

(Applications Development and Emerging Technologies)

PRE-SUMMATIVE ASSESSMENT

4

PHP PRE DEFINED FUNCTIONS

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I. PROGRAM OUTCOME/S (PO) ADDRESSED BY THE LABORATORY EXERCISE

- Design, implement and evaluate computer-based systems or applications to meet desired needs and requirements.

II. COURSE LEARNING OUTCOME/S (CLO) ADDRESSED BY THE LABORATORY EXERCISE

- Understand and apply best practices and standards in the development of website.

III. INTENDED LEARNING OUTCOME/S (ILO) OF THE LABORATORY EXERCISE

At the end of this exercise, students must be able to:

- To know how to include separate PHP code in the main page for code enhancement.
- To be familiar with the use of common predefined function such as define, include, and require.
- To use different available mathematical function for manipulating numbers.

IV. BACKGROUND INFORMATION

PHP Predefined Functions

Using Constant

`define()` functions

used to declare constants. A constant can only be assigned a scalar value, like a string or a number. A constant's value cannot be changed.

Syntax:

```
define('NAME', 'value');
```

Example:

```
<?php
define('MAX_VALUE',10);
for($i=5;$i<MAX_VALUE;$i++){
    echo $i." ";
}
//MAX_VALUE = 20; is invalids
?>
```

Output:

5 6 7 8 9

PHP Constants

Constants are like variables except that once they are defined they cannot be changed or undefined.

A constant is an identifier (name) for a simple value. The value cannot be changed during the script.

A valid constant name starts with a letter or underscore (no \$ sign before the constant name).

Note: Unlike variables, constants are automatically global across the entire script.

Create a PHP Constant

To create a constant, use the `define()` function.

Syntax

```
define(name, value, case-insensitive)
```

Parameters:

- *name*: Specifies the name of the constant
- *value*: Specifies the value of the constant
- *case-insensitive*: Specifies whether the constant name should be case-insensitive. Default is false

Example

Create a constant with a **case-sensitive** name:

```
<?php  
define("GREETING", "Welcome to PHP Programming!");  
echo GREETING;  
?>
```

PHP Include Files

The `include` (or `require`) statement takes all the text/code/markup that exists in the specified file and copies it into the file that uses the include statement.

Including files is very useful when you want to include the same PHP, HTML, or text on multiple pages of a website.

PHP include and require Statements

It is possible to insert the content of one PHP file into another PHP file (before the server executes it), with the include or require statement.

The include and require statements are identical, except upon failure:

- `require` will produce a fatal error (E_COMPILE_ERROR) and stop the script
- `include` will only produce a warning (E_WARNING) and the script will continue

So, if you want the execution to go on and show users the output, even if the include file is missing, use the include statement. Otherwise, in case of Framework, CMS, or a complex PHP application coding, always use the require statement to include a key file to the flow of execution. This will help avoid compromising your application's security and integrity, just in-case one key file is accidentally missing.

Including files saves a lot of work. This means that you can create a standard header, footer, or menu file for all your web pages. Then, when the header needs to be updated, you can only update the header include file.

Syntax

```
include 'filename';
```

or

```
require 'filename';
```

PHP include Examples

Example 1

Assume we have a standard footer file called "footer.php", that looks like this:

```
<?php
echo "<p>Copyright &copy; 1999-" . date("Y") . " W3Schools.com</p>";
?>
```

To include the footer file in a page, use the `include` statement:

Example

```
<html>
<body>

<h1>Welcome to my home page!</h1>
<p>Some text.</p>
<p>Some more text.</p>
<?php include 'footer.php';?>

</body>
</html>
```

Example 2

Assume we have a standard menu file called "menu.php":

```
<?php
echo '<a href="/default.asp">Home</a> -
<a href="/html/default.asp">HTML Tutorial</a> -
<a href="/css/default.asp">CSS Tutorial</a> -
<a href="/js/default.asp">JavaScript Tutorial</a> -
<a href="default.asp">PHP Tutorial</a>';
?>
```

