Course Project Report for Undergraduate Students

Course Type： Subject Elective

Course Name： Internet Application Development
互联网应用开发(全英)

Course Code： 60080049

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《VUE Map Implementation》

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1.Introduction

The project of VUE Map Implementation has made me gain a lot. Actually, we use the map almost every day, however, I never think about how it works. In this project, I realise the logic behind the webpage based map and learn to utilise VUE to add the map on my personal home page.

URL of my homepage : http://106.54.89.21/leo/homepage.html

2.Description

The project is based on the last project 'Personal's Homepage' and I add the map module in my homepage with the help of Vue.js. In order to load the map JS API on HTML webpage, I utilise the < script > method to introduce the 'Vue' directly.

```
<script src="https://cdn.jsdelivr.net/npm/vue/dist/vue.min.js"></script>
```

Then I can use AMap with Vue. Asynchronous loading refers to that after JS API loading is completed, when a plug-in needs to be used, the AMap.plugin Method to import plug-ins on demand and use the plug-in function after the plugin callback. With this method, I firstly obtain a key from 'https://lbs.amap.com' and load the AMap and plug-in what I will use in this project.

```
<script src="https://webapi.amap.com/maps?v=1.4.15&key=836d14d2f72caacbb78e2bcc7de6331a&plugin=AMap.PlaceSearch,AMap.AdvancedInfoWindow"></script>
<script type="text/javascript" src="https://cache.amap.com/lbs/static/addToolbar.js"></script>
```

Then I utilise 'new AMap.Map' to create a map instance.

```
<div id="container" class="map"></div>

<script>
    var app = new Vue({
        el: '.vue-box',
        data: {map: [],},
        mounted: function () {
            var map = new AMap.Map('container', {
                zoom: 17,
                viewMode: '3D',
                resizeEnable: true,
                pinch: 45,
                isHotspot: true
            });
```

After loading the AMap JS API, everything will be easy. I just follow the tutorials offered by the official 'lbs.amap.com' and choose the function what I want and it will offer the way to implement. For example, the code below will show the real time traffic situation, which is just a layer added on the map.

```
var trafficLayer = new AMap.TileLayer.Traffic({
    zIndex: 10
});
map.add(trafficLayer);
```

The real time traffic is shown below. And the default location display is based on your ip address, and it will get your approximate location.

