

Mobile Development



Google Maps API

#9 React Native & Google Maps



Google Maps API

- Google has the world mapped. With more than one billion global monthly active users in over 200 countries, Google gives us accurate real-time information for mapping, navigation and places.
- More informations:
<https://developers.google.com/maps/>



React Native Maps

- React Native Maps is a package to makes maps attachments on React Native mobile application development easier. It requires Google Maps API!
- More info about this package:
<https://github.com/react-community/react-native-maps>
- Installation:

```
$ npm install react-native-maps --save
```

How to Set Up Google Maps API On React Native



#1 Create Project

- Create React Native project:

```
$ react-native init namaProjek  
$ cd namaProjek
```

- Install React Native Maps on our project:

```
$ npm install react-native-maps --save
```



#2 Enable GMaps API

- Login to your Google account, then go to Google Developer console & enable Google Maps Android API (<https://console.developers.google.com/apis/library/maps-android-backend.googleapis.com/>).



Google Maps Android API

Google

Maps for your native Android app.

MANAGE



API enabled



#3 Get GMaps API Key

- Go to Google Developer GMaps documentation, then get your GMaps API key. Save it!
(<https://developers.google.com/maps/documentation/android-api/signup>).

A screenshot of the Google Maps APIs documentation page. The page has a blue header with the Google Maps APIs logo and navigation links: Home, Documentation, and Pricing and Plans. Below the header, there's a blue bar with the breadcrumb "Android > Maps Android API" and a "GET A KEY" button. The main content area is white and titled "Get API Key" with a five-star rating. It includes a brief introduction, a "Quick guide to getting a key" section, and "Step 1. Get an API key from the Google API Console". A "GET A KEY" button is prominently displayed. A left sidebar contains a table of contents with links like Overview, Get Started, Get API Key, Configuration, Tutorials, and Creating a Map. The "Notes:" section is partially visible at the bottom.



#4 Update Gradle

- On your project, edit `android/build.gradle`, add:

```
buildscript {  
    repositories {  
        jcenter()  
        google()  
    }  
    dependencies {  
        classpath 'com.android.tools.build:gradle:3.1.0'  
    }  
}
```

- Edit `android/gradle/wrapper/gradle-wrapper.properties`

```
distributionUrl =  
https://services.gradle.org/distributions/gradle-4.4-all.zip
```




#5 Add GPlay Service

■ In your `android/app/build.gradle` add:

...

```
dependencies {
```

```
    ...
```

```
    implementation(project(':react-native-maps')){  
        exclude group: 'com.google.android.gms', module: 'play-services-base'  
        exclude group: 'com.google.android.gms', module: 'play-services-maps'  
    }  
    implementation 'com.google.android.gms:play-services-base:10.0.1'  
    implementation 'com.google.android.gms:play-services-maps:10.0.1'
```

```
}
```



#6 Include RN Maps

- In your `android/settings.gradle` add these 2 lines:

...

```
include ':react-native-maps'

project(':react-native-maps').
projectDir = new File(rootProject.projectDir,
'../node_modules/react-native-maps/lib/android')
```



#7 Insert GMaps API

- Add your Google Maps API key to your manifest file (`android/app/src/main/AndroidManifest.xml`):

```
<application>
```

```
...
```

```
<meta-data  
    android:name="com.google.android.geo.API_KEY"  
    android:value="Sisipkan_API_Key_Di_Sini"/>
```

```
</application>
```



#8 MainApplication.java

- On **MainApplication.java** add these lines:
(android/app/src/main/java/com/nama.app/
MainApplication.java):

```
import com.airbnb.android.react.maps.MapsPackage;
```

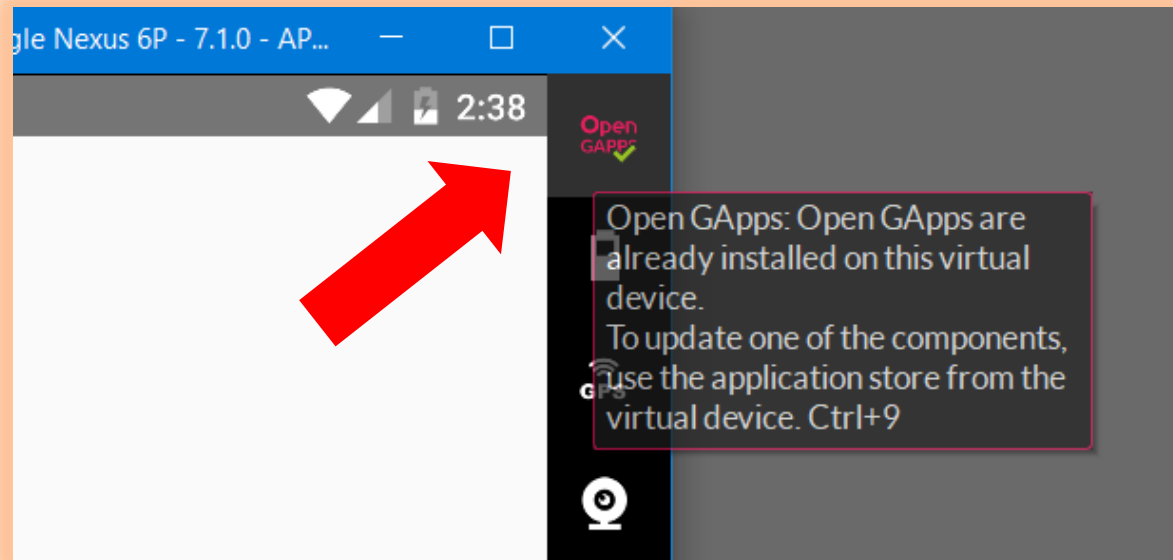
```
...
```

```
@Override  
protected List<ReactPackage> getPackages() {  
    return Arrays.<ReactPackage>asList(  
        new MainReactPackage(),  
        new MapsPackage()  
    );  
}
```



