7.2 Exception

An exception is a condition that is caused by a runtime error in a program.

When the java interpreter caught an error such as division by zero, the interpreters creates an exception object and throws it to inform that an error has occurred.

The execution handling mechanism actually provides a means that to detect and report an"exceptional circumstance" so that corrective action can be taken.

The exception handling mechanism suggests incorporation of a separate error handling code that performs the following task:

1. Find the problem i.e. hit the exception.
2. Inform that an error has occurred i.e. throw the exception.
3. Receives the error information i.e. catch the exception.
4. Take corrective active i.e. handle the execution.

❑**The error handling code contains two parts:**

1. To detect errors and to throw exception.
2. To catch exceptions and to take appropriate actions.

7.2.1 Syntax of Exception Handling Code

Java exception handling is managed by five keywords: **try, catch, throw, throws and finally.**

1. **try:** The program statement that to be monitored for exception are contained within the try block. If an exception occurs within try block, it is thrown.

2. **catch:** your code can catch this exception using catch and handle it in some rational manner.
3. **throw:** System-generated exception are automatically thrown by the Java runtime system. To manually throw an exception 'throw' keyword is used.
4. **throws:** Any exception that is generated out of a method must be specified as such by a 'throws' clause.
5. **finally:** Any code that must be executed before a method returns is put in a finally black.

The general form of exception handling block is:

```
try{
 Statement; // generates exception or block of code to monitor for errors
}
catch( Exception-type 1 e){
//exception handler for Exception-type 1
Statement; // process the exception
}
catch( Exception-type 2 e){
//exception handler for Exception-type 2
Statement; // process the exception
}
----------
----------
Finally{
// block of code to be executed before try block ends
}
```