The AMap toolbar plug-in can provide scaling, location, position details, and navigation services. It is provided by AMap official, and it's very developer friendly. The scaling and location service code and implementation are shown below.

```
AMap.plugin(['AMap.ToolBar'], function () {
    var toolbar = new AMap.ToolBar();
    map.addControl(toolbar);
});
```
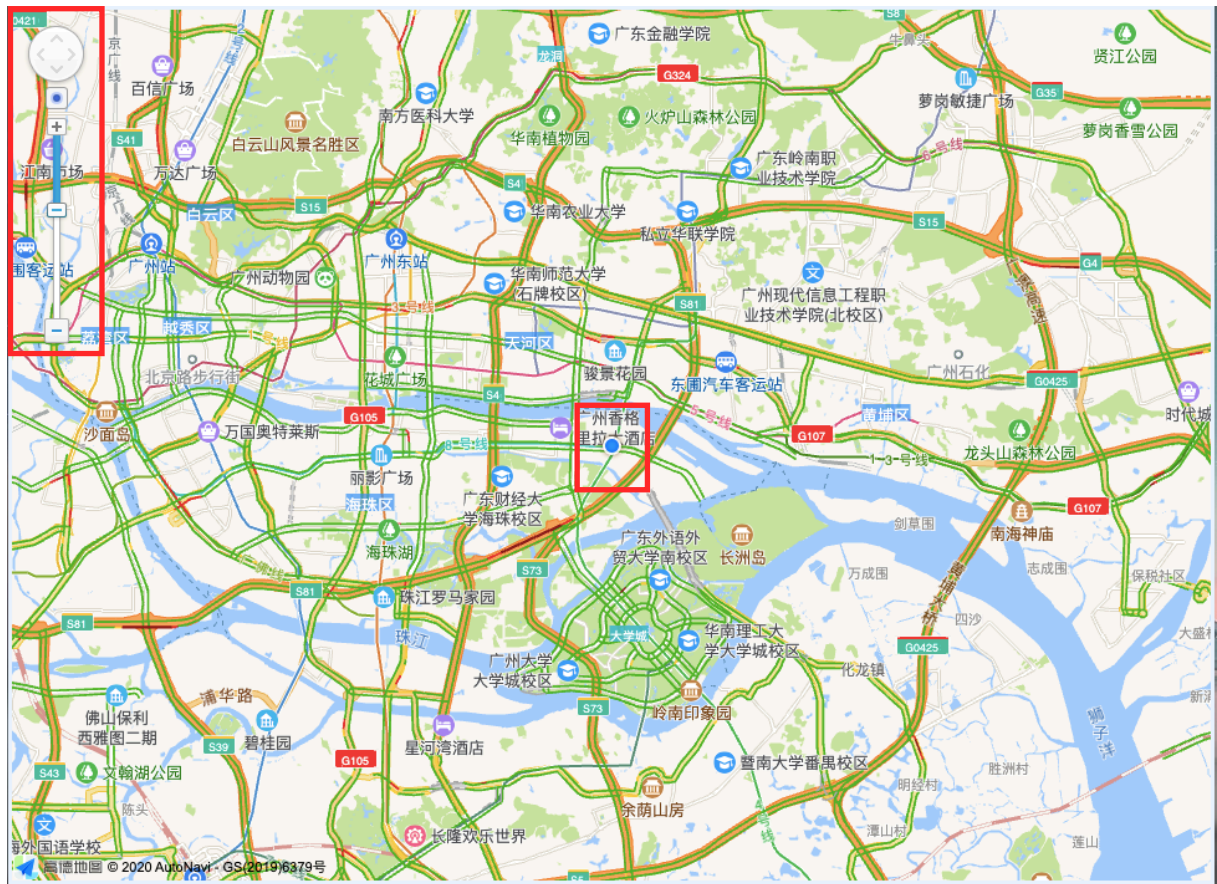
Though the 'tool-bar' plug-in is very convenient, the AMap official also provide other way to implement location service.

```javascript
AMap.plugin('AMap.Geolocation', function() {
  var geolocation = new AMap.Geolocation({
    // 是否使用高精度定位，默认: true
    enableHighAccuracy: true,
    // 设置定位超时时间，默认: 无穷大
    timeout: 10000,
    // 定位按钮的停靠位置的偏移量，默认: Pixel(10, 20)
    buttonOffset: new AMap.Pixel(10, 20),
    //  定位成功后调整地图视野范围使定位位置及精度范围视野内可见，默认: false
    zoomToAccuracy: true,
    //  定位按钮的排放位置，  RB表示右下
    buttonPosition: 'RB'
  })

  geolocation.getCurrentPosition(function(status,result){
      if(status=='complete'){
          onComplete(result)
      }else{
          onError(result)
      }
  });

  function onComplete (data) {
    // data是具体的定位信息
  }

  function onError (data) {
    // 定位出错
  }
})
```

These two methods can provide the location service, however, they can only get the location base on IP. Since most of browser like Chrome and Safari are no longer support browser location requests in non-security domains.

