

# Design and Development of a Random Matching Chat Mini Program based on the QQ/Wechat of the Tencent Cloud

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## Abstract

With the rapid development of economy and the Internet, mobile communication devices are changing rapidly and their functions are becoming more and more complete, which also causes people to live faster and faster. The increasing demands of daily life and the increasing pressure of work. Chat is an important tool for people to maintain their feelings. Wechat has become the most popular App in China, playing an important role both at work and in life. Wechat's 2016 launch of the Wechat public platform brought new ways of presenting applications. Wechat Mini Program's advantage is that there is no need to download and install, that is, to use, wave it, with its concise operation to quickly seize the market. This design uses Wechat to provide special development tools, a number of sample tutorials help developers quickly get started, back-end using PHP development, through the interface to connect the front-end and back-end. Today's chat tools are mostly presented in the form of APP, which requires users to download and install, and need users to authenticate, bind ID numbers, and so on. The excessive exposure of identity information in the Internet has become the biggest hidden danger in the current network security. The chat tool with the theme of "random matching" is developed with the help of Wechat platform, and Wechat itself is restricted by the relevant laws and the environment is safe. Mini Programs's management is more stringent, from the developer identity audit, interface advertising proportion and interface opening all aspects have made strict requirements, greatly providing a secure development environment. Do not record the user's personal information in the chat process, can satisfy the user's need for privacy security. The chat objects are matched in a random manner, providing the user with a private stress relief vent. In the form of Mini Programs development, on the one hand, it is promote the new development of chat tools, users do not need to download and install. On the other hand, it is helpful to alleviate the problem that APP tends to saturate.

## Keywords

Tencent Cloud; Random Matching; Chat Tool; Wechat Mini Program.

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## 1. Introduction

### 1.1 Topic background

With the development of the Internet, data has infiltrated into every aspect of people's daily life, changing the way people communicate. In 2011, tencent launched Wechat with great success, and in 2016, the Wechat APP concept set off a wave of APP reform. It has been suggested that a product with a low usage rate for Wechat APP development would be the best choice. The APP provides an alternative for high usage applications, as the Wechat APP can solve problems such as high

maintenance costs and high traffic consumption. Applet through API algorithm to achieve no download installation, no registration effect.

Wechat is the most developed and widely used social APP today, allowing people to communicate with each other by sending pictures, text and audio, all of which reinforce the reliance on electronic devices. Communication is the basic way to develop interpersonal relationship, lack of communication has become a common disease of contemporary people, resulting in a sense of loneliness has become an important factor affecting the level of mental health of contemporary people. Great pressure and negative emotions can not be resolved in time, over time easy to form mental illness, such as: social anxiety. Studies have shown that high neurotic individuals are more likely to form conflicts in real life, so they may be more willing to seek emotional satisfaction and stress release through mobile phones to escape reality. More and more people choose to communicate by mobile phone, which has become a mainstream way.

As the data age progresses, connections between people seem to become more frequent and intense in the non-physical Internet environment, but the reality is that loneliness and anxiety in people's inner world become more intense. People's personal information gradually open, privacy "no escape.". At the same time, the phenomenon of "network crime" appears unavoidably. The network crime is one kind of endangers the social interest and the security behavior. Overexposure of personal information is the biggest hidden danger. This design does not need to register, chat does not need to add friends. Random matching chat, so that users do not disclose any information, as far as possible to prevent online fraud, to provide users with a more private and secure chat environment, can express their true feelings without concern, to relieve the stress of a fast-paced life.

## 1.2 Current research situation in China

Domestic research status the common domestic chat tools such as QQ, Wechat, Feixin, with more than 50 million downloads, with a strong advantage to lead the trend of chat software.

QQ And Wechat belong to the same development company, QQ from the development of the original text-only interaction to the text, pictures, voice and video interaction. QQ Mobile version and short message, can achieve collaboration between members through the computer and mobile devices for text communication [5]. Need to designated official website and APP store for download and installation, occupy memory space, the need to regularly clean up the cache information. Registered account includes: real name authentication, telephone number binding, personal information filling, etc. Add friends can chat, anonymous chat object limited to the scope of friends.