#9 Activate GApps <Genymotion Only>

- If using Genymotion AVD, you need **Open GApps** package installed on Genymotion.
- To install GApps, open Genymotion's Android emulator then click **Open GApps** icon.
- At the end of the installation, you are redirected to the Open GApps website (*ignore it*). Then restart its virtual device. Done!



Develop Maps in our Apps



#1 MapView: Maps on Apps



Maps on Apps

#1 Import

```
import React, { Component } from 'react';
```

```
import {  
  StyleSheet,  
  Text,  
  View  
} from 'react-native';
```

```
import MapView from 'react-native-maps'
```

```
• • • • •
```


Maps on Apps

#2 Component

.

```
class App extends Component {  
  render() {  
    return (  
      <View style={styles.container}>  
        <MapView  
          style={styles.map}  
          region={{  
            latitude: -6.302403,  
            longitude: 106.652248,  
            latitudeDelta: 0.015,  
            longitudeDelta: 0.015,  
          }}  
        >  
        </MapView>  
      </View>  
    );  
  }  
}
```

.

Maps on Apps

#3 Style

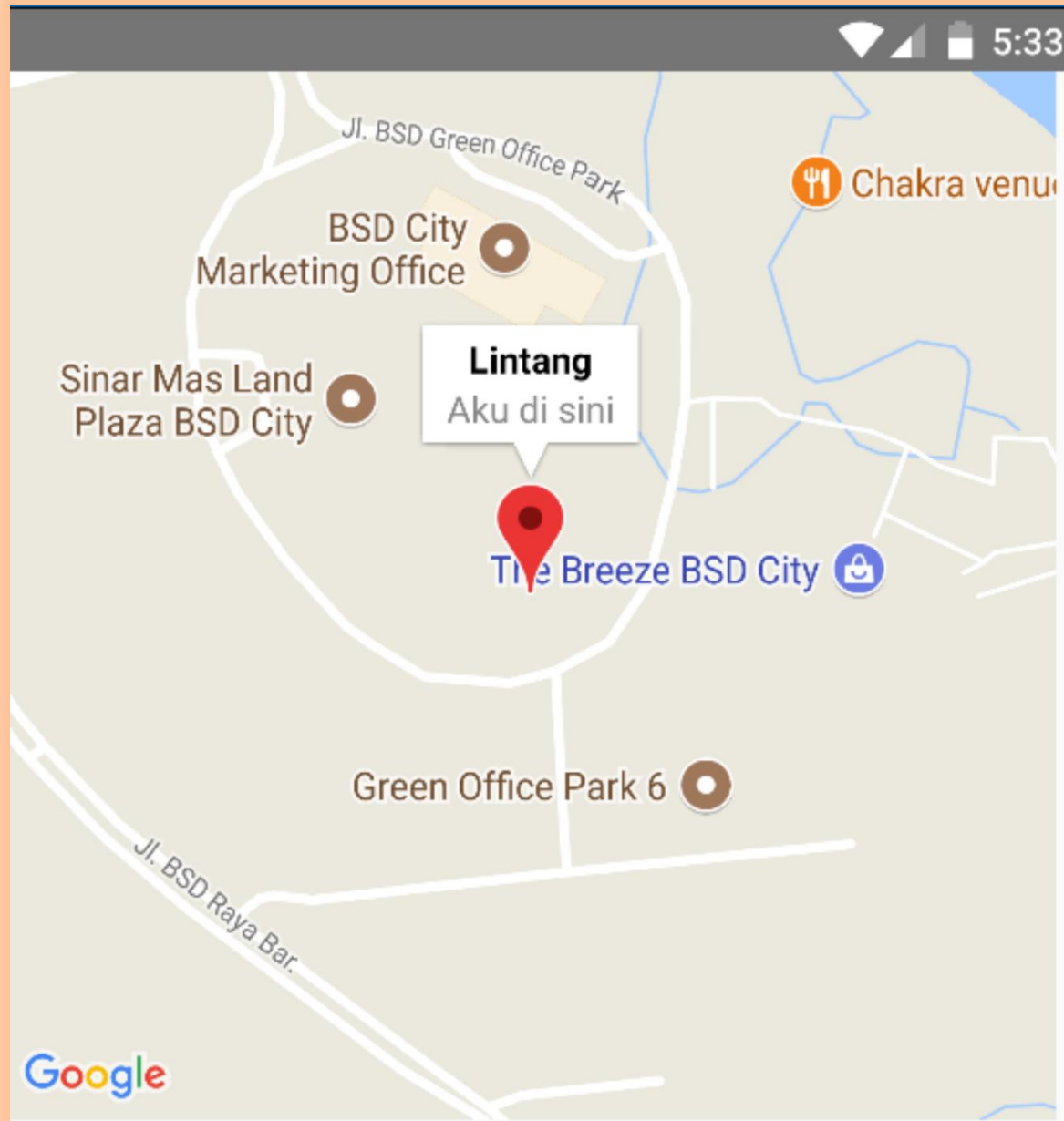
.

```
const styles = StyleSheet.create({
  container: {
    ...StyleSheet.absoluteFillObject,
    height: 400,
    width: 400,
    justifyContent: 'flex-end',
    alignItems: 'center',
  },
  map: {
    ...StyleSheet.absoluteFillObject,
  },
});
```

```
export default App;
```



