JavaScript程序设计

实验报告

计算机学院 行政6班 任浩龙 2018141461344



**项目介绍**：

本万年历是基于html的表格(table)嵌入JavaScript代码实现的，JS部分通过getElementsByTagName()方法获取元素ID，然后使用window.op\_calendar获取月份和日期，农历日期通过“日历生成算法”进行计算，最后通过改变id对应的内容实现显示。CSS部分使用了baidu.com的公共css库，按钮控件通过自定义函数e加载，在循环中使用appendChild来添加年份。

**农历算法**：

从前一年冬至开始计算15和朔日

从前一年的冬至节气开始算，计算25个节气时间

获取公历年份

朔望月=13？

判断两个冬至之间有多少朔/望月

生成14个连续朔月信息表

否

是

查月表计算对应农历日期

查找第一个没有中气的月，并查进位表

存入变量

**程序源码**：

文件名：index.html

----------------------------------------------------------------------------------------

<html>

<head>

<meta content="text/html;charset=gb2312" />

<title>万年历-任浩龙2018141461344</title>

<link rel="stylesheet" type="text/css" href="style.css"></head>

<body>

<table>

<tbody>

<tr> <td>

<div id="cal">

<div id="top">公元

<select></select>年

<select></select>月&nbsp;&nbsp;农历

<span></span>年[

<span></span>年]

<botton></botton>

</div>

<ul id="wk">

<li>一</li>

<li>二</li>

<li>三</li>

<li>四</li>

<li>五</li>

<li>六</li>

<li>日</li>

</ul>

<div id="cm"></div>

<div id="bm">

</div>

</div> <script src="dates.js"></script> </td>

</tr>

</tbody>

</table>

</body>

</html>

--------------------------------------------------------------------------------------

文件名：style.css

----------------------------------------------------------------------------------------

#cal {

width:434px;

border:1px solid #c3d9ff;

font-size:12px;

margin:8px 0 0 15px;

}

#cal #top {

height:29px;

line-height:29px;

background:#00BFFF;

color:#003784;

padding-left:70px;

}

#cal #top select {

font-size:12px;

}

#cal #top input {

padding:0;

}

#cal ul#wk {

margin:0;

padding:0;

height:25px;

}

#cal ul#wk li {

float:left;

width:60px;

text-align:center;

line-height:25px;

list-style:none;

}

#cal ul#wk li b {

font-weight:normal;

color:#c60b02;

}

#cal #cm {

clear:left;

border-top:1px solid #ddd;

border-bottom:1px dotted #ddd;

position:relative;

}

#cal #cm .cell {

position:absolute;

width:42px;

height:36px;

text-align:center;

margin:0 0 0 9px;

}

#cal #cm .cell .so {

font:bold 16px arial;

}

#cal #bm {

text-align:right;

height:24px;

line-height:24px;

padding:0 13px 0 0;

}

#cal #bm a {

color:7977ce;

}

#cal #fd {

display:none;

position:absolute;

border:1px solid #dddddf;

background:#feffcd;

padding:10px;

line-height:21px;

width:150px;

}

#cal #fd b {

font-weight:normal;

color:#c60a00;

}

----------------------------------------------------------------------------------------

文件名：dates.js

----------------------------------------------------------------------------------------

//四川大学计算机系2018级行政6班 任浩龙 2018141461344

(function() {

//获取窗口信息

var T = navigator.userAgent.indexOf("MSIE") != -1 && !window.opera;

function N(C) {

return document.getElementById(C)

}

function S(C) {

return document.createElement(C)

}

//农历进位法则

var Q = [19416, 19168, 42352, 21717, 53856, 55632, 91476, 22176, 39632, 21970, 19168, 42422, 42192, 53840,119381, 46400,

54944, 44450, 38320, 84343, 18800, 42160, 46261, 27216, 27968,109396, 11104, 38256, 21234, 18800, 25958, 54432,

59984, 28309, 23248, 11104,100067, 37600,116951, 51536, 54432,120998, 46416, 22176,107956, 9680, 37584, 53938,

