# 06. Exceptions – Assignment

1. Write a program to calculate area of a rectangle and area of a square by using method overloading. Take the input for dimension of rectangle and square from console. Handle appropriate exception in order to stop abnormal termination of execution.
2. Demonstrate that a derived-class constructor cannot catch exceptions thrown by its base-class constructor
3. Write a program which generates ArrayIndexOutOfBoundsException.
4. Write a program which generates ArithmeticException
5. Write a program which generates NullPointerException
6. Write a program which generates NumberFormatException
7. What is the difference between Checked Exceptions and UnChecked Exceptions.
8. Create your own exception class using the **extends** keyword. Write a constructor for this class that takes a **String** argument and stores it inside the object with a **String** reference. Write a method that prints out the stored **String**. Create a **try-catch** clause to exercise your new exception.
9. Define an object reference and initialize it to **null**. Try to call a method through this reference. Now wrap the code in a **try-catch** clause to catch the exception
10. Create a three-level hierarchy of exceptions. Now create a base-class **A** with a method that throws an exception at the base of your hierarchy. Inherit **B** from **A** and override the method so it throws an exception at level two of your hierarchy. Repeat by inheriting class **C** from **B**. In **main( )**, create a **C** and upcast it to **A**, then call the method
11. Create a user defined exception to check whether your employee exist in your data structure
12. (use any data structure to store the employees - like array, ArrayList etc) and throw exception
13. if name is not in the employees list. Create a user defined exception to handle this case. Use appropriate data structure to store employee information.
14. Write a program in Java to display the names and roll numbers of students. Initialize respective array variables for 10 students. Handle ArrayIndexOutOfBoundsException, so that any such problem doesn't cause illegal terminations of program.
15. Create an Exception called NegativeNumberException. Write a java application to use the same.