Hands-on Assignments for Exception Handling

Complete the below hands-on assignments before proceeding with the next Topic

No.	Hands-on Assignment	Topics Covered	Status
1	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.	Exception Handling	☐
2	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	Exception Handling: Try-catch	☐

3	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. Index starts from zero. This program may generate Array Index Out Of Bounds Exception or NumberFormatException . Use exception handling mechanisms to handle this exception. Sample Input and Output 1: Enter the number of elements in the array 2 Enter the elements in the array 50 80 Enter the index of the array element you want to access 1 The array element at index 1 = 80 The array element successfully accessed Sample Input and Output 2: Enter the number of elements in the array 2 Enter the elements in the array 50 80 Enter the index of the array element you want to access 9 java.lang.ArrayIndexOutOfBoundsException Sample Input and Output 3: Enter the number of elements in the array 2 Enter the elements in the array 30 j java.lang.NumberFormatException	Exception Handling: Try-catch Use multiple catch block	☐
4	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.	Exception handling: throws	☐
5	Write a Program with a division method which receives two integer numbers and performs the division operation.	throws	☐

	The method should declare that it throws ArithmeticException. This exception should be handled in the main method.		
6	Write a Program to take care of Number Format Exception if user enters values other than integer for calculating average marks of 2 students. The name of the students and marks in 3 subjects are taken from the user while executing the program. In the same Program write your own Exception classes to take care of Negative values and values out of range (i.e. other than in the range of 0-100)	Exception Handling: Throw & Used Defined Exception	☐
7	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	Exception Handling: User Defined Exception & throw	☐
8	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.)	Exception handling: User Defined Exception & throw	☐
9	Write a program that accepts 2 integers a and b as input and finds the quotient of a/b.	Exception Handling:	☐

	This program may generate an Arithmetic Exception. Use exception handling mechanisms to handle this exception. In the catch block, print the message as shown in the sample output. Also illustrate the use of finally block. Print the message “Inside finally block”. Example1) Enter the 2 numbers 5 2 The quotient of 5/2 = 2 Inside finally block Example2) Enter the 2 numbers 5 DivideByZeroException caught Inside finally block	Finally block	