



# 多人在线协作 白板工具

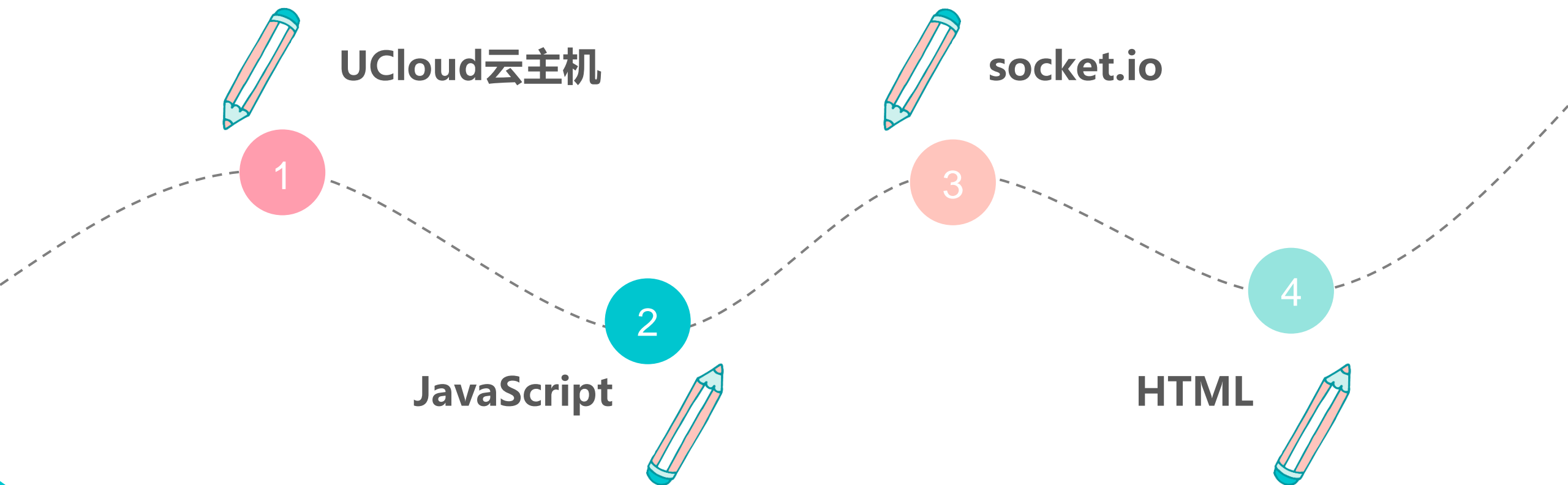
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**url:** [http://gitea.shuishan.net.cn/10195501421/heyufan-wangyiming-zhangwenyi-finalproject\\_of\\_cloud-computing-course.git](http://gitea.shuishan.net.cn/10195501421/heyufan-wangyiming-zhangwenyi-finalproject_of_cloud-computing-course.git)