#2 Maps with a Marker



Maps with Marker

#1 Import

```
import React, { Component } from 'react';
```

```
import {  
  StyleSheet,  
  Text,  
  View  
} from 'react-native';
```

```
import MapView , { Marker }  
from 'react-native-maps'
```

• • • • •

Maps with Marker

#2 Component

• • • • •

```
class App extends Component {
  render() {
    const pin = {
      latitude: -6.302403, longitude: 106.652248 };
    return (
      <View style={styles.container}>
        <MapView style={styles.map}
          region={{
            latitude: -6.302403, longitude: 106.652248,
            latitudeDelta: 0.005, longitudeDelta: 0.005,
          }}>
          <Marker coordinate={pin} title={'Lintang'}
            description={'Aku di sini'} pinColor={'yellow'}/>
        </MapView>
      </View>
    );
  }
}
```

• • • • •

Maps with Marker

#3 Style

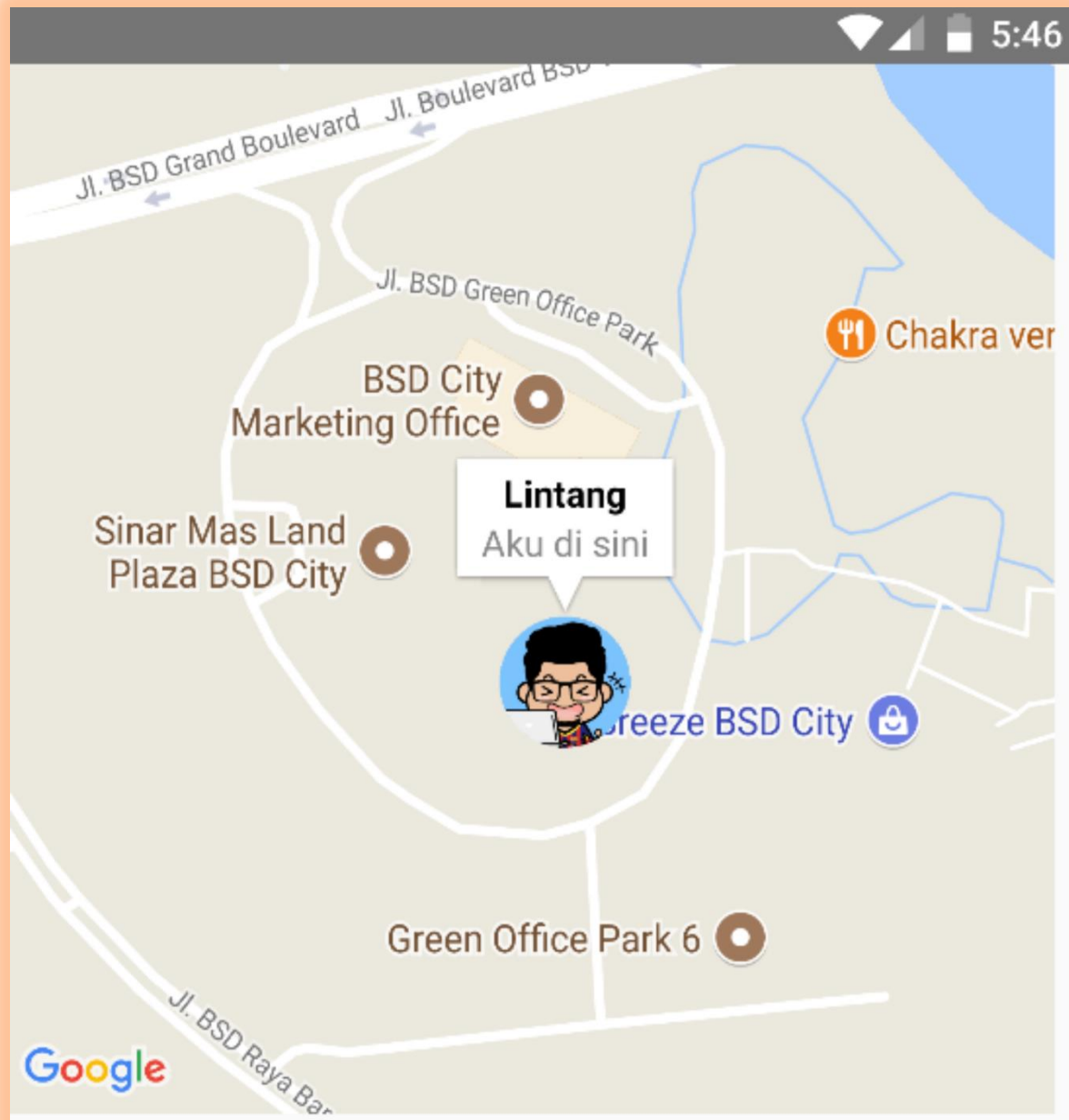
.

```
const styles = StyleSheet.create({  
  container: {  
    ...StyleSheet.absoluteFillObject,  
    height: 400,  
    width: 400,  
    justifyContent: 'flex-end',  
    alignItems: 'center',  
  },  
  map: {  
    ...StyleSheet.absoluteFillObject,  
  },  
});
```

```
export default App;
```



