Project Document for CrazyPages

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1. Abstraction

This document is a project document for the assigned individual project for Web Service & SOA course. It's written as an entertainment auxiliary for every single person, especially who surf the Internet a lot. For some objective reasons, the theme of my project has changed after the project proposal submitted. This document aims to draw a brief illustration of CrazyPages and make it easier to learn about its technology stack. This proposal is divided into 5 parts mainly. The first part intoduces the design concept and practicality of Sino, in addition to some operation guides. Then the second part demonstrates the architecture of the project, divided by the front-end and the back-end design. The third lists all the web-apis I've used, demonstrates all the apis that I design and achieve, and explains the integration. The fourth part demonstrates a few screenshots of my project. The last part instructs readers to set up environment and precondition in order to run the whole project.

2. Brief Introduction

CrazyPages is a product made by a crazy programmer(yey, that's me), to provide precious entertainment for high-speed living people and high-pressurers. I try my best to make the front-end pages cute and active. They may make you smile and also learn some interesting facts. Hope my project bring you a good day!
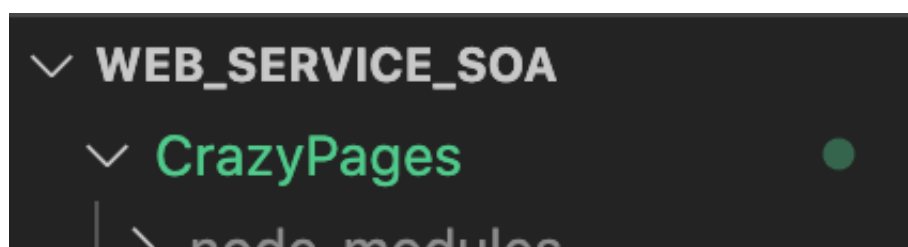
3. Architecture

3.1 Front-end

3.1.1 Introduction

My front-end part is based on a react scaffolding. React basically helps to distribute task into lower levels and realize easier data fetching and access. The structure is listed as below.

```
> node_modules
> public                                    ●
∨ src                                       ●
  ∨ components                              ●
    ∨ search                                ●
      JS searchContentDr...                 U
      JS searchContentHis...                U
      JS searchContentNe...                 U
      JS searchContentTra...                U
      JS searchFrame.js                     U
    JS Footer.js                            U
    JS logoBar.js                           U
    🖼 searchLogoBar.png                    U
  > pages                                   ●
  > routes                                  ●
  JS App.js                                 U
  {} App.less                               U
  JS App.test.js                            U
  # index.css                               U
  JS index.js                               U
  🔖 logo.svg                               U
  JS serviceWorker.js                       U
```

3.1.2 Structure

- node_modules: dependency file, fine to be added into git.ignore
- public: openly access files
- src: edit your 90% codes here
- index.js => load some global scripts and start a react app
- **component** => including views and logical controller of the elements of frontend web pages
- pages: including more direct rendering of pages
- **routes** => **index.js** ==> package React routes to jump to a certain path and define mine
- craco.config.js => realize the global configuration of UI component library such as change theme color
- setupProxy.js => import http-proxy-middleware and set up my Proxy agent

3.1.3 Most Used Libraries

1. ant-design UI
2. axios
3. proxy
4. jquery

3.1.4 Essential Code Pics

```js
import SearchPage from "../pages/search/searchPage";
import SearchResult from "../pages/search/searchResult";


export const mainRoutes = [{
    path: "/search",
    title: "搜索页面",
    component: SearchPage
},
{
    path: "/searchResult/:kw",
    title: "搜索结果页面",
    component: SearchResult
}]
```

