Experiment No. 2

Title: Arrays, Image and File handling functions, User Defined function in PHP

Batch: B-3 **Roll No.: 16010422234** **Experiment No.: 2**

Aim: Write PHP script for demonstrating use of arrays, functions, image and file handling functions.

Resources needed: Windows OS, Web Browser, Editor, and XAMPP Server

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Pre Lab/ Prior Concepts: Students should have prior knowledge of HTML/CSS/Basic Programming.

Theory:

What are PHP Arrays?

Arrays are complex variables that allow us to store more than one value or a group of values under a single variable name.

Types of Arrays in PHP

There are three types of arrays that you can create. These are:

1. Indexed array — An array with a numeric key.
2. Associative array — An array where each key has its own specific value.
3. Multidimensional array — An array containing one or more arrays within itself.

1. Indexed Array Example

```
<?php
echo "<br><b> --CREATING & DISPLAYING NUMERIC ARRAY-- </b><br><br>";
$languages = array("PHP", "JAVA", "PYTHON", "C++");
$languages[0]="C"; //will overwrite "PHP"at index 0
$languages[4]="PHP";//will add PHP at index 4 var_dump($languages);
?>
```

var_dump() function dumps information about one or more variables. The information holds the type and value of the variable(s).

2. Associative Array Example

```
<?php
echo "<br><br><b> --CREATING & DISPLAYING ASSOCIATIVE ARRAY-
- </b><br>";
$subjectcode=array(111=>"C",222=>"JAVA",333=>"PYTHON",444=>"C++",555=>"PHP");
echo "<br><br><b> ACCESSING ASSOCIATIVE ARRAY USING KEY </b><br>";
echo "SUBJECT with code 333 is ::".$subjectcode[333];
//echo $subjectcode[777]; //throw php error
```

```
echo "<br><br><b> DISPLAYING ASSOCIATIVE ARRAY USING KEY THROUGH LOOPS</b><br>";
foreach ($subjectcode as $code => $subvalue){ echo "SubjectCode $code ::$subvalue <br>";}
echo "<br><b> Displaying raw value of array</b><br>"; print_r($subjectcode);
?>
```

print_r() function prints the information about a variable in a more human-readable way.

3. Multidimensional Array Example

```
<?php
echo "<br><b> --CREATING & DISPLAYING MULTIDIMENSIONAL ARRAY -- </b><br>";
$courses = array(
array("code" => "001", "subject" => "PIC","sem" => "First"),
array( "code" => "003","subject" => "PYTHON", "sem" => "Third"),
array( "code" => "004", "subject" => "Advance JAVA/PYTHON", "sem" => "Fourth")
);
echo "<b> Display multidimensional array</b><br>";
$keys = array_keys($courses);
for($i = 0; $i < count($courses); $i++) { echo $keys[$i] . "<br>";
foreach($courses[$keys[$i]] as $key => $value) { echo $key . " : " . $value . "<br>";
} }
?>
```

array_keys() function returns an array containing the keys.

Functions in PHP

1. PHP Built-in Functions

-A function is a self-contained block of code that performs a specific task.

-PHP has a huge collection of internal or built-in functions that you can call directly within your PHP scripts to perform a specific task, like gettype(), print_r(), var_dump, etc.

2. PHP User-Defined Functions

Syntax for creating Functions

a)
```
function functionName(){
        // Code to be executed
}
```
b)
```
function myFunc($oneParameter, $anotherParameter){
        // Code to be executed
}
```
c)
```
function myFunc($oneParameter, $anotherParameter=value){
        // Code to be executed
}
//calling such functions
$myFunc(“value1”, “value2”);
$myFunc(“value1”); // both will work
```

d) function myFunc($oneParameter, $anotherParameter){
    return $returnvalue;
}

Built in Functions:

Built-in functions are functions that come along with the PHP installation package. The built in functions are what make PHP a very efficient and productive scripting language. The built in functions can be classified into many categories.

1. String Functions
2. Date and Time Functions
3. Math Functions
4. Image Handling Functions
5. File Handling Functions

File Handling Functions:

File handling in PHP is similar as file handling is done by using any programming language like C. PHP has many functions to work with normal files.

