create a user defined exception class for handling errors.)   |  | | --- | |  | | package com; | |  |  | |  | public class Problem5 { | |  |  | |  | public static void main(String[] args) { | |  |  | |  | String name= args[0]; | |  | int age = Integer.parseInt(args[1]); | |  | try { | |  | if(age < 18 || age >= 60) | |  | throw new InvalidAgeException("Invalid Age"); | |  | System.out.println("Name= "+ name+ " Age= "+ age); | |  | } | |  | catch(InvalidAgeException e) { | |  | System.out.println(e); | |  | } | |  | } | |  | } | |  | class InvalidAgeException extends Exception{ | |  | public InvalidAgeException(String age) { | |  | super(age); | |  | } | |  | } | |  |  | |
| Write a class MathOperation which accepts 5 integers through command line. Create an array using these parameters. Loop through the array and obtain the sum and average of all the elements and display the result.  Various exceptions that may arise like ArithmeticException, NumberFormatException, and so on should be handled.   |  | | --- | |  | | package com; | |  | import java.util.InputMismatchException; | |  | public class problem2 { | |  |  | |  | public static void main(String[] args) { | |  | int n = args.length; | |  |  | |  | for (int i = 0; i < n; i++) | |  | if (args[i].charAt(args[i].length() - 1) == ',') | |  | args[i] = args[i].replace(",", ""); | |  |  | |  | //System.out.println(Arrays.toString(args)); | |  |  | |  | int[] arr = new int[n]; | |  |  | |  | int sum = 0; | |  | double avg = 0; | |  |  | |  | try { | |  | for (int i = 0; i < n; i++) | |  | arr[i] = Integer.parseInt(args[i]); | |  |  | |  | for (int i = 0; i < n; i++) | |  | sum += arr[i]; | |  |  | |  | avg = sum / n; | |  | } catch (NumberFormatException e) { | |  | System.out.println("NumberFormatException"); | |  | } catch (ArithmeticException e) { | |  | System.out.println("ArithmeticException"); | |  | } catch (InputMismatchException e) { | |  | System.out.println("InputMismatchException"); | |  | } | |  |  | |  | System.out.println("sum: " + sum); | |  | System.out.println("avg: " + avg); | |  |  | |  | } | |  |  | |  | } | |  |  | |  |  | |