pic1: set routes

```
JS searchPage.js        JS searchResult.js ✕

CrazyPages > src > pages > search > JS searchResult.js > ...
  1    import React, { Component } from 'react'
  2    import Footer from '../../components/Footer'
  3    import SearchContentDream from '../../components/search/searchContentDream'
  4    import LogoBar from '../../components/logoBar'
  5    import SearchContentNews from '../../components/search/searchContentNews'
  6    import SearchContentTransEng from '../../components/search/searchContentTransEng'
  7    import { Row, Col, Layout, PageHeader } from 'antd';
  8
  9    export default class SearchResult extends Component {
 10        render() {
 11            return (
 12                <div >
 13                    <PageHeader
 14                        className="site-page-header"
 15                        onBack={() => this.props.history.goBack()}
 16                        title="还想搜? "
 17                        subTitle="好吧那你搜吧"
 18                    />
 19                    <LogoBar/>
 20                    <Row>
 21                        <Col span={12} offset={7}>
 22                            <SearchContentTransEng />
 23                        </Col>
 24                    </Row>
 25                    <Layout style={{ margin: '2% 8% 5% 8%' }}>
 26                        <Row>
 27                            <Col span={12}>
 28                                <SearchContentNews />
 29                            </Col>
 30                            <Col span={12}>
 31                                <SearchContentDream />
 32                            </Col>
 33                        </Row>
 34                    </Layout>
 35                    <Footer/>
 36                </div>
 37            )
 38        }
 39    }
```

pic2: SearchResult Component design

```
JS searchPage.js ✕      JS searchResult.js

CrazyPages > src > pages > search > JS searchPage.js > ...
  1    import React, { Component } from 'react'
  2    import { Layout } from 'antd'
  3    import SearchFrame from '../../components/search/searchFrame'
  4    import LogoBar from '../../components/logoBar'
  5    import Footer from '../../components/Footer'
  6    import SearchContentHistory from '../../components/search/searchContentHistory'
  7
  8    export default class SearchPage extends Component {
  9        render() {
 10            return (
 11                <div >
 12
 13                    <LogoBar/>
 14
 15                    <SearchFrame/>
 16
 17                    <Layout style={{ margin: '5% 8% 5% 8%' }}>
 18                        <SearchContentHistory/>
 19                    </Layout>
 20
 21                    <Footer/>
 22
 23                </div>
 24            )
 25        }
 26    }
```

pic3: SearchPage Component design

```
CrazyPages > src > components > search > JS searchFrame.js > ...
1    import React, { Component } from 'react'
2    import { Input, Layout } from 'antd';
3
4    const { Search } = Input;
5
6    export default class SearchFrame extends Component {
7
8        constructor(props) {
9
10           super(props)
11           this.state = {
12             kw: this.props.kw
13           }
14
15       }
16
17       inputChange(e){
18           this.setState({
19             kw: e.target.value
20           })
21           console.log(this.state.kw)
22       }
23
24       keyDown(e){
25           if(e.keyCode === 13){
26           }
27       }
28
29       searchJump(value){
30           console.log(this.state.kw)
31           window.location.hash=`#/searchResult/${this.state.kw}`
32       }
33
```

```
    render() {

        return (
            <div style={{ marginLeft: '25%', backgroundColor: 'white' }}>
                <Layout style={{ backgroundColor: 'white' }}>
                    <Search
                        placeholder="这是一个无聊的网站，不要在这里搜索任何东西！"
                        style={{ width: '65%'}}
                        enterButton="Search"
                        size="large"

                        value={this.state.kw}
                        onSearch={value => this.searchJump(value)}
                        //onKeyDown={e=>this.keyDown(e)}
                        onChange={this.inputChange.bind(this)}
                    />
                </Layout>

            </div>
        )
    }
}
```

pic4-5: SearchFrame Component design

```
export default class SearchContentTransEng extends Component {
    constructor(props) {
        super(props);
        this.state = {
          keyword: window.location.hash.slice(15),
          data:[]
        };
    }
    componentDidMount(){
        Axios
        .get(`https://api.66mz8.com/api/translation.php?info=`+this.state.keyword)
        .then((res) => {
        console.log('res2:', res.data)
        var result=res.data
        this.setState({data:result})
        })
        .catch(function (error) {
        console.log(error)
        })
    }
    componentWillUnmount = () => {
      this.setState = (state,callback)=>{
        return;
      };
    }
    render() {
        //初始化render数组状态
        let objArr=this.state.data
        return(
        <Layout>
            <PageHeader
              className="site-page-header"
              ghost={false}
              title={"首先我知道你搜索的意思是\""+objArr.fanyi+"\""}
              subTitle="我英语比你强多了（狗头）"
            />
        </Layout>
        )
```

