1.     Find out all exceptions in the **System.IO.IOException** **hierarchy**.

2.    Find out all standard exceptions that are part of the **hierarchy** holding the class **System.IO.FileNotFoundException**.

3.    Find out all standard exceptions from **System.ApplicationException** **hierarchy**.

4.    Explain the concept of **exceptions** and **exception handling**, when they are used and how to **catch** exceptions.

5.    Explain when the statement **try**-**finally** is used. Explain the relationship between the statements **try**-**finally** and **using**.

6.    Explain the **advantages** when using exceptions.

7.    Write a program that takes a positive integer from the console and prints the **square root** of this integer. If the input is **negative or invalid** print "Invalid Number" in the console. In all cases print "Good Bye".

8.    Write a method **ReadNumber(int** **start,** **int** **end)** that reads an integer from the console in the range [**start…end**]. In case the input integer is not valid or it is not in the required range throw appropriate exception. Using this method, write a program that takes 10 integers **a1, a2, …, a10** such that **1 < a1 < … < a10 < 100**.

9.    Write a method that takes as a parameter the name of a **text file**, **reads the file and returns its content as string**. What should the method do if and **exception is thrown**?

10.   Write a method that takes as a parameter the name of a binary file, **reads the content** of the file and returns it as an array of bytes. Write a method that **writes the file content** to another file. Compare both files.

11.   Search for information in Internet and define your own class for exception **FileParseException**. The exception has to contain the name of the processed file and the number of the row where the problem is occurred. Add appropriate constructors in the exception. Write a program that reads integers from a text file. If the during reading a row does not contain an integer throw **FileParseException** and pass it to the calling method.

12.   Write a program that gets from the user the full path to a file (for example **C:\Windows\win.ini**), reads the content of the file and prints it to the console. Find in MSDN how to us the **System.IO.File.  
ReadAllText(…)**method. Make sure all possible exceptions will be caught and a user-friendly message will be printed on the console.

13.   Write a program that **downloads a file from Internet** by given URL, e.g. [https://softuni.bg/forum](https://softuni.bg/).