#3 Custom Marker



Custom Marker

#1 Import

```
import React, { Component } from 'react';
```

```
import {  
  StyleSheet,  
  Text,  
  View  
} from 'react-native';
```

```
import MapView , { Marker }  
from 'react-native-maps'
```

• • • • •

Custom Marker

#2 Component

```
• • • • •
class App extends Component {
  render() {
    const pin = {
      latitude: -6.302403, longitude: 106.652248 };
    return (
      <View style={styles.container}>
        <MapView style={styles.map}
          region={{
            latitude: -6.302403, longitude: 106.652248,
            latitudeDelta: 0.005, longitudeDelta: 0.005,
          }}>

          <MapView.Marker coordinate={pin} title={'Lintang'}
            description={'Aku di sini'} >
            <Image source={require('./gbr/zzz.png')}
              style={{width:50, height:50}} />
          </MapView.Marker>

        </MapView>
      </View>
    );
  }
}
```

Custom Marker

#3 Style

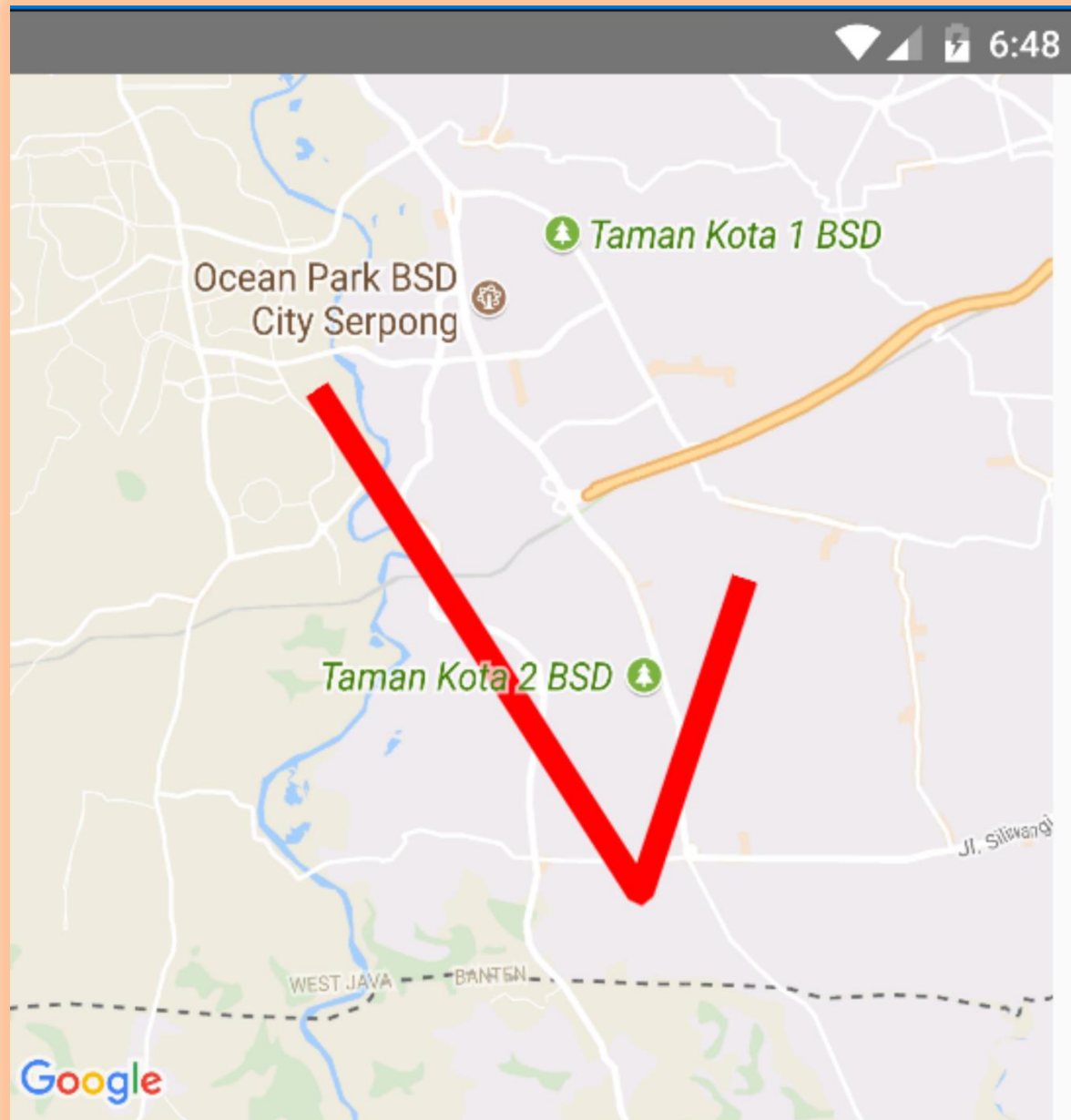
.

```
const styles = StyleSheet.create({
  container: {
    ...StyleSheet.absoluteFillObject,
    height: 400,
    width: 400,
    justifyContent: 'flex-end',
    alignItems: 'center',
  },
  map: {
    ...StyleSheet.absoluteFillObject,
  },
});
```

```
export default App;
```