All pages in the Web site should use this menu file. Here is how it can be done (we are using a <div> element so that the menu easily can be styled with CSS later):

Example

```
<html>
<body>

<div class="menu">
<?php include 'menu.php';?>
</div>

<h1>Welcome to my home page!</h1>
<p>Some text.</p>
<p>Some more text.</p>
```

```
</body>
</html>
```

Example 3

Assume we have a file called "vars.php", with some variables defined:

```
<?php
$color='red';
$car='BMW';
?>
```

Then, if we include the "vars.php" file, the variables can be used in the calling file:

Example

```
<html>
<body>

<h1>Welcome to my home page!</h1>
<?php include 'vars.php';
echo "I have a $color $car.";
?>

</body>
</html>
```

PHP include vs. require

The `require` statement is also used to include a file into the PHP code.

However, there is one big difference between include and require; when a file is included with the `include` statement and PHP cannot find it, the script will continue to execute:

Example

```
<html>
<body>

<h1>Welcome to my home page!</h1>
```

```
<?php include 'noFileExists.php';  
echo "I have a $color $car."  
?>
```

```
</body>  
</html>
```

If we do the same example using the `require` statement, the `echo` statement will not be executed because the script execution dies after the `require` statement returned a fatal error:

Example

```
<html>  
<body>  
  
<h1>Welcome to my home page!</h1>  
<?php require 'noFileExists.php';  
echo "I have a $color $car."  
?>
```

```
</body>  
</html>
```

PHP String Functions

In this chapter we will look at some commonly used functions to manipulate strings.

strlen() - Return the Length of a String

The PHP `strlen()` function returns the length of a string.

Example

Return the length of the string "Hello world!":

```
<?php  
echo strlen("Hello world!"); // outputs 12  
?>
```

str_word_count() - Count Words in a String

The PHP `str_word_count()` function counts the number of words in a string.

Example

Count the number of word in the string "Hello world!":

```
<?php
echo str_word_count("Hello world!"); // outputs 2
?>
```

strrev() - Reverse a String

The PHP `strrev()` function reverses a string.

Example

Reverse the string "Hello world!":

```
<?php
echo strrev("Hello world!"); // outputs !dlrow olleH
?>
```

strpos() - Search For a Text Within a String

The PHP `strpos()` function searches for a specific text within a string. If a match is found, the function returns the character position of the first match. If no match is found, it will return FALSE.

Example

Search for the text "world" in the string "Hello world!":

```
<?php
echo strpos("Hello world!", "world"); // outputs 6
?>
```


Tip: The first character position in a string is 0 (not 1).

str_replace() - Replace Text Within a String

The PHP `str_replace()` function replaces some characters with some other characters in a string.

Example

Replace the text "world" with "Dolly":