Wechat, the largest social media mobile APP in the market, has a huge user base. Wechat has been growing and perfecting at an amazing speed since its birth, among which the Wechat service ecology, represented by the Wechat public platform, has penetrated into all walks of life and our daily life. As a new type of multimedia system, it has the characteristics of convenient operation, high communication efficiency, accurate content, accurate push message and so on. Wechat continues to innovate new functions, communication as the main function, to set communications, social, media, marketing, tools as one of the platform products. In the designated official website and APP store download installation, occupy memory space, to phone number as a way to register, need real name authentication. Anonymous chat is not supported.

## 1.3 Research Purposes and Implications

There are many chat tools available today, but they inevitably require downloading memory, registering to fill in information, getting current location information, and so on, the most important thing is that users can not avoid the existence of information leakage concerns. In the context of big data, privacy breaches often occur, and the more attention paid to privacy policies, the higher the privacy concerns of users, which reflects the increasingly serious privacy concerns of users. Users are demanding more and more information security, and the state is increasingly binding on online social networks, such as the Organization for Economic Cooperation and Development's revised privacy guidelines, the cybersecurity law, and the general data regulations. Wechat platform with the

development of random matching chat applet and Wechat are subject to the same law, even more than Wechat is subject to the binding force, with credibility. I believe that the advantages of small programs and psychological needs of users can make random matching chat small programs are very suitable for development on Wechat.

Wechat offers a new way to connect with friends. Small program development so far has a large number of users, some functions have been achieved independent of the APP to form their own characteristics. Safe and sound. A study of the largest online social software in the country has found that cybercrime has become a national problem. Security and privacy are amplified by the speed, volume, and variety of big data. Wechat has publicly said it can not use public accounts as a marketing channel, and the random-matching chat APP is subject to stricter regulation to ensure overall safety and health. Random matching chat applet is different from Qq, Wechat and other chat tools that need empirical information. Random matching can solve the privacy concerns when users choose chat tools, and provide users with a more relaxed environment by anonymous means. Wechat has a huge user base, the first quarter of 2018 Wechat accounts showed that the number of users broke 1 billion, reaching 1.04 billion. Random matching small program developed with the help of Wechat platform, has a good way of publicity, high user acceptance. Effective in relieving social anxiety. In the real world, people are more socially stressed and have higher levels of social anxiety. It's easier to reveal yourself and gain acceptance when you're in a new environment and face a new person. Using mobile social networks to some extent can reduce anxiety, improve self esteem, gain a sense of identity, and increase self well being.

## 2. System Function Analysis

Wechat provides "Wechat Web developer tool" overall divided into .js, .wxss, .wxml, .json four file formats, can fully achieve the development of the front, and the implementation of Wechat running in the application with native APP experience, save the download and installation steps. The background is set up by phpstudy and connected to the MySQL database to transfer data between the front end and the back end of the database using a local server to simulate the Tencent cloud.

### 2.1 Front-end Implementation Function

Random matching chat applet front-end with the following functions:

User information confirmation. Enter the first interface of small program, output user profile picture and user name, do user information confirmation only, do not save to database operation. At the same time get user OpenID, stored in the database. Confirm key jump.

Topic preview. This page serves as a guide, providing users with a wide range of topics. Continue the key jump, you can also save the current page to return.

Log in. Log In and you'll be able to access the chat interface. Get a "logon success" alert. Edit text. The most important part of the design, the interface and Wechat chat interface consistent, user-friendly operation.

### 2.2 Back-end Implementation Function

Random matching chat applet back-end with the following functions:

User and information viewing. Users log in to the applet to get the user's OpenID. 1. Into the database, and the chat logs into the database.

2. Deletion of users and information. Delete a chat record of a user.

## 3. Implementation method

### 3.1 Front-end Implementation Method

#### 3.1.1 Using the Tool

Wechat Web developer tool can be downloaded in the Wechat public platform. This program uses version 1.02.1803210.

### 3.1.2 Front End Interface

The user profile confirmation interface is designed using four files: chat. wxml, chat. wxss, chat. js, chat. wxml for page layout, chat. wxss do style settings, chat. js to do a script file, get the user profile and user name and response to the key.

The topic preview interface is designed using user userConsole. Wxml, userConsole. wxss for design. userConsole. js Responds to keys.

The design of a total of three interfaces, chat, userConsole, Chantt. Each interface contains. wxml. wxss. js three files, each interface is a separate page, each page needs to be in a json file.