Those functions are:

1. fopen() – This function is used to open a file. First parameter of fopen() contains name of the file which is to be opened and second parameter tells about mode in which file needs to be opened, e.g.,

```
<?php
$file = fopen(“demo.txt”,'w');
?>
```

Files can be opened in any of the following modes :

“w” – Opens a file for write only. If the file does not exist then a new file is created and if file already exists then contents of file is erased.

“r” – File is opened for read only.

“a” – File is opened for write only. File pointer points to the end of the file. Existing data in file is preserved.

“w+” – Opens file for read and write. If the file does not exist then a new file is created and if the file already exists then contents of file is erased.

“r+” – File is opened for read/write.

“a+” – File is opened for write/read. File pointer points to the end of the file. Existing data in file is preserved. If the file is not there then a new file is created.

“x” – New file is created for write only.

2. fread() – After a file is opened using fopen() the contents of data are read using fread(). It takes two arguments. One is file pointer and another is file size in bytes, e.g.,

```
<?php
$filename = "demo.txt";
$file = fopen( $filename, 'r' );
```

```
$size = filesize( $filename );
$filedata = fread( $file, $size );
?>
```

3. fwrite() – New file can be created or text can be appended to an existing file using the fwrite() function. Arguments for fwrite() function are file pointer and text that is to be written to the file.

```
<?php
$file = fopen("demo.txt", 'w');
$text = "Hello world\n"; fwrite($file, $text);
?>
```

4. fclose() – file is closed using the fclose() function. Its argument is file which needs to be closed, e.g.,

```
<?php
$file = fopen("demo.txt", 'r'); fclose($file);
?>
```

Image Handling Function:

imagecreate() returns an image identifier representing a blank image of specified size. In general, we recommend the use of imagecreatetruecolor() instead of imagecreate() so that image processing occurs on the highest quality image possible.

imagecreate (int $width, int $height)

```
<?php
header("Content-Type: image/png");
$im = @imagecreate(110, 20)
or die("Cannot Initialize new GD image stream");
$background_color = imagecolorallocate($im, 0, 0, 0);
$text_color = imagecolorallocate($im, 233, 14, 91);
imagestring($im, 1, 5, 5, "A Simple Text String", $text_color); imagepng($im);
imagedestroy($im);
?>
```

The above example will output something similar to:

Image Upload using File Upload

The process of uploading a file follows these steps −

The user opens the page containing a HTML form featuring text files, a browse button and a submit button.

The user clicks the browse button and selects a file to upload from the local PC.

The full path to the selected file appears in the text field then the user clicks the submit button.

The selected file is sent to the temporary directory on the server.

The PHP script that was specified as the form handler in the form's action attribute checks that the file has arrived and then copies the file into an intended directory.

The PHP script confirms the success to the user.

An uploaded file could be a text file or image file or any document.

```
<?php if(isset($_FILES['image'])){
$errors= array();
$file_name = $_FILES['image']['name'];
$file_size =$_FILES['image']['size'];
$file_tmp =$_FILES['image']['tmp_name'];
$file_type=$_FILES['image']['type'];
$file_ext=strtolower(end(explode('.',$_FILES['image']['name'])));
$extensions= array("jpeg","jpg","png"); if(in_array($file_ext,$extensions)=== false){
$errors[]="extension not allowed, please choose a JPEG or PNG file.";
}
if($file_size > 2097152){
$errors[]='File size must be exactly 2 MB';
}
if(empty($errors)==true){ move_uploaded_file($file_tmp,"images/".$file_name); echo "Success";
}else{ print_r($errors);
}
}
?>
<html>
<body>
<form action="" method="POST" enctype="multipart/form-data">
<input type="file" name="image" />
<input type="submit"/>
</form>
</body>
</html>
```

PHP GD

GD is an open-source code library that is required to create and manipulate images in PHP. It is used for creating PNG, JPEG, and GIF images. It is commonly used to create charts, graphics, thumbnails, etc, and website development is the most common application of GD

Installing PHP GD in Windows

To install the PHP GD follow the following steps:

Step 1: Install XAMPP in your windows system.

