



S.N.J.B.'s  
**SHRI H. H. J. B. POLYTECHNIC, CHANDWAD**

CLASS TEST I / II (201 - 201 )

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Supplied By: SNJB

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## Chapter 5. Regular Expression, Rollover, and Frames.

Regular Expression is special text string that defines the search pattern. It is logical expression.

for eg:-

for counting specific characters in a string or to replace some substring by another substring we need to create a regular expression.

We can create a regular expression pattern using forward slash /.

for eg, instance -  
`re=/abc/`

Regular expression is powerful way for searching & replacing the characters in string.

Regular expression is written as

`res=/[ ]/;`

The regular expression begins & ends with slash /.

A pair of square brackets [ ] appears following the first slash. This tells the browser to search the text for characters that appear within the brackets. This regular expression is assigned to the variable `re`.



Special character	Meaning
.	Any character except newline
A	The character a.
ab	The string ab.
a b	a or b.
a*	0 or more a's.
\	Escapes a special character
[ab-d]	one character of a, b, c, d.
[^ab-d]	one character except: a, b, c, d.
[\b]	Backspace character
\d	one digit
\D	one non-digit
\s	one whitespace
\S	one non-whitespace
\w	one word character
\W	one non-word character
*	0 or more
+	1 or more
?	0 or 1
{2,3}	Exactly 2
{2,5}	Between 2 & 5.
{2,3}	2 or more.
{...}	Group of pattern
^	start of string
\$	End of string
\b	word boundary
\n	newline
\r	carriage return
\t	Tab
\0	Null character

## Methods that use regular expressions

- exec: <sup>A RegExp method</sup> that executes a search for a match in a string. It returns an array of information <sup>or null on a mismatch.</sup>
- test: <sup>A RegExp method</sup> that tests for a match in string. It returns true or false.
- match: A string method that executes a search for a match in a string. It returns an array of information or null on mismatch.
- matchAll: A string method that returns an iterator containing all of the matches, including capturing groups.
- search: A string method that tests for a match in a string. It returns the index of the match, or -1 if the search fails.
- replace: A string method that <sup>replaces</sup> ~~replaces~~ <sup>for a</sup> ~~match~~ <sup>match</sup> in a string, executes a search for a match in a string, & replaces the matches substring with a replacement substring.
- split: A string method that uses a regular expression or a fixed string to break a string into an array of substrings.



Q. WAP to test if the string contains the letter a or x or both.

```
→ <html>
<head>
<script-type="text/javascript">
function A(str)
{
    re = /[aX]/;
    if (re.test(str))
    {
        alert("The letter a or x or both are
        present in string");
    }
    else
    {
        alert("The letters are not present in
        string");
    }
}
</script>
</head>
<body>
<script-type="text/javascript">
var i = prompt("Enter string");
A(i);
</script>
</body>
</html>
```

Finding Non-matching characters  
by placing \ as the first character within a square [].

eg:- to check whether the string entered by the user contains digits or not

```
→ <html>
<head>
<script-type="text/javascript">
function A(str)
{
    re = /^[^\d-9]/;
    if (re.test(str))
    {
        alert("The string doesn't contain any
        digit");
    }
    else
    {
        alert("string contains some digits");
    }
}
</script>
</head>
<body>
<script-type="text/javascript">
var m = prompt("Enter some input");
A(m);
</script>
</body>
</html>
```



Replacing a Text using Regular Expressions.

using replace function we can replace the desired pattern.

The first parameter in the replace fn is the string which is to be replaced & the second parameter is replacing string

eg:- the word country is replaced by India

```
<html>
<head>
<script type="text/javascript">
function A(str)
{
s = str.replace("country","India");
document.write(s);
}
</script>
</head>
<body>
<script type="text/javascript">
str="I love my country"; document.
<form name="form1">
<input type="button" value="Replace"
onclick="A(str)">
</form>
</body>
</html>
```

Returning a Matched Character:-

- exec() method searches string for text that matches with regular expression. If it finds a match, it returns an array of results, otherwise it returns null.

