

# **Programming in PHP**

## **Lab05**



**Spring 2025**

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“On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work.”

Student Signature: \_\_\_\_\_

Submitted to:

**Engr. Summeya Salahudin**

Month Day, Year (13 05, 2025)

Department of Computer Systems Engineering  
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## OBJECTIVES OF THE LAB:

This lab aims at the understanding of:

- PHP Basics
- PHP Data Types
- PHP Expressions
- PHP Operators
- PHP Conditionals
- PHP Loops

### TASK 5.1:

In contrast to `settype()`, there is another method that causes a variable's value to be treated as a specific type. It is known as type casting. Note that the variable itself remains unaffected during type casting. Consider the following variable:

```
$test_var = 8.23;
```

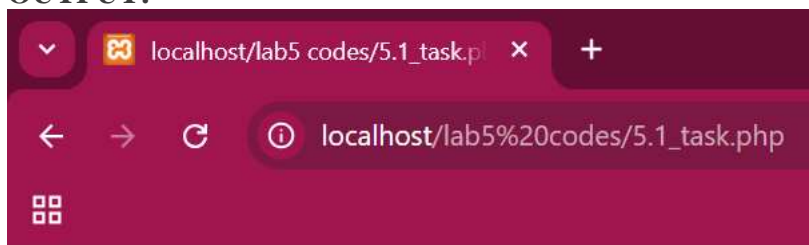
Type cast this variable's value to integer, string, and Boolean and show result using echo.

### CODE:

```
//type-casting
```

```
<?php
$test_var = 8.23;
echo "Integer: " . (int)$test_var . "<br>";
echo "String: " . (string)$test_var . "<br>";
echo "Boolean: " . ((bool)$test_var ? 'true' : 'false') . "<br>";
?>
```

### OUTPUT:



```
Integer: 8
String: 8.23
Boolean: true
```

### Task 5.2:

Use and Specify the purpose of following functions:

- 1) intval( value )
- 2) floatval( value )
- 3) strval( value )

### CODE:

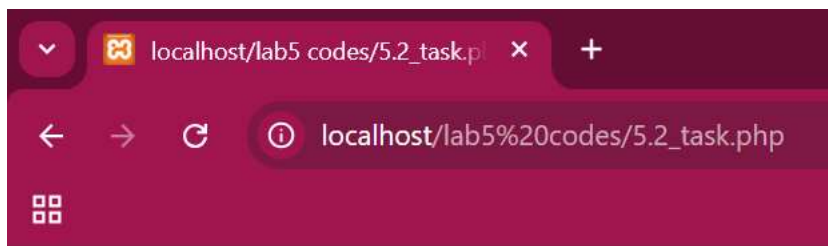
```
<?php

// Purpose: Converts a value to an integer.
$x = "15.8";
echo "Integer: " . intval($x) . "<br>"; // Output: 15

// Purpose: Converts a value to a floating-point number (float).
$x = "15.8";
echo "Float: " . floatval($x) . "<br>"; // Output: 15.8

// Purpose: Converts a value to a string.
$x = 100;
echo "String: " . strval($x) . "<br>"; // Output: "100"
?>
```

### Output:



Integer: 15  
Float: 15.8  
String: 100

### Task 5.3:

Write PHP script that shows the division table displayed as in Table 5.2 using different loops. For each number, display whether that number is an odd or even number, and also display a message if the number is a prime number. Display this information within an HTML table.

**CODE:**

```
<?php
```

```
function is_prime($num) {
    if ($num < 2) return false;
    for ($i = 2; $i * $i <= $num; $i++) {
        if ($num % $i == 0) return false;
    }
    return true;
}

echo "<table border='1' cellpadding='5' cellspacing='0'>";
echo "<tr><th></th>";
for ($col = 1; $col <= 10; $col++) {
    echo "<th>" . $col . "</th>";
}
echo "</tr>";

for ($row = 1; $row <= 10; $row++) {
    echo "<tr><th>" . $row . "</th>";
    for ($col = 1; $col <= 10; $col++) {
        $result = number_format($row / $col, 3);
        $number_type = ($row % 2 == 0) ? "Even" : "Odd";
        $prime_info = is_prime($row) ? "Prime" : "";
        echo "<td>" . $result . "<br>(" . $number_type . ($prime_info ? ", " .
$prime_info : "") . ")</td>";
    }
    echo "</tr>";
}
echo "</table>";

?>
```

