

HTML DOM & JavaScript

Muhammad Iqbal



[Sir Muhammad Iqbal](#) (November 9, 1877 - April 21, 1938), also known as Allama Iqbal, was a philosopher, poet and politician[1] in British India who is widely regarded as having inspired the Pakistan Movement. He is considered one of the most important figures in Urdu literature,[2] with literary work in both the Urdu and Persian languages.[1][2]

Iqbal is admired as a prominent classical poet by Pakistani, Indian, Iranian, and other international scholars of literature.[3][4] Though Iqbal is best known as an eminent poet, he is also a highly acclaimed "Muslim philosophical thinker of modern times".[1][4] His first poetry book, *Asrar-e-Khudi*, appeared in the Persian language in 1915, and other books of poetry include *Rumuz-i-Bekhud*, *Payam-i-Mashriq* and *Zabur-i-Ajam*. Amongst these his best known Urdu works are *Bang-i-Dara*, *Bal-i-Jibril*, *Zarb-i Kalim* and a part of *Armughan-e-Hijaz*. [5] In Iran and Afghanistan, he is famous as *Iqbal-e-Lahori* (Iqbal of Lahore), and he is most appreciated for his Persian work. [6] Along with his Urdu and Persian poetry, his various Urdu and English lectures and letters have been very influential in cultural, social, religious and political disputes over the years

...

```
<html>
<body>
<h1>Muhammad Iqbal</h1>

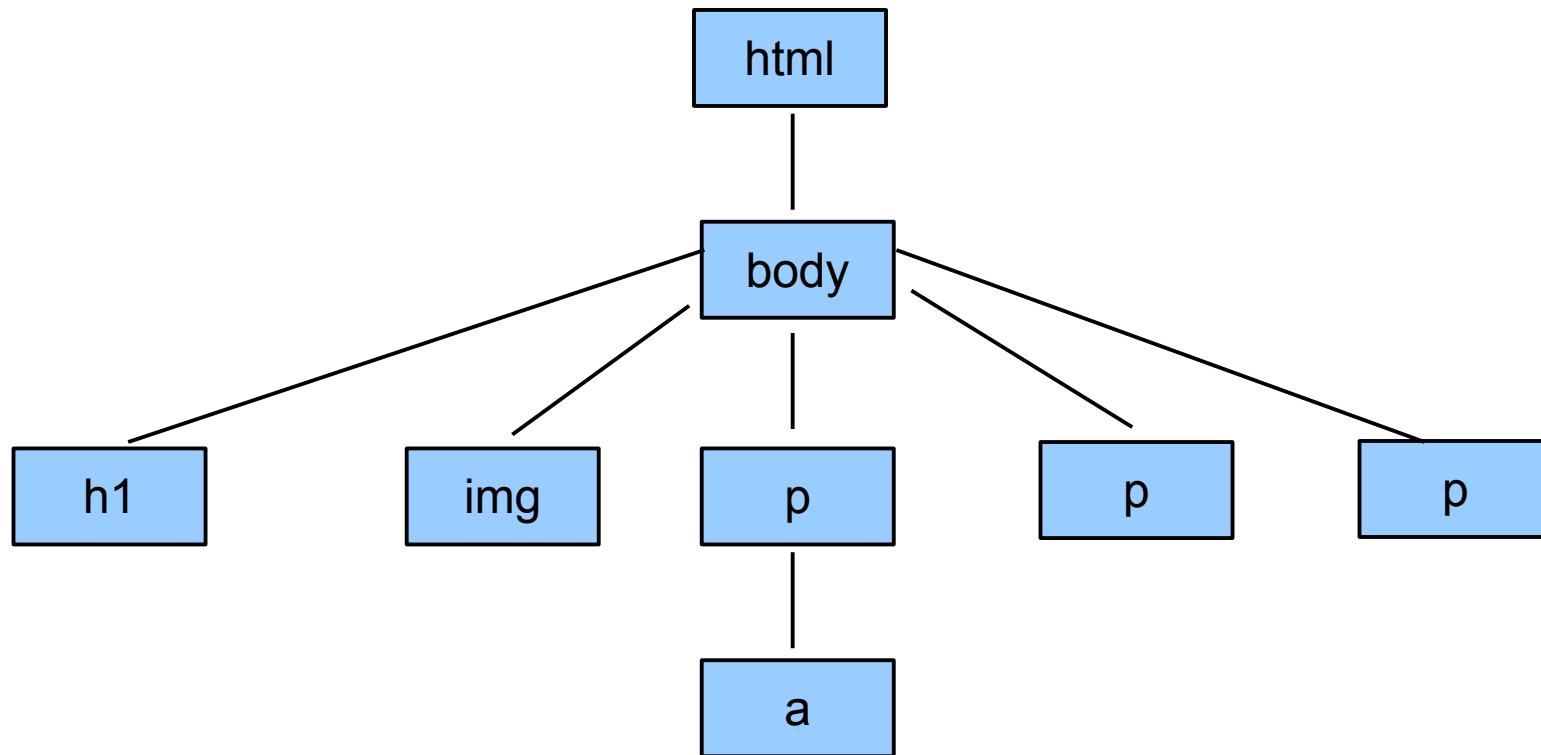
<img src='images/iqbal.jpeg' />

<p>
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April 21, 1938), also known as Allama Iqbal, was a philosopher, poet and politician[1] in British India who
is widely regarded as having inspired the Pakistan Movement. He is considered one of the most
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and he is most appreciated for his Persian work.[6] Along with his Urdu and Persian poetry, his various
Urdu and English lectures and letters have been very influential in cultural, social, religious and political
disputes over the years
</p>

<p>...</p>
</body>
</html>
```

