Lecture 5.3
Regular Expressions
Sever Side Form Validation Using PHP

Course Instructor

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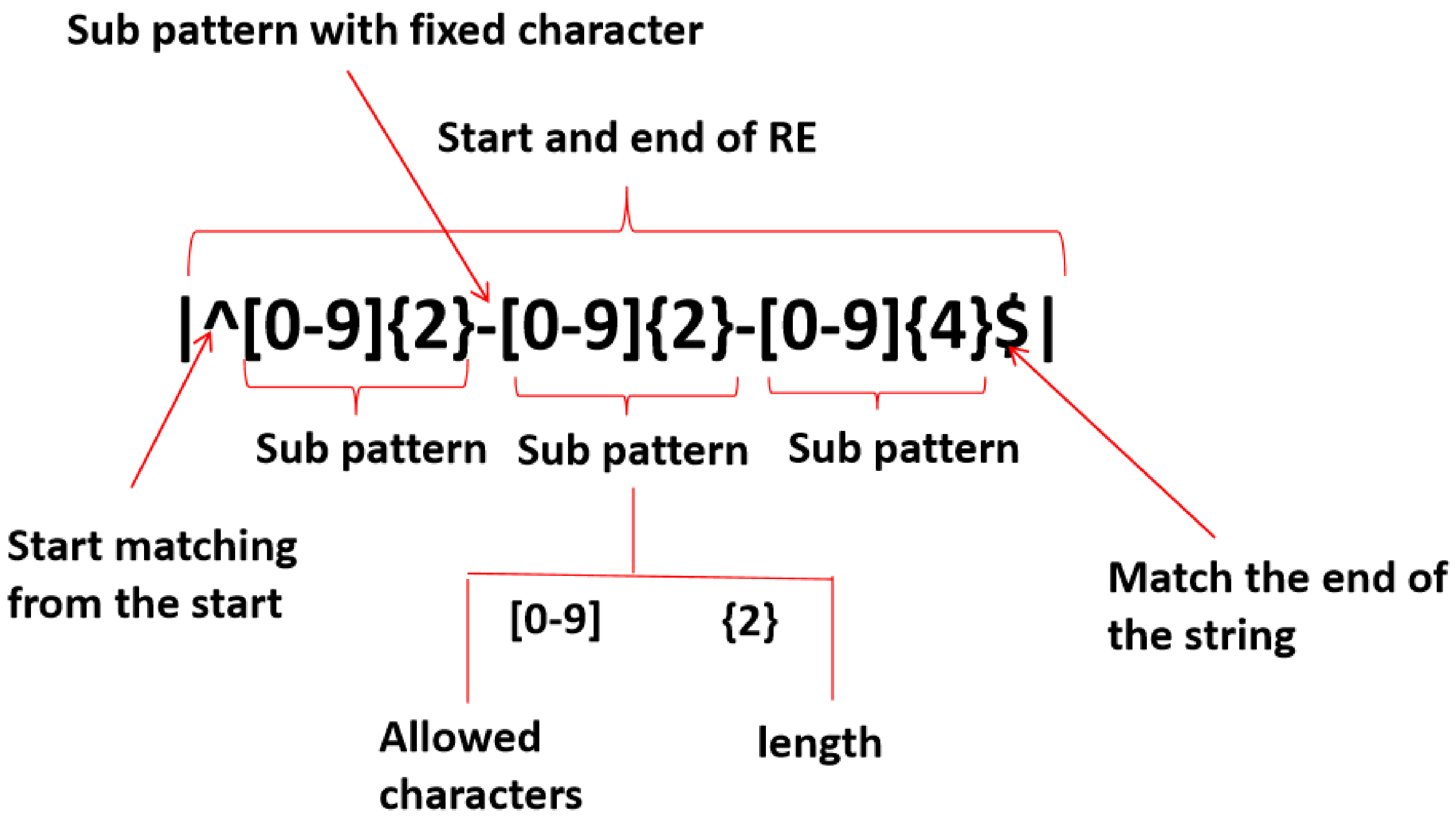
Regular expressions in PHP

- A regular expression is a concise notation to describe patterns in strings.
- Regular expressions provide the foundation for describing or matching data according to defined syntax rules.
- A regular expression is nothing more than a pattern of characters, matched against a certain parcel of text.
- Example: |^[0-9]{2}-[0-9]{2}-[0-9]{4}$|