The official AMap also provides plug-in to implement position details, place search and navigation services.

```javascript
var placeSearch = new AMap.PlaceSearch();
var infoWindow = new AMap.AdvancedInfoWindow({});
map.on('hotspotover', function (result) {
    placeSearch.getDetails(result.id, function (status, result) {
        if (status === 'complete' && result.info === 'OK') {
            placeSearch_CallBack(result);
        }
    });
});

function placeSearch_CallBack(data) {
    var poiArr = data.poiList.pois;
    var location = poiArr[0].location;
    infoWindow.setContent(createContent(poiArr[0]));
    infoWindow.open(map, location);
}

function createContent(poi) {
    var s = [];
    s.push('<div class="info-title">' + poi.name + '</div><div class="info-content">' + "Address: " + poi.address);
    s.push("Phone Number: " + poi.tel);
    s.push("Type: " + poi.type);
    s.push('<div>');
    return s.join("<br>");
}
```
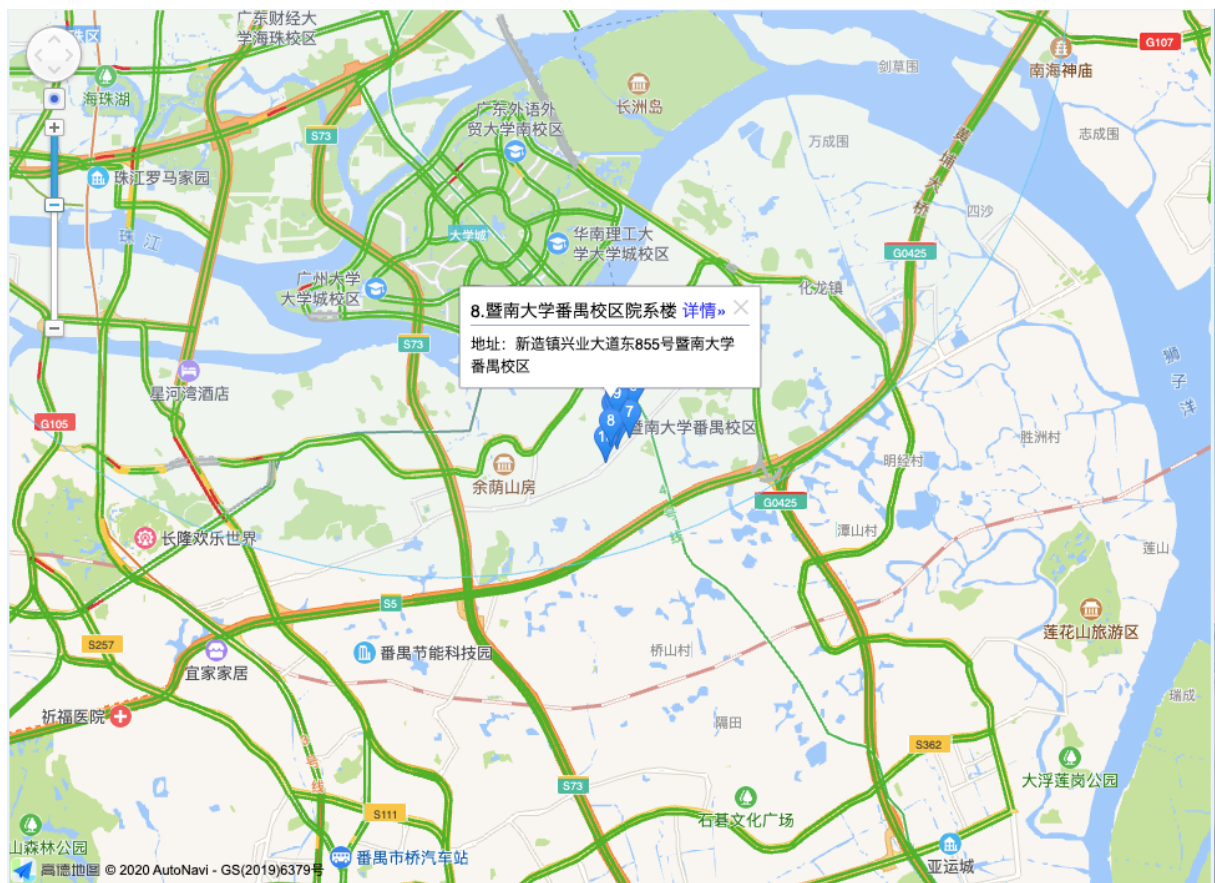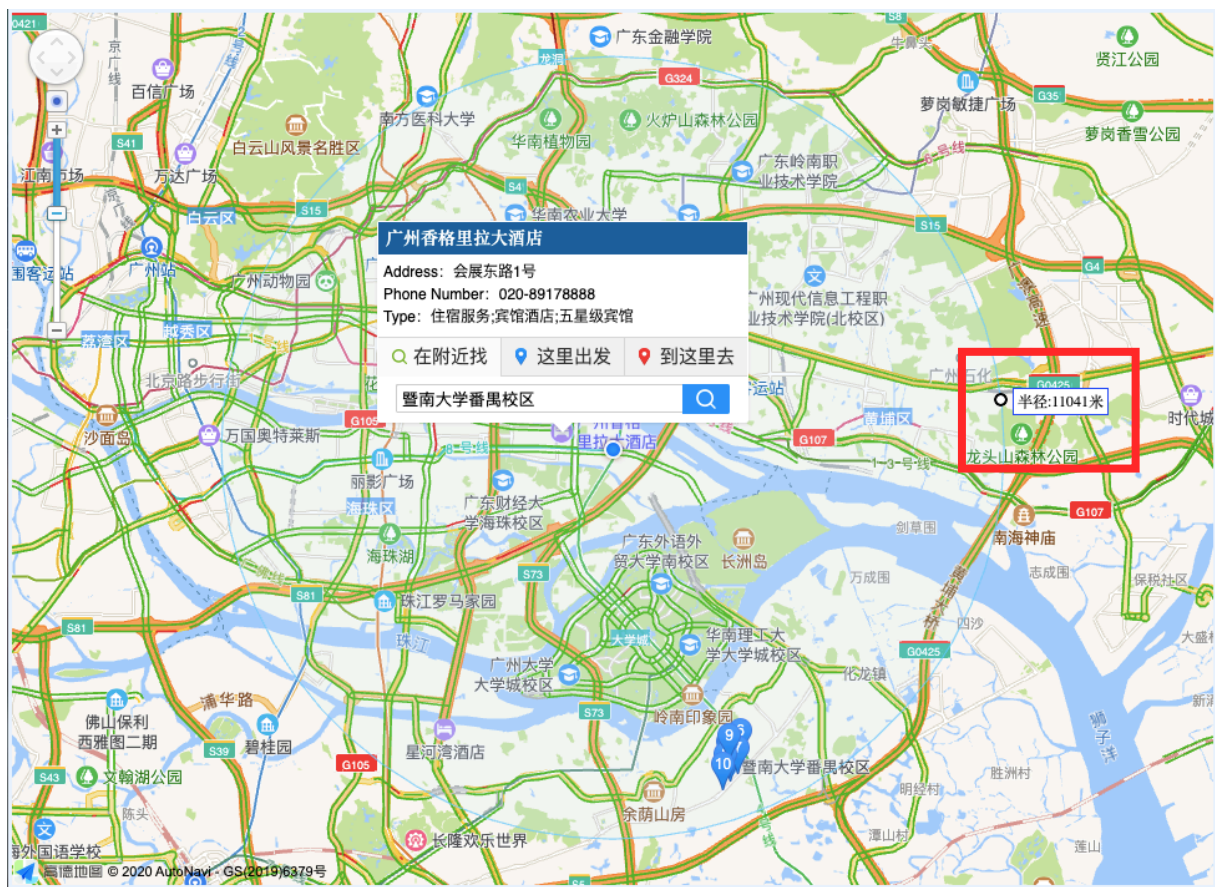
When user places the mouse on a position, the details including address, phone number and type will be displayed.


