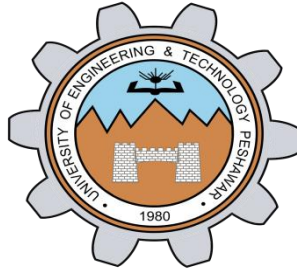Lab Report No. 05



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Registration No: 22pwcse2157

Section: Section C

"On my honor , as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work"
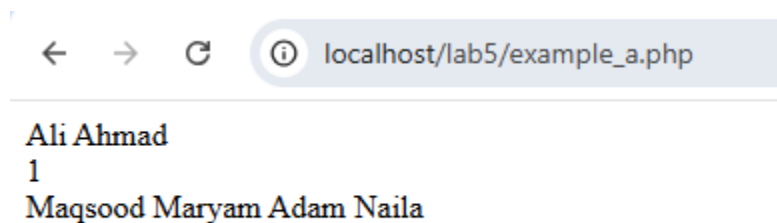
Department of Computer Systems Engineering

University of Engineering and Technology Peshawar

<div align="center">Lab 5:</div>

## Example a:

```php
example_a.php
1    <?php
2
3    $username = "Ali Ahmad";
4     echo $username;
5     $mycount = 1;
6     echo "<br />".$mycount;
7     $team = array('Maqsood', 'Maryam', 'Adam', 'Naila');
8    echo "<br />".$team[0]." ".$team[1]." ".$team[2]." ".$team[3];
9    ?>
10
```
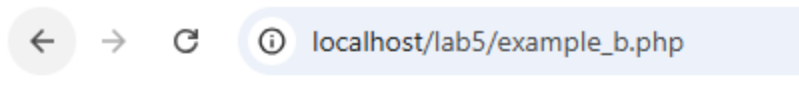
Results:

```
←   →   C   ⓘ  localhost/lab5/example_a.php

Ali Ahmad
1
Maqsood Maryam Adam Naila
```

## Example b:

```php
example_b.php
1    <?php
2    /* This is a section
3    of multiline comments
4    which will not be
5    interpreted */
6    ?>
```

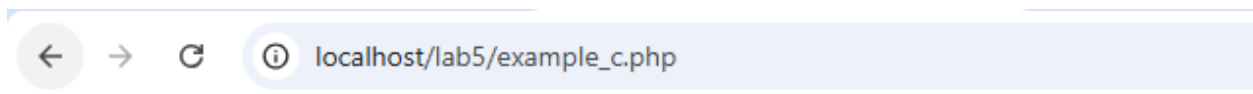Results:

Example c:

```php
example_c.php
1    <?php
2    $test_var;
3    echo gettype($test_var) . "<br />"; // Displays "NULL"
4
5    $test_var = 15;
6    echo gettype($test_var) . "<br />"; // Displays "integer"
7
8    $test_var = 8.23;
9    echo gettype($test_var) . "<br />"; // Displays "double"
10
11   $test_var = "Hello, world!";
12   echo gettype($test_var) . "<br />"; // Displays "string"
13   ?>
14
```

Results:

← → C ⓘ localhost/lab5/example_c.php

**Warning**: Undefined variable $test_var in **C:\xampp\htdocs\lab5\example_c.php** on line **3**
NULL
integer
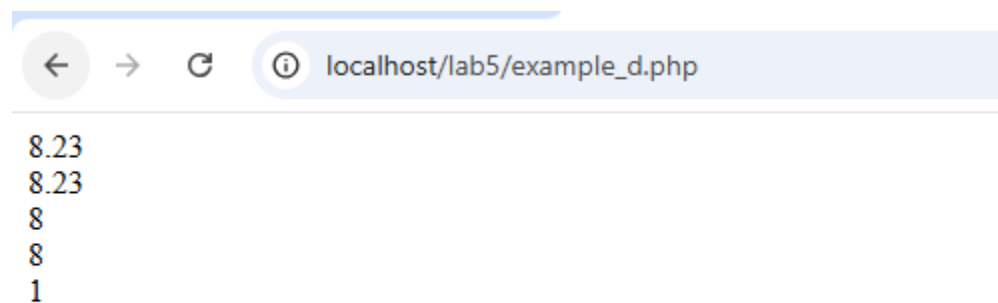double
string