The chat interface is the initial interface, which is the first interface a user sees when entering the applet. The page takes the user's profile and user name.

The userConsole interface is the boot page.

The chattt interface takes a user's OpenID and randomly matches them to chat.

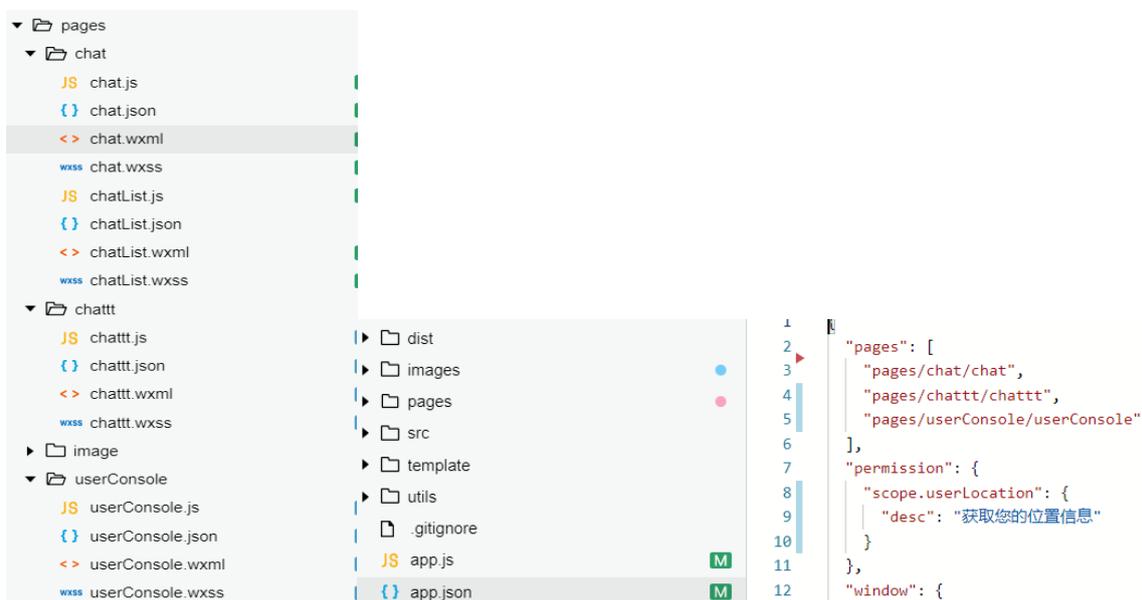


Figure 1. Front-end Total Design Structure

### 3.1.3 Introduction to Front-end Matching

The random matching function takes a user's OpenID and randomly takes a list of users in a database and matches them. If match to the same user will show the past chat record, exit applet after re-entry can be re-matched.

```
return that.promise = new Promise(function(resolve) {
  util.request(that.onechatRul + '/get_navopenid.php', 'post', {
    openid: wx.getStorageSync('openid'),
  }, '', function(res) {
    var rand = Math.floor(Math.random() * res.data.length);
    // 随机从数组中取出某值

    that.navopenid = res.data[rand].openid;
    var navopenid = res.data[rand].openid;
    resolve(navopenid);
    console.log('app.navopenid:', that.navopenid)
  })
})
```

Figure 2. Random Matching Design

Wechat public platform Web application in the interface design page can be corresponding to the back-end of the transfer of data for reference. In app. js suffix recommendation page function to achieve interaction with the background can complete a complete transfer process.

```
onLaunch: function(e) {  
  console.log(e)  
  var that = this;  
  this.onechatRul = 'http://localhost/oneChat';  
  ...  
}
```

Figure 3. The Front-end Connects the Back-end Main Code

Implementation of Wechat interface jump in .js file.

```
again: function () {  
  wx.navigateTo({ url: '../userConsole/userConsole' })  
},
```

Figure 4. Click on The Page to Achieve the Corresponding Jump

### 3.2 Backend and database implementation method

#### 3.2.1 Use the Tool

phpStudy to create MySQL databases in Phpstudy. Download.

#### 3.2.2 Back -end Specific Functions and Structure

Database with user's OpenID and chat records, can be viewed and deleted.