pic6: SearchContentTransEng Component design, including fetch data through web-api by the way of URL

```javascript
1    import React, { Component } from 'react'
2    import { Layout, List, PageHeader } from 'antd';
3    import axios from 'axios'
4    axios.defaults.baseURL = '/api'
5
6    export default class SearchContentHistory extends Component {
7
8        constructor(props) {
9            super(props);
10           this.state = {
11               keyword: window.location.hash.slice(15),
12               myData:{
13                   code:'',
14                   month:'',
15                   day:'',
16                   data:[]
17               }
18           }
19       }
20
21       componentDidMount(){
22           axios
23           .get('/history')
24           .then((res) => {
25           console.log('res1:', res.data)
26           var result=res.data
27           this.setState({myData:result})
28           })
29           .catch(function (error) {
30           console.log(error)
31           })
32          console.log(this.state.myData)
33       }
34       componentWillUnmount = () => {
35         this.setState = (state,callback)=>{
36           return;
37         };
```

```javascript
render() {
    //初始化render数组状态
    let objArr=this.state.myData
    return(
      <Layout>

        <PageHeader
          className="site-page-header"
          ghost={false}
          title="我打赌你不知道……"
          subTitle="历史上的今天发生了这些事！"
        />

        <List
            itemLayout="horizontal"
            dataSource={objArr.data}
            style={{ marginLeft: '20px', marginTop: '5px' }}
            split={true}
            grid={{ column:'2', gutter: '2px'}}
            renderItem={item => (
          <List.Item>
              <List.Item.Meta

              title={
                <a href={item.link}>
                  {item.title}
                </a>
              }
              //昵称
              description={'公元'+item.year+'年'+this.state.myData.month+'月'+this.state.myData.day+'日'}
              //账号
              />
          </List.Item>
          )}
        />
      </Layout>
    )
}
```

pic7-8: SearchContentHistory Component design, including fetch data through my api by agent name

3.2 Back-end

3.2.1 Introduction

My back-end part is based on Python Flask. I've learned how to use Flask to finish enough requirements for my project just for one night and finally realize everything necessary. Python Flask is agile, efficient and practical. And it's so suitable for this assignment. The structure is listed as below.

3.2.2 Structure

in main.py, you will first find dependencies imported such as flask, flask_cors (to solve CORS problems), requests.

```
# r'/*' 是通配符，让本服务器所有的URL 都允许跨域请求
CORS(app, resources=r'/*')
```

Above allows all URLs on this server to allow cross-domain requests.

Then I bind functions to a route and define the methods of data requsting. If there need to be some parameters I use request.value.get(), then pass on to call for web-apis and return data after encoding (to controll the format). And if there is key needed for a certain web-api (the key should be acquired by myself from their platform), I will wrap the api fine and cut the number of parameters to keep it easy.

```
if __name__ == '__main__':
    app.run(debug=True)
```

Finally app.run. Keep the back-end server working and then test all my api at the front-end. They all work out.

