



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

CLASS TEST I / II (201 - 201 )

Course & Semester :	Roll No.:	Date : / /201	
Name of Subject :	Marks obtained :		
Sign. of Supervisor :	Sign. of Sub. Examiner :		
Q. No. 1	Q. No. 2	Q. No. 3	
			Total Marks

Supplied By: SNJB

000540

## 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 res.

Special character	Meaning
.	Any character except newline
A	The character a.
ab	The string ab.
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
\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
\n	start of string
\\$	End of string
\b	word boundary
\r	newline
\t	carriage return
\o	Tab
Null character	

## Methods that use regular expressions

- exec : A REGEXP METHOD that executes a search for a match in a string. It returns an array of information or null on a mismatch.
- test : A REGEXP METHOD that tests for a match in string. It return 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 test for a match in a string. It returns the index of the match, or -1 if the search fails.
- replace: A string method that ~~replaces~~ REPLACES a match 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 ACstr()
{
    re=/[a-zA-Z]/;
    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");
        }
}
else
{
    re=/[^0-9]/;      [^0-9] indicates any digit.
    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 i=prompt("Enter String");
A(i);
</script>
</body>
</html>
```

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

e.g:- to check whether the string entered by the user contains digits or not  
→ <html>

```
<head>
<script type="text/javascript">
function ACstr()
```

}

```
re=/[^0-9]/;      [^0-9] indicates any digit.
```

if (re.test(str))

```
    {
        alert("The string doesn't contain any digit");
    }
}
else
{
    alert("string contains some digits");
}
```

## 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

e.g:- the word country is replaced by India

```
<html>
<head>
<script type="text/javascript">
function A(s)
{
    s = str.replace("country","India");
    document.write(s);
}
</script>
</head>
<body>
<script type="text/javascript">
function A(str)
{
    re=/India/g;
    r1=re.exec(str);
    str2=re.exec(str);
    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'");
    }
}
</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:

`pattern.exec(text)`

- This function returns an array of matched result

e.g:-

```
<html>
<head>
<script type="text/javascript">
function A(str,str2)
{
    re=/India/g;
    r1=re.exec(str);
    str2=re.exec(str2);
    if(r1)
    {
        document.write("The first text
contains the word "+r1);
    }
}
```

```
if(r2)
{
    document.write("The first text
contains the word "+r2);
}
```

document.write("<br> The second text contains  
the word " + str2);  
}  
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);

document.write("<br>" + str2);

</script>

</form>

</body>

</html>

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CLASS TEST I / II (201 - 201 )			
Course & Semester:	Roll No.:	Date:	/ /201
Name of Subject:		Mark obtained:	
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Q. No. 1	Q. No. 2	Q. No. 3	Total Marks

000574

#### \* 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 Properties.

\$1 (through \$9)

- Parenthesized substring matched

Same as input

Same as multiline

Same as lastMatch.

Same as lastParen

same as leftContent

Same as rightContent

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. $1'));
}
</script>
<body>
<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>

}

document.write("The given string is");
document.write("<em>" + str + "</em>" + "<br/>");
var i = str.match(/\d{1,2}\.\d{2}\.\d{2}/);
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>
```

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(/\d{1,2}\.\d{2}\.\d{2}/);
if(i == null)
    return false;
else
    return true;
}
```

## \* 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.

e.g. - <frameset cols="150, \*">

i.e. window divided into two columns (vertically). one → 150 pixels size

Other → remaining size

- \* → any number of pixels

② <frameset rows="\*, 120">

i.e. divided into two rows (horizontally) second part of horizontal frame will be of 120 pixels & upper horizontal frame will occupy remaining portion of the window

Similarly we can also specify the frameset in if.

form

e.g. - <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.

e.g. -  
<frame src="D:\HTML Examples\1.html"  
name="first-page">

## Attributes in frameset tag

Attribute	Value	Properties	Purpose
cols	pixels */	I	It specifies the number & size of columns in frameset
rows	pixels */	I	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 written after <frameset> tag

Attribute	Value	Purpose
frameborder	0 or 1	value 1 specifies that the frame is displayed with border & 0 indicates that there is no border
name	somename	I
src		specifies name of the frame
3. Nosize		Due to this attribute, we cannot resize the particular frame
4. scrolling	yes, no or auto	I
		specifies whether the scrolling along with the frame or not to be displayed
5. src	URL	I
		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="30%, 40%, 30%">
<frame src="f1.html" />
<frame src="f2.html" />
<frame src="f3.html" />
</frameset>
</html>
```

①