Example d:

```php
example_d.php
1   <?php
2   $test_var = 8.23;
3   echo $test_var . "<br />";
4   settype($test_var, "string");
5   echo $test_var . "<br />";
6   settype($test_var, "integer");
7   echo $test_var . "<br />";
8   settype($test_var, "float");
9   echo $test_var . "<br />";
10  settype($test_var, "boolean");
11  echo $test_var . "<br />";
12  ?>
```

Results:

localhost/lab5/example_d.php

8.23
8.23
8
8
1

Example 5:

```php
example_e.php
1   <?php
2   // Make sure $page is defined before using it, for example:
3   $page = isset($_GET['page']) ? $_GET['page'] : ''; // or assign some default
4
5   if ($page == "Home") {
6       echo "You selected Home";
7   } elseif ($page == "About") {
8       echo "You selected About";
9   } elseif ($page == "News") {
10      echo "You selected News";
11  } elseif ($page == "Login") {
12      echo "You selected Login";
13  } elseif ($page == "Links") {
14      echo "You selected Links";
15  } else {
16      echo "Page not recognized";
17  }
18  ?>
```
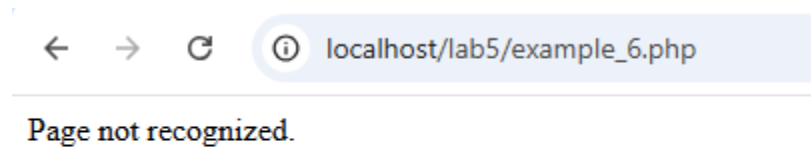
Results:



Page not recognized
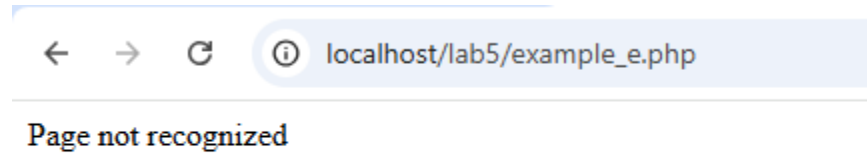
Example 6:

```php
example_6.php
1   <?php
2   // Set the page variable (you can also use $_GET['page'] if taking from URL)
3   $page = isset($_GET['page']) ? $_GET['page'] : '';
4
5   switch ($page)
6   {
7       case "Home":
8           echo "You selected Home";
9           break;
10      case "About":
11          echo "You selected About";
12          break;
13      case "News":
14          echo "You selected News";
15          break;
16      case "Login":
17          echo "You selected Login";
18          break;
19      case "Links":
20          echo "You selected Links";
21          break;
22      default:
23          echo "Page not recognized.";
24  }
25  ?>
```
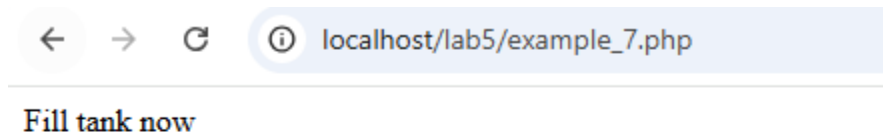
Results:



Page not recognized.

## Example 7:

```php
example_7.php
1    <?php
2    $fuel = 10;
3    |
4    echo $fuel <= 19 ? "Fill tank now" : "There's enough fuel";
5    ?>
6
```

Results:

localhost/lab5/example_7.php

Fill tank now

## Example 8:

```php
example_c.php
1    <?php
2    $test_var= 7;
3    echo gettype($test_var) . "<br />";
4
5    $test_var = 15;
6    echo gettype($test_var) . "<br />";
7
8    $test_var = 8.23;
9    echo gettype($test_var) . "<br />";
10
11   $test_var = "Hello, world!";
12   echo gettype($test_var) . "<br />";
13   ?>
14   |
```
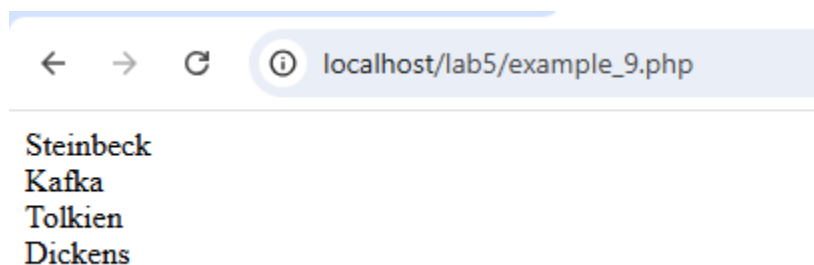
Results:

Selling a widget... done. There are 9 widgets left.
Selling a widget... done. There are 8 widgets left.
Selling a widget... done. There are 7 widgets left.
Selling a widget... done. There are 6 widgets left.
Selling a widget... done. There are 5 widgets left.
Selling a widget... done. There are 4 widgets left.
Selling a widget... done. There are 3 widgets left.
Selling a widget... done. There are 2 widgets left.
Selling a widget... done. There are 1 widgets left.
Selling a widget... done. There are 0 widgets left.
We're right out of widgets!

## Example 9:

```php
example_9.php
1   <?php
2   $authors = array("Steinbeck", "Kafka", "Tolkien", "Dickens");
3   foreach ($authors as $val) {
4       echo $val . "<br />";
5   }
6   ?>
7   |
```

Results:

localhost/lab5/example_9.php

Steinbeck
Kafka
Tolkien
Dickens

## Example 10:

```php
🐘 exaple_10.php
1    <?php
2    $myBook = array(
3        "title" => "The Grapes of Wrath",
4        "author" => "John Steinbeck",
5        "pubYear" => 1939
6    );
7
8    foreach ($myBook as $key => $value) {
9        echo "<dt>$key</dt>";
10       echo "<dd>$value</dd>";
11   }
12   ?>
13   |
```

Results:

> title
> > The Grapes of Wrath
> author
> > John Steinbeck
> pubYear
> > 1939

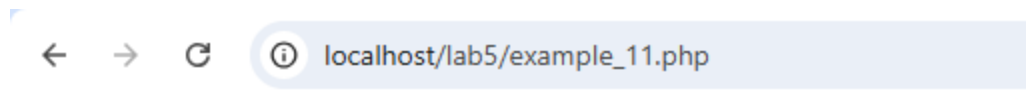## Example 11:

```php
🐘 example_11.php
1    <?php
2    $width = 1;
3    $length = 1;
4    do {
5        $width++;
6        $length++;
7        $area = $width * $length;
8    } while ($area < 1000);
9
10   echo "The smallest square over 1000 sq ft in area is $width ft x $length ft.";
11   ?>
12   |
```

Results:

localhost/lab5/example_11.php

The smallest square over 1000 sq ft in area is 32 ft x 32 ft.

Example 12:

```php
example_12.php
1    <?php
2    for ($count = 1 ; $count <= 12 ; ++$count)
3    echo "$count times 12 is " . $count * 12 . "<br>";
4    ?>
5
```

Results:

localhost/lab5/example_12.php
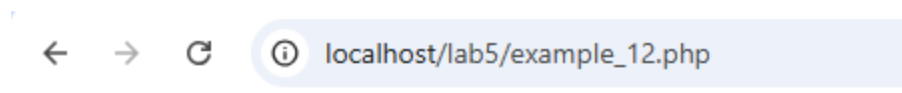
1 times 12 is 12
2 times 12 is 24
3 times 12 is 36
4 times 12 is 48
5 times 12 is 60
6 times 12 is 72
7 times 12 is 84
8 times 12 is 96
9 times 12 is 108
10 times 12 is 120
11 times 12 is 132
12 times 12 is 144

## Task a:

```php
task_a.php
1    <?php
2    $test_var = 8.23;
3
4    echo (int)$test_var . "<br />";      // Outputs: 8
5    echo (string)$test_var . "<br />";   // Outputs: 8.23
6    echo (bool)$test_var . "<br />";     // Outputs: 1 (true)
7    ?>
8    |
```
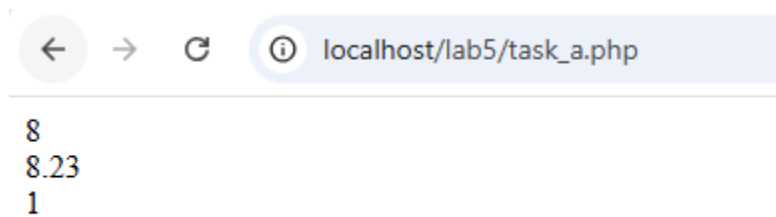
Results:

```
←   →   C    ⓘ  localhost/lab5/task_a.php

8
8.23
1
```