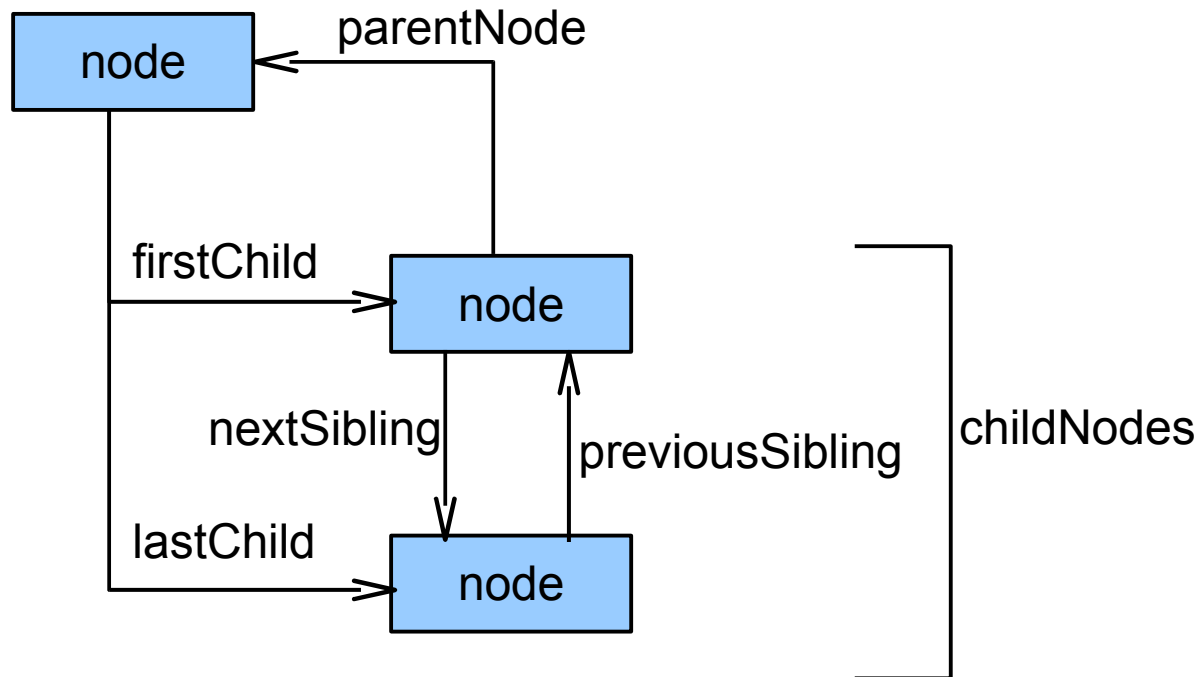
window

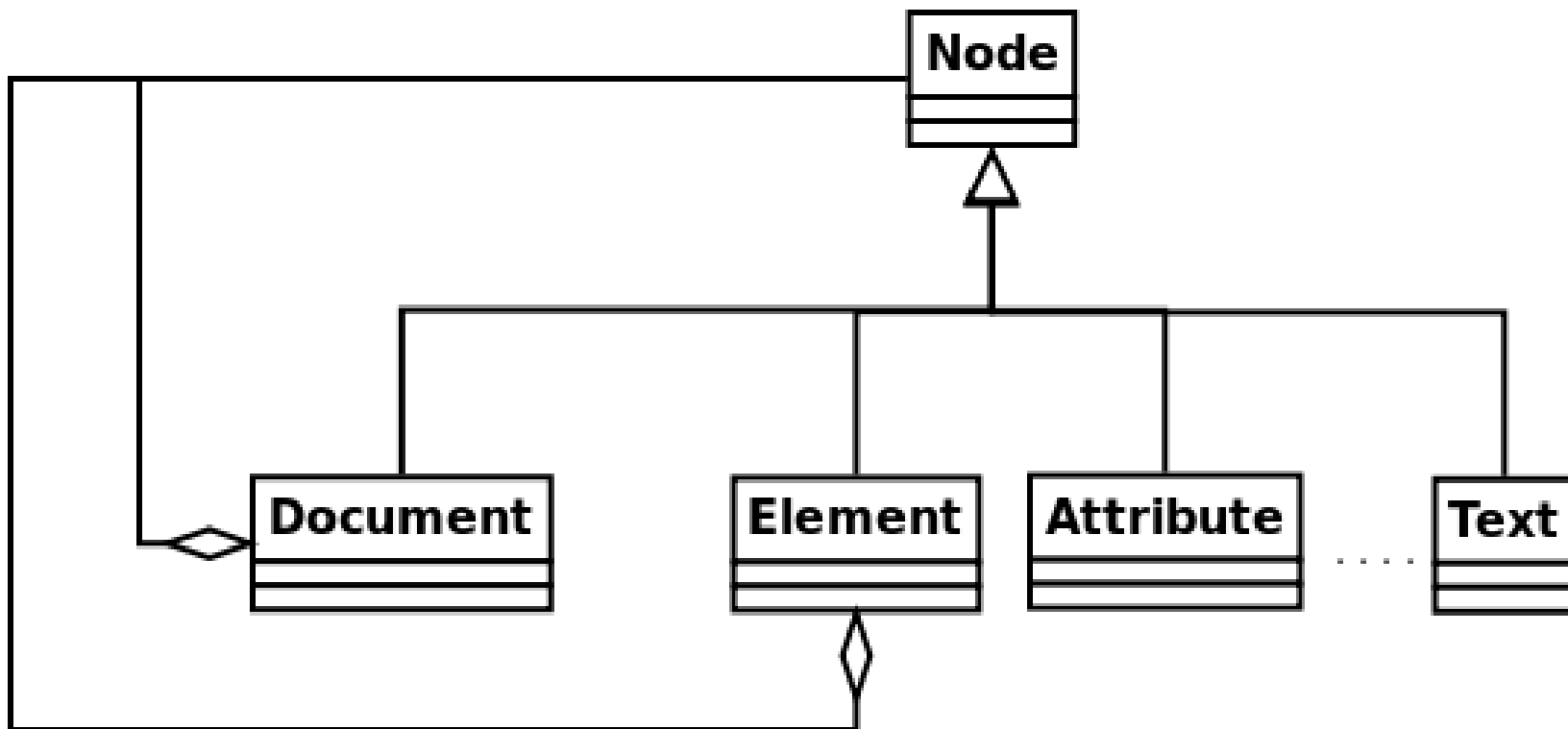
document



node:

- firstChild
- lastChild
- nextSibling
- previousSibling
- parentNode
- childNodes





Element

Properties	Description
id	Id of the element
attributes	Attributes associated with element
className	CSS class associated with element
innerHTML	HTML specified inside element
appendChild()	Add a new child element
removeChild()	Remove an existing child element
replaceChild()	Replace an existing child element with new one
...	...
...	...

Attribute

```
<tag name=value name=value ... ></tag>
```

e.g.

```
<a href='http://www.google.com'>Google</a>
```

Properties	Description
name	Returns the name of an attribute
value	Returns the value of attribute
specified	Returns true if the attribute exists / specified or not

Event Attributes

Attribute	Description
onblur	Script to be run when an element loses focus
onchange	Script to be run when an element change
onclick	Script to be run on a mouse click
ondblclick	Script to be run on a mouse double-click
onfocus	Script to be run when an element gets focus
onmousedown	Script to be run when mouse button is pressed
onmousemove	Script to be run when mouse pointer moves
onmouseout	Script to be run when mouse pointer moves out of an element
onmouseover	Script to be run when mouse pointer moves over an element
onmouseup	Script to be run when mouse button is released
onkeydown	Script to be run when a key is pressed
onkeypress	Script to be run when a key is pressed and released
onkeyup	Script to be run when a key is released
onselect	Script to be run when an element is selected
...	...