#4 Polyline



Polyline #1 Import

```
import React, { Component } from 'react';
```

```
import {  
  StyleSheet,  
  Text,  
  View  
} from 'react-native';
```

```
import MapView , { Marker, Polyline }  
from 'react-native-maps'
```

• • • • •

Polyline

#2 Define Points

```
• • • • •  
class App extends Component {  
  constructor(){  
    super();  
    this.state={}  
  }  
  render() {  
    const pin1 = {  
      latitude: -6.302403,  
      longitude: 106.652248  
    };  
    const pin2 = {  
      latitude: -6.350403,  
      longitude: 106.683248  
    };  
    const pin3 = {  
      latitude: -6.320403,  
      longitude: 106.693248  
    };  
  }  
}
```

Polyline

#3 Components

• • • • •

```
return (  
  <View style={styles.container}>  
    <MapView style={styles.map} region={{  
      latitude: -6.302403, longitude: 106.652248,  
      latitudeDelta: 0.1, longitudeDelta: 0.1,  
    }}>
```

```
      <Polyline  
        coordinates={[pin1,pin2,pin3]}  
        strokeWidth={10}  
        strokeColor={'red'}  
        fillColor={'yellow'}  
      />
```

```
    </MapView>  
  </View>  
);}}
```

• • • • •

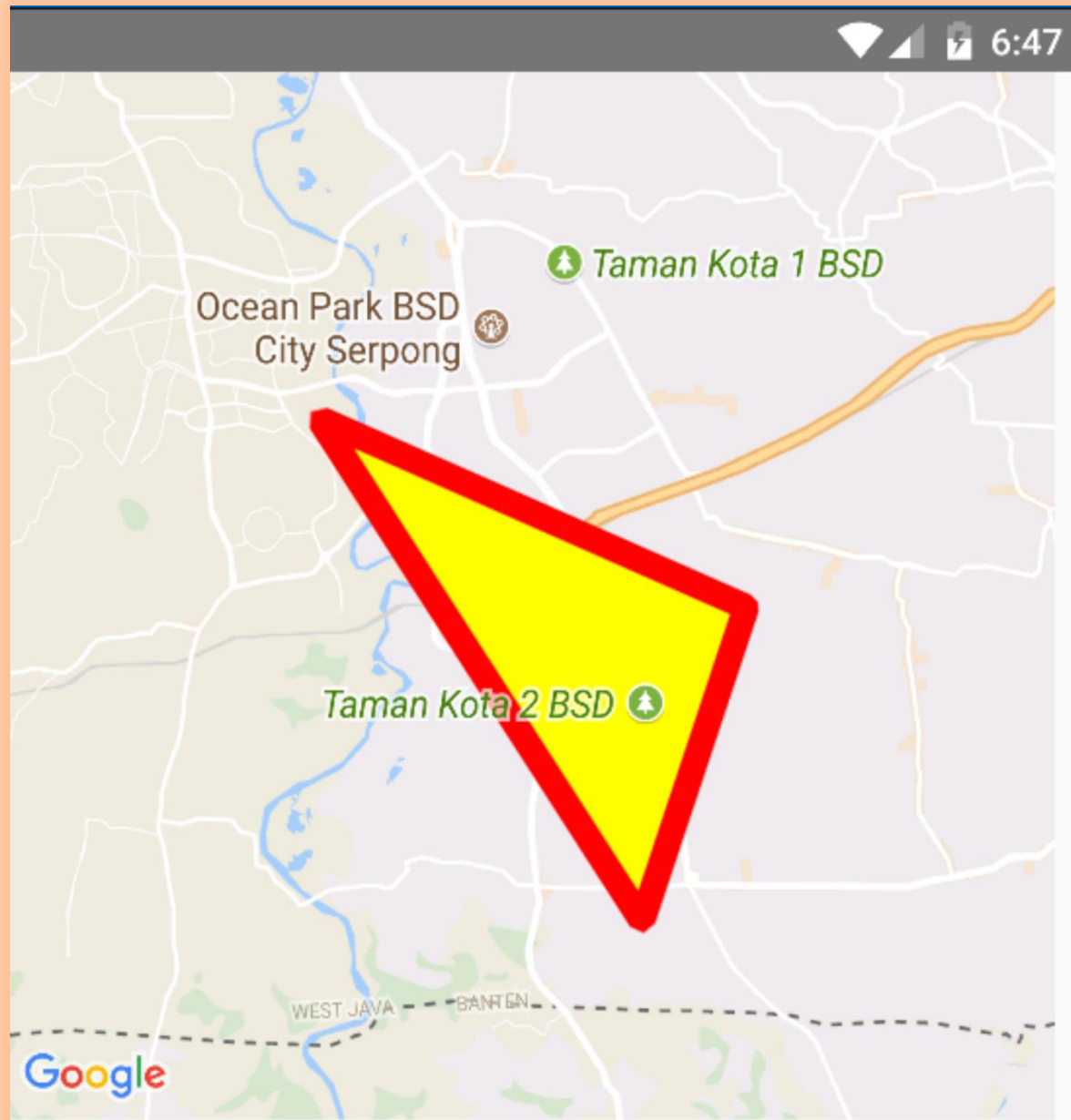
.

```
const styles = StyleSheet.create({  
  container: {  
    ...StyleSheet.absoluteFillObject,  
    height: 400,  
    width: 400,  
    justifyContent: 'flex-end',  
    alignItems: 'center',  
  },  
  map: {  
    ...StyleSheet.absoluteFillObject,  
  },  
});
```

```
export default App;
```