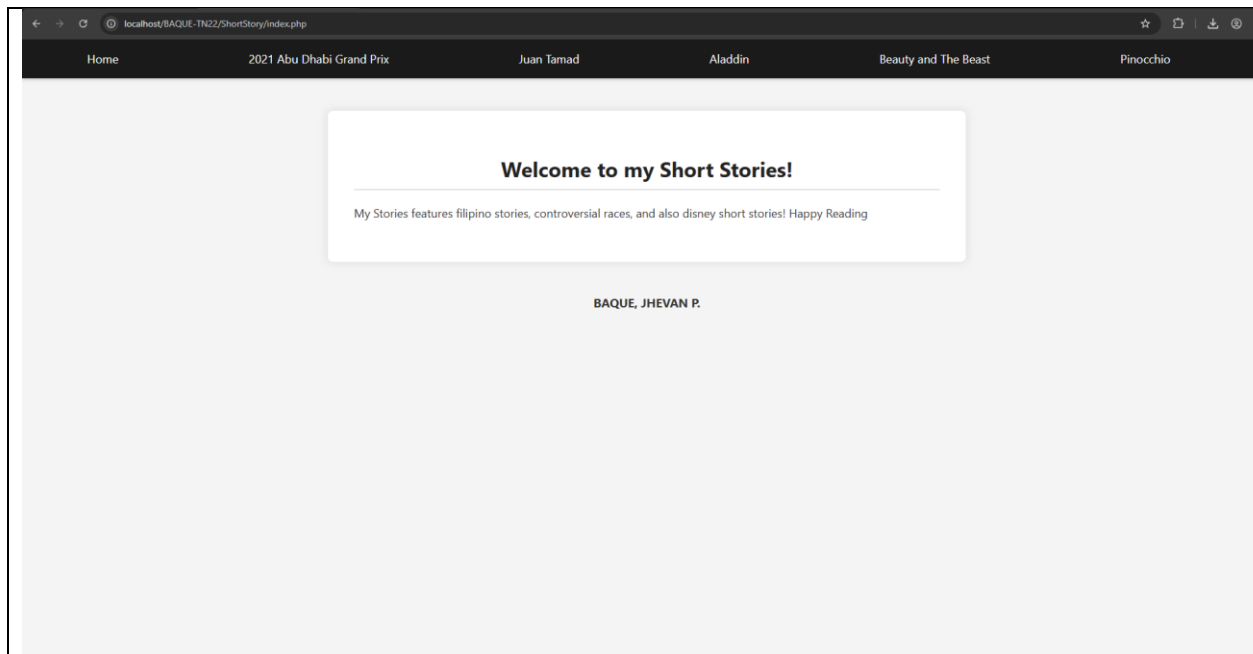
```
<?php
echo str_replace("world", "Dolly", "Hello world!"); // outputs Hello
Dolly!
?>
```

V. GRADING SYSTEM / RUBRIC (please see separate sheet)

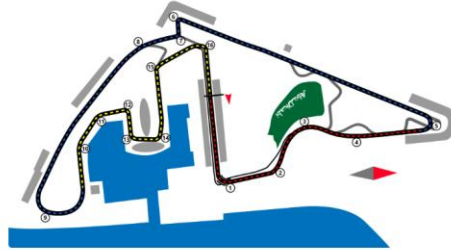
VI. LABORATORY ACTIVITY

1. Create 5 different short story webpages and Convert your stories into a web based form, use `include()` and `require()` functions to connect all pages integrate with HTML and CSS (Put images on the stories). See the format below:

Story 1	Story 2	Story 3	Story 4	Story 5
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2021 Abu Dhabi Grand Prix



The 2021 Abu Dhabi Grand Prix (officially known as the Formula 1 Etihad Airways Abu Dhabi Grand Prix 2021) was a Formula One motor race held on 12 December 2021 at the Yas Marina Circuit in Abu Dhabi, United Arab Emirates. Contested over a distance of 58 laps, the race was the twenty-second and final round of the 2021 Formula One World Championship. The race decided both the Drivers' and Constructors' championships; Max Verstappen and Lewis Hamilton both had 369.5 points coming into the race.

Hamilton led most of the race and appeared on course to win the race. Verstappen overtook Hamilton on the final lap after a controversial safety car restart in the last moments of the race. The controversy stemmed from race director Michael Masi's decision to allow only a partial number of lapped cars to un-lap themselves before the restart, a move that was seen as inconsistent with usual race procedures and sparked debate over whether it was done to influence the outcome of the championship.

The FIA conducted an inquiry into the race, confirming Verstappen as the winner and validating the championship results. The report concluded that race director Michael Masi acted in good faith, though differing interpretations of the rules contributed to confusion, particularly regarding the safety car unlapping procedure. The inquiry also led to Masi's removal as race director and prompted recommendations to clarify safety car regulations and limit team-radio communications with race control. Controversy stemming from Masi's actions significantly contributed to the direction of reforms aimed at restructuring and modernising race operations by Mohammed Ben Sulayem during his tenure as FIA President.

