# 基于 D3 的词云图可视化
# JSP+MySQL+D3 展示

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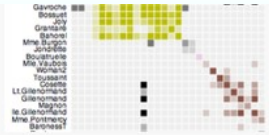
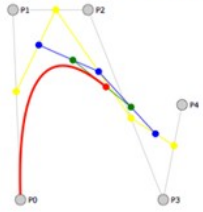
# 什么是词云图





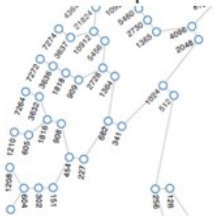

Chord Diagram


Animated Béziers

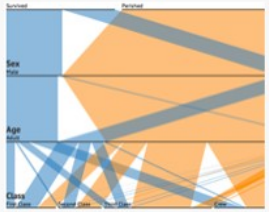



Zoomable Sunburst

Collatz Graph

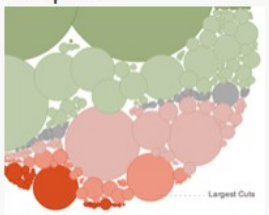


Parallel Sets

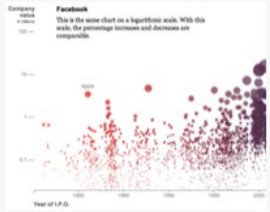



Word Cloud


Obama's Budget Proposal



Facebook IPO

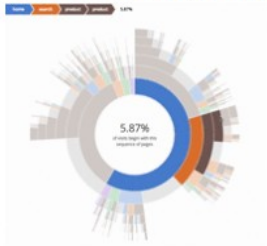



D3 Mobile Application

Federal Budget

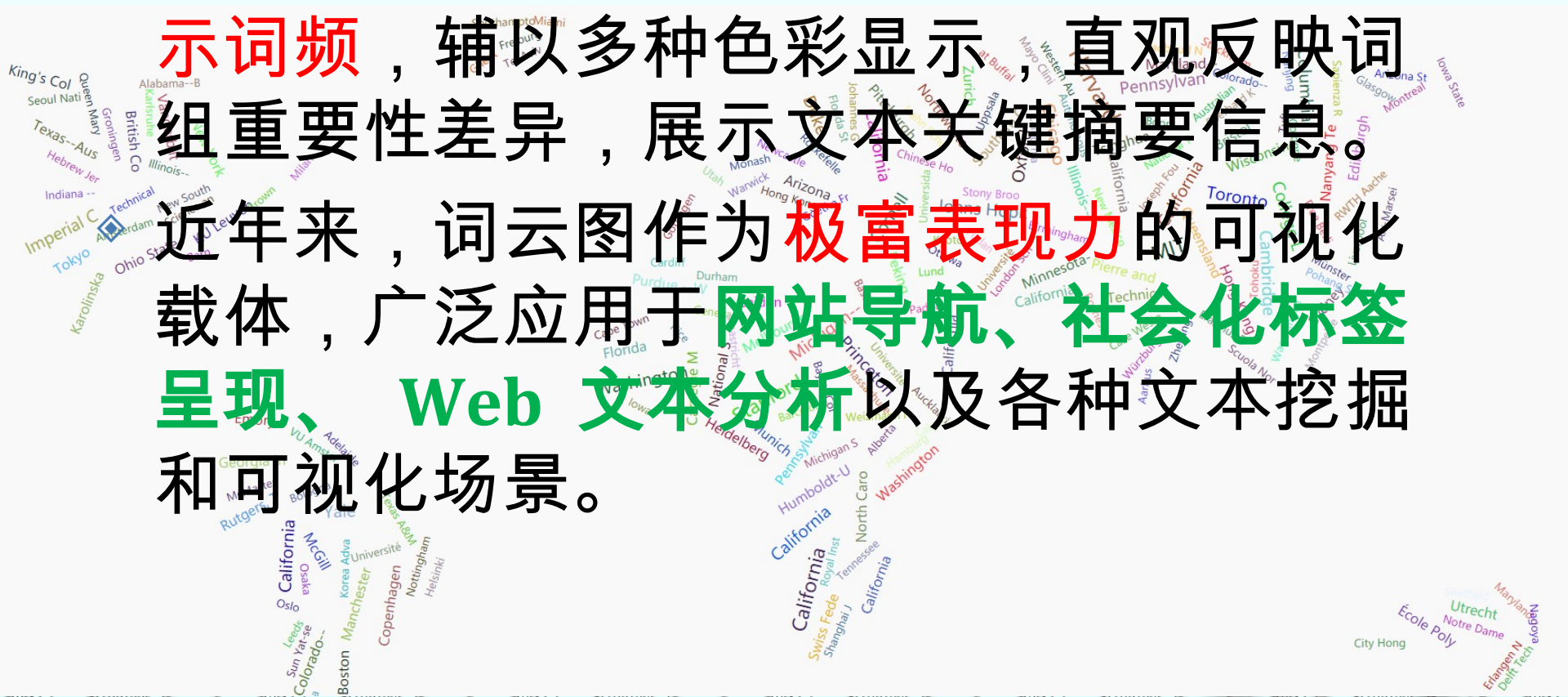
US Trade Deficit

Sequences sunburst



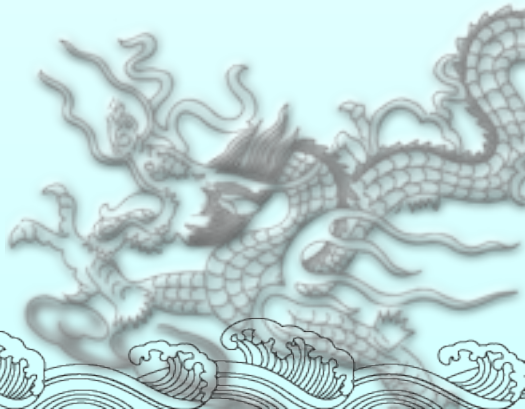
# 什么是词云图

- 词云图（ *Word Cloud* ）是一种**富信息文本可视化技术**，通过**布局算法**用**文字大小表示词频**，辅以多种色彩显示，直观反映词组重要性差异，展示文本关键摘要信息。近年来，词云图作为**极富表现力**的可视化载体，广泛应用于**网站导航、社会化标签呈现、 Web 文本分析**以及各种文本挖掘和可视化场景。