Regular expressions in PHP



Regular expressions in PHP

- Start and end of the RE:
  - optional, | |
- Sub-patterns:
  - range of allowed characters
  - Allowed length
- For exact match we should use both ^ and $

Notation for RE

- ^: match strings that start with the given pattern, For example: ^a matches any string with a at the beginning of it
- $: match strings that end with the given pattern, a$ matches any string with a at the end of it.
- [ ]: makes a class of characters, [0-9] matches any decimal digit from 0 through 9.
- [^]: negates the class of character, [^a-zA-Z] matches any string not containing any of the characters ranging from a through z and A through Z

Notation for RE

- Quantifiers:
- a{2} matches any string containing a sequence of two a’s.
- a{2,3} matches any string containing a sequence of two or three a’s.
- a{2,} matches any string containing a sequence of at least two a’s.

Notation for RE

- ?: a? matches any string containing zero or one a.
- +: a+ matches any string containing at least one a.
- *: a* matches any string containing zero or more a’s.
- Consider the following examples:
  - ^.{2}$

Notation for RE

  - <b>(.*)</b> matches any string enclosed within <b> and </b>.
  - p(hp)* matches any string containing a p followed by zero or more instances of the sequence hp.
- If we want to search for special characters like $, the character must be escaped with a backslash (\).
- ([\$])([0-9]+); that is, a dollar sign followed by one or more integers.
- Potential matches of this regular expression could be?

Notation for RE

- Predefined character ranges:
- \d:means exactly as [0-9]
- \D: means exactly as [^0-9]
- \w: means exactly as [a-zA-Z0-9]

Notation for RE

- RE examples:
- Validating date:
  - |^\d{2}-\d{2}-\d{4}$|
- Validating CNIC:
  - |^\d{5}-\d{7}-\d{1}$|
- Validating Email:
  - |^[a-zA-Z0-9_.]+@[a-z]{3,5}.[a-z]{2,3}$|

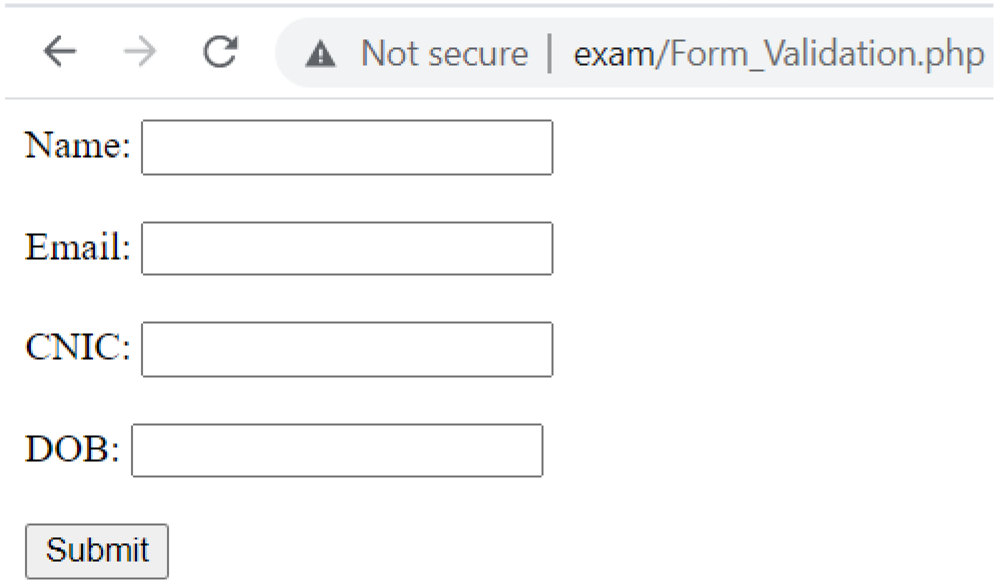
Notation for RE

- Validating name:
  - |^[a-zA-Z]{5,25}$|
- Validating Password:
  - must contain '@'
  - |@|

Validating user’s input

- preg_match():
  - searches a string for a specific pattern
  - returns TRUE if it exists and FALSE otherwise
  - preg_match(“pattern”,$string);

