**Task – 11 Java Exceptions and Error Handling**

1. what are four access modifiers available in java and what is their significance in terms of class, method and variable accessibility?

The four access modifiers are

\*public

\*private

\*protected

\*default

2.What is the difference between Exception and Error?

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| **Exceptions** | **Error** |
| 1. Exceptions occur only at run time, just that checked exceptions can be detected at compile time. | 1. Errors occur at compile time and run time, which can terminate the compilation or execution. |
| 2.Exceptions are raised when some internal events occur which changes the normal flow of the program. | 2.Errors are the problems in a program due to which the program will stop the execution. |
| 3.It can be classified in to two categories i.e checked and unchecked. | 3.All errors in java are unchecked. |
| 4.It belongs to java.lang.Exception package. | 4.It belongs to java.lang.Error package. |
| 5.It is mainly caused by the application itself. | 5.It is mostly caused by the environment in which the application is running. |
| 6.Exceptions can be recovered by try, catch block. | 6.An Error cannot be recovered. |
| 7.Checked Exceptions: SQL Exception, IOException.  Unchecked Exceptions: ArrayIndexOutOfBoundException, NullPointerException, ArithmaticException. | 7.java.lang.StackOverFlow, java.lang.OutOfMemoryError. |

3. What is the difference between checked exception and unchecked exception?

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| **Checked Exception** | **Unchecked Exception** |
| 1.Checked Exceptions occur during compile time when the source code is being converted into an executable code. | 1.Unchecked exceptions occur during runtime when the program is in execution. |
| 2.The compiler checks the checked exception. | 2.The compiler does not check these type of exception. |
| 3.Checked exceptions can be manually created. | 3.Unchecked exceptions can also be manually created. |
| 4.This type of exceptions is considered as a subclass of the exception class. | 4.Unchecked Exceptions occur during runtime. Therefore, they are not included in the exception class. |
| 5.The JVM requires that the exception be caught and handled. | 5.The JVM doesn’t require the exception to be caught and handled. |
| 6.It is a sub class of the exception class. | 6. There are not a part of the ‘Exception’ class since they are runtime exceptions. |
| 7. eg. File Not Found Exception. | 7. eg. No Such element Exception. |