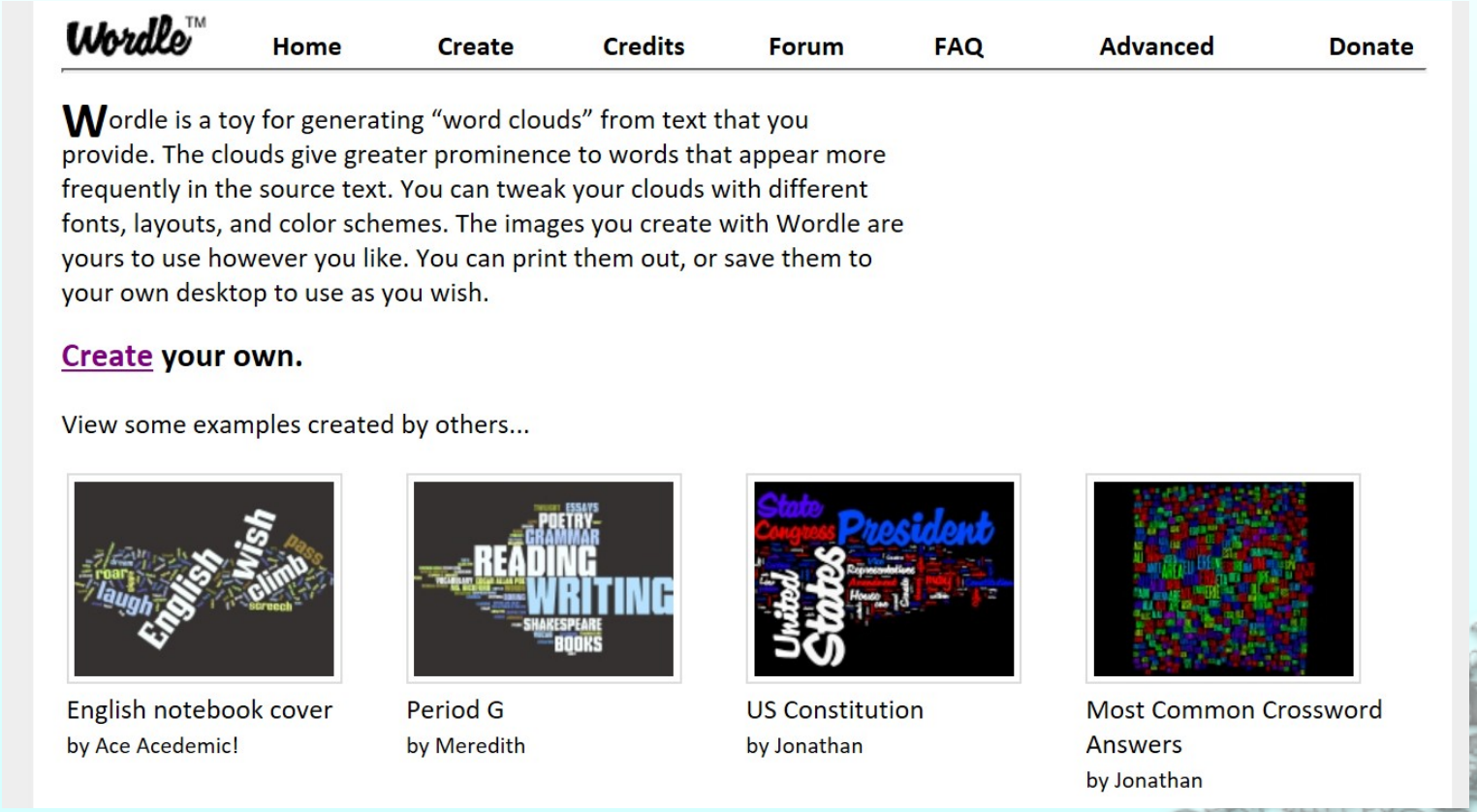
# 什么是词云图

- 完整的词云分析包括：分词、词频统计和可视化，这种综合的文本挖掘技术，以极
- 小代价统揽全文主旨，具有初筛选和归纳性，显著提高海量文本使用效率。



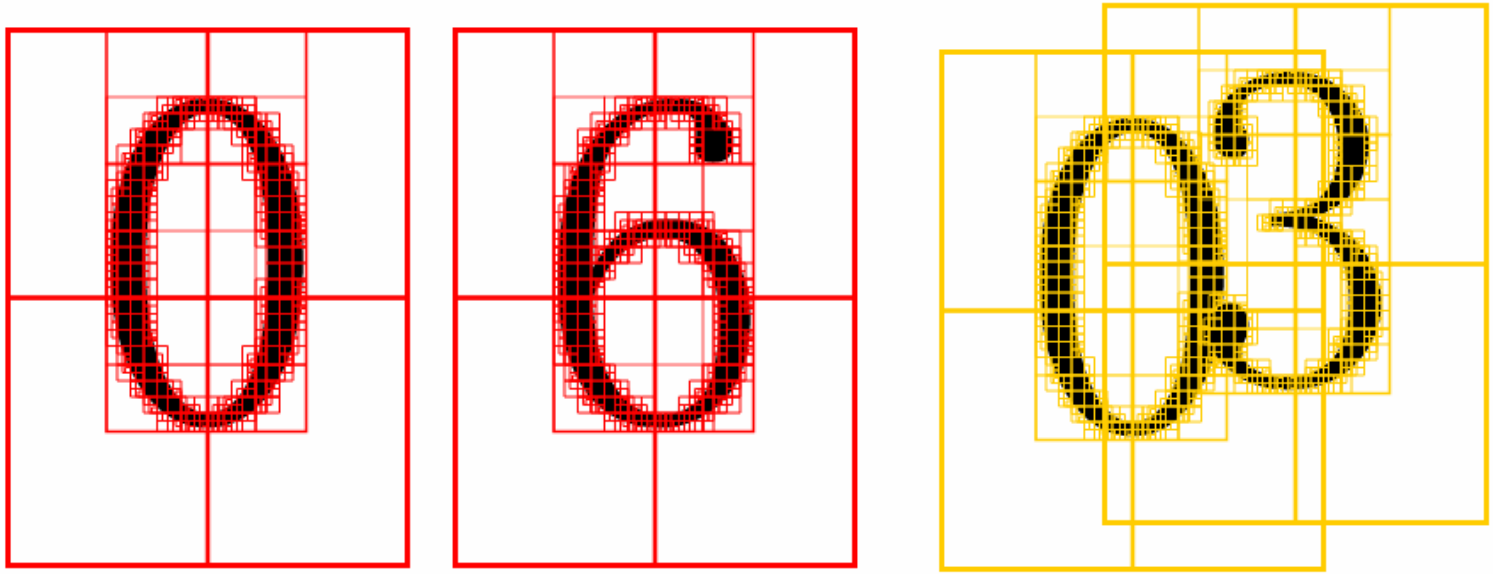
# 词云图起源于 Wordle

- *Wordle.com: Java Applet*



# D3.JS 词云图

- 后来 *D3.JS* 实现了 *JavaScript* 的 *Wordle* 算法。 *Wordle* 基于空间四叉树去除重叠。

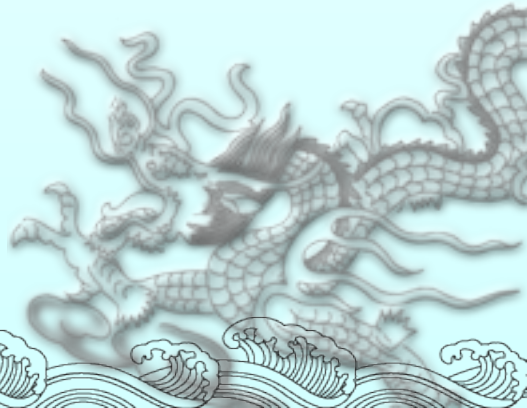


# D3.JS 词云图

- *https://www.jasondavies.com/wordcloud/*

