



Purpose:

In this work sheet, you will get hands-on experience with exception handling in Java. You will particularly practice try/catch blocks, and the exception handling hierarchy in Java.

Tasks:

1. Write a program that meets the following requirements:
 - Create an array of 50 randomly chosen integers.
 - Prompt the user to enter the index of the array, then display the corresponding element value. If the specified index is out of bounds, display the message "Out of bounds". Make sure that you use try-catch blocks.
2. In Worksheet 3, exercise 4, you created an Account class. Modify your class such that if an account is created with a negative balance value to throw `IllegalArgumentException`.
3. Write a Password class that stores a password String. Password must contain at least seven alpha-numeric characters, with at least one letter and one number. Also write an `InvalidPasswordException` class that extends `Exception`. The Password constructor should throw an `InvalidPasswordException`, which should report an appropriate message based on a given String (e.g., if the string contains no numbers, the exception should report this fact). If there is more than one error, the exception need only report one of them.
4. Write a program to prompt the user to enter a password and report an `InvalidPasswordException` if an invalid password is entered. The program should continue to ask the user for a valid password until one is entered.