#### 3.2.3 Implementation of the Back-end Function

Back-end implementation of access to OpenID, and stored in the database, response to the front-end random access matching OpenID, save chat records.

```
$code = $_POST['code'];  
$appid = wx550b1a1f3d478d8'://appid  
$appsecret = eba1444611fb80ff38e8ba9e6d5161a7'://appsecret  
$url = https://api.weixin.qq.com/sns/jscode2session?appid=$appid.&secret=$appsecret.&js_code=$code.&grant_type=authorization_code';  
$json = file_get_contents($url);  
//只返回openid. json是一个json对象  
$array = json_decode($json, TRUE);  
$obj = json_decode($array);  
$openid = $obj->openid;  
  
$q = "SELECT * FROM chatuser"; //SQL查询语句 SELECT * FROM 表名  
$result = mysql_query("SELECT * FROM chatuser  
WHERE openid='$openid'");  
$num=mysql_num_rows($result); //获取行数  
if($num>0){  
  //插入数据到数据库  
  $strsql = "insert into chatuser (openid) values('$openid')";  
  //mysql_query() 函数执行一条 MySQL 查询。SELECT, SHOW, EXPLAIN 或 DESCRIBE 都需要用这个函数执行  
  $result = @mysql_query($strsql);  
}  
echo $openid;
```

Figure 5. OpenID Input Database

```
//循环读取数据并存入数组对象  
$dlogs;$i=0;$dlog;  
while($row=mysql_fetch_array($rs))  
{  
  $result = @mysql_query($strsql);  
  if($row["fasongfang"]==$openid){  
    $dlog['name'] = $row["usernamef"];  
    $dlog['img'] = $row["avatarurlf"];  
    $dlog['openid'] = $row["jieshoufang"];  
    $dlog['date'] = $row["date"];  
    $dlog['shenfen'] = "fasongfang";  
    $dlogs[$i++]=$dlog;  
  }  
  if($row["jieshoufang"]==$openid){  
    $dlog['name'] = $row["usernamef"];  
    $dlog['img'] = $row["avatarurlf"];  
    $dlog['openid'] = $row["fasongfang"];  
    $dlog['shenfen'] = "jieshoufang";  
    $dlog['date'] = $row["date"];  
    $dlogs[$i++]=$dlog;  
  }  
}  
echo urldecode(json_encode($dlogs));
```

Figure 6. Back-end Information Entry Database

### 3.3 Experimental Results

1. Open the back end and the database
2. Open the front end, user information confirmed to get a matching user OpenId as well as their own OpenId.

```
app.navopenid: oMUMY0Vty_v8uHRHoK3m7samxpRE
提交文字
sendTemplateMessage: ▶ {data: {...}, header: {...},
nickName: 傅阳 avatarUrl: https://wx.qlogo.cn/t
SHCV3myRUeRJIvqrctHticg/132
oD66A4rvoRfEpu37eRfJkYeSRQSc
```

Figure 7. Get OpenId

3. Edit the text and click send.

Go into the database and look at the "xinxi" log table to see the chat logs, where the "jieshoufang" field records the user OpenID that matches, and the "fangsongfang" field records the current user's OpenID.

	jieshoufang	fangsongfang	xinxi	date	usernamef	usernamej	avatarurlf	avatarurlj
	oMUMY0Vty_v8uHRHoK3m7samxpRE	oD66A4rvoRfEpu37eRfJkYeSRQSc	我是小明	1552987693576	undefined		undefined	
	oMUMY0Vty_v8uHRHoK3m7samxpRE		你好	1552987439599	undefined		undefined	

Figure 8. DataBase

### 4. Conclusion

The design is based on the Wechat Public Platform Web, which is the development tool of Wechat. The tool can digest the general development language well, and the language support is similar to that of Android, the front-end development follows the learning progress quite smoothly through the network massive video resources, because uses is the local server, writes the request failed because HTTPS must be used, and the URL can not have a port number. Choosing the wrong domain name on the settings page can solve the problem. The backstage uses the phpstudy to carry on the development, in the design initial, through the books, the network inquiry and so on way to carry on understood, chooses uses the phpstudy to carry on the development, but the process is not smooth, in the past study only stays in the front end the design, there is no hands-on experience for the background, through the web to find sample code and tutorials while learning the practice. The biggest problem is the interface code, front end and back end through the interface data transmission, confusion access-token, code, session-key concepts, the interface call process has been in a clear state, lack of systematic understanding, it is by asking programmers in the relevant fields that they gain insight into the entire invocation process.

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