Validating user's input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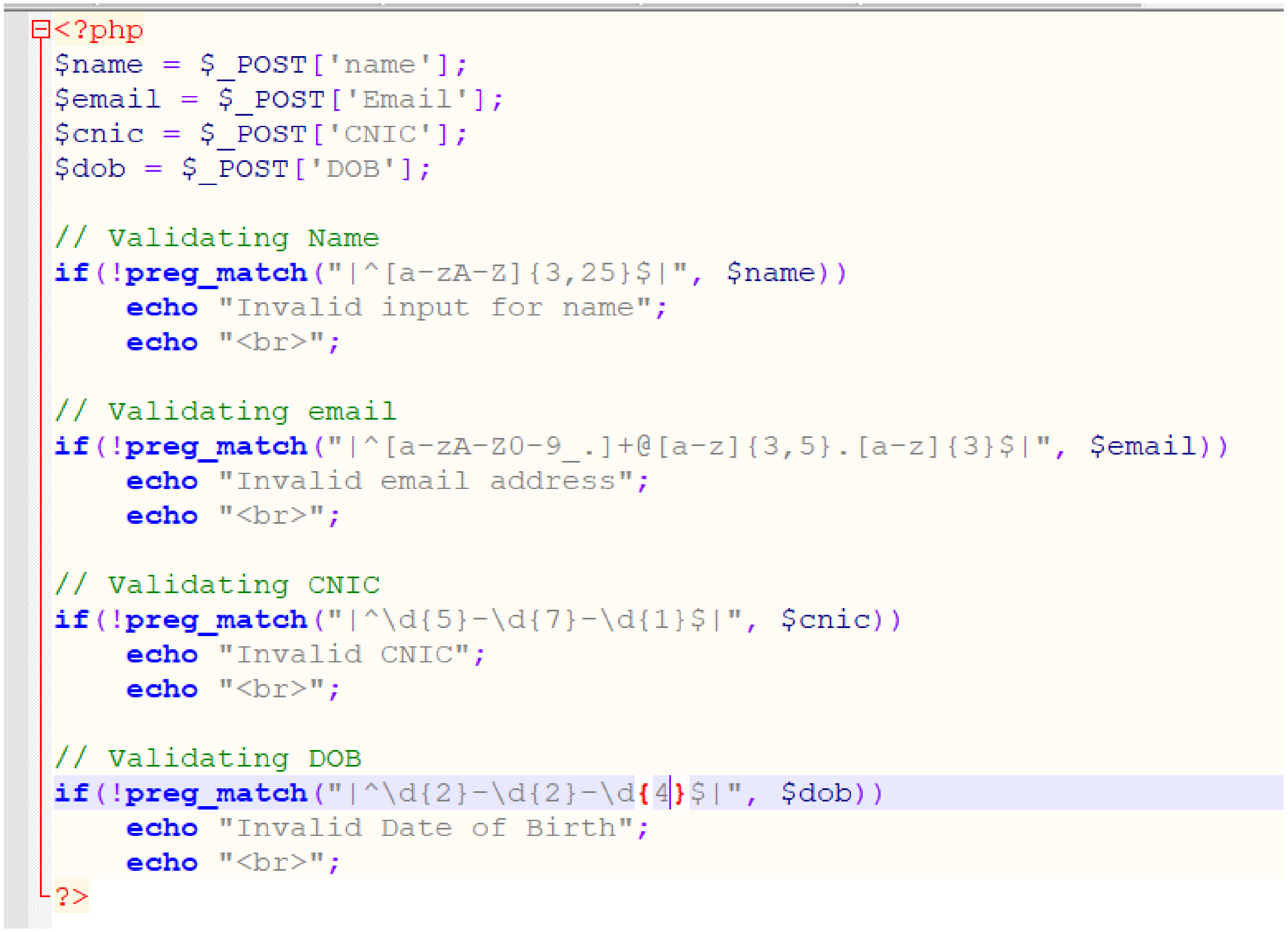
Name:	
Email:	
CNIC:	
DOB:	