## Task b:

- **intval(value)**

**Purpose**:
Converts the given value to an **integer** and returns the result.

- **floatval(value)**

**Purpose**:
Converts the given value to a **floating-point (decimal) number** and returns it.

- **strval(value)**

**Purpose**:
Converts the given value to a **string**.

## Task c:

```php
task_c.php
1    <?php
2
3    // Function to check if a number is prime
4    function isPrime($num) {
5        if ($num <= 1) return false;
6        if ($num == 2) return true;
7        if ($num % 2 == 0) return false;
8        for ($i = 3; $i <= sqrt($num); $i += 2) {
9            if ($num % $i == 0) return false;
10       }
11       return true;
12   }
13
14   $max = 10;   // Change this if you want a bigger table
15
16   echo "<table border='1' cellpadding='8' cellspacing='0'>";
17   echo "<tr><th>/</th>";
18
19   // Header row: numbers 1 to $max
20   for ($header = 1; $header <= $max; $header++) {
21       echo "<th>$header</th>";
22   }
23   echo "</tr>";
24
25   // Generate division table with additional info
26   for ($row = 1; $row <= $max; $row++) {
27       echo "<tr>";
28       echo "<th>$row</th>";   // Row header
```

```php
29
30       for ($col = 1; $col <= $max; $col++) {
31           $div = $row / $col;
32
33           // Determine odd or even for the numerator (row number)
34           $oddEven = ($row % 2 == 0) ? "Even" : "Odd";
35
36           // Check if prime
37           $primeMsg = isPrime($row) ? "<br><small>(Prime)</small>" : "";
38
39           // Cell content
40           echo "<td>";
41           echo number_format($div, 2) . "<br>";
42           echo "<small>$oddEven $primeMsg</small>";
43           echo "</td>";
44       }
45       echo "</tr>";
46   }
47   echo "</table>";
48
49   ?>
```

Results:

| / | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|----|
| 1 | 1.00 Odd | 0.50 Odd | 0.33 Odd | 0.25 Odd | 0.20 Odd | 0.17 Odd | 0.14 Odd | 0.13 Odd | 0.11 Odd | 0.10 Odd |
| 2 | 2.00 Even (Prime) | 1.00 Even (Prime) | 0.67 Even (Prime) | 0.50 Even (Prime) | 0.40 Even (Prime) | 0.33 Even (Prime) | 0.29 Even (Prime) | 0.25 Even (Prime) | 0.22 Even (Prime) | 0.20 Even (Prime) |
| 3 | 3.00 Odd (Prime) | 1.50 Odd (Prime) | 1.00 Odd (Prime) | 0.75 Odd (Prime) | 0.60 Odd (Prime) | 0.50 Odd (Prime) | 0.43 Odd (Prime) | 0.38 Odd (Prime) | 0.33 Odd (Prime) | 0.30 Odd (Prime) |
| 4 | 4.00 Even | 2.00 Even | 1.33 Even | 1.00 Even | 0.80 Even | 0.67 Even | 0.57 Even | 0.50 Even | 0.44 Even | 0.40 Even |
| 5 | 5.00 Odd (Prime) | 2.50 Odd (Prime) | 1.67 Odd (Prime) | 1.25 Odd (Prime) | 1.00 Odd (Prime) | 0.83 Odd (Prime) | 0.71 Odd (Prime) | 0.63 Odd (Prime) | 0.56 Odd (Prime) | 0.50 Odd (Prime) |
| 6 | 6.00 Even | 3.00 Even | 2.00 Even | 1.50 Even | 1.20 Even | 1.00 Even | 0.86 Even | 0.75 Even | 0.67 Even | 0.60 Even |
| 7 | 7.00 Odd (Prime) | 3.50 Odd (Prime) | 2.33 Odd (Prime) | 1.75 Odd (Prime) | 1.40 Odd (Prime) | 1.17 Odd (Prime) | 1.00 Odd (Prime) | 0.88 Odd (Prime) | 0.78 Odd (Prime) | 0.70 Odd (Prime) |
| 8 | 8.00 Even | 4.00 Even | 2.67 Even | 2.00 Even | 1.60 Even | 1.33 Even | 1.14 Even | 1.00 Even | 0.89 Even | 0.80 Even |
| 9 | 9.00 Odd | 4.50 Odd | 3.00 Odd | 2.25 Odd | 1.80 Odd | 1.50 Odd | 1.29 Odd | 1.13 Odd | 1.00 Odd | 0.90 Odd |
| 10 | 10.00 Even | 5.00 Even | 3.33 Even | 2.50 Even | 2.00 Even | 1.67 Even | 1.43 Even | 1.25 Even | 1.11 Even | 1.00 Even |