Verstappen's win secured his first Formula One World Drivers' Championship of his career by eight points from Hamilton, and Red Bull Racing's first since 2013. Mercedes won their eighth consecutive Formula One World Constructors' Championship, setting a new record. The Grand Prix was also the final race for 2007 World Champion Kimi Räikkönen; the 42-year-old Finn retired from Formula One after a two-decade career spanning (a then record setting) 349 Grand Prix starts.

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Juan Tamad



Si Juan Tamad, isang batang lalaki na ubod ng tamad, ay nakahiga lamang sa ilalim ng puno, pinapanuod ang mga kalaro niyang masiglang nagtatakbuhan. Siya ay kilala sa buong bayan hindi lamang sa kanyang katamaran kundi pati na rin sa kanyang kakayahang makalusot sa anumang gulo. "Bakit pa ako maglalaro kung puwede naman akong magpahinga?", bulong niya sa sarili habang nakapikit ang mga mata.

Si Aling Nena, na kilala sa kanilang lugar bilang isang matalinong matanda, ay napadaan at napansin si Juan Tamad. "Juan, hindi ka ba nag-iisip na sayang ang araw na ito sa kakahiga mo lamang?" tanong niya sabay ngiti. Nagmulat ng mata si Juan at bumaling sa kanya. "Ay, Aling Nena, mas gusto ko pong magpahinga," sagot niya, malinaw na walang balak bumangon.

Aling Nena ay umupo sa tabi ni Juan at nagkwento ng isang alamat tungkol sa isang mahiwagang puno na nagbibigay ng kasaganaan sa sinumang nagtatrabaho ng masipag. "Ang puno ay nagbibigay ng bunga na hindi nauubos kung ito'y aalagaan ng maayos," paliwanag ni Aling Nena. Naisip ni Juan ang posibilidad ng hindi na kailangang magtatrabaho kung ang puno ay nagbibigay sa kanya ng lahat ng kailangan niya.

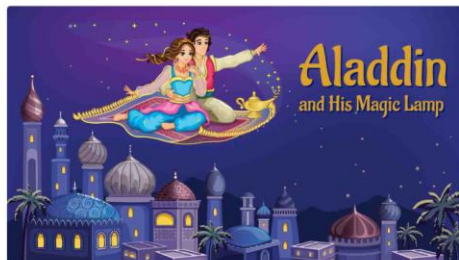
Nahimok sa alamat, si Juan Tamad ay nagpasya na subukan ang kwento ni Aling Nena. "Kung totoo ang iyong sinasabi, subukan ko nga. Baka sakaling hindi na ako kailangang magtatrabaho pa," sabi niya bago siya bumangon mula sa kanyang kinahihigaan.

Unti-unti, natutunan ni Juan ang halaga ng sipag at tiyaga. Napansin niya na ang bunga ng puno ay mas marami at mas matamis. Sa kanyang pagod na katawan, may kakaibang saya siyang nararamdaman. "Ngayon ko lang nararamdaman ang ganitong klaseng kasiyahan," bulong niya habang tinitignan ang mga nag-gagandahang bunga.

Si Juan Tamad ay hindi na kilala bilang tamad kundi bilang isang batang masipag at puno ng sigla. Siya ay naging inspirasyon sa ibang mga bata sa kanilang bayan. Aling Nena ay nasa gilid, ngumingiti habang pinapanuod ang pagbabago ni Juan. "Minsan, kailangan lang ng kaunting tulak para makita ang ganda ng pagsisikap," sabi niya sa sarili.

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Aladdin and the Magic Lamp



Once upon a time, in a busy city in Arabia, there lived a kind and curious boy named Aladdin. He was poor and lived in a small house with his mother. Even though they didn't have much, Aladdin always dreamed of a better life.

One day, while Aladdin was playing in the market, a strange man came up to him. "I'm your uncle," the man said, smiling. But he was lying. He was actually a mean sorcerer looking for something special. The man told Aladdin about a secret treasure hidden in a cave and asked him for help. Aladdin was excited and agreed to go. They traveled far into the mountains, where the man moved a huge rock and opened the cave. "Go inside and bring me the old lamp," the man said. "But don't touch anything else."