Validating user’s input

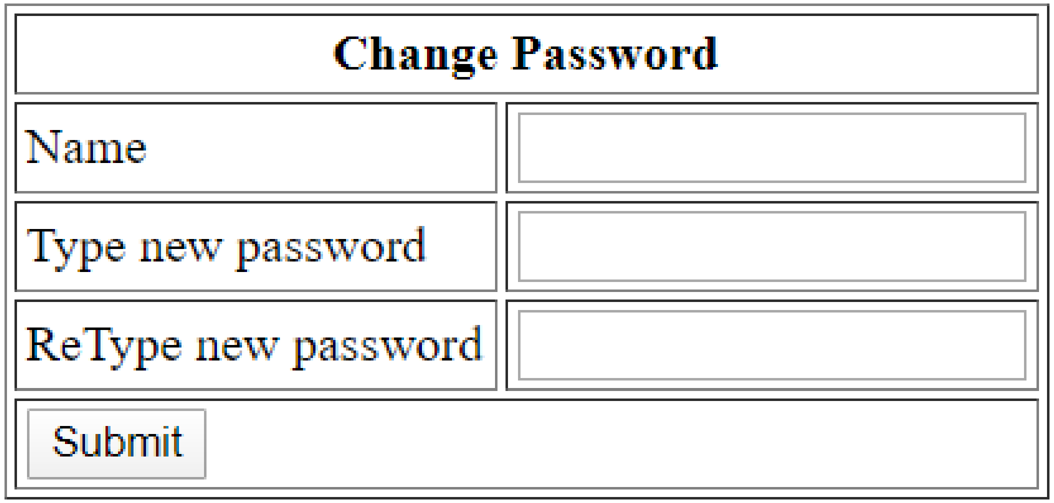


```php
<?php
$name = $_POST['name'];
$email = $_POST['Email'];
$cnic = $_POST['CNIC'];
$dob = $_POST['DOB'];

// Validating Name
if(!preg_match("|^[a-zA-Z]{3,25}$|", $name))
    echo "Invalid input for name";
    echo "<br>";

// Validating email
if(!preg_match("|^[a-zA-Z0-9_.]+@[a-z]{3,5}.[a-z]{3}$|", $email))
    echo "Invalid email address";
    echo "<br>";

// Validating CNIC
if(!preg_match("|^\d{5}-\d{7}-\d{1}$|", $cnic))
    echo "Invalid CNIC";
    echo "<br>";

// Validating DOB
if(!preg_match("|^\d{2}-\d{2}-\d{4}$|", $dob))
    echo "Invalid Date of Birth";
    echo "<br>";
?>
```

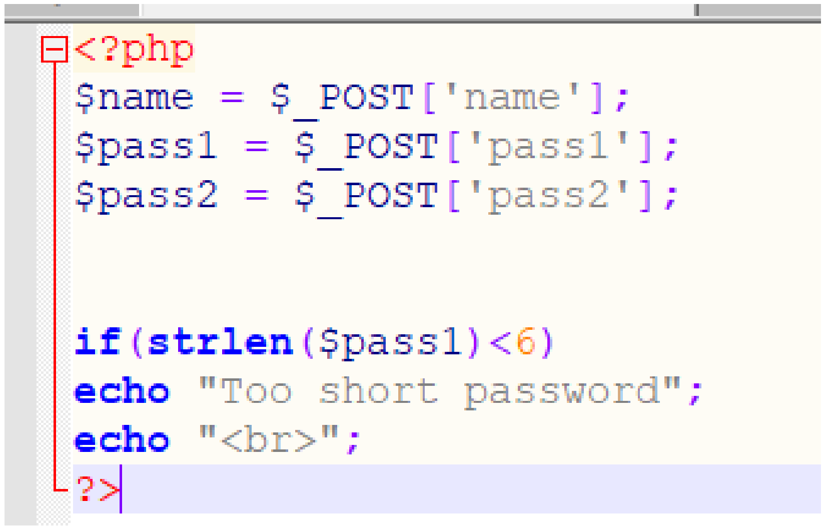
String functions in PHP

- strlen():
  - Returns the length of the string
  - strlen($string);
- strcmp():
  - Compares two strings
  - Returns 0 if strings are equal, 1 if first string is greater and -1 if second is greater
  - strcmp($string1,$string2);
- Strcasecmp():
  - Compares two strings in case insensitive manner
  - strcasecmp($string1,$string2);