## Task d:

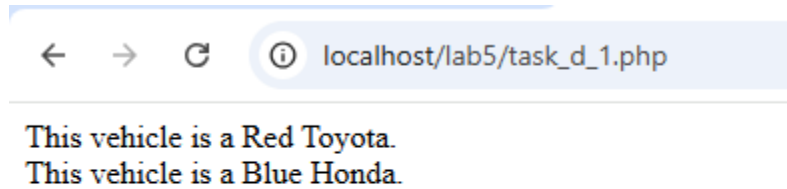> ➢ Classes and Objects

```php
task_d_1.php
1   <?php
2   // Define a class
3   class Vehicle {
4       public $brand;
5       public $color;
6
7       // Constructor method
8       public function __construct($brand, $color) {
9           $this->brand = $brand;
10          $this->color = $color;
11      }
12
13      // Method to display info
14      public function displayInfo() {
15          echo "This vehicle is a $this->color $this->brand.<br>";
16      }
17  }
18
19  // Create objects from the class
20  $car = new Vehicle("Toyota", "Red");
21  $bike = new Vehicle("Honda", "Blue");
22
23  // Use object methods
24  $car->displayInfo();
25  $bike->displayInfo();
26  ?>
```

Results:



This vehicle is a Red Toyota.
This vehicle is a Blue Honda.

> Inheritance

```php
<?php
class Vehicle {
    public $brand;
    public $color;
    public function __construct($brand, $color) {
        $this->brand = $brand;
        $this->color = $color;    }
    public function displayInfo() {
        echo "This vehicle is a $this->color $this->brand.<br>";
    }
}
class Car extends Vehicle {
    public $doors;
    public function __construct($brand, $color, $doors) {
        parent::__construct($brand, $color);
        $this->doors = $doors;
    }

    public function displayInfo() {
        echo "This car is a $this->color $this->brand with $this->doors doors.<br>";
    }
}

$myCar = new Car("BMW", "Black", 4);
$myCar->displayInfo();
?>
```

Results:
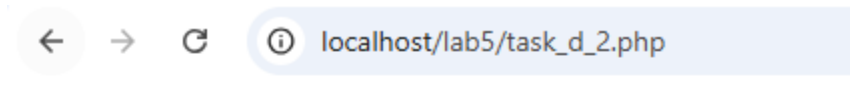
This car is a Black BMW with 4 doors.

➢ Polymorphism

```php
task_d_3.php
1    <?php
2    interface Shape {
3        public function area();}
4    class Circle implements Shape {
5        private $radius;
6        public function __construct($radius) {
7            $this->radius = $radius;
8        }
9        public function area() {
10           return pi() * $this->radius * $this->radius;
11       }
12   }
13   class Rectangle implements Shape {
14       private $width;
15       private $height;
16       public function __construct($width, $height) {
17           $this->width = $width;
18           $this->height = $height;
19       }
20       public function area() {
21           return $this->width * $this->height;
22       }
23   }
24   $shapes = [
25       new Circle(5),
26       new Rectangle(4, 6)
27   ];
28   foreach ($shapes as $shape) {
29       echo "Area: " . $shape->area() . "<br>";
30   }
31   ?>
```

Results:

Area: 78.539816339745
Area: 24