#5 Polygon



Polygon #1 Import

```
import React, { Component } from 'react';
```

```
import {  
  StyleSheet,  
  Text,  
  View  
} from 'react-native';
```

```
import MapView , { Marker, Polygon }  
from 'react-native-maps'
```

• • • • •

Polygon

#2 Define Points

```
• • • • •  
class App extends Component {  
  constructor(){  
    super();  
    this.state={}  
  }  
  render() {  
    const pin1 = {  
      latitude: -6.302403,  
      longitude: 106.652248  
    };  
    const pin2 = {  
      latitude: -6.350403,  
      longitude: 106.683248  
    };  
    const pin3 = {  
      latitude: -6.320403,  
      longitude: 106.693248  
    };  
  }  
}
```

Polygon

#3 Components

• • • • •

```
return (  
  <View style={styles.container}>  
    <MapView style={styles.map} region={{  
      latitude: -6.302403, longitude: 106.652248,  
      latitudeDelta: 0.1, longitudeDelta: 0.1,  
    }}>
```

```
      <Polygon  
        coordinates={[pin1,pin2,pin3]}  
        strokeWidth={10}  
        strokeColor={'red'}  
        fillColor={'yellow'}  
      />
```

```
    </MapView>  
  </View>  
);}}
```

• • • • •

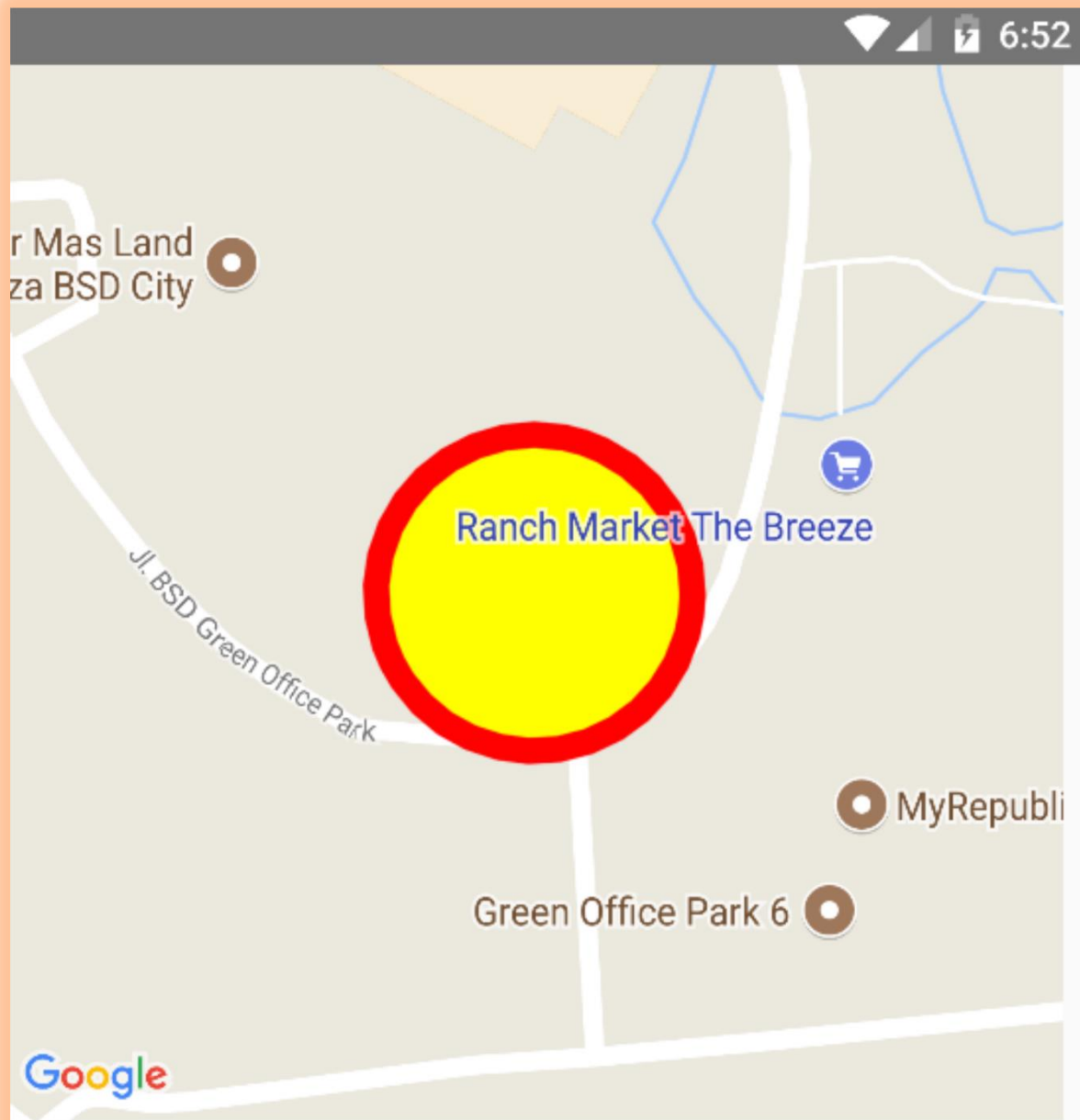
.

```
const styles = StyleSheet.create({  
  container: {  
    ...StyleSheet.absoluteFillObject,  
    height: 400,  
    width: 400,  
    justifyContent: 'flex-end',  
    alignItems: 'center',  
  },  
  map: {  
    ...StyleSheet.absoluteFillObject,  
  },  
});
```

```
export default App;
```