String functions in PHP

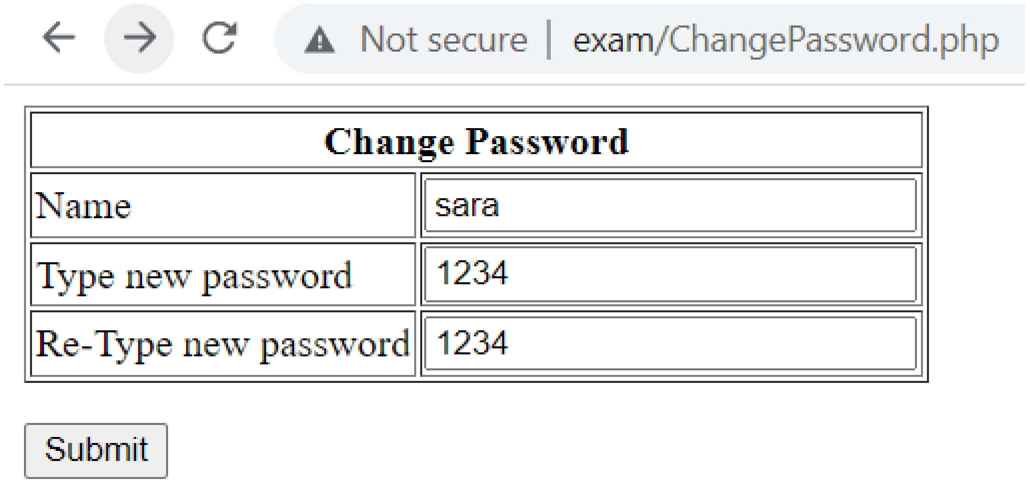


Change Password	
Name	
Type new password	
ReType new password	
Submit	



```
<?php
$name = $_POST['name'];
$pass1 = $_POST['pass1'];
$pass2 = $_POST['pass2'];


if(strlen($pass1)<6)
echo "Too short password";
echo "<br>";
?>
```

String functions in PHP



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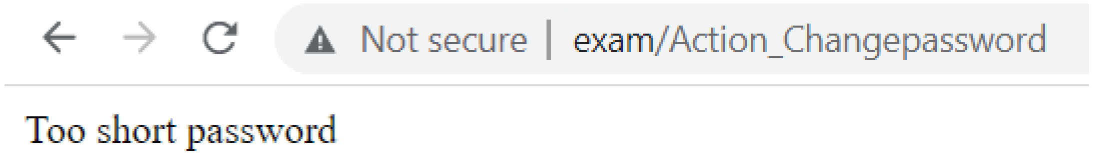
Change Password	
Name	sara
Type new password	1234
Re-Type new password	1234



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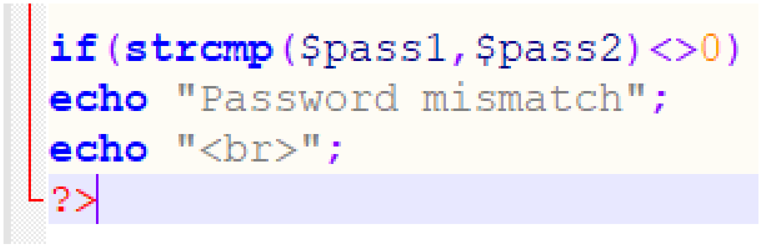
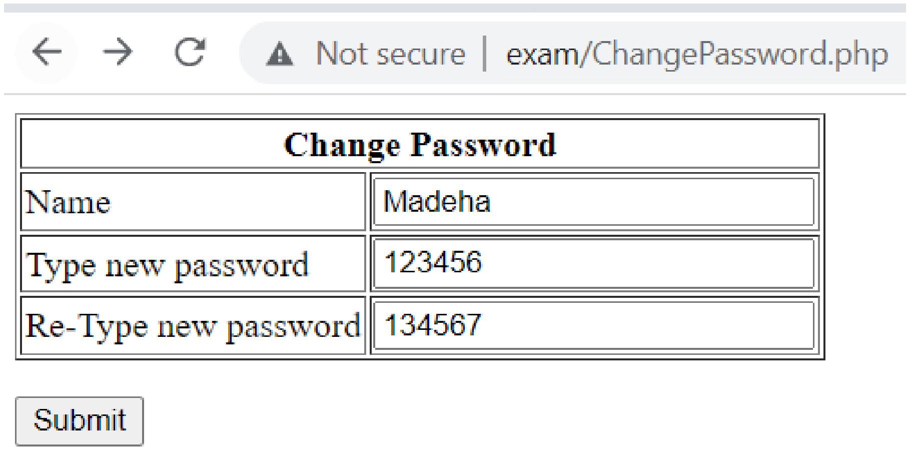
Too short password

