Web Programming

Javascript

Module 2

Agenda

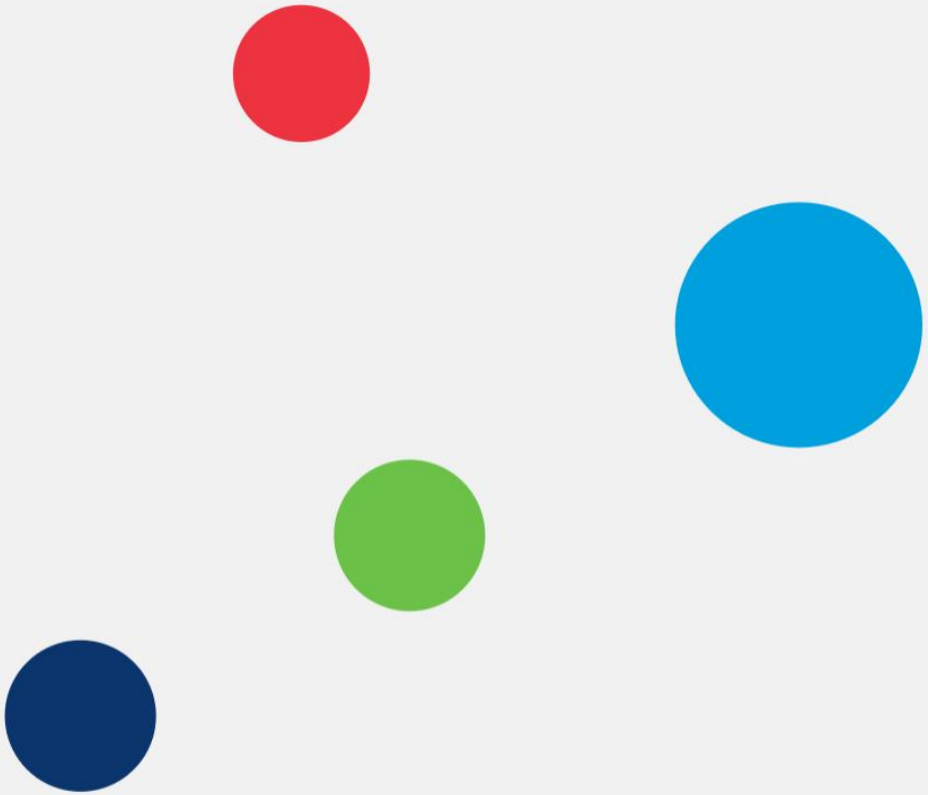
1 JavaScript Regular Expressions

Objectives

At the end of this module you will be able to:

- Understand the use of regular expressions
- Validate user inputs using regular expressions

JavaScript Regular Expressions



Regular Expression in Javascript

- The most difficult part of creating user interface for a web application is user validation
- Developing user interfaces that will be accessed by different browsers is much more painful, due to lack of useful validation functions in Javascript
- Luckily, Javascript (version 1.2 and above) has incorporated regular expressions, using which we can perform validations easily
- Regular expression are tools for performing pattern matching
- We can perform complex task that requires lengthy procedures with just few lines using regular expressions

Use of Patterns

- Regular expressions are implemented in Javascript in the following way:
- var regexp = /pattern/
- To use regular expressions to validate a String you need to define a pattern String that defines the search criteria
- Use a relevant String method to denote actions like search or test
- Patterns are defined using String literal characters or meta characters

Metacharacters

- Metacharacters are characters with special meaning

Metacharacter	What it means
\d	Find a digit
\D	Find a non-digit character
\w	Find a word character
\W	Find a non-word character
\s	Find a whitespace character
\S	Find a non-whitespace character
\b	Find a match at the beginning or end of a word
\B	Find a match not at the beginning or end of a word

Example 1

- The following example demonstrates how to use patterns that will check whether the key pressed is a digit or not :

```
<html>
<body>
<script language="javascript">
function onlyNumbers(e){
  var keynum
  var keychar
  var numcheck
  if(window.event) {
    keynum = e.keyCode
  }
```

Contd..

Example 1 (Contd.).

```
  keychar = String.fromCharCode(keynum)
  numcheck = /\d/
  return numcheck.test(keychar)
}
</script>

<form>
<input type="text" onkeypress="return onlyNumbers(event)" />
</form>
</body>
</html>
```

Example 1 (Contd.).

- When the user presses any key, an event is generated. The key on which the event is generated, is stored in the variable keynum by capturing the keycode.
- The javascript String method ***fromCharCode()*** is used to convert the unicode value to character and it is stored in the variable keychar.
- The variable ***numcheck*** defines a pattern for searching. Here \d is the metacharacter, which is used to find a digit.
- The String method ***test()*** is used to match the pattern(here it is trying to match the character obtained from the keypress with \d, i.e a digit).
- Thus, the function ***onlyNumbers()*** will return the value of the keypress only if it is a digit(0 – 9). It will not return any other character.

Brackets

- Brackets are used to find a range of characters

Expression	What it means
[xyz]	Find any character between the brackets
[^xyz]	Find any character not between the brackets
[A-Z]	Find any character from uppercase A to uppercase Z
[a-z]	Find any character from lowercase a to lowercase z
[A-z]	Find any character from uppercase A to lowercase z
[0-9]	Find any digit from 0 to 9
[Bandra|Andheri|Borivli]	Find any of the alternatives specified

Example 2

- The following example demonstrates how to use patterns that will check whether the key pressed is an alphabet(Lower case or upper case):

```
<html>
<body>
<script language="javascript">
function onlyCharacters(e){
  var keynum
  var keychar
  var charcheck
  if(window.event) {
    keynum = e.keyCode
  }
```

Contd..

Example 2 (Contd.).

```
  keychar = String.fromCharCode(keynum)
  charcheck = /[A-Za-z]/
  return charcheck.test(keychar)
}
</script>

<form>
<input type="text" onkeypress="return onlyCharacters(event)" />
</form>
</body>
</html>
```

Quiz

What happens when you move the mouse pointer on the image displayed?

```
<html>
 <body bgcolor="pink">
<img name=ash src="ash2.bmp" onmousemove=vh() onmouseout=hv()>
<script>
function vh() {
  document.ash.src="ash3.bmp";
}
function hv(){
  document.ash.src="ash2.bmp";
}
</script>
</body></html>
```

Quiz (Contd.).

What happens when you move the mouse pointer on the image displayed? What happens when you move the mouse pointer out of the image?

```
<html>
<img name=ash src="ash2.bmp" onmousemove=vh() onmouseout=hv()>
<script>
function vh(){
  document.ash.height=document.ash.height+1;
  document.ash.width=document.ash.width+1;
}
function hv(){
  document.ash.height=document.ash.height-100;
  document.ash.width=document.ash.width-100;
}
</script></body></html>
```

Summary

In this module, you were able to:

- Understand the use of regular expressions
- Validate user inputs using regular expressions

Thank You