3.2.3 Essential Code Pics

```
flask  main.py                                                            main

P..                    main.py
  flask  ~/Pycharm    1    from flask import Flask, request, json
    venv              2    import requests, json
    main.py           3
  External Librarie   4    from flask_cors import CORS
  Scratches and C     5
                      6    app = Flask(__name__)
                      7
                      8    # r'/*' 是通配符，让本服务器所有的URL 都允许跨域请求
                      9    CORS(app, resources=r'/*')
                     10
                     11
                     12    # 历史上的今天
                     13    @app.route('/api/history', methods=['GET'])  # 装饰器
                     14    def history():
                     15        url = 'https://api.asilu.com/today/'
                     16        data = requests.get(url)
                     17        data.encoding = 'utf-8'
                     18        return data.text
                     19
                     20
                     21    # 时事新闻搜索
                     22    @app.route('/api/news', methods=['GET'])
                     23    def news():
                     24        keyword = request.values.get('kw')  # 例：http://127.0.0.1:5000/api/news?kw=奥巴马
                     25        url = 'http://api.avatardata.cn/ActNews/Query'
                     26        key = 'a119e90b1a1a4087ac24157b8c25755a'
                     27        dtype = 'XML'
                     28        dict = {'key': key, 'dtype': dtype, 'keyword': keyword}
                     29        res = requests.get(url, dict)  # 这个调用第三方接口的方法，第二个参数是字典/字节流
                     30        # type(res.text)是str
                     31        return res.text

                          dream()
 4: Run  TODO  6: Problems  Terminal  Python Console                    Event Log
                                              37:81  LF  UTF-8  4 spaces  Python 3.7 (flask)
```
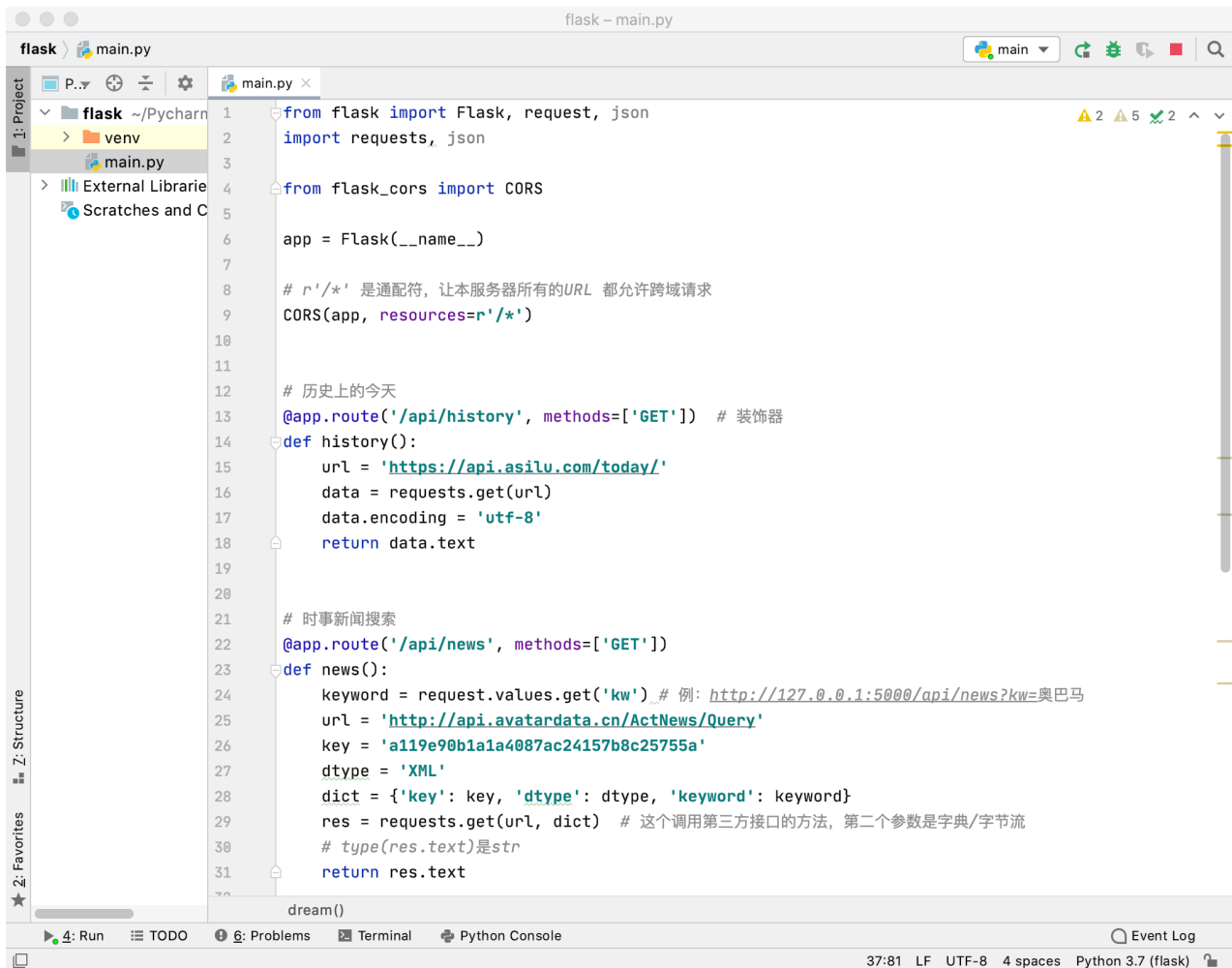
```python
# 周公解梦
@app.route('/api/dream', methods=['GET'])
def dream():
    keyword = request.values.get('kw')  # 例：http://127.0.0.1:5000/api/dream?kw=黄金
    url = 'http://v.juhe.cn/dream/query'
    key = 'c5179ebd54f625613902bc6660d4b1b5'
    dict = {'key': key, 'q': keyword}
    res = requests.post(url, dict)
    res.encoding = 'utf-8'
    # type(res.text)是str
    return res.text


if __name__ == '__main__':
    app.run(debug=True)
```