- If we want to search for particular pattern from a text then exec() method can be used as follows:

- This function returns an array of matched result.

eg:-

```
<html>
<head>
<script type="text/javascript">
function A(str1, str2)
{
re=/India/g;
r1=re.exec(str1);
r2=re.exec(str2);
if(r1)
{
document.write("<br/>The first text
contains the word " + r1);
}
else
{
document.write("<br/>The first text
does not contain the word 'India'");
}
if(r2)
{
}
```



document.write("<br/>The second text contains the word 'rd');

else  
{

document.write("<br/>The second text doesn't contain the word 'India');

</script>  
</head>  
</body>

<script type="text/javascript">

str1 = "I love my country";

str2 = "India has rich heritage & culture";

document.write(str1);

</script>

<form name="form1">

<input type="button" value="check for match">

</form>

</body>

</html>



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\* Regular Expression Object Properties

that help in matching particular word, character, last character, index at which to start the next match & so on.

Regular Expression Object

\$1 (through \$9)

\$\_

\$\*

\$\$

\$+

\$`

\$'

global

ignoreCase

input

lastIndex

lastMatch

lastParen

leftContext

multiline

Properties.

- Parenthesized substring matches

Same as input

Same as multiline

Same as lastMatch.

Same as lastParen

same as leftContext

search globally

search case insensitive

search the string to search if no string is passed.

The index at which to start the next match.

The last match characters.

The last parenthesized substring match.

The substring to the left of the most recent match.

whether strings are searched across multiple lines



prototype allows the addition of properties to all objects.

rightContext The substring to the right of the most recent match.

source The regular expression pattern itself.

eg:-

```

<html>
<head>
<script type="text/javascript">
function A(str)
{
    alert(str.replace(/sunil/g, 'Mr. $&'));
}
</script>
</head>
<body>
<script type="text/javascript">
str="Sunil Kumar, Sunil Shetty, sunil Kale";
document.write(str);
</script>
<button onclick="A(str)"> change
</button>
</body>
</html>

```

Q. Collect university Number:  
 A digit from 1 to 4 followed by two upper case characters followed by two digits followed by two upper case characters followed by three digit of the user.

```

<html>
<head>
<script type="text/javascript">
function A(str)
{
    document.write("The given string is");
    document.write("<em>" + str + "</em>" +
        "<br/>");
    var i = str.match(/[1234][A-Z]{2}\d{3}/);
    if(i != null)
        return false;
    else
        return true;
}
</script>
</head>
<body>
<script type="text/javascript">
i = prompt("Enter your university seat no.");
if (A(i))
{
    document.write("Valid seat Number");
}
else
{
    document.write("Invalid seat Number");
}
</script>
</body>
</html>

```



## \* Frames

HTML frames allow us to present documents in multiple views using multiple views we can keep certain info visible & at the same time other views are scrolled or replaced.

### Create a frame:-

To set the frames in the browser window we use frame set.

eg: `<frameset cols="150, *">`

ie window divided into two columns (vertically). one  $\rightarrow$  150 pixels size  
other  $\rightarrow$  remaining size

\*  $\rightarrow$  any number of pixels

② `<frameset rows="*, 120">`  
ie divided into two rows (horizontally) second part of horizontal frame will be of 120 pixels & upper horizontal frame will occupy remaining position of the window

Similarly we can also specify the frameset in % form

eg: `<frameset rows="30%, 70%">`

`<frameset rows="20%, 30%, 50%", cols="30%, *">`

In every layout frame we can load the desired html page by using frame **src**.

eg:-

`<frame src="D:\html\example\1.html" name="first-page">`

## \* Attributes in frameset tag

Attributes	Value	Purpose
cols	pixels %	It specifies the number & size of columns in frameset
rows	pixels % *	It specifies the number & size of rows in frameset

## Attributes of frame tag

The `<frame>` tag has no end tag. The `<frame>` tag defines one frame within a `<frameset>` tag