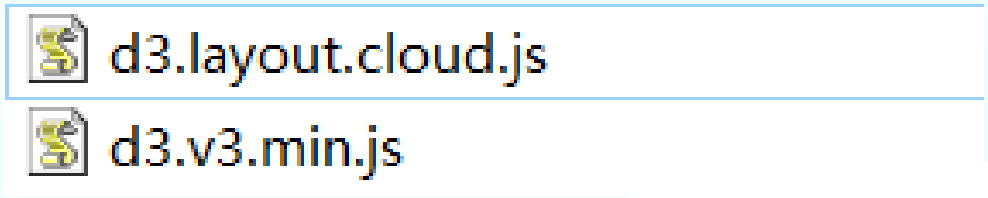
# D3 词云图参数

- *var words=[{text:" 战狼 2",size:57},*
- *{text:" 速度与激情 8",size:27},*
- *{text:" 羞羞的铁拳 ",size:22},*
- *{text:" 功夫瑜伽 ",size:18},*
- *{text:" 西游伏妖篇 ",size:17},*
- *{text:" 变形金刚 5",size:16},*
- *{text:" 摔跤吧！爸爸 ",size:13},*
- *{text:" 芳华 ",size:13},*
- *{text:" 寻梦环游记 ",size:12},*
- *{text:" 加勒比海盗 5",size:12}];*



