Assignment -5

1. Write a program to input two integers and divide them. Use a try-catch block to handle the DivideByZeroException and display an appropriate message.
2. Create a program where the user inputs a string. Try converting it into an integer and handle the FormatException if the input is not a valid integer.
3. Write a program to demonstrate the use of the finally block. Ensure the program always closes a file even if an exception occurs while reading it.
4. Write a program that uses nested try-catch blocks to handle exceptions for multiple operations like file reading and mathematical calculations. Demonstrate catching different types of exceptions in different levels.
5. Create a custom exception class InvalidAgeException that is thrown when a user enters an age less than 18. Test this exception in a program.
6. Write a program with a method ValidateNumber(int number) that throws an exception if the number is negative. Handle the exception in the main program.
7. Implement a program that demonstrates multiple catch blocks to handle exceptions like IndexOutOfRangeException, NullReferenceException, and ArgumentException.
8. Write a program where an exception is caught in one method and rethrown to be handled in the calling method. Show the stack trace of the exception.
9. Write a program that performs multiple asynchronous tasks using Task.WhenAll(). Simulate exceptions in some tasks and handle them using AggregateException.
10. Implement exception filters in a program that logs specific exceptions (e.g., ArgumentOutOfRangeException) to a file while handling other exceptions with a generic message.