43344, 46423, 27808, 46416, 86869, 19872, 42416, 83315, 21168, 43432, 59728, 27296, 44710, 43856, 19296, 43748,

42352, 21088, 62051, 55632, 23383, 22176, 38608, 19925, 19152, 42192, 54484, 53840, 54616, 46400, 46752,103846,

38320, 18864, 43380, 42160, 45690, 27216, 27968, 44870, 43872, 38256, 19189, 18800, 25776, 29859, 59984, 27480,

21952, 43872, 38613, 37600, 51552, 55636, 54432, 55888, 30034, 22176, 43959, 9680, 37584, 51893, 43344, 46240,

47780, 44368, 21977, 19360, 42416, 86390, 21168, 43312, 31060, 27296, 44368, 23378, 19296, 42726, 42208, 53856,

60005, 54576, 23200, 30371, 38608, 19415, 19152, 42192,118966, 53840, 54560, 56645, 46496, 22224, 21938, 18864,

42359, 42160, 43600, 111189, 27936, 44448,84835];

var K = "甲乙丙丁戊己庚辛壬癸"; //10循环

var J = "子丑寅卯辰巳午未申酉戌亥"; //12循环

var P = "鼠牛虎兔龙蛇马羊猴鸡狗猪"; //12循环

var L = ["小寒", "大寒",

"立春", "雨水", "惊蛰", "春分", "清明", "谷雨",

"立夏", "小满", "芒种", "夏至", "小暑", "大暑",

"立秋", "处暑", "白露", "秋分", "寒露", "霜降",

"立冬", "小雪", "大雪", "冬至"]; //15+月份%13偏移量

//农历闰月法则

var B = [0, 21208, 43467, 63836, 85337,

107014, 128867, 150921, 173149,

195551, 218072, 240693, 263343,

285989, 308563, 331033, 353350,

375494, 397447, 419210, 440795,

462224, 483532, 504758];

var A = "日一二三四五六七八九十";

var F = ["正", "二", "三", "四", "五", "六", "七", "八", "九", "十", "十一", "腊"];

var D = "初十廿卅";

var W = {

//公历节日

"0101": "元旦节",

"0214": "情人节",

"0308": "妇女节",

"0312": "植树节",

"0401": "愚人节",

"0501": "劳动节",

"0504": "青年节",

"0601": "儿童节",

"0701": "建党节",

"0801": "建军节",

"0910": "教师节",

"1001": "国庆节",

"1225": "圣诞节"

};

//农历节日

var U = {

"0101": "春节",

"0115": "元宵",

"0505": "端午",

"0815": "中秋",

"0909": "重阳",

"1208": "腊八",

"0100": "除夕"

};

//获取时间戳

function V(Z) {

function d(k, j) {

var i = new Date((31556925974.7 \* (k - 1900) + B[j] \* 60000) + Date.UTC(1900, 0, 6, 2, 5));

return (i.getUTCDate())

}

//计算相对时间

function e(l) {

var j, k = 348;

for (j = 32768; j > 8; j >>= 1) {

k += (Q[l - 1900] & j) ? 1 : 0

}

return (k + c(l))

}

function b(i) {

return (K.charAt(i % 10) + J.charAt(i % 12))

}

//计算农历大小月

function c(i) {

if (h(i)) {

return ((Q[i - 1900] & 65536) ? 30 : 29)

} else {

return (0)

}

}

function h(i) {

return (Q[i - 1900] & 15)

}

function f(j, i) {

return ((Q[j - 1900] & (65536 >> i)) ? 30 : 29)

}

//计算农历日期

function C(n) {

var l, k = 0,

j = 0;

var m = new Date(1900, 0, 31);

var o = (n - m) / 86400000;

this.dayCyl = o + 40;

this.monCyl = 14;

for (l = 1900; l < 2100 && o > 0; l++) {

j = e(l);

o -= j;

this.monCyl += 12

}

if (o < 0) {

o += j;

l--;

this.monCyl -= 12

}

this.year = l;

this.yearCyl = l - 1864;

k = h(l);

this.isLeap = false;

for (l = 1; l < 13 && o > 0; l++) {

if (k > 0 && l == (k + 1) && this.isLeap == false) {--l;

this.isLeap = true;

j = c(this.year)