Document

Properties	Description
<code>createElement()</code>	Create a new element node
<code>createAttribute()</code>	Create a new attribute node
<code>createTextNode()</code>	Create a new text node
<code>getElementById()</code>	Search and return an element node by given id
<code>getElementsByTagName()</code>	Search and return a list of elements by given tag name
<code>write()</code>	Write text to document
...	...

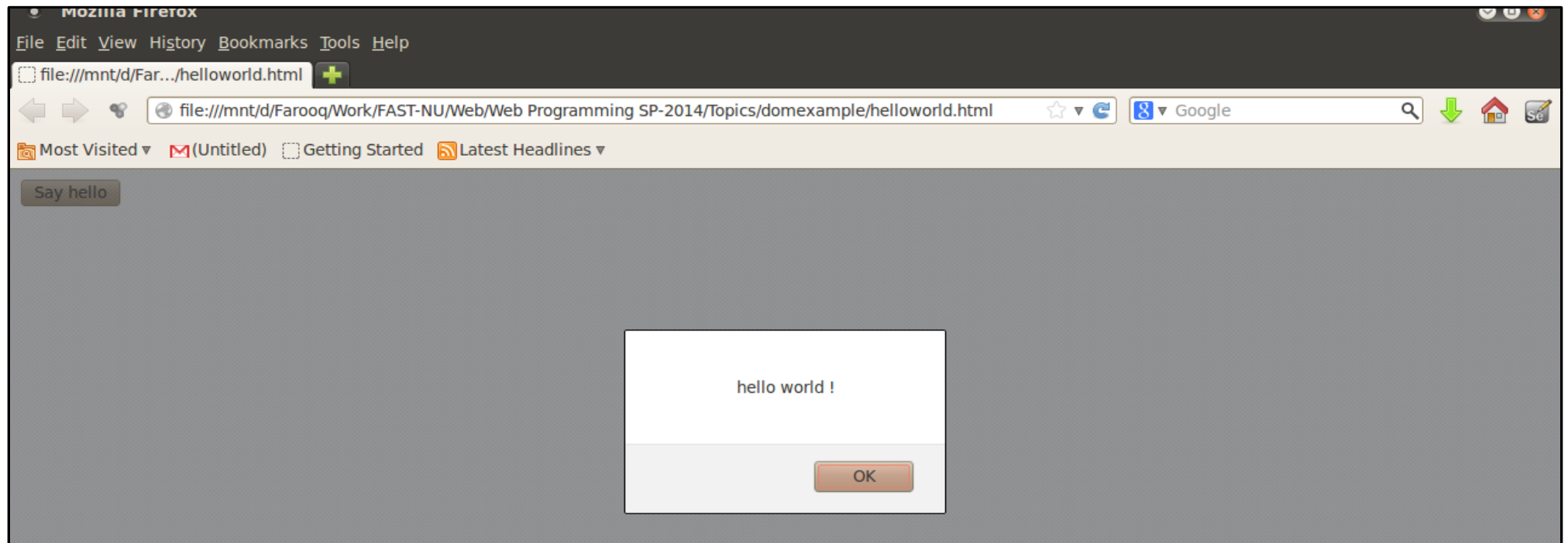
Hello World Example

```
<html>
  <head>
    <script type="text/javascript">

      function sayHello(){
        alert("hello world !");
      }

    </script>
  </head>

  <body>
    <input type="button" value="Say hello" onclick="sayHello()" />
  </body>
</html>
```



Text Effects

WELCOME TO OUR SITE!

```
<script>
function uphilltext(text){
    var temptext=text.toUpperCase()
    var size=1

    //go through the text, letter by letter

    for (i=0;i<temptext.length;i++){
        document.write(temptext.charAt(i).fontsize(size).bold())
        if (size<7)
            size++
        else
            size=1
    }
}

uphilltext("Welcome to our site!");
</script>
```

Source : JavaScript Kit (<http://javascriptkit.com>)