Step 2: Verify if GD is already installed or not. So to verify GD we need to follow the following steps:

- Open XAMPP and click on the start button in front of Apache and MySQL to start the php server, and go to the admin.
- A web page will open. Go to the 'PHPInfo' option on the top of the page.
- A PHPInfo dashboard will open up.
- Scroll down the page and search for 'gd'. If present, GD is already installed
- If 'gd' is not present on the phpinfo page, you can follow the next to install GD.

Step 3: Locate and open php.ini in your editor.

Step 4: Find **;extension=gd.**

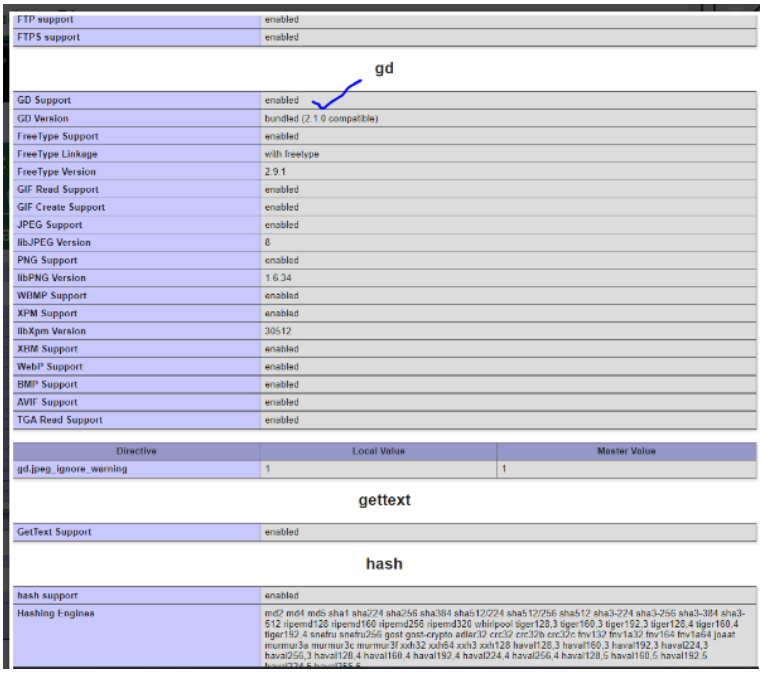
Step 5: Remove semicolon from **;extension=gd** and save the file.

Step 6: Go to the php folder. It is usually present in **C:\xampp**. **Step 7:** Look for **php_gd.dll** in the ext folder.

Step 8: Copy php_gd.dll and paste it into the following folder.

C:\Windows\System32

Step 9: Restart the XAMPP server. Now use the phpinfo() method as mentioned in step 2 to check whether the GD library is installed in the PHP server. It will show information about the PHP's configuration.



FTP support	enabled
FTPS support	enabled

gd

GD Support	enabled
GD Version	bundled (2.1.0 compatible)
FreeType Support	enabled
FreeType Linkage	with freetype
FreeType Version	2.9.1
GIF Read Support	enabled
GIF Create Support	enabled
JPEG Support	enabled
libJPEG Version	8
PNG Support	enabled
libPNG Version	1.6.34
WBMP Support	enabled
XPM Support	enabled
libXpm Version	30512
XBM Support	enabled
WebP Support	enabled
BMP Support	enabled
AVIF Support	enabled
TGA Read Support	enabled

Directive	Local Value	Master Value
gd.jpeg_ignore_warning	1	1

gettext

GetText Support	enabled

hash

hash support	enabled
Hashing Engines	md2 md4 md5 sha1 sha224 sha256 sha384 sha512/224 sha512/256 sha512 sha3-224 sha3-256 sha3-384 sha3-512 ripemd128 ripemd160 ripemd256 ripemd320 whirlpool tiger128,3 tiger160,3 tiger192,3 tiger128,4 tiger160,4 tiger192,4 snefru snefru256 gost gost-crypto adler32 crc32 crc32b crc32c fnv132 fnv1a32 fnv164 fnv1a64 joaat murmur3a murmur3c murmur3f xxh32 xxh64 xxh3 xxh128 haval128,3 haval160,3 haval192,3 haval224,3 haval256,3 haval128,4 haval160,4 haval192,4 haval224,4 haval256,4 haval128,5 haval160,5 haval192,5

Activity: Write a PHP program for implementing different types of arrays and their associated functions. Also write a program for implementing image and file handling functions.