Attribute	Value	Purpose
1. frameborder	0 or 1	value 1 specifies that the frame is displayed with border & 0 indicates that there is no border
2. name	some name	It specifies name of the frame
3. noresize		Due to this attribute, we cannot resize the particular frame
4. scrolling	yes, no or auto	It specifies whether or not to be displayed the scrolling along with the frame
5. src	URL	It specifies the name of the document to be displayed within the frame



eg: Create main.html document which will display three.html documents in three vertical frames

```

frameset.html
<html>
<frameset cols="25%, * , 25%">
<frame src="f1.html">
<frame src="f2.html">
<frame src="f3.html">
</frameset>
</html>

```

①

```

<html>
<body>
<h1> frames </h1>
</body>
</html>

```

②

```

<html>
<body>
<h1> frames </h1>
</body>
</html>

```

③

```

<html>
<body>
<h1> frames </h1>
</body>
</html>

```

### Visible Border frame

setting frameborder & border = 0.

```

eg: <html>
<frameset cols="50%, 50%">
<frame src="f1.html" frameborder="0" border="0">
<frame src="f2.html" frameborder="0" border="0">
</frameset>
</html>

```

### Calling a child window

The main window defining the frames is called parent window & each frame contains the child window.

We can call one child window from another child window.

eg: ① create parent window script in which two frames are defined.

```

test.html
<html>
<frameset cols="50%, 50%">
<frame src="f1.html" name="left page">
<frame src="f2.html" name="right page">
</frameset>
</html>

```

② f1.html as left page frame.

```

<html>
<body>
<h1> frame 1 </h1>
</body>
</html>

```





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Changing the content & focus of child window.

We can assign the new source to child window's href attribute.

```

steps:- f1.html
        f2.html
        f3.html
        <frameset cols="30%, 70%">
        <frame src="f1.html" name="LeftPage">
        <frame src="f2.html" name="RightPage">
        </frameset>
        </html>
    
```

```

steps:- f1.html
        <html>
        <head>
        <script language="JavaScript" type="text/javascript">
        function AC()
        {
        parent.RightPage.location.href="f3.html"
        }
        </head>
        <body>
        <form>
        <input type="button" name="Frame1" value="
        Click me" onclick="AC()"
        </form>
        </body>
        </html>
    
```

```

<input type="button" name="button1" value="click me"
onclick="parent.RightPage.AC()" />
</form>
</body>
</html>
    
```

Step 3 AC is present in second frame

```

f2.html
<html>
<head>
<script type="text/javascript">
function AC()
{
document.write("some fn is called");
}
</script>
</head>
<body>
</body>
</html>
    
```



```

</in
steps: f3.html
<html>
  <head> frame2 </head>
  <body> <h1> frame2 </h1> </body>
</html>
step4: f3.html
<html>
  <body>
    <h1> frames </h1>
    <p> Note that the frame is changed
    from frame2 to frames </p>
  </body>
</html>
step5: f3.html. run this file

```

### \* Accessing Elements of Another child window:

It is possible to change the elements of one frame from another frame.

parent.RightPage.form2.Frame2.value = NewLab

eg: - f1.html

```

<html>
  <frameset cols="30%,70%">
    <frame src="f1.html" name="LeftPage">
    <frame src="f2.html" name="RightPage">
  </frameset>
</html>

```

### f1.html

```

<html>
  <head>
    <script language="JavaScript" type="text/
    javascript">
      function ACC()
      {
        parent.RightPage.form2.Frame2.value = "
        calculate"
      }
    </script>
  </head>
  <body>
    <form name="form1">
      <input type="button" name="frame1"
      value="Clickme" onclick="ACC" />
    </form>
  </body>
</html>

```

### f2.html

```

<html>
  <head> <title> "Frame 2" </title>
  </head>
  <body>
    <form name="form2">
      <input type="button" name="Frame2"
      value="Click" />
    </form>
  </body>
</html>

```



Rollover :- change in the appearance of the object when user moves his or her mouse over object on the page. The rollover effect is mainly used in webpage designing for advertising purpose.

#### creating Rollover :-

on many webpages, javascript rollovers are handled by adding an onmouseover & onmouseout event on images.

1) onmouseover is triggered when the mouse moves over an element.