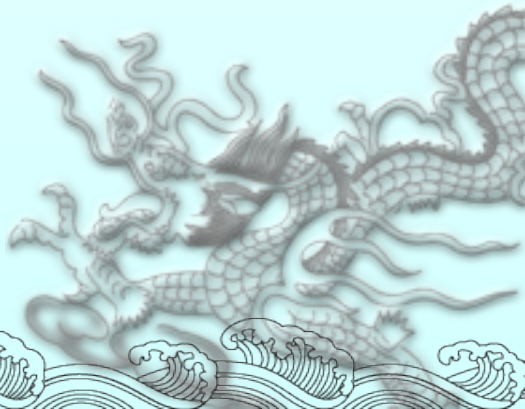
# D3 词云图

- 加载的 *JavaScript* 库




# 词云图布局算法：计算文本坐标

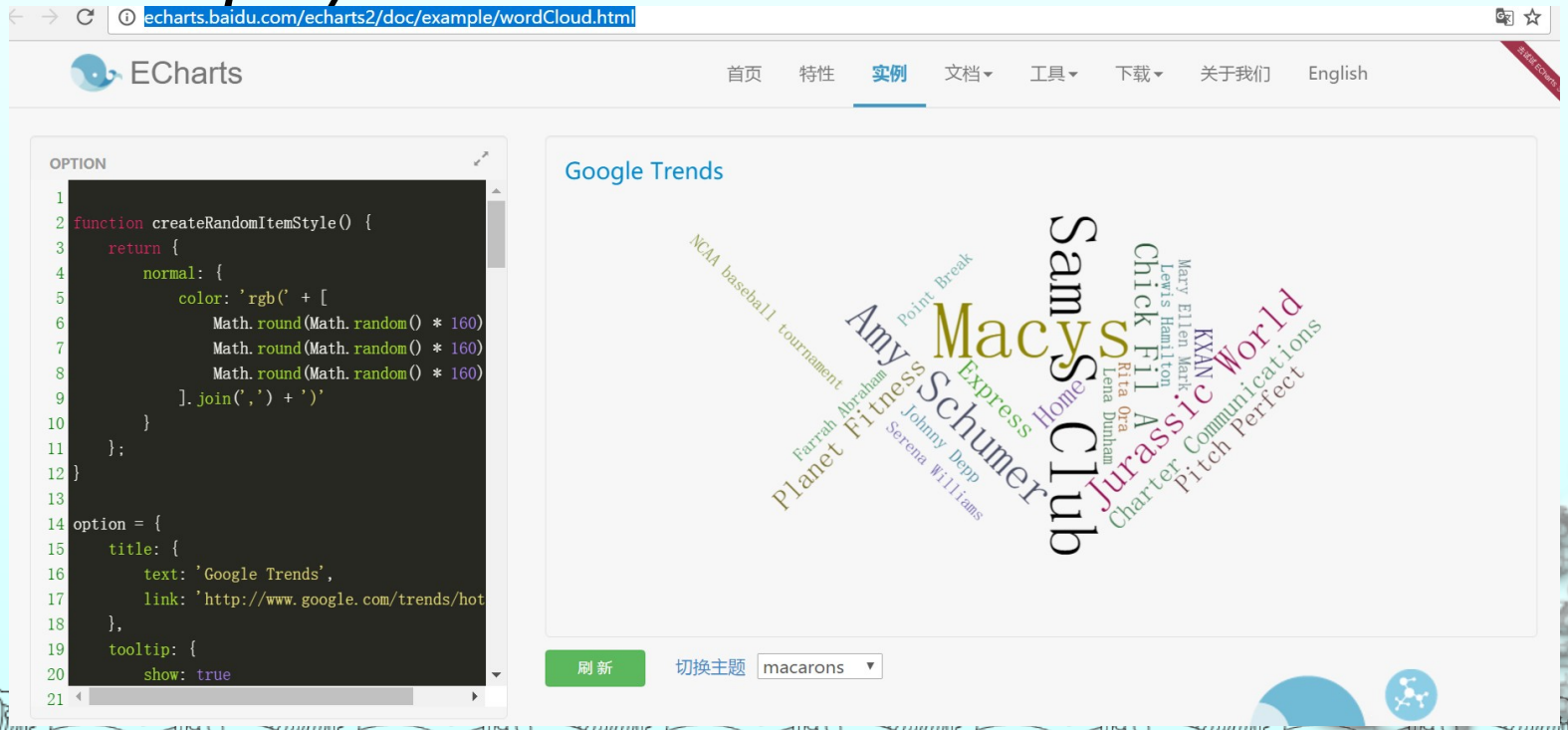
```
var
wc=d3.layout.cloud() .size([600,
400])
.words(words)
.padding(5)
.fontSize(function(d) { return
d.size; })
.on("end", draw)
.start();
```



```
function draw(words) {
        d3.select("body").append("svg")
            .attr("width", 600)
            .attr("height", 400)
            .append("g")
            .attr("transform", "translate(300,200)")
            .selectAll("text")
            .data(words)
            .enter().append("text")
            .style("font-size", function(d) { return d.size + "px"; })
