
Mobile Application Development

Mapbox - a commercial mapping service using OpenStreetMap

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OpenStreetMap

An open source project

- OpenStreetMap Foundation
- A non-profit organisation
- Founded in 2004 by Steve Coast
- Over 2 million registered contributors
- Primary output OpenStreetMap data

OpenStreetMap

An open source project

- Various data collection methods:
 - On-site data collection using:
 - paper & pencil
 - computer
 - preprinted map
 - cameras
 - Aerial photography

MapBox

Competitor to Google Maps

- Provides commercial mapping services.
- OpenStreetMap a data source for many of these.
- Large provider of custom online maps for websites.
- Clients include Foursquare, Financial Times, Uber.
- But also NASA and some proprietary sources.
- Startup 2010
- Series B round funding 2015 \$52 million
- Contrast Google 2015 profit \$16 billion

MapBox

Software Development Kits (SDKs)

- Web apps
- Android
- iOS
- JavaScript (browser & node)
- Python

MapBox

Comparison with Google Maps

- Google Maps module requires the Play Services library
- Latest Play Services lib has approx 30k method references.
- Puts MyRent release build over 65k limit.
- Using MapBox reduces method reference count to about 40k.

MapBox

Comparison with Google Maps - getting started

GoogleMaps requirements:

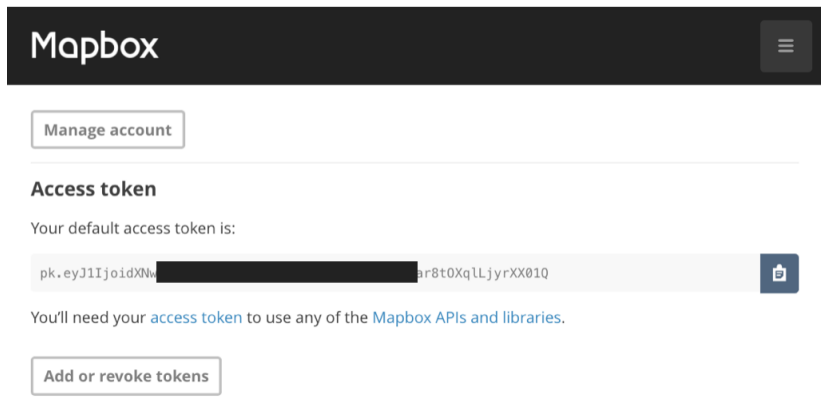
- API key
- Short form app digital certificate (SHA-1 fingerprint)

MapBox requirements:

- Token

Using MapBox

Free token available to get started



The screenshot shows the Mapbox account management interface. At the top is a dark header with the Mapbox logo and a menu icon. Below the header is a 'Manage account' button. The main section is titled 'Access token' and contains the text 'Your default access token is:'. Below this text is a light gray box containing the access token 'pk.eyJ1IjoidXNw...ar8tOXqLLjyrXX01Q', with a portion of the token obscured by a black redaction box. To the right of the token box is a dark blue icon of a clipboard. Below the token box is the text 'You'll need your [access token](#) to use any of the [Mapbox APIs and libraries](#).' At the bottom of the main section is an 'Add or revoke tokens' button.

Using MapBox

Free token available to get started

```
public class MapBoxActivity implements OnMapReadyCallback {
    private MapView mapView;
    ...
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        ...
        // Mapbox access token only needs to be configured once in your
        // app
        MapboxAccountManager.start(this, "your token here");

        mapView = (MapView) findViewById(R.id.mapView);
        mapView.onCreate(savedInstanceState);
        mapView.getMapAsync(this);
    }
}
```

Using MapBox

Free token available to get started

```
// OnMapReadyCallback interface method impl
@Override
public void onMapReady(MapboxMap mapboxMap) {
    this.mapboxMap = mapboxMap;
    positionCamera();
    setMarker();
    mapboxMap.setOnMarkerClickListener(this);
    mapboxMap.setOnMapLongClickListener(this);
}
```

Using MapBox

Free token available to get started

```
// Instantiates marker located at residence position and adds to map.  
private void setMarker() {  
  
    MarkerViewOptions marker = new MarkerViewOptions().  
        position(residenceLatLng);  
    residenceMarker = mapboxMap.addMarker(marker);  
}
```

Using MapBox

Free token available to get started

```
// Render the map centred on the residence location.  
private void positionCamera() {  
    CameraPosition position = new CameraPosition.Builder()  
        .target(residenceLatLng) // Sets the new camera position  
        .zoom(residence.zoom)  
        .build(); // Creates a CameraPosition from the builder  
  
    mapboxMap.animateCamera(CameraUpdateFactory  
        .newCameraPosition(position));  
  
}
```

Using MapBox

Free token available to get started

```
/**
 * OnMapLongClickListener interface method implementation
 * Long click moves marker to clicked position and updates
 * Residence object's geolocation to new marker position.
 * @param point
 */
@Override
public void onMapLongClick(@NonNull LatLng point) {
    residenceMarker.setPosition(point);
}
```

Using MapBox

Free token available to get started

```
// Save the current residence state when switching out of the map
// activity.
@Override
public void onPause() {
    super.onPause();
    mapView.onPause();
    residence.zoom = mapboxMap.getCameraPosition().zoom;
    residence.geolocation = MapHelper.latLng(residenceMarker.
        getPosition());
    app.portfolio.updateResidence(residence);
}
```

References

Google Maps

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<http://nextjuggernaut.com/blog/google-vs-mapbox/>
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