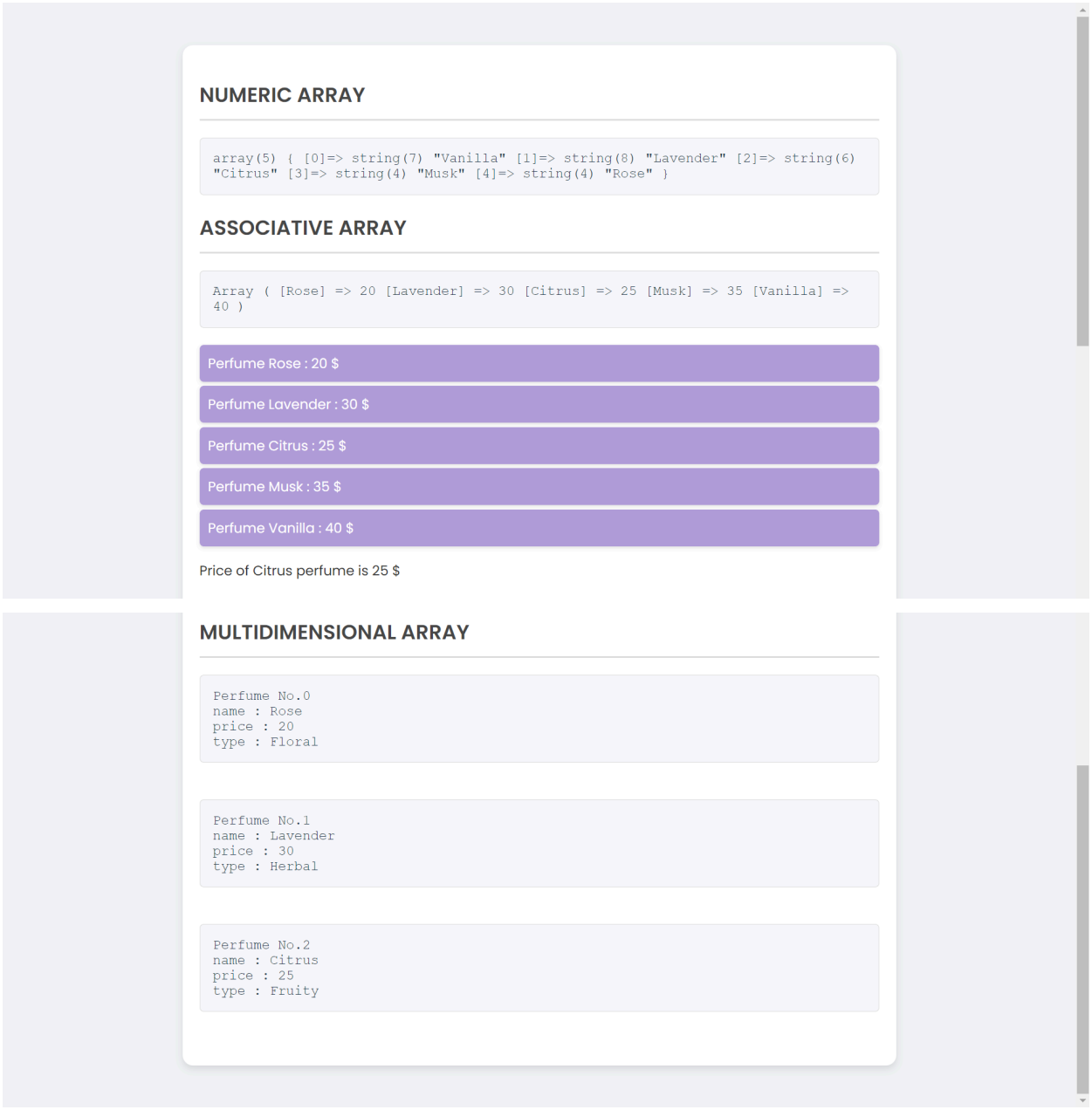
Output: (Code with result Snapshot)