2) onmouseout is triggered when the mouse moves away from the element

eg:- <html>

```
<body>
<a href="#">

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

#### Text Rollover

- user rollover the text.  
- Javascript allows to change the page element usually some graphics image.

eg:-

```
<html>
<body>
<table border="1">
<tr>
<td>

</td>
</tr>
<tr>
<td onmouseover="document.fruit.src='m.jpg'">
<b><u>Mango</u></b>
</td>
</tr>
<tr>
<td onmouseover="document.fruit.src='o.jpg'">
<b><u>Orange</u></b>
</td>
</tr>
<tr>
<td onmouseover="document.fruit.src='b.jpg'">
<b><u>Banana</u></b>
</td>
</tr>
</table>
</body>
</html>
```

#### MULTIPLE ACTIONS FOR ROLLOVER

- suppose user is rolling the cursor over the text, then instead of simply changing the image we can display more window displaying some feature or additional info about the item on which the mouse is rolling over. This process is referred as multiple actions for rollover.

- Due to this effect visitors get more info at glance.

- We can open additional window using the built



in function opens. This function is invoked using object window.

The open() method opens a new browser window, or a new tab. The close() window closes the window.

The window.open function can be written as follows:

```
window.open ("url", "window", "height=20", "width=20", "left=20", "top=20", "name of the window")
```

Specifies the URL page to open. If no URL is specified, a new window/tab with about:blank is opened.

Specifies the name of the window

width="20", left="20", top="20", right="20", bottom="20", location bar, etc.

This fn returns the object or instance of window. We store this instance in variable mywindow.

Then using mywindow.document.write() fn we can write the info to this opened window. Thus it is possible to write additional info by opening & writing the contents to additional window.

eg:-

```
<html>
<head>
<script language="JavaScript">
function AC(ch)
{ if(ch=1)
{
```

```
document.fruit.sac = 'M.jpg'
Mywindow = window.open("", "info window",
"height="20", width="20", left="30", top="30");
Mywindow.document.write("source of vitamin A & C");
}
```

```
if (ch=2)
{ document.fruit.sac = 'O.jpg'
Mywindow = window.open("", "info window",
"height="20", width="20", left="30", top="30");
Mywindow.document.write("source of vitamin C");
}
```

```
if (ch=3)
{ document.fruit.sac = 'b.jpg'
Mywindow = window.open("", "info window",
"height="20", width="20", left="30", top="30");
Mywindow.document.write("Full of fiber & Potassium");
}
```

```
</script>
</head>
<body>
<table>
<tr>
<td>
<a>
<img sac="M.jpg" name="Fruit">
</a>
</td>
</tr>
</table>
</body>
</html>
```



```

</td>
<a onMouseover="A(1)"
onmouseout="MyWindow.close();"
<b><u> mango </u> </b>
</a>
<a onMouseover="A(2)"
onmouseout="MyWindow.close();"
<b><u> orange </u> </b>
</a>
<a onMouseover="A(3)"
onmouseout="MyWindow.close();"
<b><u> Banana </u> </b>
</a>
</td>
</tr>
</tbody>
</html>


```

\* More efficient rollover

the images can be stored in array & requested images are displayed when the webpage is loaded.

This makes the rollover action efficient bcz - the images are already collected & loaded in array. The requested image is displayed when user rollover particular text.

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```

<html>
<head>
<script language="javascript">
RollImage = new Array(),
RollImage[0] = new Image(100,100),
RollImage[0].src = 'm.jpg';
RollImage [1] = new Image(100,100),
RollImage [1].src = 'o.jpg';
RollImage [2] = new Image(100,100);
RollImage [2].src = 'b.jpg';
</script>
</head>
<body>
<table>
<tr> <td>
<a> .
<img src='m.jpg' name='fruit'>
</a>
</td> <td>
<a onMouseover='document.fruit.src = RollImage[0].src'>
<b><u> Mango </u> </b>
</a>
</td>
<a onMouseover='document.fruit.src =
RollImage [1].src'>

```



```
<b> <u> orange </u> </b>
```

```
</a>
```

```
<del b> <b> <del b> <b>
```

```
<a onmouseover="document.fruit.src=  
Rollimage[2].src">
```

```
<b> <u> Banana </u> <b>
```

```
</a>
```

```
</td>
```

```
</tr>
```

```
</table>
```

```
</body>
```

```
</html>
```