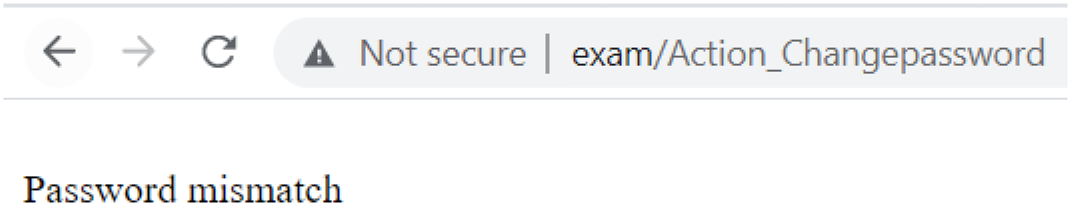
String functions in PHP



```php
if(strcmp($pass1,$pass2)<>0)
echo "Password mismatch";
echo "<br>";
?>
```



Change Password	
Name	Madeha
Type new password	123456
Re-Type new password	134567



```
Password mismatch
```

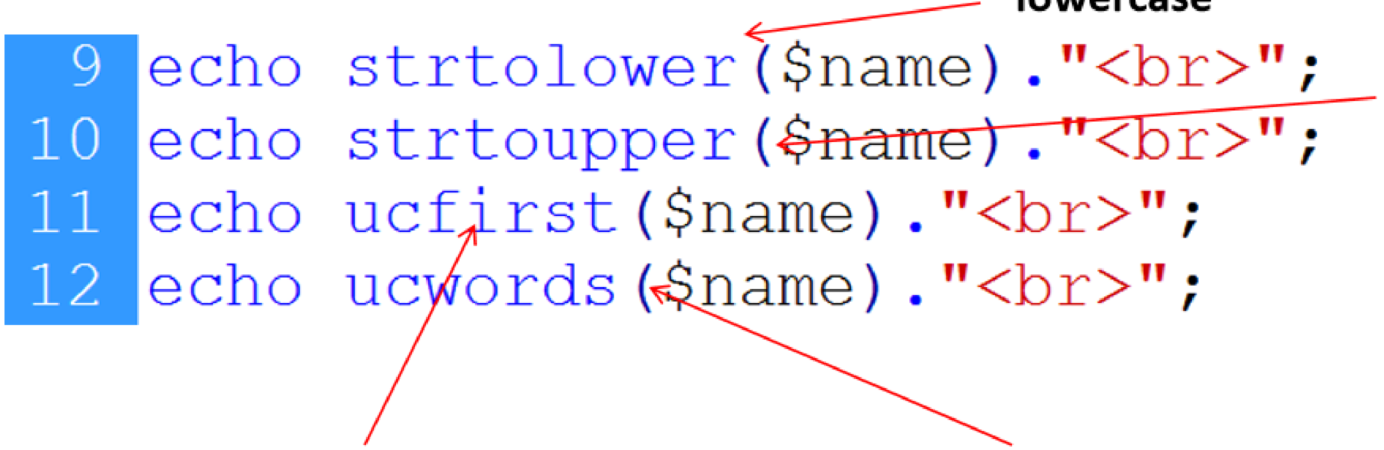
String functions in PHP

- strtolower(): – Convert a string to lower case – strtolower($string);
- strtoupper(): – Convert a string to upper case – strtoupper($string);
- ucfirst(): – Convert the first character of a string to upper case – ucfirst($string);
- ucwords(): – Convert the first character of each word in a string to upper case – ucwords($string);

String functions in PHP

Converts name to lowercase

Converts name to uppercase



```
echo strtolower($name)."<br>";
echo strtoupper($name)."<br>";
echo ucfirst($name)."<br>";
echo ucwords($name)."<br>";
```