Inside the cave, Aladdin saw piles of gold, shiny jewels, and treasures everywhere! But he remembered the warning and walked past it all until he found the dusty, plain lamp sitting on a small table. He grabbed the lamp and came back to the entrance, but the sorcerer wanted the lamp before helping Aladdin out. Aladdin refused. Angry, the sorcerer trapped Aladdin inside the cave and ran away. Aladdin sat in the dark and felt scared. He rubbed the lamp to clean it—and POOF! A giant cloud of smoke appeared. A magical genie popped out! "I am the Genie of the Lamp," he said. "You set me free, so I will give you three wishes." Aladdin's eyes lit up. "I wish to go home!" he said. In a flash, he was back in his house.

Aladdin told his mother everything. They used the genie's help to live more comfortably. For his second wish, Aladdin asked to become a prince—because he had seen the beautiful Princess Jasmine and wanted to marry her. Dressed in shining clothes and riding a fancy horse, Aladdin visited the palace. The Sultan liked him and agreed that Jasmine and Aladdin could marry. Jasmine liked that Aladdin was kind and brave—not just rich. But the sorcerer wasn't done. He found out Aladdin had the magic lamp. He disguised himself as a peddler and tricked Princess Jasmine into trading the lamp for a shiny new one. She didn't know it was magical! Now holding the lamp, the sorcerer told the genie to take the palace, Jasmine, and all the treasure to a faraway desert. When Aladdin came home and saw the palace gone, he was heartbroken—but not for long. He set off on a journey and used his clever mind to find the sorcerer.

With courage and smarts, Aladdin got the lamp back. He rubbed it and made his third and final wish: "Please bring my palace and Jasmine home, just as they were." The genie nodded and granted the wish. The palace returned, and Aladdin and Jasmine were safe again. Aladdin looked at the genie and smiled. "You're free now," he said. The genie was so happy. "Thank you, Aladdin!" he said before flying off into the sky. Soon after, Aladdin and Jasmine were married in a big, joyful celebration. They ruled the kingdom with kindness and fairness, and Aladdin never forgot what he learned: being honest and brave is the greatest treasure of all.

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Beauty and the Beast



This is the Beauty and the Beast short story. In a far away land, lived a merchant and his beautiful daughter named Beauty. One day, the merchant got lost in the woods and reached a castle. He went inside and seeing nobody inside, decided to spend the night there. More about Beauty and the Beast.

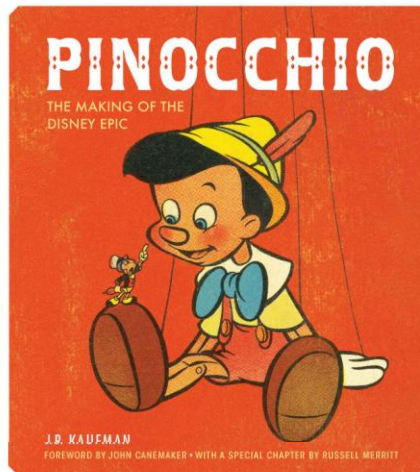
Next morning, when the merchant was leaving he saw beautiful roses in the garden. He thought of Beauty and plucked one. Suddenly, a horrible beast came behind him and screamed at him for stealing from his garden. The merchant was scared and explained he plucked the rose for his daughter Beauty. The beast said he would let him go if he promised to send Beauty to stay with him. The merchant fearfully agreed. Also, read Rapunzel Story.

At home, he sorrowfully told Beauty the whole story. Beauty put her father's worries to rest and went to the castle. Initially, she was scared of the beast but in a few days she realized that the beast was kind and gentle. One day in the magic mirror gifted by the beast, beauty saw that her father was ill. Unable to see her sadness, the beast let her go home. Beauty was glad to be home again. Under Beauty's care, her father quickly recovered.

