

A+ Computer Science

# EXCEPTIONS

# What is an Exception?

**An exception is a class used to store error information.**

# What is an Exception?

## Common Exceptions -

**java.util.NoSuchElementException**

**java.lang.NullPointerException**

**java.lang.StringIndexOutOfBoundsException**

**java.lang.ArrayIndexOutOfBoundsException**

**java.lang.IndexOutOfBoundsException**

**java.lang.NumberFormatException**

**java.lang.ClassCastException**

**java.lang.ArithmeticException**

# What is an Exception?

**Reserved words that you need to know to use exception handling ::**

**try** - try this section and see what happens

**catch** - if the try blew up catch the exception thrown

**finally** - this section always happens no matter what

# What is an Exception?

```
public static void main(String args[ ])  
{  
    int num=32;  
    if(num==32)  
        throw new Exception("num==32");  
}
```

**This code will not compile. Why not?**

# What is an Exception?

**RuntimeExceptions are unchecked exceptions.  
Exception and IOException are checked exceptions.**

**Parent - *Exception***

**Child - *RuntimeException* extends Exception**

**Child – *IndexOutOfBoundsException***

**Child – *ArrayIndexOutOfBoundsException***

**Child – *ArithmeticException***

**Child – *ClassCastException***

**Child – *NullPointerException***

**// several more**

**Child – *IOException* extends Exception**

**Child – *FileNotFoundException***

**exceptionone.java**  
**exceptiontwo.java**

# What is an Exception?

```
public static void main(String args[ ]) throws Exception
{
    int num=32;
    if(num==32)
        throw new Exception("num==32");
}
```

You have to have throws because you are throwing a checked Exception.



# What is an Exception?

```
public static void main(String args[ ])
{
    int num=32;
    if(num==32)
        throw new RuntimeException("num==32");
}
```

You have to have throws because you are throwing a checked Exception.

**exceptionthree.java**  
**exceptionfour.java**

# What is an Exception?

```
try{  
    int num= 3/0;  
}
```

**//must have a catch or finally block**

**System.out.println("compsci");**

**This will not compile!!!!**

# What is an Exception?

```
try{  
    int num=3/0;  
}
```

//catch is optional

```
finally{  
    System.out.println("divby0");  
}  
System.out.println("compsci");
```

# What is an Exception?

```
try{
//code would go here
}
catch(NullPointerException e){
    System.out.println(e + "Exception");
}
catch(ClassCastException e){
    System.out.println(e + "Exception");
}
finally{
    System.out.println("this always happens");
}
```

# What is an Exception?

**Why use exception handling?**

**What do you gain?**

**What do you lose?**

**exceptionfive.java**  
**exceptionsix.java**

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