4. Apis and Intergration

4.1 All of the web-apis I used

src	BaseURL	Data Format	Note
简爱API	https://api.asilu.com/today	json	历史上的今天
阿凡达数据	http://api.avatardata.cn/ActNews/Query	xml	新闻时事查询
Kate·API	https://api.66mz8.com/api/translation.php	json	中英互译
聚合数据	http://ip.taobao.com/service/	json	周公解梦查询

4.2 My Apis

Method	Api	Note
GET	/api/history	Get today's history affairs.
GET	/api/news?kw	Get the detailed news list searched by a certain keyword.
GET	/api/dream?kw	Get the detaied dream analysis list searched by a certain keyword.

4.3 Intergration

Back-end:

```python
@app.route('/api/dream', methods=['GET'])
def dream():
    keyword = request.values.get('kw') # 例: http://127.0.0.1:5000/api/dream?kw=黄金
    url = 'http://v.juhe.cn/dream/query'
    key = 'c5179ebd54f625613902bc6660d4b1b5'
    dict = {'key': key, 'q': keyword}
    res = requests.post(url, dict)
    res.encoding = 'utf-8'
    # type(res.text)是str
    return res.text
```
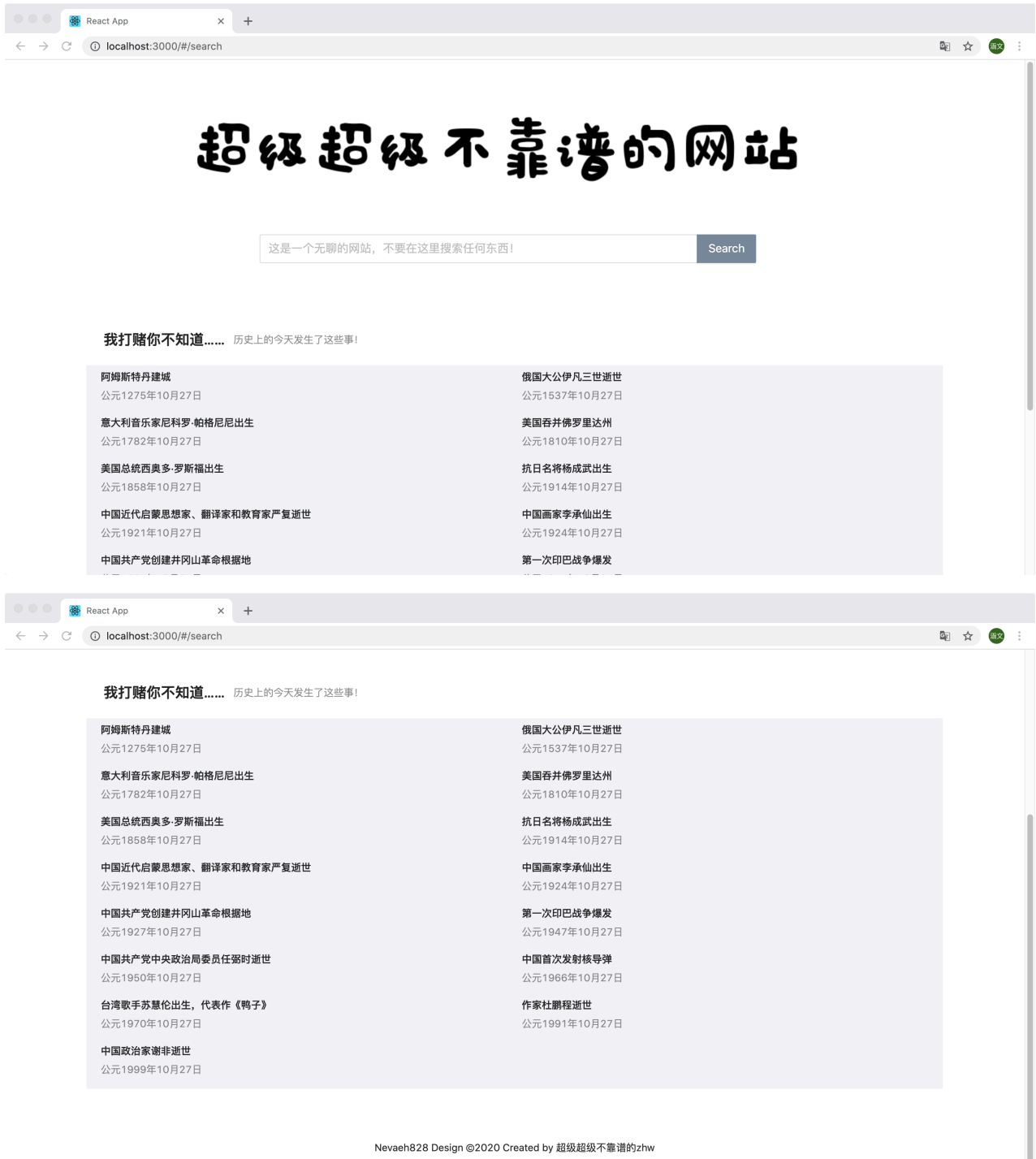
Front-end:

```
    var url = '/dream?kw=' + this.state.keyword
  axios.get(url).then((res) => {
    console.log('res3:', res.data)
    var result=res.data.result
    this.setState({myData:result})
  })
```

```
  render() {
    //初始化render数组状态
    let objArr=this.state.myData
    return(
      <Layout>
        <PageHeader
            className="site-page-header"
            ghost={false}
            title="最后我还熟读《周公解梦》，昨晚梦见这个啦？"
            subTitle="想不到吧"
        />
        <List
            itemLayout="vertical"
            dataSource={objArr}
            style={{ margin: '0 20px 0 20px' }}
            split={true}
            renderItem={item => (
            <List.Item>
                <List.Item.Meta
                title={'如果你梦到"'+item.title+'"'}
                description={item.des}
                />
                <Divider />
            </List.Item>
            )}
        />
      </Layout>
    )
  }
```