exp2_1.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Perfume Arrays</title>
    <style>
        @import
url('https://fonts.googleapis.com/css2?family=Poppins:wght@300;400;600&dis
play=swap');

        body {
            font-family: 'Poppins', sans-serif;
            margin: 0;
            padding: 0;
            background-color: #f0f2f5;
            color: #333;
        }
        .container {
            max-width: 800px;
            margin: 50px auto;
            padding: 20px;
            background: #fff;
            border-radius: 12px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
        }
        h2 {
            color: #4a4a4a;
            border-bottom: 2px solid #e0e0e0;
            padding-bottom: 10px;
            margin-bottom: 20px;
        }
        b {
```

```
            color: #6c757d;
        }
        .array-output {
            background: #f8f9fa;
            border-radius: 5px;
            padding: 15px;
            margin-bottom: 20px;
            font-family: 'Courier New', Courier, monospace;
            color: #2c3e50;
            border: 1px solid #ddd;
        }
        .array-output p {
            margin: 5px 0;
        }
        .perfume-list {
            list-style-type: none;
            padding: 0;
        }
        .perfume-list li {
            background: #b19cd9;
            color: white;
            margin: 5px 0;
            padding: 10px;
            border-radius: 5px;
            transition: background 0.3s;
            box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
        }
        .perfume-list li:hover {
            background: #9370db;
        }
        p {
            font-size: 16px;
            line-height: 1.6;
        }
    </style>
</head>
<body>
    <div class="container">
        <?php
        echo "<h2>NUMERIC ARRAY</h2>";
        $perfumes = array("Rose", "Lavender", "Citrus", "Musk");
        $perfumes[0] = "Vanilla";
```

```
        $perfumes[4] = "Rose";
        echo '<div class="array-output">';
        var_dump($perfumes);
        echo '</div>';

        echo "<h2>ASSOCIATIVE ARRAY</h2>";
        $perfumePrices = array("Rose" => 20, "Lavender" => 30, "Citrus" =>
25, "Musk" => 35, "Vanilla" => 40);
        echo '<div class="array-output">';
        print_r($perfumePrices);
        echo '</div>';

        echo '<ul class="perfume-list">';
        foreach ($perfumePrices as $perfume => $price) {
            echo "<li>Perfume $perfume : $price $</li>";
        }
        echo '</ul>';

        echo "<p>Price of Citrus perfume is " . $perfumePrices['Citrus'] .
" $</p>";

        echo "<h2>MULTIDIMENSIONAL ARRAY</h2>";
        $perfumeCollection = array(
            array("name" => "Rose", "price" => 20, "type" => "Floral"),
            array("name" => "Lavender", "price" => 30, "type" =>
"Herbal"),
            array("name" => "Citrus", "price" => 25, "type" => "Fruity")
        );

        $keys = array_keys($perfumeCollection);
        for ($i = 0; $i < count($perfumeCollection); $i++) {
            echo '<div class="array-output">';
            echo "Perfume No." . $keys[$i] . "<br>";
            foreach ($perfumeCollection[$keys[$i]] as $key => $value) {
                echo $key . " : " . $value . "<br>";
            }
            echo "</div><br>";
        }
        ?>
    </div>
</body>
</html>
```



exp2_2.php

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Perfume File and Image Upload</title>
    <style>
        @import
url('https://fonts.googleapis.com/css2?family=Poppins:wght@300;400;600&dis
```