Further more, users can search the position nearby and adjust the search range by dragging the radius of circle.

广州香格里拉大酒店

Address: 会展东路1号
Phone Number: 020-89178888
Type: 住宿服务;宾馆酒店;五星级宾馆

在附近找   这里出发   到这里去

暨南大学番禺校区

半径:11041米

8.暨南大学番禺校区院系楼 详情»

地址: 新造镇兴业大道东855号暨南大学
番禺校区

The navigation function is implemented as well. I choose the navigation from Wanshengwei subway station to Jinan University by driving, public transport and working.
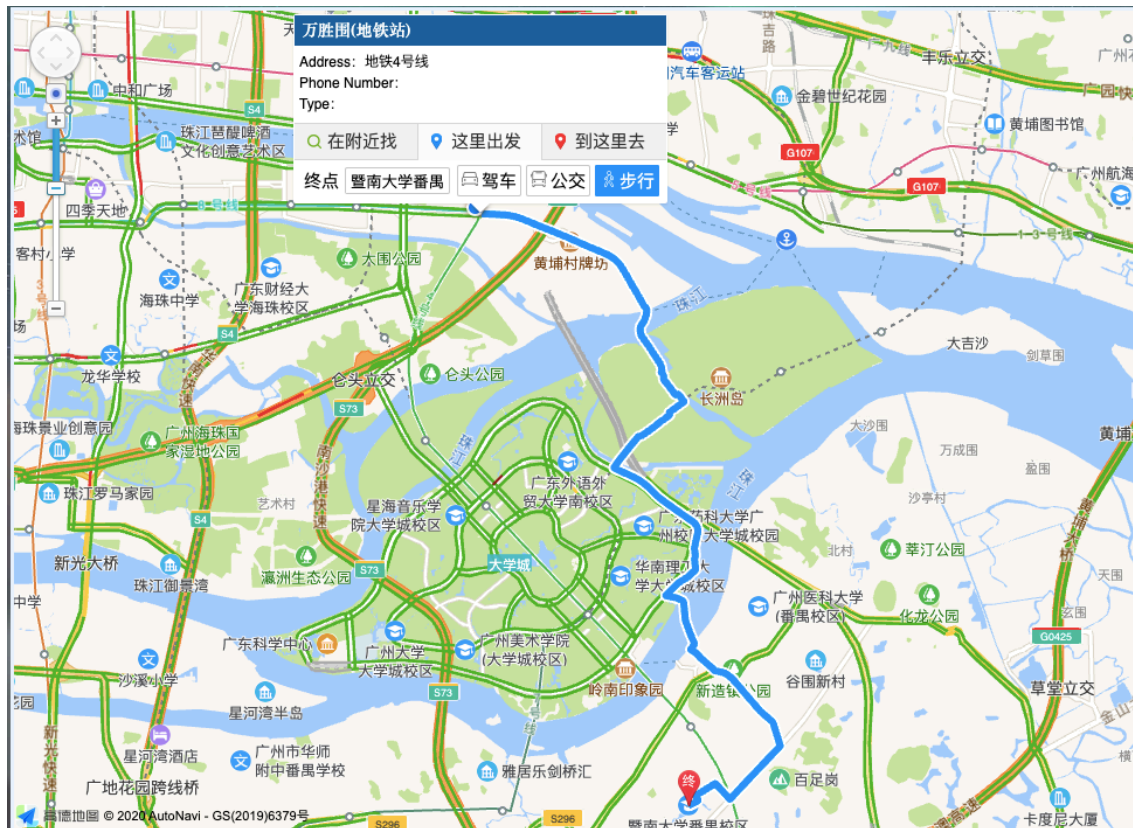
3.Conclusion

The VUE Map Implementation makes me realise the charming of web development again. Before this project, I never know how the map applications work, though I use it in everyday life. In this project, I learn to implement the Map application based on Vue.js, which can add the map on my HTML5 homepage directly. This project leads me to read and learn the Vue and AMap Documentation carefully and realise After learning the Documentations, I follow the Guide and Examples to implement the functions step by step. The project makes me realise that self-learning is very important. We should learn from the Documentations by ourselves and follow the guide to implement what we want. I feel successful when I implement the map application, though comparing with the top-design map application, my naive map application is not good enough. So I will make it better and add more functions in the future.