#6 Circle



Circle

#1 Import

```
import React, { Component } from 'react';
```

```
import {  
  StyleSheet,  
  Text,  
  View  
} from 'react-native';
```

```
import MapView , { Marker, Circle }  
from 'react-native-maps'
```

• • • • •

Circle

#2 Component

```
• • • • •
class App extends Component {
  constructor(){
    super();
    this.state={}
  }
  render() {
    const pin={latitude:-6.302403,longitude:106.652248};
    return (
      <View style={styles.container}>
        <MapView style={styles.map} region={{
          latitude: -6.302403, longitude: 106.652248,
          latitudeDelta: 0.003, longitudeDelta: 0.003, }}>

          <Circle center={pin} radius={50} strokeWidth={10}
            strokeColor='red' fillColor='yellow' />

        </MapView>
      </View>
    );
  }
}
```

.

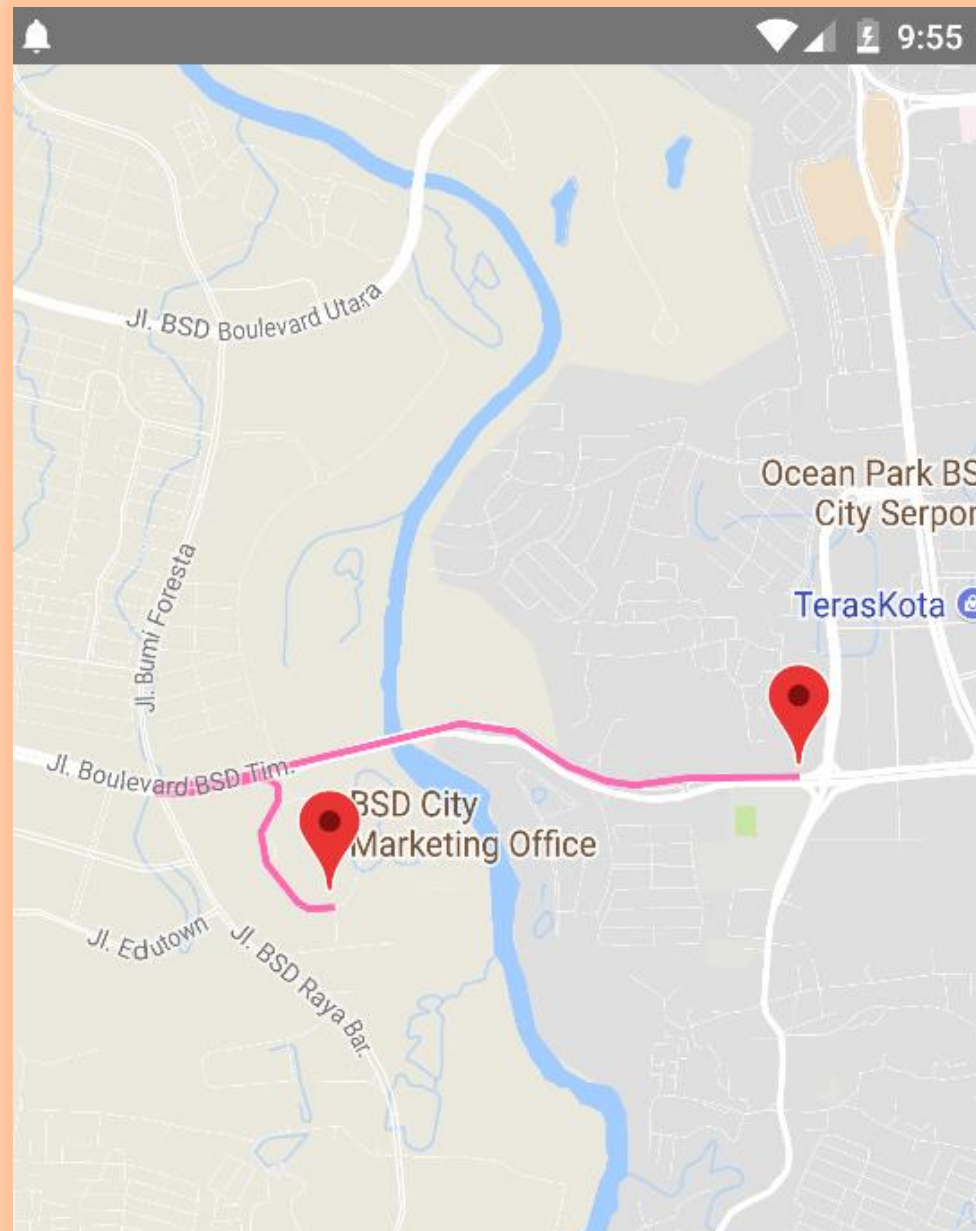
```
const styles = StyleSheet.create({
  container: {
    ...StyleSheet.absoluteFillObject,
    height: 400,
    width: 400,
    justifyContent: 'flex-end',
    alignItems: 'center',
  },
  map: {
    ...StyleSheet.absoluteFillObject,
  },
});
```

```
export default App;
```