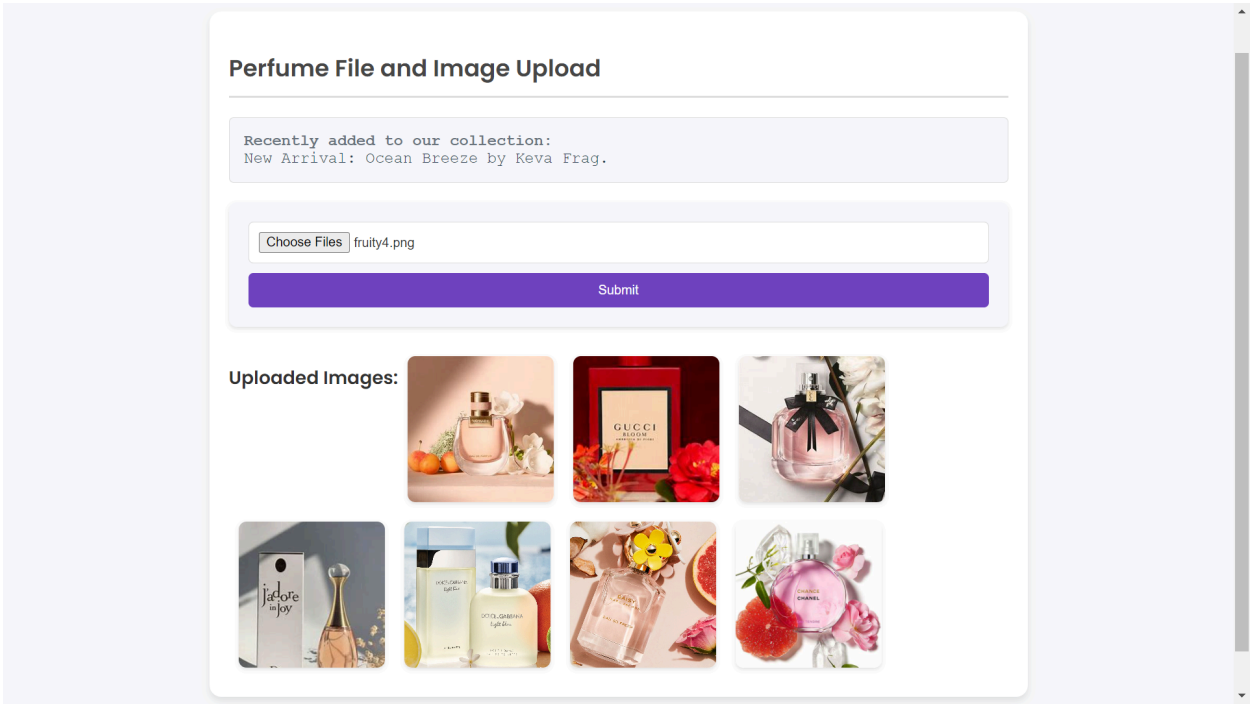
```
play=swap');

        body {
            font-family: 'Poppins', sans-serif;
            margin: 0;
            padding: 0;
            background-color: #f8f9fa;
            color: #333;
        }
        .container {
            max-width: 800px;
            margin: 50px auto;
            padding: 20px;
            background: #fff;
            border-radius: 12px;
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.1);
        }
        h2 {
            color: #4a4a4a;
            border-bottom: 2px solid #e0e0e0;
            padding-bottom: 10px;
            margin-bottom: 20px;
        }
        b {
            color: #6c757d;
        }
        .content {
            background: #f8f9fa;
            border-radius: 5px;
            padding: 15px;
            margin-bottom: 20px;
            color: #2c3e50;
            border: 1px solid #ddd;
            overflow-x: auto;
            font-family: 'Courier New', Courier, monospace;
        }
        .content pre {
            margin: 0;
            white-space: pre-wrap;
            word-wrap: break-word;
        }
        form {
```

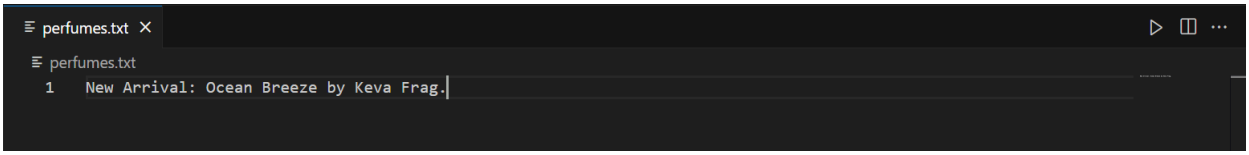
```
            display: flex;
            flex-direction: column;
            gap: 10px;
            background: #f8f9fa;
            padding: 20px;
            border-radius: 8px;
            box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
        }
        input[type="file"] {
            padding: 10px;
            border: 1px solid #ddd;
            border-radius: 5px;
            background: #fff;
        }
        input[type="submit"] {
            padding: 10px;
            border: none;
            border-radius: 5px;
            background: #6f42c1;
            color: white;
            cursor: pointer;
            transition: background 0.3s;
        }
        input[type="submit"]:hover {
            background: #563d7c;
        }
        .success, .errors {
            margin-top: 20px;
            padding: 15px;
            border-radius: 5px;
            font-size: 16px;
        }
        .success {
            background: #d4edda;
            color: #155724;
            border: 1px solid #c3e6cb;
        }
        .errors {
            background: #f8d7da;
            color: #721c24;
            border: 1px solid #f5c6cb;
        }
```

