CS212 Lab 17: Chapters 9
Exception Hndling

Notes:

- *Runtime errors* occur while a program is running if the JVM detects an operation that is difficult to carry out.
- For example, if we try to access an array element using an index that is out of bounds, we get a *runtime error* with an **ArrayOutOfBoundsException**. if we enter a 0 as a divisor in a division, we get a runtime error with an **ArithmeticException**.
- In Java, runtime errors are thorwn an Exceptions.
- Exception handling enables a program to deal with exceptional situations and continue its normal execution.
- An Exception is an object that signals the occurrence of an error or unusual event that prevents execution of a program from proceeding normally.
- If the exception is not handled, the program will terminate abnormally.
- The process of generating or creating the Exception object is called **throwing an exception**.

Goal

•To write programs that can handle exceptions.

Write a circle class that can handle illegal argument exception. A circle's argument is illegal if it is negative.

1. The class has a single instance variable, radius of type int.
2. The class also has a private static variable called numberOfObjects initially set to 0. Everytime a Circle object is created successfully increment this variable. Include the increment operation in the constructor.
3. The class should have a default constructor and a constructor with one variable.
4. The constructor should call the setRadius method to set the radius.
5. Use throws clause in the setRadius method header.
6. In the setRadius method, throw a new Exception to make sure that the radius is not negative.
7. In the static main method, use try - catch block to handle the IllegalArgumentException.
8. Create several Circle objects with different radius in the try block of the static main method in the same Circle class.
9. Write catch block immediately after creating the Circle Objects (close the try block immediately after creating the Circle objects).
10. Finally print, the numberOfObjects successfully created after the catch block.
11. Remember to create some Circle objects wth positive radius and some with negative radius.