The Exception Class

This lesson discusses how you can use the Exception class for exception handling using various coding scenarios.

WE'LL COVER THE FOLLOWING

PHP has a class-based exception handling mechanism. The `Exception` class is a built-in class with various methods and properties. In this lesson, we will be just be concerned with learning the basics of exception handling using the PHP `Exception` class.

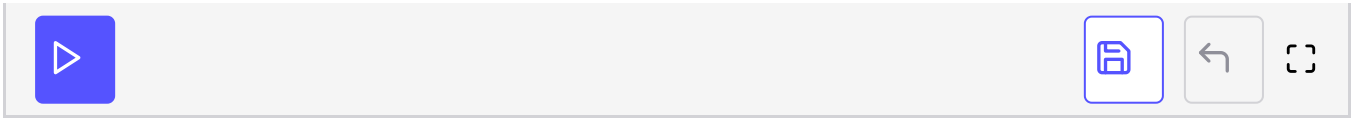
Components

- `try`: It is the block of code in which exception may arise.
- `catch`: It is the block of code that will be executed when a particular exception is *thrown*.
- `throw`: It is used to *throw* an exception. It is also used to list the exceptions that a function throws, but doesn't handle itself.
- `finally`: This is the block of code that executes at the end once the exception is thrown and/or handled.

Run the code below to see how exception handling works:

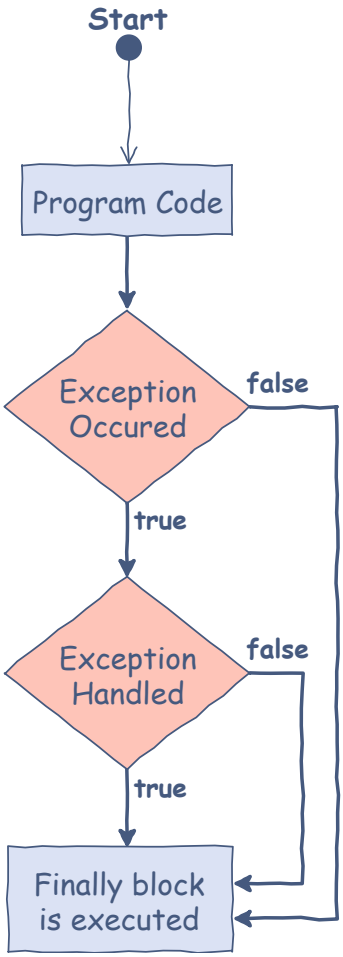
```
<?php
function distance($speed, $time){

    if($time <= 0){
        throw new Exception('Time cannot be zero or negative.'); // Throw exception if time i
    } else{

        $d = $speed*$time;
        echo "$speed * $time = $d";
```

```
    }
}


try{
    distance(10,2);
    distance(30,-4); //code will stop execution at this point (due to negative time) and star
    distance(15,3);

    echo 'All calculations done!'; // If an exception is thrown, this line will not execute
  }

// catch block is executed when an exception is thrown in the try block
// an object $e of Exception class is created
catch(Exception $e){

    echo "\n". "Caught exception: " . $e->getMessage(); //Exception handling
}

echo "\n"."Hello World!"; // Continue execution
?>
```



> **Note:** The code will **terminate** if there is **no** catch for a thrown exception. So if you want the script to continue executing beyond the point where the exception has occurred, you must have at least **one** corresponding catch block for each try block.

The following figure illustrates the flow of a program with exception handling:



Methods

PHP's `Exception` class also provides the following methods for detailed information:

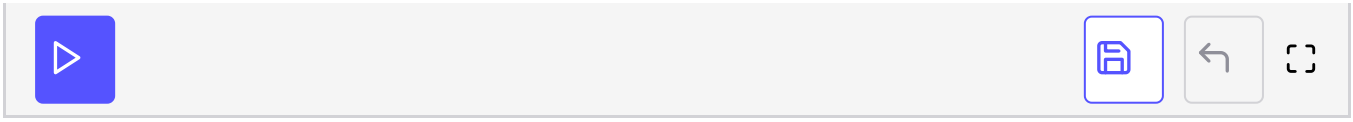
- `getCode()`
- `getFile()`
- `getLine()`
- `getTraceAsString()`

Other methods and properties of the Exception class can be seen in the PHP documentation.

php without_catch | php with_catch

```php
<?php
function division($a, $b){

    if($b ==0){
        throw new Exception('Divisor is zero'); // Throw exception if divisor is zero
```

```
    } else{

        $c = $a/$b;

        echo "$a / $b = $c";
    }
}

try{
    division(10, 2);
    division(15, 0);
    division(30, -4);


    echo 'All calculations done!';// If an exception is thrown, this line will not execute
  }

// write your catch statement here

echo "\n"."Hello World!"; // Continue execution
?>
```



The code above does not work since there is no catch statement in it.

Can you write a catch statement of your own on `line 22` in the code and see if it runs? If you can't write it just yet, don't fret; see the code tab on the right.

In the next lesson, we will learn how custom exceptions can be used in PHP.