NullPointerException

1. **Problem Statement:**
   - Write a program that initializes a String variable to null and attempts to call a method on it. Handle the NullPointerException and provide a meaningful error message to the user.

ArithmeticException

2. **Problem Statement:**
   - Write a program that takes two integers as input from the user and performs division. Handle the ArithmeticException that occurs when dividing by zero, and print an appropriate message.

IOException

3. **Problem Statement:**
   - Write a program that reads a String specified by the user using BufferedReader. Handle IOException.

ArrayIndexOutOfBoundsException

4. **Problem Statement:**
   - Write a program that initializes an array of integers and attempts to access an element at an invalid index. Handle the ArrayIndexOutOfBoundsException and print an appropriate message.

NumberFormatException

5. **Problem Statement:**
   - Write a program that takes a string input from the user and attempts to parse it as an integer. Handle the NumberFormatException if the input is not a valid integer.

InterruptedException

6. **Problem Statement:**
   - Write a program that spawns a new thread to sleep for a specified time. Handle the InterruptedException that occurs if the thread is interrupted while sleeping.

User-Defined Exceptions

7. **Problem Statement: Invalid Age Exception**
   - Define a custom checked exception InvalidAgeException. Write a program that takes an age as input and throws InvalidAgeException if the age is less than 0 or greater than 150.

8. **Problem Statement: Insufficient Balance Exception**
   - Define a custom unchecked exception InsufficientBalanceException. Write a program that simulates a simple bank account with deposit and withdrawal methods. Throw InsufficientBalanceException if a withdrawal amount exceeds the account balance.

9. **Problem Statement: Invalid Temperature Exception**
   - Define a custom checked exception InvalidTemperatureException. Write a program that takes a temperature value as input and throws InvalidTemperatureException if the temperature is below absolute zero (-273.15°C).