Using Google Maps Direction



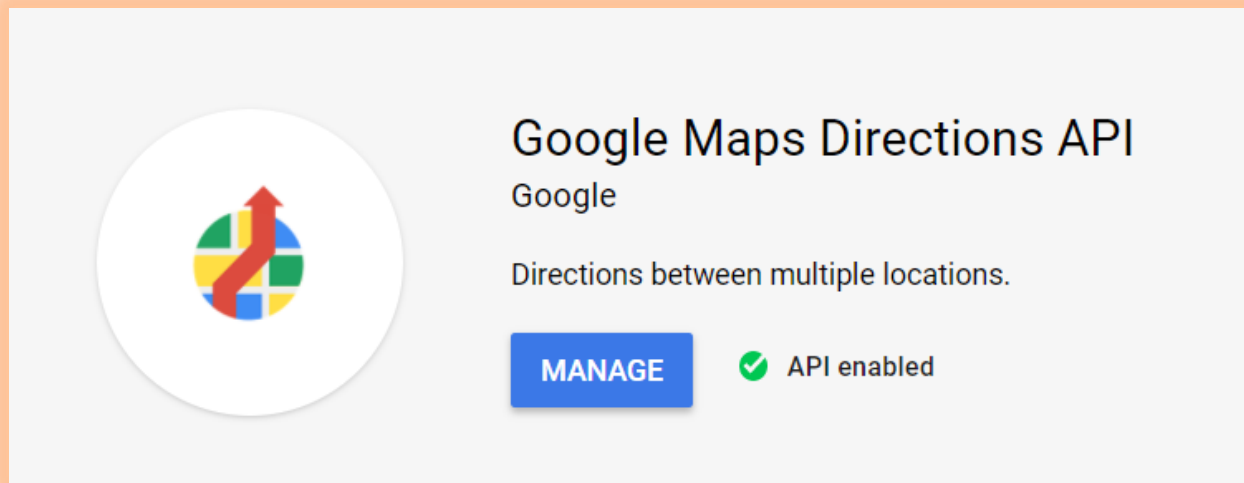
Maps Direction





#1 GMaps Direction API

- Login to Google, then go to Google Developer console & enable Google Maps Direction API (<https://console.developers.google.com/apis/library/directions-backend.googleapis.com/>).





#2 GMaps Direction API Key

- Go to Google Developer GMaps documentation, then get your Gmaps Direction API key. Save it!
(<https://developers.google.com/maps/documentation/directions/get-api-key>).

Web Services > Directions API

OVERVIEW GUIDES SUPPORT

Overview

Get Started

Get API Key

Web Services

Best Practices

Client Libraries

Policies and Terms

Usage Limits

Policies

Terms of Service

Other Web Service APIs

Distance Matrix API

Get API Key

To use the Google Maps Directions API, you must register your app project on the Google API Console and get a Google API key which you can add to your app or website.

Quick guide to getting a key

Step 1: Get an API Key from the Google API Console

Click the button below, which guides you through the process of registering a project in the Google API Console, activates the Google Maps Directions API automatically, and generates a generic, unrestricted API key.

GET A KEY



React Native Maps Direction

- React Native Maps Direction is a package to create route direction with React Native Maps package from React Community!
- More info about this package:
github.com/bramus/react-native-maps-directions
- Installation:

```
$ npm install react-native-maps-directions
```

Maps Direction

#part 1

```
import React, { Component } from 'react';
import { StyleSheet } from 'react-native';
import MapView from 'react-native-maps';
import MapViewDirections
from 'react-native-maps-directions';

const LATITUDE = -6.302403;
const LONGITUDE = 106.652248;
const LATITUDE_DELTA = 0.015;
const LONGITUDE_DELTA = 0.015;
const GOOGLE_MAPS_APIKEY = 'Sisipkan_API_KEY';
```

• • • • •

Maps Direction

#part 2

• • • • •

```
class App extends Component {  
  constructor() {  
    super();  
    this.state = { coordinates: [  
      {latitude: -6.302403, longitude: 106.652248},  
      {latitude: -6.299461, longitude: 106.663339}], };  
  }
```

```
  render() {  
    return (  
      <MapView  
        initialRegion={{  
          latitude: LATITUDE, longitude: LONGITUDE,  
          latitudeDelta: LATITUDE_DELTA,  
          longitudeDelta: LONGITUDE_DELTA,  
        }}  
        style={StyleSheet.absoluteFill}>
```

• • • • •

Maps Direction

#part 3

• • • • •

```
<MapView.Marker  
  coordinate={this.state.coordinates[0]} />
```

```
<MapView.Marker  
  coordinate={this.state.coordinates[1]} />
```

```
<MapViewDirections  
  origin={this.state.coordinates[0]}  
  destination={this.state.coordinates[1]}  
  apiKey={GOOGLE_MAPS_APIKEY}  
  strokeWidth={3}  
  strokeColor="hotpink" />
```

```
</MapView>  
);}}
```

```
export default App;
```


Mobile Development



Google Maps API

#9 React Native & Google Maps