Exception Handling

Date	15 November 2022
Team ID	PNT2022TMID30855
Project Name	Project - IoT based safety gadget for ChildSafety Monitoring and Notification
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Exception Handling :

- The **Exception Handling** is one of the powerful *mechanism to handle the runtime errors* sothat the normal flow of the application can be maintained.
- In this tutorial, we will learn about Java exceptions,it's types, and the difference between checked and unchecked exceptions.

What is Exception :

- Exception is an abnormal condition.
- In Java, an exception is an event that disrupts the normal flow of the program. It is an object which is thrown at runtime.

What is Exception Handling:

☐ Exception Handling is a mechanism to handle runtime errors such as ClassNotFoundException, IOException, SQLException, RemoteException ,etc.

Types of Java Exceptions :

☐ There are mainly two types of exceptions: checked and unchecked. An error is considered as the unchecked exception. However, according to Oracle, there are three types of exceptions namely:

1. Checked Exception
2. Unchecked Exception
3. Error

Hierarchy of Java Exception classes :

☐ The java.lang.Throwable class is the root class ofJava
Exception hierarchy inherited by two subclasses:
Exception and Error. The hierarchy of

Java Exception classes is given below:

```
                          ┌──────────────┐
                          │  Throwable   │
                          └──────────────┘
                                 ▲
           ┌─────────────────────┴─────────────────────┐
    ┌──────────────┐                            ┌──────────────┐
    │  Exception   │                            │    Lrror     │
    └──────────────┘                            └──────────────┘
           │                                           │
           │   ┌──────────────┐                        │   ┌──────────────────┐
           ├───│ IOException  │                        ├───│ StackOverflowError│
           │   └──────────────┘                        │   └──────────────────┘
           │   ┌──────────────┐                        │   ┌──────────────────┐
           ├───│ SQLException │                        ├───│VirtualMachineError│
           │   └──────────────┘                        │   └──────────────────┘
           │   ┌──────────────┐                        │   ┌──────────────────┐
           ├───│   ClassNot   │                        └───│ OutOfMemoryError │
           │   │FoundException│                            └──────────────────┘
           │   └──────────────┘
           │   ┌──────────────┐
           └───│RuntimeException│
               └──────────────┘
                      │
                      │   ┌────────────────────┐
                      ├───│ ArithmeticException│
                      │   └────────────────────┘
                      │   ┌────────────────────┐
                      ├───│ NullPointerException│
                      │   └────────────────────┘
                      │   ┌────────────────────┐
                      ├───│   NumberFormat     │
                      │   │    Exception       │
                      │   └────────────────────┘
                      │   ┌────────────────────┐
                      └───│    IndexOutOf      │
                          │  BoundsException   │
                          └────────────────────┘
                                   │
                                   │   ┌────────────────────┐
                                   ├───│  ArrayIndexOutOf   │
                                   │   │  BoundsException   │
                                   │   └────────────────────┘
                                   │   ┌────────────────────┐
                                   └───│ StringIndexOutOf   │
                                       │  BoundsException   │
                                       └────────────────────┘
```