```
<html>
<body>
<h1> Frame1 <h1>
</body>
</html>
②
<html>
<body>
<h1> Frame2 <h1>
</body>
</html>
③
<html>
<body>
<h1> Frame3 <h1>
</body>
</html>
```

### Calling a child window

The main window defining the frames is it is called parent window & each frame contains the child windows.  
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="30%, 70%">
<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> Frame1 <h1>
</html>
```

### Indirect address of frame

setting frameborder & border = 0,

```
<html>
<frameset cols="30%, 40%, 30%">
<frame src="f1.html" frameborder="0" border="0" />
<frame src="f2.html" frameborder="0" border="0" />
<frame src="f3.html" frameborder="0" border="0" />
</frameset>
</html>
```



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CLASS TEST I / II (201 - 201 )

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

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

Step③ 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>
</html>
```

000575

\* changing the content & Focus of child window.

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

Step 1:- f1.html

~~frame~~ :- <html>

<frameset cols="30%,70%">

```
<frame src="f1.html" name="LeftPage">
<frame src="f2.html" name="RightPage">
</frameset>
</html>
```

Step 2: 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()"/>
```

```
<input type="button" name="frame1" value="click me"
      onclick="AC()"/>
```

<in  
<html>

<frame2> frame2 </head>  
<body> <h1> frame2 </h1> </body>  
</html>

step4: f<sub>3</sub>.html

<html>  
<body>  
<h1> frame3 </h1>

<p> Note that the frame is changed  
from frame2 to frame3 </p>

</body>

</html>  
step5: f<sub>4</sub>.html run this file

\* Accessing Elements of Another child  
Window:

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

f<sub>1</sub>.html

<head>

javascript">

function AC()

{

parent.RightPage.form2.frame2.value = "

calculate";

}

<script>

</head>

<body>

<form name="form1">

<input type="button" name="frame1"

value="click me" onclick="AC()"/>

</form>

</body>

</html>

f<sub>2</sub>.html

<html>

<head> <title> Frame2 </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 web pages, 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>
```

```
<html>
<body>
<table>
<tr>
<td>
<a href="#" onmouseover="document.fruit.src='b.jpg'" onmouseout="document.fruit.src='a.jpg'>
Banana </a>
</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

#### Text Rollover

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

eg:-

In function open() 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

```
window.open('','window1','height=20'  
specifies the url of the window  
Page to open. If no URL is specified  
a new window/tab with about: blank  
is opened
```

```
Specifies width="20",  
name of the window top="30",  
comma separated list of specification  
such as height,  
width, location &  
so on.
```

This fn returns the object or instance of mywindow.

Then using mywindow.document.write() 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 ACab()  
{  
if (fch==1)  
{
```

```
</td>  
<td>  
<a href="M.jpg" name="fruity">  
</td>
```

```
document.fruit.src = 'M.jpg'  
Mywindow = window.open("", "infowindow",  
"height = "20", width = "20", left = "30", top = "30").  
Mywindow.document.write(" source of vitamin  
C");  
if (fch == 2)  
{  
document.fruit.src = 'b.jpg'  
Mywindow = window.open("", "infowindow",  
"height = "20", width = "20", left = "30", top = "30").  
Mywindow.document.write(" Full of Fiber &  
Potassium")  
}
```

```
</script>  
</head>  
<body>  
<table>  
<tr>  
<td>  
<td>  
<a href="M.jpg" name="fruity">  
</td>
```



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CLASS TEST I / II (201 - 201 )			
Course & Semester:	Roll No.:	Date:	/ /201
Name of Subject:		Marks obtained:	
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```
<a onmouseover="A(2)">  
Onmouseout="MyWindow.Close();">  
<b><u>orange</u></b>  
</a>
```

```
Onmouseout = "MyWindow.close();"  
<b> <u> Banana </u></b>  
</a>
```

```
</td>
</tr>
</table>
</body>
</html>
```

More efficient Borrower

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

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

```
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 href="#" onmouseove="document.fruit.src=Rollimage[0].src">
      <b> <u>Mango</u> </b>
    </a>
  </td>
</tr>
<tr>
  <td>
    <a href="#" onmouseover="document.fruit.src=Rollimage[1].src">
      <b> <u>Apple</u> </b>
    </a>
  </td>
  <td>
    <a href="#" onmouseover="document.fruit.src=Rollimage[2].src">
      <b> <u>Banana</u> </b>
    </a>
  </td>
</tr>
</table>

```

```
<b><u> orange </u></b>
</a>
<#b> <br/> <br/> <br/>
<a onmouseove="document.fruit.soc=
Rollimage[2].src"
  href="Banana">
<b><u> Banana </u></b>
</a>
</td>
<tr>
</table>
</body>
</html>
```