	1	2	3	4	5	6	7	8	9	10
1	1.000 (Odd)	0.500 (Odd)	0.333 (Odd)	0.250 (Odd)	0.200 (Odd)	0.167 (Odd)	0.143 (Odd)	0.125 (Odd)	0.111 (Odd)	0.100 (Odd)
2	2.000 (Even, Prime)	1.000 (Even, Prime)	0.667 (Even, Prime)	0.500 (Even, Prime)	0.400 (Even, Prime)	0.333 (Even, Prime)	0.286 (Even, Prime)	0.250 (Even, Prime)	0.222 (Even, Prime)	0.200 (Even, Prime)
3	3.000 (Odd, Prime)	1.500 (Odd, Prime)	1.000 (Odd, Prime)	0.750 (Odd, Prime)	0.600 (Odd, Prime)	0.500 (Odd, Prime)	0.429 (Odd, Prime)	0.375 (Odd, Prime)	0.333 (Odd, Prime)	0.300 (Odd, Prime)
4	4.000 (Even)	2.000 (Even)	1.333 (Even)	1.000 (Even)	0.800 (Even)	0.667 (Even)	0.571 (Even)	0.500 (Even)	0.444 (Even)	0.400 (Even)
5	5.000 (Odd, Prime)	2.500 (Odd, Prime)	1.667 (Odd, Prime)	1.250 (Odd, Prime)	1.000 (Odd, Prime)	0.833 (Odd, Prime)	0.714 (Odd, Prime)	0.625 (Odd, Prime)	0.556 (Odd, Prime)	0.500 (Odd, Prime)
6	6.000 (Even)	3.000 (Even)	2.000 (Even)	1.500 (Even)	1.200 (Even)	1.000 (Even)	0.857 (Even)	0.750 (Even)	0.667 (Even)	0.600 (Even)
7	7.000 (Odd, Prime)	3.500 (Odd, Prime)	2.333 (Odd, Prime)	1.750 (Odd, Prime)	1.400 (Odd, Prime)	1.167 (Odd, Prime)	1.000 (Odd, Prime)	0.875 (Odd, Prime)	0.778 (Odd, Prime)	0.700 (Odd, Prime)
8	8.000 (Even)	4.000 (Even)	2.667 (Even)	2.000 (Even)	1.600 (Even)	1.333 (Even)	1.143 (Even)	1.000 (Even)	0.889 (Even)	0.800 (Even)
9	9.000 (Odd)	4.500 (Odd)	3.000 (Odd)	2.250 (Odd)	1.800 (Odd)	1.500 (Odd)	1.286 (Odd)	1.125 (Odd)	1.000 (Odd)	0.900 (Odd)
10	10.000 (Even)	5.000 (Even)	3.333 (Even)	2.500 (Even)	2.000 (Even)	1.667 (Even)	1.429 (Even)	1.250 (Even)	1.111 (Even)	1.000 (Even)

### Task 5.4:

Explore PHP Object Oriented using examples showing classes, objects, inheritance, and polymorphism.

#### Classes and Objects:

- A class is a blueprint for objects.
- An object is an instance of a class.

```
<?php
// Define a class named Car
class Car {
    public $brand;
    public $model;

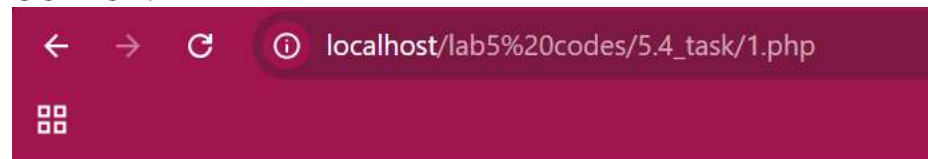
    // Constructor to initialize properties
    public function __construct($brand, $model) {
        $this->brand = $brand;
        $this->model = $model;
    }

    // Method to display car info
    public function displayInfo() {
        echo "Brand: " . $this->brand . ", Model: " . $this->model . "<br>";
    }
}
```

```
// Create objects (instances) of the Car class
$car1 = new Car("Toyota", "Camry");
$car2 = new Car("Honda", "Accord");

// Call the method
$car1->displayInfo();
$car2->displayInfo();
?>
```

## OUTPUT:



Brand: Toyota, Model: Camry  
Brand: Honda, Model: Accord

## Inheritance:

- Inheritance allows a class to inherit properties and methods from another class.
- Use the extends keyword.

## CODE:

```
<?php

// Base class (Parent)
class Animal {
    public $name;

    public function __construct($name) {
        $this->name = $name;
    }

    public function sound() {
        echo "Some generic sound<br>";
    }
}

// Derived class (Child) inheriting from Animal
class Dog extends Animal {
    // Overriding the sound method
    public function sound() {
```

```

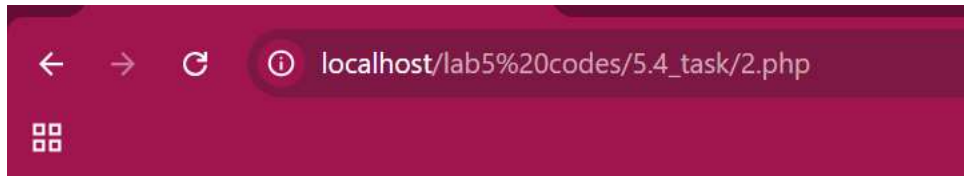
        echo $this->name . " says: Woof!<br>";
    }
}

$genericAnimal = new Animal("Animal");
$genericAnimal->sound();

$dog = new Dog("Buddy");
$dog->sound();
?>

```

### OUTPUT:



Some generic sound  
Buddy says: Woof!