**测试网页:** <http://106.75.253.94/>



# 使用技术



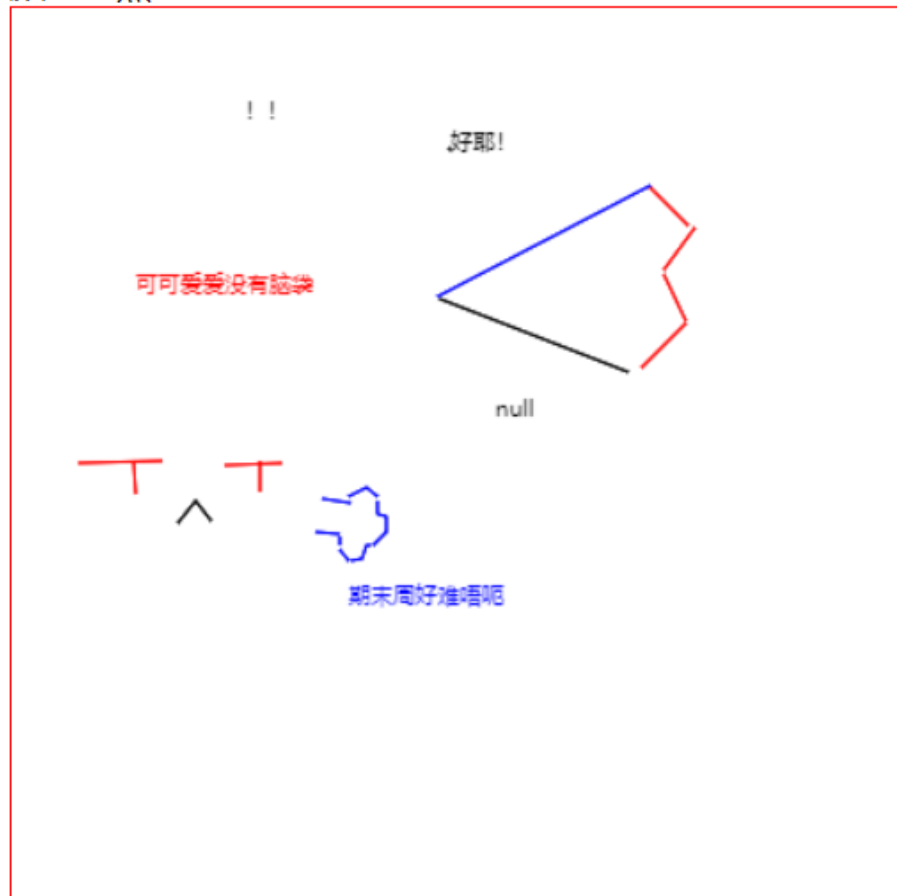
# 实现的功能

多人在线书写功能

黑，红，蓝三种笔书写（从起笔到终点的直线）

橡皮擦功能、一键清空功能

☐ 橡皮  
颜色：黑 ☐ 红 ☐ 蓝 ☒



清空画布

# 后端代码实现与修改

```
io.on("connection", function(socket){
  socket.on("line", function(msg){//画线
    //向客户端发命令
    msg.name = "line";
    msgs.push(msg);
    io.sockets.emit("message", msg);
  });
  socket.on("text", function(msg){//文字
    msg.name = "text";
    msgs.push(msg);
    io.sockets.emit("message", msg);
  });
  socket.on("eraser", function(msg){//橡皮
    msg.name = "eraser";
    msgs.push(msg);
    io.sockets.emit("message", msg);
  });
});
```

```
socket.on("load", function(msg){//从头画
  socket.emit("load", {
    name : "load",
    msgs : msgs
  });
});
socket.on("clear", function(msg){
  msgs.length = 0;
  io.sockets.emit("message", {
    name : "clear"
  });
});
});

var msgs = [];
```

# 前端代码实现与修改

```
1 var app = require("http").createServer(handler);
2 var io = require("socket.io")(app);
3 var fs = require("fs");
4
5 function handler(req, res){
6   var html = fs.readFileSync("index.html", "utf8");
7   res.setHeader("Content-Type", "text/html");
8   res.setHeader("Content-Length", Buffer.byteLength(html, "utf8"));
9   res.end(html);
10 }
11
12 app.listen(80);
13
14 io.on("connection", function(socket){
15   socket.on("line", function(msg){//画线
16     //向客户端发命令
17     msg.name = "line";
18     msgs.push(msg);
19     io.sockets.emit("message", msg);
20   });
21   socket.on("text", function(msg){//文字
22     msg.name = "text";
23     msgs.push(msg);
24     io.sockets.emit("message", msg);
25   });
26   socket.on("eraser", function(msg){//橡皮
27     msg.name = "eraser";
28     msgs.push(msg);
29     io.sockets.emit("message", msg);
30   });
31   socket.on("load", function(msg){//从头画
32     socket.emit("load", {
33       name : "load",
34       msgs : msgs
35     });
36   });
37   socket.on("clear", function(msg){
38     msgs.length = 0;
39     io.sockets.emit("message", {
40       name : "clear"
41     });
42   });
43 });
44
45 var msgs = [];
```

```
<!DOCTYPE html>
<html>
<head>
  <meta charset="utf-8">
  <style type="text/css">
    #c{
      border: 1px solid red;
    }
  </style>
</head>
<body>
  <input type="checkbox" id="er" >橡皮
  <br>
  颜色: 黑<input type="radio" name="color" value="black" checked="">红<input type="radio" name="color" value="red">蓝<input type="radio" name="color" value="blue">
  <br>
  <canvas id="c" width="400" height="400"></canvas>
  <br>
  <button id="clear">清空画布</button>
```

参考链接: [https://github.com/qidafang/whiteboard\\_by\\_socket\\_io](https://github.com/qidafang/whiteboard_by_socket_io)

# 云主机环境配置与连接

```
[root@10-23-147-187 node]# cd nodejs
-bash: cd: nodejs: No such file or directory
[root@10-23-147-187 node]# mv node-v14.10.0-linux-x64 nodejs
[root@10-23-147-187 node]# ls
nodejs  node-v14.10.0-linux-x64.tar.xz
[root@10-23-147-187 node]# cd nodejs
[root@10-23-147-187 nodejs]# cd bin
[root@10-23-147-187 bin]# ll
total 71992
-rwxr-xr-x 1 1001 1001 73716968 Sep  8 19:46 node
lrwxrwxrwx 1 1001 1001      38 Sep  8 19:46 npm -> ../lib/node_modules/npm/bin/
npm-cli.js
lrwxrwxrwx 1 1001 1001      38 Sep  8 19:46 npx -> ../lib/node_modules/npm/bin/
npx-cli.js
[root@10-23-147-187 bin]# ln -s /node/nodejs/bin/npm /usr/local/bin/
[root@10-23-147-187 bin]# ln -s /node/nodejs/bin/node /usr/local/bin/
[root@10-23-147-187 bin]# node -v
v14.10.0
[root@10-23-147-187 bin]#
```

```
[root@10-23-147-187 ~]# mkdir try
[root@10-23-147-187 ~]# cd try
[root@10-23-147-187 try]# npm install socket.io
npm WARN saveError ENOENT: no such file or directory, open '/root/try/package.js
on'
npm notice created a lockfile as package-lock.json. You should commit this file.
npm WARN enoent ENOENT: no such file or directory, open '/root/try/package.json'
npm WARN try No description
npm WARN try No repository field.
npm WARN try No README data
npm WARN try No license field.

+ socket.io@3.0.5
added 23 packages from 74 contributors and audited 23 packages in 6.433s
found 0 vulnerabilities

[root@10-23-147-187 try]# ls
node_modules  package-lock.json
[root@10-23-147-187 try]# node main.js
```

参考链接: [https://blog.csdn.net/weixin\\_42365757/article/details/108507213](https://blog.csdn.net/weixin_42365757/article/details/108507213)

# 后续尝试

画出曲线

增加画笔颜色

增加油漆桶等功能



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**感谢聆听!**

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