            .style("fill", function(d, i) { return fill(i); })
            .attr("transform", function(d) {
                    return "translate(" + [d.x, d.y] +
")rotate(" + d.rotate + ")";
                })
                .text(function(d) { return d.text; });
        }
```

# Echart2 词云图

- 采用了开源的 *D3.JS*
- *http://echarts.baidu.com/echarts2/doc/example/wordCloud.html*

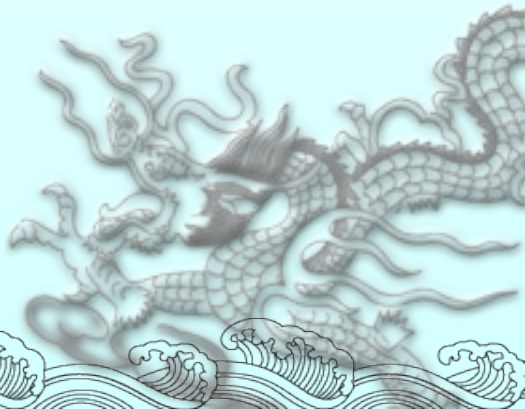


# 实例： D3 词云图


- *<meta charset="utf-8">*
- *<body>*
- **<script src="d3.v3.min.js"></script>**
- **<script src="d3.layout.cloud.js"></script>**
- *<script>*
- *var fill = d3.scale.category20();*