### Polymorphism:

- Polymorphism allows methods to behave differently based on the object that is calling them.
- Achieved through method overriding.

### CODE:

```

<?php
// Base class
class Shape {
    public function draw() {
        echo "Drawing a shape<br>";
    }
}

// Derived classes
class Circle extends Shape {
    public function draw() {
        echo "Drawing a circle<br>";
    }
}

class Square extends Shape {
    public function draw() {
        echo "Drawing a square<br>";
    }
}

```

```

    }
}

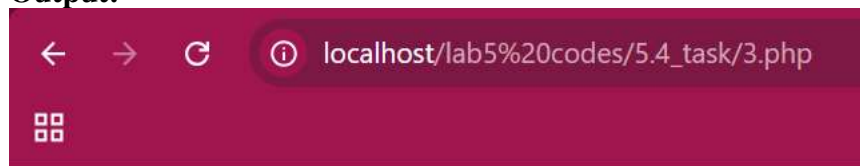
// Polymorphism in action
function drawShape(Shape $shape) {
    $shape->draw();
}

$shape = new Shape();
$circle = new Circle();
$square = new Square();

drawShape($shape);
drawShape($circle);
drawShape($square);
?>

```

### Output:



### Task 5.5:

Build an image gallery website using PHP without database. Your website must show all the images in a given directory. Use bootstrap/CSS in your website. Please note that when a given image is clicked, it enlarges it and shows in higher resolution. Also, your website should be flexible enough to show the images when number of images are increased or decreased from a given directory.

### CODE:

```

<?php

function getImages($dir) {
    $images = array();
    if (is_dir($dir)) {
        $files = scandir($dir);
        foreach ($files as $file) {

```



```

        if (in_array(strtolower(pathinfo($file, PATHINFO_EXTENSION)), ['jpg',
'jpeg', 'png', 'gif'])) {
            $images[] = $file;
        }
    }
}
return $images;
}

```

```

$imageDir = 'images';
$images = getImage($imageDir);
?>

```

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Image Gallery</title>
    <link
href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/css/bootstrap.min.css"
rel="stylesheet">
    <style>
        .gallery img { width: 100%; height: auto; border-radius: 8px; }
        .modal-img { width: 100%; height: auto; }
    </style>
</head>
<body>
<div class="container mt-4">
    <h2 class="text-center mb-4">Dynamic Image Gallery</h2>
    <div class="row gallery">
        <?php foreach ($images as $image): ?>
            <div class="col-md-3 mb-4">
                ')" />
            </div>
        <?php endforeach; ?>
    </div>
</div>

```

```

<!-- Modal to display enlarged image -->
<div id="imageModal" class="modal" tabindex="-1">
    <div class="modal-dialog modal-dialog-centered">
        <div class="modal-content">
            <div class="modal-body">

```

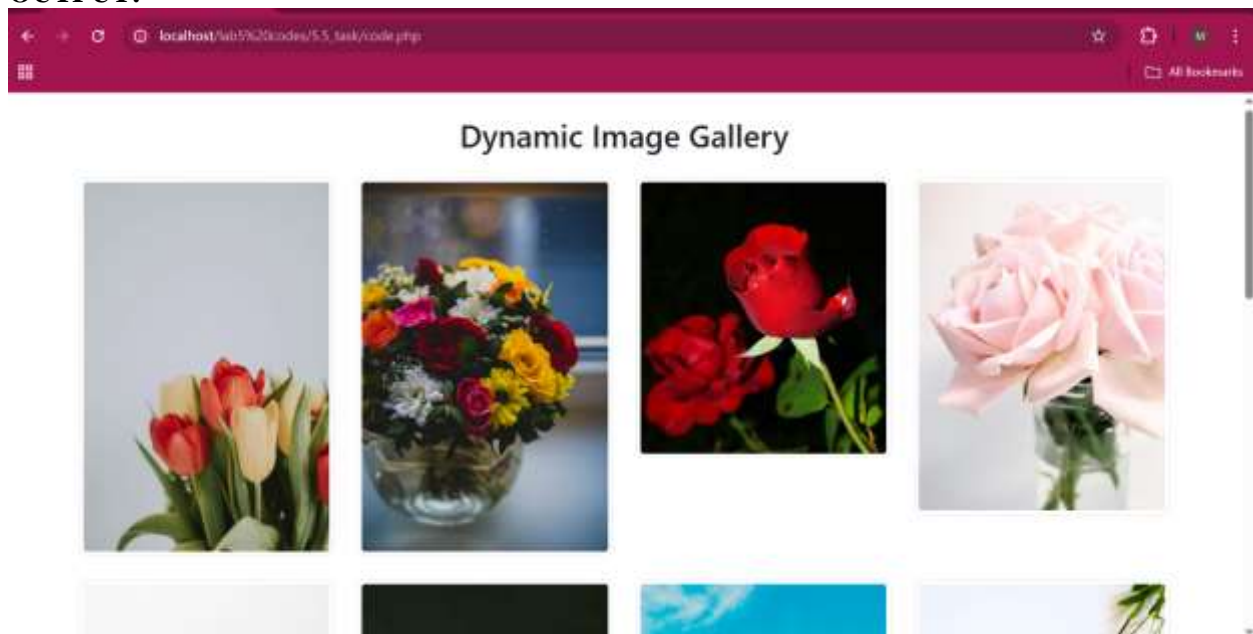
```