Form Validation

```
<html>
  <head>
    <script type="text/javascript">
      function validate(){
        if (document.getElementById('q').value == ""){
          alert('search string cannot be empty');
          return false;
        }
        return true;
      }
    </script>
  </head>
  <body>
    <form method="GET" action="http://www.google.com/search">
      <input type="text" name="q" id="q" />
      <input type="submit" value="Google Search" onclick="return validate()"/>
    </form>
  </body>
</html>
```

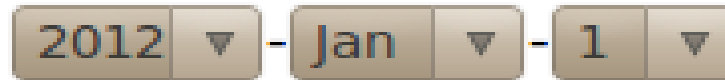
Validation Exercises

- Validate that total count of characters in text area doesn't exceed a specified limit
- Validate if a given string is a number
- Validate that email is in correct format
- Validate that date is in correct format

...

...

Calendar / Date-picker widget



```
<html>
  <head>
    <script type="text/javascript" src="calendar.js"></script>
    <script type="text/javascript" src="calendar_leap.js"></script>
    <script type="text/javascript">

      var cal1 = new Calendar(2012,2014,"cal1");

      function load(){
        cal1.render("divCalendar1");
      }

    </script>
  </head>

  <body onload="load()">
    <div id='divCalendar1'></div>
  </body>
</html>
```



```
var calendarPool = new Array();
```

```
function Calendar(start,end,id){  
    this.startYear = start;  
    this.endYear = end;  
    this.id = id;  
  
    calendarPool[this.id] = this;  
}
```

```
Calendar.prototype.render = function(divId){  
  
    var html = this.getYearHtml();  
    html += "-";  
    html += this.getMonthHtml();  
    html += "-";  
    html += this.getDateHtml();  
  
    document.getElementById(divId).innerHTML = html;  
}
```

```
Calendar.prototype.prefixId = function(str){  
    return this.id + "_" + str;  
}
```

```
Calendar.prototype.getYearHtml = function(){
```

```
    var html = "<select id='" + this.prefixId("cal_year") + "' class='calYear'
        onchange='update_calendar(\""+ this.id +"\" ) '>";
```

```
    for(i=this.startYear; i <= this.endYear; i++){
        html += "<option value=" + i + ">" + i + "</option>";
    }
```

```
    html += "</select>";
```

```
    return html;
```

```
}
```

```
Calendar.prototype.getMonthHtml = function(){
```

```
    var html = "<select id='" + this.prefixId("cal_month") + "' class='calMonth'
        onchange='update_calendar(\""+ this.id +"\" ) '>";
```

```
    html += "<option value='1'>Jan</option>";
    html += "<option value='2'>Feb</option>";
    html += "<option value='3'>Mar</option>";
    html += "<option value='4'>Apr</option>";
    html += "<option value='5'>May</option>";
    html += "<option value='6'>Jun</option>";
    html += "<option value='7'>Jul</option>";
    html += "<option value='8'>Aug</option>";
    html += "<option value='9'>Sep</option>";
    html += "<option value='10'>Oct</option>";
    html += "<option value='11'>Nov</option>";
    html += "<option value='12'>Dec</option>";
    html += "</select>";
```

```
    return html;
```

```
}
```

```
Calendar.prototype.getDateHtml = function(){
    var html = "<select id='" + this.prefixId("cal_date") + "' class='calDate'>";

    for(i=1; i <= 31; i++){
        html += "<option id='" + this.prefixId("cal_d") + i + "'>" + i + "</option>";
    }

    html += "</select>";

    return html;
}
```

```
Calendar.prototype.addDate = function(date){

    var html = "<option id='" + this.prefixId("cal_d" + date) + "'>" + date + "</option>";
    document.getElementById(this.prefixId("cal_date")).innerHTML += html;

}
```

```
Calendar.prototype.removeDate = function(date){

    this.removeElement("cal_d" + date);

}
```

```
Calendar.prototype.removeElement = function(elemId){
    var node = document.getElementById(this.prefixId(elemId));

    if(node != null){
        node.parentNode.removeChild(node);
    }
}
```

```
Calendar.prototype.updateDate = function(){
    var month = document.getElementById(this.prefixId("cal_month")).value;

    this.removeDate(31);
    this.removeDate(30);
    this.removeDate(29);

    if(month == 4 || month == 6 || month == 9 || month == 11){
        this.addDate(29);
        this.addDate(30);
    }
    else if(month != 2){
        this.addDate(29);
        this.addDate(30);
        this.addDate(31);
    }
}
```

```
function update_calendar(id){
    calendarPool[id].updateDate();
}
```