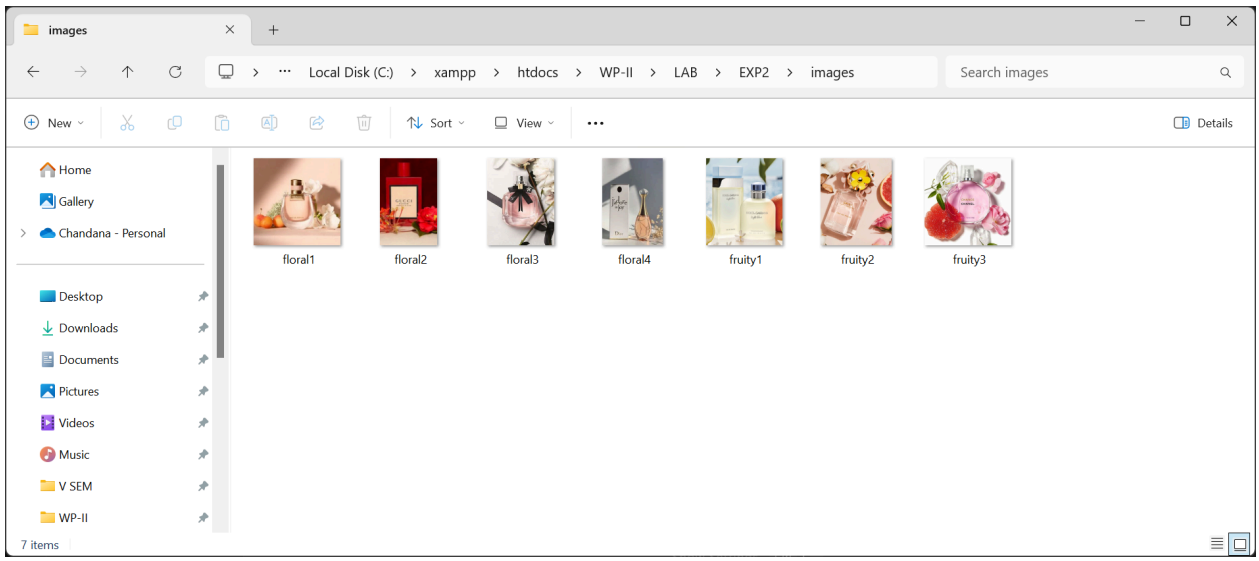
```
        .uploaded-images {
            margin-top: 20px;
            display: flex;
            flex-wrap: wrap;
        }
        .uploaded-images img {
            width: 150px;
            height: 150px;
            object-fit: cover;
            margin: 10px;
            border-radius: 8px;
            box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
            transition: transform 0.3s, box-shadow 0.3s;
        }
        .uploaded-images img:hover {
            transform: scale(1.1);
            box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);
        }
    </style>
</head>
<body>
    <div class="container">
        <h2>Perfume File and Image Upload</h2>
        <?php
        $file = fopen("perfumes.txt", 'w');
        $text = "New Arrival: Ocean Breeze by Keva Frag.\n";
        fwrite($file, $text);
        fclose($file);

        $filename = "perfumes.txt";
        $file = fopen($filename, 'r');
        $size = filesize($filename);
        $filedata = fread($file, $size);
        fclose($file);
        echo "<div class='content'><b>Recently added to our
collection:</b><br>";
        echo nl2br($filedata);
        echo "</div>";
        ?>

        <form action="" method="POST" enctype="multipart/form-data">
            <input type="file" name="images[]" multiple />
```

```
            <input type="submit"/>
        </form>

        <?php
        if (isset($_FILES['images'])) {
            $errors = array();
            $extensions = array("jpeg", "jpg", "png");

            foreach ($_FILES['images']['tmp_name'] as $key => $tmp_name) {
                $file_name = $_FILES['images']['name'][$key];
                $file_size = $_FILES['images']['size'][$key];
                $file_tmp = $_FILES['images']['tmp_name'][$key];
                $file_type = $_FILES['images']['type'][$key];
                $file_name_exploded = explode('.', $file_name);
                $file_ext = strtolower(end($file_name_exploded));

                if (in_array($file_ext, $extensions) === false) {
                    $errors[] = "Extension not allowed: $file_name";
                }

                if ($file_size > 2097152) {
                    $errors[] = "File size must be exactly 2 MB:
$file_name";
                }

                if (empty($errors) == true) {
                    if (!is_dir("images")) {
                        mkdir("images");
                    }
                    move_uploaded_file($file_tmp, "images/" . $file_name);
                }
            }

            if (!empty($errors)) {
                echo "<div class='errors'>" . implode('<br>', $errors) .
"</div>";
            } else {
                echo "<div class='success'>Success!</div>";
            }
        }

        $imageDir = "images/";
```

```
        if (is_dir($imageDir)) {
            $images = scandir($imageDir);
            echo "<div class='uploaded-images'><h3>Uploaded Images:</h3>";
            foreach ($images as $image) {
                if ($image !== "." && $image !== "..") {
                    echo "<img src='$imageDir$image' alt='Uploaded
Image'>";
                }
            }
            echo "</div>";
        }
        ?>
    </div>
</body>
</html>
```