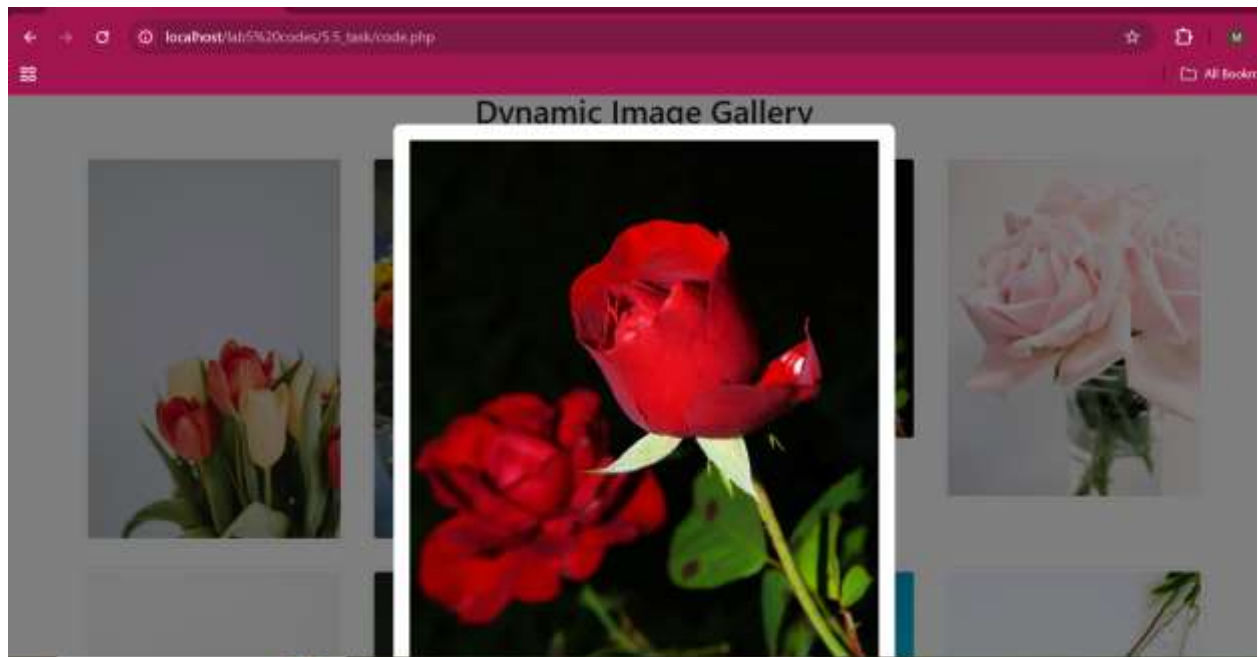
        <img id="modalImg" class="modal-img" />
    </div>
</div>
</div>
</div>

<script>
function showImage(src) {
    document.getElementById('modalImg').src = src;
    new bootstrap.Modal(document.getElementById('imageModal')).show();
}
</script>
<script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.3.3/dist/js/bootstrap.bundle.min.js
"></script>
</body>
</html>

```

### OUTPUT:





## Task 5.6:

## LARAVEL

```
C:\Windows\System32\cmd.exe - php artisan serve
Microsoft Windows [Version 10.0.19045.5737]
(c) Microsoft Corporation. All rights reserved.

