

**Montgomery College, CMSC 203**  
**Worksheet 2**  
**Module 11**

**Objectives**

- File I/O
- Exceptions

**Concept Questions**

1) A(n) \_\_\_\_\_ is an object that is generated in memory as the result of an error or an unexpected event.

- A) exception handler
- B) exception
- C) default exception handler
- D) error message

Answer: B

2) All of the exceptions that you will handle are instances of classes that extend this class.

- A) RuntimeException
- B) IOException
- C) Error
- D) Exception

Answer: D

3) All exceptions are instances of classes that extend this class.

- A) RuntimeException
- B) Throwable
- C) Error
- D) Exception

Answer: B

4) In a `try/catch` construct, after the `catch` statement is executed:

- A) the program returns to the statement following the statement in which the exception occurred
- B) the program terminates
- C) the program resumes at the statement that immediately follows the `try/catch` construct
- D) the program resumes at the first statement of the `try` statement

Answer: C

5) An exception's default error message can be retrieved using this method.

- A) `getMessage()`
- B) `getErrorMessage()`
- C) `getDefaultMessage()`
- D) `getDefaultErrorMessage()`

Answer: A

6) Why does the following code cause a compiler error?

```
try
{
    number = Integer.parseInt(str);
}
catch (IllegalArgumentException e)
```

```

{
    System.out.println("Bad number format.");
}
catch (NumberFormatException e)
{
    System.out.println(str + " is not a number.");
}

```

- A) Because you can have only one catch clause in a try statement
  - B) Because `NumberFormatException` inherits from `IllegalArgumentException`. The code should handle `NumberFormatException` before `IllegalArgumentException`
  - C) Because the `Integer.parseInt` method does not throw a `NumberFormatException`
  - D) Because the `Integer.parseInt` method does not throw an `IllegalArgumentException`
- Answer: B

7) If, within one try statement you want to have catch clauses of the following types, in which order should they appear in your program:

- (1) `Exception`
- (2) `IllegalArgumentException`
- (3) `RuntimeException`
- (4) `Throwable`

- A) 1, 2, 3, 4
- B) 2, 3, 1, 4
- C) 4, 1, 3, 2
- D) 3, 1, 2, 4

Answer: B

8) When an exception is thrown:

- A) it must always be handled by the method that throws it
- B) the program terminates even if the exception is handled
- C) it must be handled by the program or by the default exception handler
- D) it may be ignored

Answer: C

9) The numeric classes' "parse" methods all throw an exception of this type if the string being converted does not contain a convertible numeric value.

- A) `NumberFormatException`
- B) `ParseException`
- C) `ExceptionMessage`
- D) `FileNotFoundException`

Answer: A

10) To read a file you will need a \_\_\_\_\_.

Answer: Scanner object

11) To write to a file you will need a \_\_\_\_\_.

Answer: `PrintWriter` object

12) Write code which will write a string "Hello world" to a file called "Hello.txt"

ANSW:

```

try {
    PrintWriter pw = new PrintWriter("Hello.txt");
    pw.println("Hello World");
}

```

```

        pw.close();
    } catch (FileNotFoundException e) {
        e.printStackTrace();
    }
}

```

13) Write code which creates a File object which is linked to a file called "Hello.txt"

Answ:

```
File f = new File("Hello.txt");
```

18) Write a snippet of code which will read the data from file line by line and then output it in the console window

ANSW:

```

File f = new File("Hello.txt");
try {
    Scanner sc = new Scanner(f);
    while(sc.hasNextLine()){
        String line = sc.nextLine();
        System.out.println(line);
    }

    sc.close();
} catch (FileNotFoundException e) {
    e.printStackTrace();
}

```

### Programming Questions

- White the following program:
  - Prompt the user to enter a series of 10 numbers and save those numbers to a file called "Numbers.txt". After that close the file.
  - Next, open the file "Numbers.txt". While reading it line by line, add the number from the next line to the current line number.
    - EX: My file has numbers like this:
 

1  
2  
3

 I will have two additions: 1+2 and 2+3
  - Save the results of the addition to a new file called "NumbersAdded.txt"