exp2_2(2).php

```php
<?php
header("Content-Type: image/png");
$im = @imagecreate(165, 20) or die("Cannot Initialize new GD image stream.");
$background_color = imagecolorallocate($im, 0, 0, 0);
$text_color = imagecolorallocate($im, 233, 14, 91);
imagestring($im, 1, 5, 5, "Where fragrance finds its muse!", $text_color);
imagepng($im);
imagedestroy($im);
?>
```

Questions:

1. **What is the difference between array_merge and array_combine?**

Ans: array_merge combines the elements of one or more arrays together so that the values of one are appended to the end of the previous one. If the input arrays have the same string keys, then the later value for that key will overwrite the previous one. array_combine creates an array by using one array for keys and another for its values.

2. **Write a program based on functions passing reference as parameter.**

```php
<?php
function addPrefix(&$string) {
```

```
    $string = "Perfume: " . $string;
}
$name = "Rose";
addPrefix($name);
echo $name; // Outputs: Perfume: Rose
?>
```

3. **How can you display a file download dialog box using PHP?**

```
<?php
$file = 'path/to/file.pdf';
header('Content-Type: application/pdf');
header('Content-Disposition: attachment;
filename="'.basename($file).'"');
header('Content-Length: ' . filesize($file));
readfile($file);
?>
```

4. **What is the purpose of the php.ini file?**

Ans: The php.ini file is the default configuration file for running applications that require PHP. It is used to control variables such as upload sizes, file timeouts, and resource limits. The settings in this file dictate how PHP operates on the server.

Outcomes: Illustrate use of basic PHP concepts to develop applications

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Conclusion: (Conclusion to be based on the objectives and outcomes achieved)

The objectives of the experiment were achieved by successfully demonstrating the use of arrays, functions, and file handling in PHP. Through this exercise, a deeper understanding of PHP's versatility and application in web development was gained.

Grade: AA / AB / BB / BC / CC / CD /DD

Signature of faculty in-charge with date

References:

1. Instruction Link to install php GD – https://www.geeksforgeeks.org/how-to-install-php-gd-in-windows/

Books:

1. Thomson PHP and MySQL Web Development Addison-Wesley Professional , 5th Edition 2016.
2. Peter MacIntyre, Kevin Tatroe Programming PHP O'Reilly Media, Inc, 4th Edition 2020
3. Frank M. Kromann Beginning PHP and MySQL: From Novice to Professional, Apress 1st Edition, 2018