# 实例： D3 词云图

```
d3.layout.cloud().size([300, 300])
    .words([
      "Hello", "world", "normally", "you", "want", "more", "words",
      "than", "this"].map(function(d) {
      return {text: d, size: 10 + Math.random() * 90};
    }))
    .padding(5)
    .rotate(function() { return ~~(Math.random() * 2) * 90; })
    .font("Impact")
    .fontSize(function(d) { return d.size; })
    .on("end", draw)
    .start();
```



# 实例： D3 词云图

```
function draw(words) {
  d3.select("body").append("svg")
    .attr("width", 300)
    .attr("height", 300)
   .append("g")
    .attr("transform", "translate(150,150)")
   .selectAll("text")
    .data(words)
   .enter().append("text")
    .style("font-size", function(d) { return d.size + "px"; })
    .style("font-family", "Impact")
    .style("fill", function(d, i) { return fill(i); })
    .attr("text-anchor", "middle")
    .attr("transform", function(d) {
      return "translate(" + [d.x, d.y] + ")rotate(" + d.rotate + ")";
    })
    .text(function(d) { return d.text; });
}
</script>
```

# 链接数据库显示词云

```
d3.layout.cloud().size([width, height])
    .words([
      "A", "B", "C", "D", "E", "F", "G", "H", "I", "J", "K", "L", "M", "N", "O", "P", "Q", "R", "S", "T", "U", "V", "W", "X", "Y", "Z"]
    .map(function(d) {
            var tmp={
                    <%
                    for(int i=0;i<26;i++){
                            out.print("\""+(char)('A'+i)+"\" : "+count[i+1]);
                            if(i!=25){
                                    out.print(", ");
                            }
                    }
                    %>
            };
      return {text: d, size: Math.sqrt(tmp[d])*5.5};
    }))
    .padding(-3)
    .rotate(function() { return ~~(Math.random() * 2) * 90; })
    .font("Impact")
    .fontSize(function(d) { return d.size; })
    .on("end", draw)
    .start();
```

# Java 链接数据库

```
<!DOCTYPE html>
<html>
<body>
<div id="wc"></div>
<%@ page contentType="text/html; charset=gb2312" %>
<%@ page language="java" %>
<%@ page import="com.mysql.jdbc.Driver" %>
<%@ page import="java.sql.*" %>
```

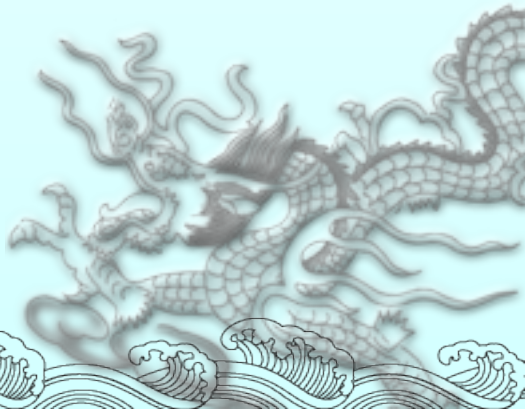
# Java 链接数据库

```
<%
    // 驱动程序名
    String driverName="com.mysql.jdbc.Driver";
    // 数据库用户名
    String userName="root";
    // 密码
    String userPasswd="";
    // 数据库名
    String dbName="engword";
    // 表名
    String tableName="map_enword";
    // 联结字符串
    String url="jdbc:mysql://localhost/"+dbName+"?user="+userName+"&password="+userPasswd;

    Class.forName("com.mysql.jdbc.Driver").newInstance();
```

# Java 链接数据库

```
Connection connection=DriverManager.getConnection(url);
    Statement statement = connection.createStatement();
    String sql="SELECT * FROM "+tableName+" order by english";
    ResultSet rs = statement.executeQuery(sql);
    // 获得数据结果集合
    ResultSetMetaData rmeta = rs.getMetaData();
    // 确定数据集的列数，亦字段数
    String str1="";
    while(rs.next()) {
            str1=rs.getString(2);
            out.print(str1+" ");
    }
%>
```



```
<%
        rs.close();
        statement.close();
        connection.close();
%>
</body>
</html>
```

# JSP 向词云图 JS 传递参数

```
<%for(int i=1;i<count.length;i++){%>
words[<%=i%>-1]=
{text:''+String.fromCharCode(64+<%=i%>),size:<%=count[i]%>} ; <
%}%>
```

# 加一个超链接

```
function wc_click(e){
        var evt=e||window.event;
        var evtSrc=evt.target||evt.srcElement;
        location.href="word.jsp?w="+evtSrc.textContent;
}

 var ele=document.getElementsByClassName("wc");
   for(var e in ele){
        ele[e].onclick=wc_click;
   }
```