} else {

j = f(this.year, l)

}

if (this.isLeap == true && l == (k + 1)) {

this.isLeap = false

}

o -= j;

if (this.isLeap == false) {

this.monCyl++

}

}

if (o == 0 && k > 0 && l == k + 1) {

if (this.isLeap) {

this.isLeap = false

} else {

this.isLeap = true; --l; --this.monCyl

}

}

if (o < 0) {

o += j; --l; --this.monCyl

}

this.month = l;

this.day = o + 1

}

function G(i) {

return i < 10 ? "0" + i: i

}

//输出格式化

function g(j, k) {

var i = j;

return k.replace(/dd?d?d?|MM?M?M?|yy?y?y?/g,

function(l) {

switch (l) {

case "yyyy":

var m = "000" + i.getFullYear();

return m.substring(m.length - 4);

case "dd":

return G(i.getDate());

case "d":

return i.getDate().toString();

case "MM":

return G((i.getMonth() + 1));

case "M":

return i.getMonth() + 1

}

})

}

function a(j, i) {

var k;

switch (j, i) {

case 10:

k = "初十";

break;

case 20:

k = "二十";

break;

case 30:

k = "三十";

break;

default:

k = D.charAt(Math.floor(i / 10));

k += A.charAt(i % 10)

}

return (k)

}

//改变页面元素

this.date = Z;

this.isToday = false;

this.isRestDay = false;

this.solarYear = g(Z, "yyyy");

this.solarMonth = g(Z, "M");

this.solarDate = g(Z, "d");

this.solarWeekDay = Z.getDay();

this.solarWeekDayInChinese = "星期" + A.charAt(this.solarWeekDay);

var Y = new C(Z);

this.lunarYear = Y.year;

this.shengxiao = P.charAt((this.lunarYear - 4) % 12);

this.lunarMonth = Y.month;

this.lunarIsLeapMonth = Y.isLeap;

this.lunarMonthInChinese = this.lunarIsLeapMonth ? "闰" + F[Y.month - 1] : F[Y.month - 1];

this.lunarDate = Y.day;

this.showInLunar = this.lunarDateInChinese = a(this.lunarMonth, this.lunarDate);

if (this.lunarDate == 1) {

this.showInLunar = this.lunarMonthInChinese + "月"

}

this.ganzhiYear = b(Y.yearCyl);

this.ganzhiMonth = b(Y.monCyl);

this.ganzhiDate = b(Y.dayCyl++);

this.jieqi = "";

this.restDays = 0;

if (d(this.solarYear, (this.solarMonth - 1) \* 2) == g(Z, "d")) {

this.showInLunar = this.jieqi = L[(this.solarMonth - 1) \* 2]

}

if (d(this.solarYear, (this.solarMonth - 1) \* 2 + 1) == g(Z, "d")) {

this.showInLunar = this.jieqi = L[(this.solarMonth - 1) \* 2 + 1]

}

if (this.showInLunar == "清明") {

this.showInLunar = "清明节";

this.restDays = 1

}

this.solarFestival = W[g(Z, "MM") + g(Z, "dd")];

if (typeof this.solarFestival == "undefined") {

this.solarFestival = ""

} else {

if (/\\*(\d)/.test(this.solarFestival)) {

this.restDays = parseInt(RegExp.$1);

this.solarFestival = this.solarFestival.replace(/\\*\d/, "")

}

}

this.showInLunar = (this.solarFestival == "") ? this.showInLunar: this.solarFestival;

this.lunarFestival = U[this.lunarIsLeapMonth ? "00": G(this.lunarMonth) + G(this.lunarDate)];

if (typeof this.lunarFestival == "undefined") {

this.lunarFestival = ""

} else {

if (/\\*(\d)/.test(this.lunarFestival)) {

this.restDays = (this.restDays > parseInt(RegExp.$1)) ? this.restDays: parseInt(RegExp.$1);

this.lunarFestival = this.lunarFestival.replace(/\\*\d/, "")