C:\xampp\htdocs>
C:\xampp\htdocs>composer create-project --prefer-dist laravel/laravel mohsinProject
Creating a "laravel/laravel" project at "../mohsinProject"
Installing laravel/laravel (v12.0.8)
  - Downloading laravel/laravel (v12.0.8)
  - Installing laravel/laravel (v12.0.8): Extracting archive
Created project in C:\xampp\htdocs\mohsinProject
> @php -r "file_exists('.env') || copy('.env.example', '.env');"
Loading composer repositories with package information
Updating dependencies
Lock file operations: 118 installs, 0 updates, 0 removals
  - Locking brick/math (0.12.3)
  - Locking carbonphp/carbon-doctrine-types (3.2.0)
  - Locking dflydev/dot-access-data (v3.0.3)
  - Locking doctrine/inflector (2.0.10)
  - Locking doctrine/lexer (3.0.1)
  - Locking dragonmantank/cron-expression (v3.4.0)
  - Locking egulias/email-validator (4.0.4)
  - Locking fakerphp/faker (v1.24.1)
  - Locking filp/whoops (2.18.0)
  - Locking fruitcake/php-cors (v1.3.0)
  - Locking graham-campbell/result-type (v1.1.3)
  - Locking guzzlehttp/guzzle (7.9.3)
  - Locking guzzlehttp/promises (2.2.0)
  - Locking guzzlehttp/psr7 (2.7.1)
  - Locking guzzlehttp/uri-template (v1.0.4)
  - Locking hamcrest/hamcrest-php (v2.1.1)
```

```
C:\Windows\System32\cmd.exe - php artisan serve
> Illuminate\Foundation\ComposerScripts::postAutoloadDump
> @php artisan package:discover --ansi

  INFO  Discovering packages.

laravel/pail ..... DONE
laravel/sail ..... DONE
laravel/tinker ..... DONE
nesbot/carbon ..... DONE
nunomaduro/collision ..... DONE
nunomaduro/termwind ..... DONE

80 packages you are using are looking for funding.
Use the 'composer fund' command to find out more!
> @php artisan vendor:publish --tag=laravel-assets --ansi --force

  INFO  No publishable resources for tag [laravel-assets].

No security vulnerability advisories found.
> @php artisan key:generate --ansi

  INFO  Application key set successfully.

> @php -r "file_exists('database/database.sqlite') || touch('database/database.sqlite');"
> @php artisan migrate --graceful --ansi

  INFO  Preparing database.

Creating migration table ..... 23.62ms DONE
```

```
C:\Windows\System32\cmd.exe - php artisan serve
C:\xampp\htdocs\mohsinProject>composer require laravel/breeze --dev
./composer.json has been updated
Running composer update laravel/breeze
Loading composer repositories with package information
Updating dependencies
Lock file operations: 1 install, 0 updates, 0 removals
  - Locking laravel/breeze (v2.3.6)
Writing lock file
Installing dependencies from lock file (including require-dev)
Package operations: 1 install, 0 updates, 0 removals
  - Installing laravel/breeze (v2.3.6): Extracting archive
Generating optimized autoload files
> Illuminate\Foundation\ComposerScripts::postAutoloadDump
> @php artisan package:discover --ansi

  INFO  Discovering packages.

laravel/breeze ..... DONE
laravel/pail ..... DONE
laravel/sail ..... DONE
laravel/tinker ..... DONE
nesbot/carbon ..... DONE
nunomaduro/collision ..... DONE
nunomaduro/termwind ..... DONE

80 packages you are using are looking for funding.
Use the 'composer fund' command to find out more!
> @php artisan vendor:publish --tag=laravel-assets --ansi --force

  INFO  No publishable resources for tag [laravel-assets].
```

```
C:\Windows\System32\cmd.exe - php artisan serve

[INFO] No publishable resources for tag [laravel-assets].

No security vulnerability advisories found.
Using version ^2.3 for laravel/breeze

C:\xampp\htdocs\mohsinProject>npm install

added 91 packages, and audited 92 packages in 33s

21 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

npm notice
npm notice New major version of npm available! 10.9.2 -> 11.3.0
npm notice Changelog: https://github.com/npm/cli/releases/tag/v11.3.0
npm notice To update run: npm install -g npm@11.3.0
npm notice

C:\xampp\htdocs\mohsinProject>php artisan breeze:install

Which Breeze stack would you like to install?
Blade with Alpine ..... blade
Livewire (Volt Class API) with Alpine ..... livewire
Livewire (Volt Functional API) with Alpine ..... livewire-functional
React with Inertia ..... react
Vue with Inertia ..... vue
API only ..... api
❯ blade
```

```
C:\Windows\System32\cmd.exe - php artisan serve

Would you like dark mode support? (yes/no) [no]
❯ yes

Which testing framework do you prefer? [Pest]
Pest ..... 0
PHPUnit ..... 1
❯ PHPUnit

[INFO] Installing and building Node dependencies.

added 184 packages, changed 1 package, and audited 196 packages in 19s

49 packages are looking for funding
  run `npm fund` for details

found 0 vulnerabilities

> build
> vite build

vite v6.3.5 building for production...
transforming...
  54 modules transformed.
rendering chunks...
computing gzip size...
  public/build/manifest.json 0.27 kB | gzip: 0.15 kB
  public/build/assets/app-Dn7KqYAB.css 38.35 kB | gzip: 6.95 kB
  public/build/assets/app-BF4POITX.js 79.80 kB | gzip: 29.76 kB
❯ built in 3.83s
```



```
C:\Windows\System32\cmd.exe - php artisan serve
C:\xampp\htdocs\mohsinProject>php artisan migrate

  WARN  The database 'mohsinProject' does not exist on the 'mysql' connection.