5. Screenshots

超级超级不靠谱的网站

这是一个无聊的网站，不要在这里搜索任何东西！　　Search

我打赌你不知道…… 历史上的今天发生了这些事！

阿姆斯特丹建城 公元1275年10月27日	俄国大公伊凡三世逝世 公元1537年10月27日
意大利音乐家尼科罗·帕格尼尼出生 公元1782年10月27日	美国吞并佛罗里达州 公元1810年10月27日
美国总统西奥多·罗斯福出生 公元1858年10月27日	抗日名将杨成武出生 公元1914年10月27日
中国近代启蒙思想家、翻译家和教育家严复逝世 公元1921年10月27日	中国画家李承仙出生 公元1924年10月27日
中国共产党创建井冈山革命根据地	第一次印巴战争爆发

我打赌你不知道…… 历史上的今天发生了这些事！

阿姆斯特丹建城 公元1275年10月27日	俄国大公伊凡三世逝世 公元1537年10月27日
意大利音乐家尼科罗·帕格尼尼出生 公元1782年10月27日	美国吞并佛罗里达州 公元1810年10月27日
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中国共产党创建井冈山革命根据地 公元1927年10月27日	第一次印巴战争爆发 公元1947年10月27日
中国共产党中央政治局委员任弼时逝世 公元1950年10月27日	中国首次发射核导弹 公元1966年10月27日
台湾歌手苏慧伦出生，代表作《鸭子》 公元1970年10月27日	作家杜鹏程逝世 公元1991年10月27日
中国政治家谢非逝世 公元1999年10月27日	

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6. Background Setup Instruction

Front-end background

```
npm -v
yarn -v
node -v
git --version


# antd
npm i antd
```

```
yarn add craco-less

# 路由
npm i react-router-dom

# Proxy 代理
yarn add http-proxy-middleware

# 启动
cd Web_Service_SOA
cd CrazyPages
npm start
```

Back-end background

```
pip install flask
pip install requests
pip install flask_cors
......

python flask.py
```

By the way, the project has been tracked in my GitHub repository(link below). You can see my follow-up development and improvement.

https://github.com/Nevaeh828/Web_Service_SOA