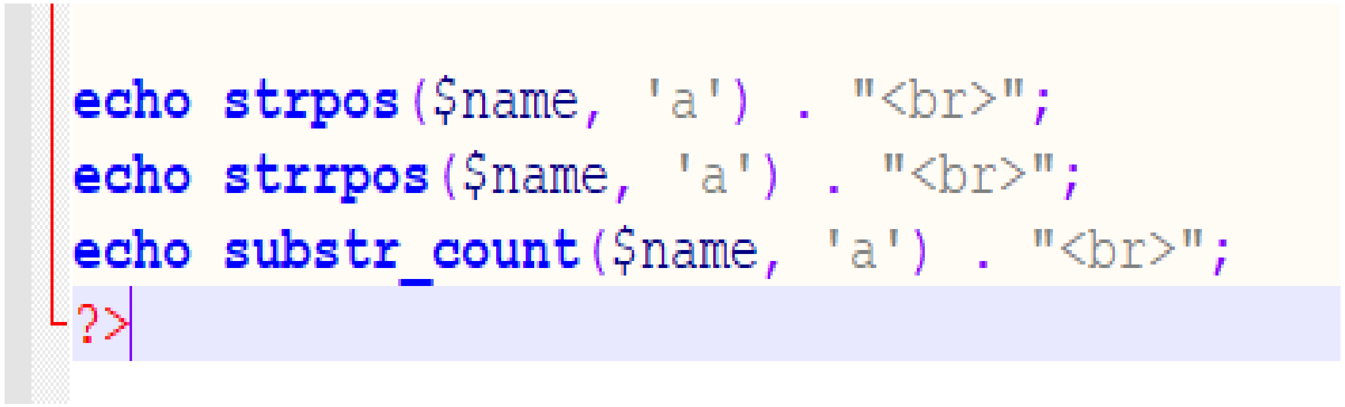
Using ucfirst()

Using ucwords()

String functions in PHP

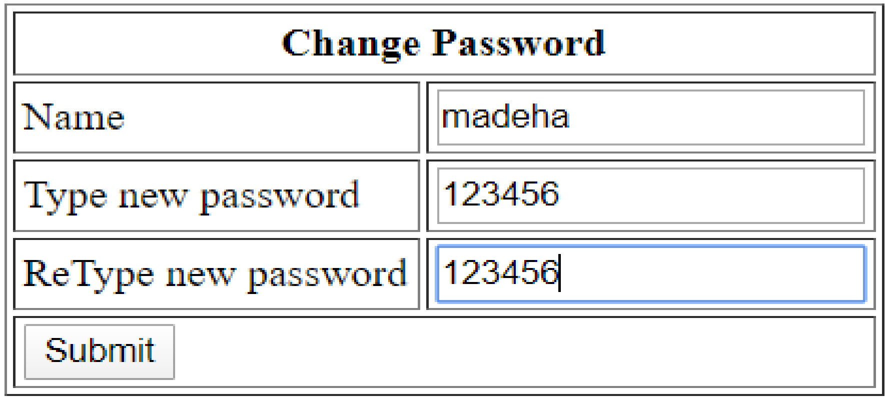
- strpos(): – finds the position of the first case-sensitive occurrence of a substring in a string – strpos($string,sub-string);
- strrpos(): – finds the position of the last case-sensitive occurrence of a substring in a string – strrpos($string,sub-string);
- substr_count(): – returns the number of times one string occurs within another – substr_count($string,sub-string);

String functions in PHP

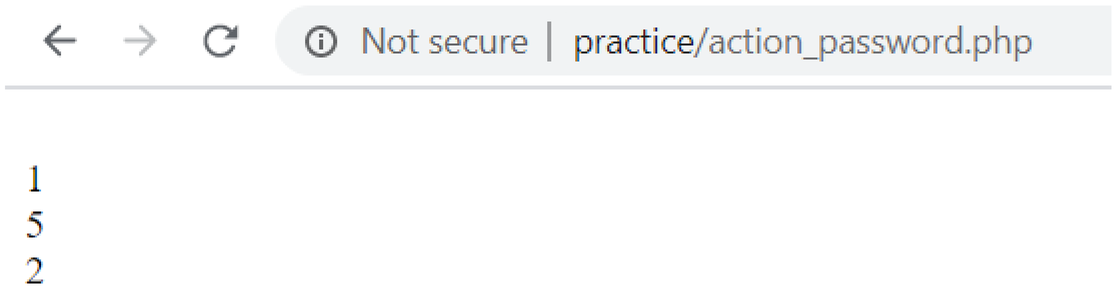


```
echo strpos($name, 'a') . "<br>";
echo strrpos($name, 'a') . "<br>";
echo substr_count($name, 'a') . "<br>";
?>
```

String functions in PHP



Change Password	
Name	madeha
Type new password	123456
ReType new password	123456
Submit	



Not secure | practice/action_password.php

```
1
5
2
```

References

- Chapter 9, “Beginning PHP and MySQL” by W. Jason Gilmore, Apress publisher, 4th edition; 2010, ISBN-13 (electronic): 978-1-4302-31158.