One day, she thought of the beast and saw into the magic mirror. She saw that the beast too was ill. She went to the castle to meet him. Beauty saw the beast moaning in pain and dying, he was very glad to see her. She held him and sobbed and told him that she loved him and kissed him softly. At that very instant, the beast changed into a handsome prince. Beauty was surprised, the prince explained that her sweet words had broken the spell that was cast on him by a witch. They soon got married and lived happily ever after. Also, read The Sleeping Beauty.

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Pinocchio



Once upon a time, there was an old carpenter named Gepetto. He was lonely and wanted someone to keep him company, so he carved a puppet in the shape of a boy and named it Pinocchio.

Gepetto loved Pinocchio dearly, but the puppet was quite naughty and rarely spoke the truth. Whenever he lied, his wooden nose would grow long! Pinocchio always promised to be a good boy from the next time, but he soon forgot his word and left school to join a circus with his friends.

One day, Pinocchio heard that his father had been swallowed up by a huge whale. He immediately went to find the whale and was swallowed up as well. Inside the whale's belly, Pinocchio and Gepetto were so happy to see each other. They made a plan to get out and began tickling the whale's stomach. As soon as the whale opened his mouth and sneezed, Pinocchio and Gepetto slipped out.

They reached home safely, and the fairy was pleased with Pinocchio's bravery. She turned him into a real flesh and blood boy. From that day on, Pinocchio was a very good boy and never missed school. The father and son lived happily ever after.

But remember, if Pinocchio ever lied again, his nose would grow long once more! This story teaches us the importance of honesty, bravery, and family. Always try to be truthful and have the courage to face challenges. And most importantly, cherish the people you love and make them feel valued.

BAQUE, JHEVAN P.

2. Creation of String Function in PHP, create an array with 20 different names and get the following:

- Number of characters of each name include spaces
- Change the first character of each name into upper case
- Replace all vowels with @ symbol
- Check the position of letter a
- Change the name into reverse formate

Please see the sample below

List of names					
Name	Number of characters	Uppercase first character	Replace vowels with @	Check position of character "a"	Reverse name
chrisa	6	Chrisa	chr@s@	5	asirhc

List of names					
Name	Number of characters	Uppercase first character	Replace vowels with @	Check position of character "a"	Reverse name
chrisa	6	Chrisa	chr@s@	6	asirhc
jhevan	6	Jhevan	jh@v@n	5	navehj
chezka	6	Chezka	ch@zk@	6	akzehc
kinzlee	7	Kinzlee	k@nzl@@	0	eeiznk
raizelle	8	Raizelle	r@z@l@l@	2	elleziar
andrei	6	Andrei	@ndr@@	1	ierdna
kyle	5	Kyle	kyl@	0	elyk
ethan	5	Ethan	@th@n	4	nahte
Jose	4	Jose	J@v@	0	esoJ
maria	5	Maria	m@r@@	2	airam
juan	4	Juan	j@n@	3	nauj
pedro	5	Pedro	p@dr@	0	ordep
antonio	7	Antonio	@nt@n@@	1	oinotna
james	5	James	j@m@s	2	semaj
marilyn	7	Marilyn	m@r@lyn	2	nyliram
mark	4	Mark	m@rk	2	kram
luna	4	Luna	l@n@	4	anul
amateo	6	Amateo	@m@t@@	1	oetama
noah	4	Noah	n@@h	3	haon
lucas	5	Lucas	l@c@s	4	sacul

Snip and paste your source codes here. Snip it directly from the IDE so that colors of the codes are preserved for readability. Include additional pages if necessary.

Source Code:

```

<?php
$names = [
    "chrisa", "jhevan", "chezka", "kinzlee", "raizelle",
    "andrei", "kyle ", "ethan", "Jose", "maria",
    "juan", "pedro", "antonio", "james", "marilyn",
    "mark", "luna", "amateo", "noah", "lucas"
];