}

}

if (this.lunarMonth == 12 && this.lunarDate == f(this.lunarYear, 12)) {

this.lunarFestival = U["0100"];

this.restDays = 1

}

this.showInLunar = (this.lunarFestival == "") ? this.showInLunar: this.lunarFestival;

this.showInLunar = (this.showInLunar.length > 4) ? this.showInLunar.substr(0, 2) + "...": this.showInLunar

}

var R = (function() {

var Y = {};

Y.lines = 0;

Y.dateArray = new Array(42);

function Z(b) {

return (((b % 4 === 0) && (b % 100 !== 0)) || (b % 400 === 0))

}

//公历大小月天数

function G(b, c) {

return [31, (Z(b) ? 29 : 28), 31, 30, 31, 30, 31, 31, 30, 31, 30, 31][c]

}

function C(b, c) {

b.setDate(b.getDate() + c);

return b

}

function a(b) {

var g = 0;

var d = new V(new Date(b.solarYear, b.solarMonth - 1, 1));

var e = (d.solarWeekDay - 1 == -1) ? 6 : d.solarWeekDay - 1;

Y.lines = Math.ceil((e + G(b.solarYear, b.solarMonth - 1)) / 7);

for (var f = 0; f < Y.dateArray.length; f++) {

if (d.restDays != 0) {

g = d.restDays

}

if (g > 0) {

d.isRest = true

}

if (e-->0 || d.solarMonth != b.solarMonth) {

Y.dateArray[f] = null;

continue

}

var c = new V(new Date());

if (d.solarYear == c.solarYear && d.solarMonth == c.solarMonth && d.solarDate == c.solarDate) {

d.isToday = true

}

Y.dateArray[f] = d;

d = new V(C(d.date, 1));

g--

}

}

return {

init: function(b) {

a(b)

},

getJson: function() {

return Y

}

}

})();

//显示模块

var X = (function() {

var C = N("top").getElementsByTagName("SELECT")[0];

var Y = N("top").getElementsByTagName("SELECT")[1];

var G = N("top").getElementsByTagName("SPAN")[0];

var d = N("top").getElementsByTagName("SPAN")[1];

var Z = N("top").getElementsByTagName("botton")[0];

function b(h) {

G.innerHTML = h.ganzhiYear;

d.innerHTML = h.shengxiao

}

function c(h) {

C[h.solarYear - 1901].selected = true;

Y[h.solarMonth - 1].selected = true

}

function g() {

var k = C.value;

var h = Y.value;

var j = new V(new Date(k, h - 1, 1));

R.init(j);

O.draw();

if (this == C) {

j = new V(new Date(k, 3, 1));

G.innerHTML = j.ganzhiYear;

d.innerHTML = j.shengxiao

}

var i = new V(new Date());

Z.style.visibility = (k == i.solarYear && h == i.solarMonth) ? "hidden": "visible"

}

function a() {

var h = new V(new Date());

b(h);

c(h);

R.init(h);

O.draw();

Z.style.visibility = "hidden"

}

//下拉菜单栏传参

function e(l, h) {

for (var k = 1901; k < 2100; k++) {

var j = S("OPTION");

j.value = k;

j.innerHTML = k;

if (k == l) {

j.selected = "selected"

}

C.appendChild(j)

}

for (var k = 1; k < 13; k++) {

var j = S("OPTION");

j.value = k;

j.innerHTML = k;

if (k == h) {

j.selected = "selected"

}

Y.appendChild(j)

}

C.onchange = g;

Y.onchange = g

}

function f(h) {

e(h.solarYear, h.solarMonth);

G.innerHTML = h.ganzhiYear;

d.innerHTML = h.shengxiao;

Z.onclick = a;

var i = new V(new Date());

Z.style.visibility = (h.solarYear === i.solarYear && h.solarMonth === i.solarMonth && h.solarDate === i.solarDate) ? "hidden": "visible"

}

return {

init: function(h) {

f(h)