Would you like to create it? (yes/no) [yes]
yes

  INFO  Preparing database.

Creating migration table ..... 31.45ms DONE

  INFO  Running migrations.

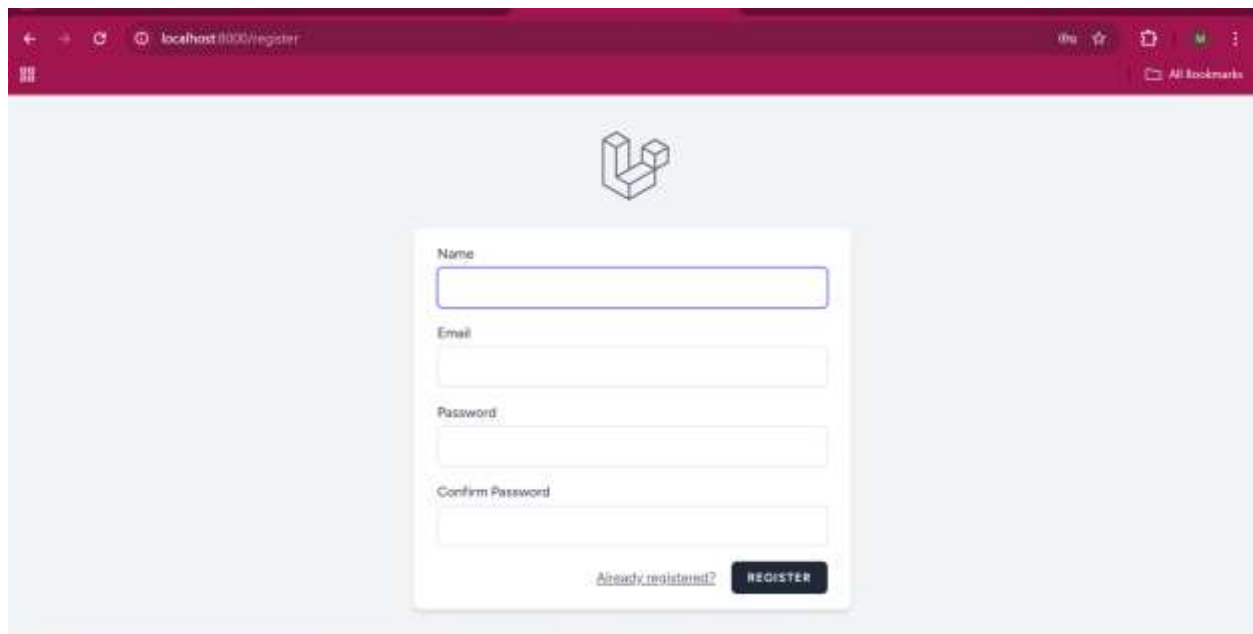
0001_01_01_000000_create_users_table ..... 97.54ms DONE
0001_01_01_000001_create_cache_table ..... 50.36ms DONE
0001_01_01_000002_create_jobs_table ..... 83.67ms DONE