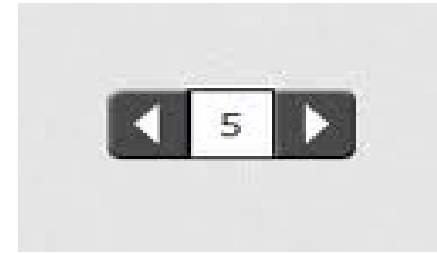
Calendar supporting leap year

```
Calendar.prototype.updateDate = function(){
    var month = document.getElementById(this.prefixId("cal_month")).value;

    this.removeDate(31);
    this.removeDate(30);
    this.removeDate(29);

    if(month == 4 || month == 6 || month == 9 || month == 11){
        this.addDate(29);
        this.addDate(30);
    }
    else if(month != 2){
        this.addDate(29);
        this.addDate(30);
        this.addDate(31);
    }
    else {
        var year = document.getElementById(this.prefixId("cal_year")).value;
        if(year % 4 == 0){
            this.addDate(29);
        }
    }
}
```

Quiz



Write code for a Javascript-based Spin control as shown in the figure above.

Spin control shall have following elements:

- A text field to display a number. Programmer shall be able to specify which number to show when the counter is first displayed**
- Increment button that will advance the counter by the step size. For example if the current value is 5 and step size is 5, pressing Increment button should show 10 in the text field. Programmer shall be able to specify step size.**
- Decrement button that will reduce the counter by the step size. For example if the current value is 5 and step size is 5, pressing Decrement button should show 0 in the text field.**

Please note the following constraints:

- Programmer shall be able to specify which number to show when the counter is first displayed**
- Programmer shall be able to specify step size.**
- Programmer shall be able to get the current value being displayed in control through a function defined in control**

YUI Calendar

December 1982						
Su	Mo	Tu	We	Th	Fr	Sa
28	29	30	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	1
2	3	4	5	6	7	8

<http://yui.yahooapis.com>

```
<html>
  <head>
    <script src="http://yui.yahooapis.com/3.14.1/build/yui/yui-min.js"></script>
    <script type="text/javascript">
      YUI().use('calendar', function (Y) {

        var calendar = new Y.Calendar({
          contentBox: "#mycalendar",
          height: '300px',
          width: '600px',
          showPrevMonth: true,
          showNextMonth: true,
          date: new Date(1982,12,1)}).render();

      });
    </script>
  </head>
  <body class="yui3-skin-sam">
    <div id="mycalendar" ></div>
  </body>
</html>
```

Other YUI widgets

- DataTable
- Panel
- TabView
- Charts
- Slider
- ScrollView

HTML5 Extensions

- Canvas
- Geolocation
- Local Storage
- Web workers
- Server Sent Events

Canvas

```
...  
<body>  
  <canvas id="myCanvas" width="200" height="100" style="border:1px solid #000000;">  
  </canvas>  
</body>  
...
```

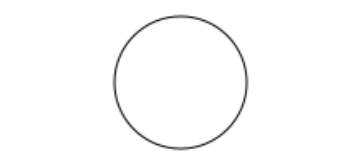
```
function drawRectangle(){  
  var c=document.getElementById("myCanvas");  
  var ctx=c.getContext("2d");  
  ctx.fillStyle="#FF0000";  
  ctx.fillRect(0,0,150,75);  
}
```



```
function drawLine(){  
  var c=document.getElementById("myCanvas");  
  var ctx=c.getContext("2d");  
  ctx.moveTo(0,0);  
  ctx.lineTo(200,100);  
  ctx.stroke();  
}
```



```
function drawCircle(){  
  var c=document.getElementById("myCanvas");  
  var ctx=c.getContext("2d");  
  ctx.beginPath();  
  ctx.arc(95,50,40,0,2*Math.PI);  
  ctx.stroke();  
}
```



Geo Location

```
<script>

    function getLocation()
    {
        if (navigator.geolocation)
        {
            navigator.geolocation.getCurrentPosition(showPosition);
        }
        else{
            alert("Geolocation is not supported by this browser.");
        }
    }

    function showPosition(position)
    {
        alert(position.coords.latitude + "," + position.coords.longitude);
    }
</script>
```