},

reset: function(h) {

c(h)

}

}

})();

//输出表单日期

var O = (function() {

function C(e) {

var a = R.getJson();

var d = a.dateArray;

N("cm").style.height = a.lines \* 38 + 2 + "px";

N("cm").innerHTML = "";

for (var b = 0; b < d.length; b++) {

if (d[b] == null) {

continue

}

var Y = S("DIV");

if (e) {

if (e.solarDate === d[b].solarDate) {

Y.style.cssText = "border:1px solid #a5b9da;background:#c1d9ff"

}

} else {

if (d[b].isToday) {

Y.style.cssText = "border:1px solid #a5b9da;background:#c1d9ff"

}

}

Y.className = "cell";

Y.style.left = (b % 7) \* 60 + "px";

Y.style.top = Math.floor(b / 7) \* 38 + 2 + "px";

var c = S("DIV");

c.className = "so";

c.style.color = ((b % 7) > 4 || d[b].isRest) ? "#c60b02": "#313131";

c.innerHTML = d[b].solarDate;

Y.appendChild(c);

var Z = S("DIV");

Z.style.color = "#000";

Z.innerHTML = d[b].showInLunar;

Y.appendChild(Z);

Y.onmouseover = (function(f) {

return function(g) {

E.show({

dateIndex: f,

cell: this

})

}

})(b);

Y.onmouseout = function() {

E.hide()

};

N("cm").appendChild(Y)

}

var G = S("DIV");

G.id = "fd";

N("cm").appendChild(G);

E.init(G)

}

return {

draw: function(G) {

C(G)

}

}

})();

var E = (function() {

var C;

function Z(f, d) {

if (arguments.length > 1) {

var c = /([.\*+?^=!:${}()|[\]\/\\])/g,

a = "{".replace(c, "\\$1"),

e = "}".replace(c, "\\$1");

var b = new RegExp("#" + a + "([^" + a + e + "]+)" + e, "g");

if (typeof(d) == "object") {

return f.replace(b,

function(g, i) {

var h = d[i];

return typeof(h) == "undefined" ? "": h

})

}

}

return f

}

//鼠标移动显示

function G(c) {

var b = R.getJson().dateArray[c.dateIndex];

var a = c.cell;

var d = "#{solarYear}&nbsp;年&nbsp;#{solarMonth}&nbsp;月&nbsp;#{solarDate}&nbsp;日&nbsp;#{solarWeekDayInChinese}";

d += "<br><b>农历&nbsp;#{lunarMonthInChinese}月#{lunarDateInChinese}</b>";

d += "<br>#{ganzhiYear}年&nbsp;#{ganzhiMonth}月&nbsp;#{ganzhiDate}日";

if (b.solarFestival != "" || b.lunarFestival != "" || b.jieqi != "") {

d += "<br><b>#{lunarFestival} #{solarFestival} #{jieqi}</b>"

}

C.innerHTML = Z(d, b);

C.style.top = a.offsetTop + a.offsetHeight - 5 + "px";

C.style.left = a.offsetLeft + a.offsetWidth - 5 + "px";

C.style.display = "block"

}

function Y() {

C.style.display = "none"

}

return {

show: function(a) {

G(a)

},

hide: function() {

Y()

},

init: function(a) {

C = a

}

}

})();

var H = (function() {

var G = N("bm").getElementsByTagName("A")[0];

function C(Y) {

G.href = ""

}

return {

setLink: function(Y) {

C(Y)

}

}

})();

var M = new V(new Date());

var I = (function() {

if (window.op\_calendar && window.op\_calendar.year && window.op\_calendar.month && window.op\_calendar.day) {

var C = new Date([window.op\_calendar.year, window.op\_calendar.month, window.op\_calendar.day].join("/"));

if ((C.toString().toLowerCase() !== "invalid date") && (Object.prototype.toString.apply(C).toLowerCase() === "[object date]")) {

return new V(C)

} else {

return M

}

} else {

return M

}

})();

X.init(I);

R.init(I);

O.draw(I);

H.setLink(M)

})();