Regular Expressions & Form Validation

Regular Expressions

- **Need & Introduction**
  - A regular expression is an object that **describes a pattern of characters.**
  - Regular expressions are used to perform pattern-matching and "search-and-replace" functions on text.

- **Syntax**
  - **var patt=new RegExp(pattern,modifiers);**
    or more simply:
    var patt=/pattern/modifiers;

  - pattern specifies the pattern of an expression
  - modifiers specify if a search should be global, case-sensitive, etc.

Modifiers

Modifier	Description
i	Perform case-insensitive matching
g	Perform a global match (find all matches rather than stopping after the first match)
m	Perform multi-line matching

Example: Do a global search for "is":

```
var str="Is this all there is?";
var patt1=/is/g;
```

```
Is this all there is?
```

Example2: Do a global, case-insensitive search for "is":

```
var str="Is this all there is?";
var patt1=/is/gi;
```

```
Is this all there is?
```

Brackets

- **Brackets are used to find a range of characters:**

Expression	Description
[abc]	Find any character between the brackets
[^abc]	Find any character not between the brackets
[0-9]	Find any digit from 0 to 9
[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
[adgk]	Find any character in the given set
[^adgk]	Find any character outside the given set
(red|blue|green)	Find any of the alternatives specified

Example 3:

- <script>
- var str="Is this all there is?";
- var patt1=/[a-h]/g;
- Or var patt1=/[abc]/g;

- document.write(str.match(patt1));
- </script>

OUTPUT:

- h,a,h,e,e

Meta Characters

- **Metacharacters are characters with a special meaning:**

Metacharacter	Description
.	Find a single character, except newline or line terminator
\w	Find a word character
\W	Find a non-word character
\d	Find a digit
\D	Find a non-digit character
\s	Find a whitespace character
\S	Find a non-whitespace character
\b	Find a match at the beginning/end of a word
\B	Find a match not at the beginning/end of a word
\0	Find a NUL character
\n	Find a new line character
\f	Find a form feed character
\r	Find a carriage return character
\t	Find a tab character
\v	Find a vertical tab character
\xxx	Find the character specified by an octal number xxx
\xdd	Find the character specified by a hexadecimal number dd
\uxxxx	Find the Unicode character specified by a hexadecimal number xxxx

Quantifiers

Quantifier	Description
n+	Matches any string that contains at least one n
n*	Matches any string that contains zero or more occurrences of n
n?	Matches any string that contains zero or one occurrences of n
n{X}	Matches any string that contains a sequence of *X* *n*'s
n{X,Y}	Matches any string that contains a sequence of X to Y *n*'s
n{X,}	Matches any string that contains a sequence of at least X *n*'s
n$	Matches any string with n at the end of it
^n	Matches any string with n at the beginning of it
?=n	Matches any string that is followed by a specific string n
?!n	Matches any string that is not followed by a specific string n

Example

- **Example:** **Do a global search for at least one word character:**
- var str="Hellooo World! Hello W3Schools!";
  var patt1=/\w+/g;

OUTPUT:

Hellooo World! Hello W3Schools!

Example: Do a global search for at least one "o"::

```
<script>
var str="Hellooo World! Hello W3Schools!";
var patt1=/o+/g;
document.write(str.match(patt1));
</script>

</body>
</html>
```

OUTPUT:

ooo,o,o,oo

RegExp Object Properties

Property	Description
global	Specifies if the "g" modifier is set
ignoreCase	Specifies if the "i" modifier is set
lastIndex	The index at which to start the next match
multiline	Specifies if the "m" modifier is set
source	The text of the RegExp pattern

RegExp Object Methods	
Method	Description
compile()	Compiles a regular expression
exec()	Tests for a match in a string. Returns the first match
test()	Tests for a match in a string. Returns true or false

Assignment # 2

1. Create a form and add five input elements (two inputbox, check box, radio button and select menu).
2. Add script to check if the form is empty or not.If empty then show alert message.
3. Add script to restrict the one text box just for text data. And other for only numbers.
4. Also add another field for email address. And validate the email address that user might input.

Submission Deadline: Next class.

Type of submission: Group Submission.

NOTE

- You are expected to see the following links :
- http://www.w3schools.com/jsref/jsref_obj_regexp.asp

- And check various examples and codes of java script for yourself.