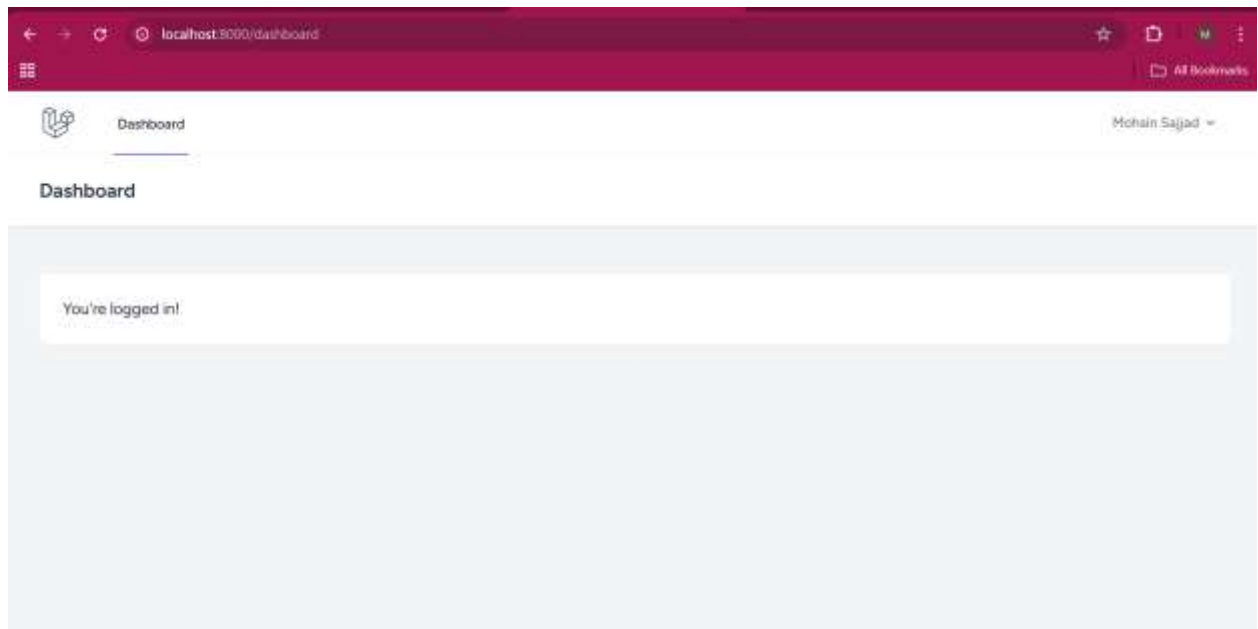
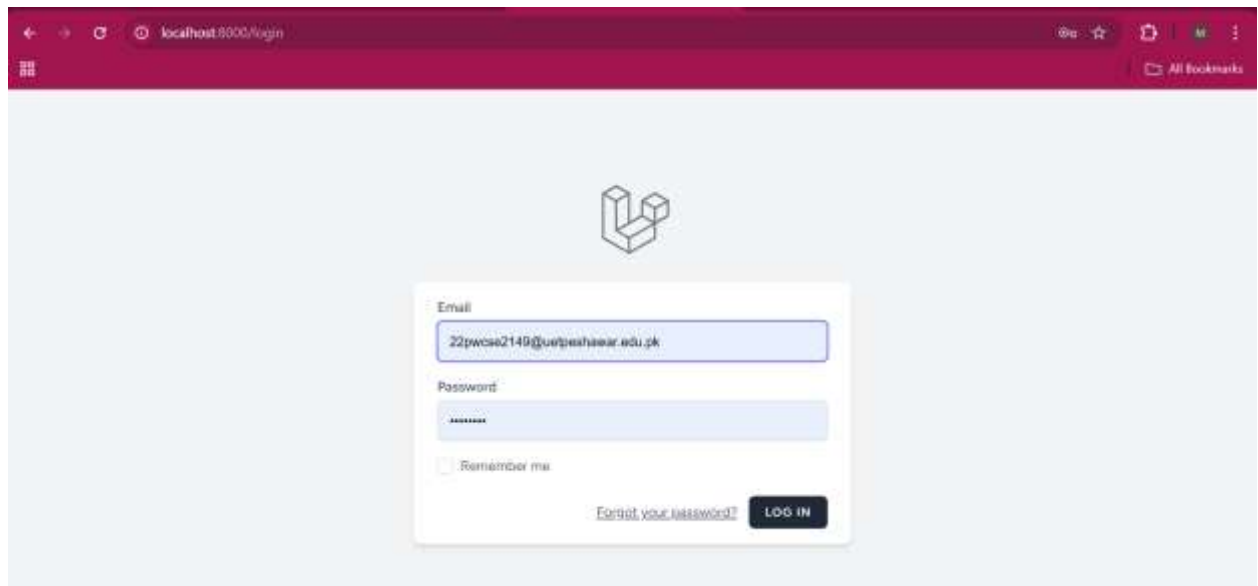
C:\xampp\htdocs\mohsinProject>php artisan serve

  INFO  Server running on [http://127.0.0.1:8000].

Press Ctrl+C to stop the server

2025-05-14 00:17:55 / ..... ~ 1s
2025-05-14 00:17:55 /build/assets/app-DbTNgVAB.css ..... ~ 1s
2025-05-14 00:17:56 /build/assets/app-Bf4POITK.js ..... ~ 20.05ms
2025-05-14 00:17:58 /favicon.ico ..... ~ 0.90ms
2025-05-14 00:17:58 /register ..... ~ 2s
2025-05-14 00:18:01 /build/assets/app-DbTNgVAB.css ..... ~ 0.46ms
```





```
C:\Windows\System32\cmd.exe - mysql -u root

Tables_in_mohsinproject
+-----+
| cache
| cache_locks
| failed_jobs
| job_batches
| jobs
| migrations
| password_reset_tokens
| sessions
| users
+-----+
9 rows in set (0.001 sec)

MariaDB [mohsinproject]> select *from user where name="Mohsin Sajjad";
ERROR 1146 (42S02): Table 'mohsinproject.user' doesn't exist
MariaDB [mohsinproject]> select *from users where name="Mohsin Sajjad";
+-----+
| id | name          | email                                     | email_verified_at | password
+-----+
| 1  | Mohsin Sajjad | 22pwcse2149@uetpeshawar.edu.pk          | NULL              | $2y$12$08LoZ.XGFLiuGN5gWedsef/5d/SGiidXfTyJ
yHnV5F06oFApJKba | NULL              | 2025-05-13 19:18:22 | 2025-05-13 19:18:22 |
+-----+
1 row in set (0.000 sec)