```



```

echo '<style>
.table-container {
    width: 99vw;
    height: 90vh;
    display: flex;
    align-items: stretch;
    justify-content: center;
}

table {
    width: 100%;
    height: 100%;
    border-collapse: collapse;
    table-layout: fixed;
}

th, td {
    border: 1px solid #000;
    padding: 8px;
    text-align: left;
    word-break: break-word;
}

</style>';

echo '<div class="table-container">';
echo '<table border="1" cellpadding="10" cellspacing="0">';
echo '<tr><th colspan="6">List of names</th></tr>';
echo '<tr>
    <th>Name</th>
    <th>Number of characters</th>
    <th>Uppercase first character</th>
    <th>Replace vowels with @</th>
    <th>Check position of character "a"</th>
    <th>Reverse name</th>
</tr>';

foreach ($names as $name) {
    $num_chars = strlen($name);

    $upperCaseFirst = ucfirst($name);

    $replace_vowels = preg_replace('/[aeiou]/i', '@', $name);

```

```

$pos_a = strpos($name, 'a');
$pos_a_display = $pos_a !== false ? $pos_a + 1 : '0';

$reverse = strrev($name);

echo "<tr>
    <td>$name</td>
    <td>$num_chars</td>
    <td>$upperCaseFirst</td>
    <td>$replace_vowels</td>
    <td>$pos_a_display</td>
    <td>$reverse</td>
</tr>";
}
echo '</table>';
echo '</div>';
?>

```

VII. QUESTION AND ANSWER

1. What is Constant in PHP
 - A constant is a identifier (name) for a simple value. And it cannot be changed during script execution.
2. What is the difference between include and require? Explain
 - Include gives a warning and continue while require on the other hands just hands out error and stops running. Require should be used if the program requires that file to run. While include is more like optional.
3. What are the different string functions? Explain each

Functions	Explanation
strlen(\$str)	Returns the length of the string.
strtoupper(\$str)	Change all characters to uppercase.
strtolower(\$str)	Change all characters to lowercase.
ucfirst(\$str)	Capitalizes the first character.
ucwords(\$str)	Capitalizes the first character of each word.
strrev(\$str)	Reverse the entire string.
strpos(\$str, \$sub)	Looks for the position of the first occurrence of a substring. Returns the index if found, and False if not.
str_replace(\$search, \$replace, \$str)	Replaces all occurrences of one string with another.
trim(\$str)	Removes whitespace from both sides.
substr(\$str,\$start, \$length)	Returns part of a string.

VIII. REFERENCES

1. <https://www.w3schools.com/css/>
2. <https://www.w3schools.com/html/>
3. https://www.w3schools.com/php/php_variables.asp
4. https://www.w3schools.com/php/php_constants.asp
5. https://www.w3schools.com/php/php_includes.asp
6. https://www.w3schools.com/php/php_string.asp

Note: The following rubrics/metrics will be used to grade students' output.

Program (100 pts.)	(Excellent)	(Good)	(Fair)	(Poor)
Program execution (20pts)	Program executes correctly with no syntax or runtime errors (18-20pts)	Program executes with less than 3 errors (15-17pts)	Program executes with more than 3 errors (12-14pts)	Program does not execute (10-11pts)
Correct output (20pts)	Program displays correct output with no errors (18-20pts)	Output has minor errors (15-17pts)	Output has multiple errors (12-14pts)	Output is incorrect (10-11pts)
Design of output (10pts)	Program displays more than expected (10pts)	Program displays minimally expected output (8-9pts)	Program does not display the required output (6-7pts)	Output is poorly designed (5pts)
Design of logic (20pts)	Program is logically well designed (18-20pts)	Program has slight logic errors that do no significantly affect the results (15-17pts)	Program has significant logic errors (3-5pts)	Program is incorrect (10-11pts)
Standards (20pts)	Program code is stylistically well designed (18-20pts)	Few inappropriate design choices (i.e. poor variable names, improper indentation) (15-17pts)	Several inappropriate design choices (i.e. poor variable names, improper indentation) (12-14pts)	Program is poorly written (10-11pts)
Delivery (10pts)	The program was delivered on time. (10pts)	The program was delivered a day after the deadline. (8-9pts)	The program was delivered two days after the deadline. (6-7pts)	The program was delivered more than two days after the deadline. (5pts)