MariaDB [mohsinproject]>
```

## Task 5.7:

Implement the following relationship in Laravel. Department: depID, depName Employee: empID, empName, empJob, dID Note that the department has at least one or many employees working in it; while employee works exactly in one department. Also, feed atleast five records in the created tables.

### Steps

```
C:\xampp\htdocs\mohsinProject>php artisan make:model Department -m

INFO Model [C:\xampp\htdocs\mohsinProject\app\Models\Department.php] created successfully.

INFO Migration [C:\xampp\htdocs\mohsinProject\database\Migrations\2025_05_13_200839_create_departments_table.php] created successfully.

C:\xampp\htdocs\mohsinProject>

C:\xampp\htdocs\mohsinProject>php artisan make:model Employee -m

INFO Model [C:\xampp\htdocs\mohsinProject\app\Models\Employee.php] created successfully.

INFO Migration [C:\xampp\htdocs\mohsinProject\database\Migrations\2025_05_13_200854_create_employees_table.php] created successfully.
```



```
C:\Windows\System32\cmd.exe
C:\xampp\htdocs\mohsinProject>code .

C:\xampp\htdocs\mohsinProject>php artisan migrate

  INFO  Running migrations.

2025_05_13_200839_create_departments_table ..... 32.22ms DONE
2025_05_13_200854_create_employees_table ..... 70.77ms DONE

C:\xampp\htdocs\mohsinProject>code .

C:\xampp\htdocs\mohsinProject>php artisan make:seeder DepartmentSeeder

  INFO  Seeder [C:\xampp\htdocs\mohsinProject\database\seeders\DepartmentSeeder.php] created successfully.

C:\xampp\htdocs\mohsinProject>php artisan make:seeder EmployeeSeeder

  INFO  Seeder [C:\xampp\htdocs\mohsinProject\database\seeders\EmployeeSeeder.php] created successfully.

C:\xampp\htdocs\mohsinProject>code .
```

```
C:\Windows\System32\cmd.exe
C:\xampp\htdocs\mohsinProject>composer dump-autoload
Generating optimized autoload files
> Illuminate\Foundation\ComposerScripts::postAutoloadDump
> @php artisan package:discover --ansi

  INFO  Discovering packages.

laravel/breeze ..... DONE
laravel/pail ..... DONE
laravel/sail ..... DONE
laravel/tinker ..... DONE
nesbot/carbon ..... DONE
nunomaduro/collision ..... DONE
nunomaduro/termwind ..... DONE

Generated optimized autoload files containing 6135 classes

C:\xampp\htdocs\mohsinProject>php artisan migrate

  INFO  Nothing to migrate.

C:\xampp\htdocs\mohsinProject>
C:\xampp\htdocs\mohsinProject>php artisan db:seed

  INFO  Seeding database.

Database\Seeders\DepartmentSeeder ..... RUNNING
Database\Seeders\DepartmentSeeder ..... 56 ms DONE
```

C:\Windows\System32\cmd.exe - mysql -u root

MariaDB [mohsinproject]> show tables;

```
+-----+
| Tables_in_mohsinproject |
+-----+
| cache                    |
| cache_locks              |
| departments              |
| employees                |
| failed_jobs              |
| job_batches              |
| jobs                     |
| migrations               |
| password_reset_tokens    |
| sessions                 |
| users                    |
+-----+
11 rows in set (0.001 sec)
```

C:\Windows\System32\cmd.exe - mysql -u root

-> \c

MariaDB [mohsinproject]> select \*from employees;  
Empty set (0.009 sec)

MariaDB [mohsinproject]> select \*from employees;

```
+-----+-----+-----+-----+-----+-----+
| empID | empName | empJob          | dID | created_at          | updated_at          |
+-----+-----+-----+-----+-----+-----+
| 1     | Alice   | Developer       | 1   | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
| 2     | Bob     | Tester          | 1   | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
| 3     | Carol   | HR Manager      | 2   | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
| 4     | Dave    | Accountant      | 3   | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
| 5     | Eve     | Financial Analyst | 3   | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.000 sec)
```

MariaDB [mohsinproject]> select \*from departments;

```
+-----+-----+-----+-----+
| depID | depName | created_at          | updated_at          |
+-----+-----+-----+-----+
| 1     | CSE     | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
| 2     | ELEC    | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
| 3     | CIVIL   | 2025-05-13 20:34:41 | 2025-05-13 20:34:41 |
+-----+-----+-----+-----+
3 rows in set (0.001 sec)
```

MariaDB [mohsinproject]>

