Social Media Apps Programming

Google Map API

1071SMAP12
TLMXM1A (8550) (M2143) (Fall 2018)
(MIS MBA) (2 Credits, Elective) [Full English Course]
Thu 8,9 (10:10-12:00) B206

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Assistant Professor
Department of Information Management
Tamkang University

http://mail.tku.edu.tw/myday

2018-12-13
<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Subject/Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2018/09/13</td>
<td>Course Orientation and Introduction to Social Media and Mobile Apps Programming</td>
</tr>
<tr>
<td>2</td>
<td>2018/09/20</td>
<td>Introduction to Android / iOS Apps Programming</td>
</tr>
<tr>
<td>3</td>
<td>2018/09/27</td>
<td>Developing Android Native Apps with Java (Android Studio)</td>
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<tr>
<td>4</td>
<td>2018/10/04</td>
<td>Developing iPhone / iPad Native Apps with Swift (XCode)</td>
</tr>
<tr>
<td>5</td>
<td>2018/10/11</td>
<td>Mobile Apps using HTML5/CSS3/JavaScript</td>
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<tr>
<td>6</td>
<td>2018/10/18</td>
<td>jQuery Mobile</td>
</tr>
<tr>
<td>7</td>
<td>2018/10/25</td>
<td>Create Hybrid Apps with Phonegap</td>
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<tr>
<td>8</td>
<td>2018/11/01</td>
<td>jQuery Mobile/Phonegap</td>
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<tr>
<td>9</td>
<td>2018/11/08</td>
<td>jQuery Mobile/Phonegap</td>
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</table>
## Course Schedule (2/2)

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Subject/Topics</th>
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</thead>
<tbody>
<tr>
<td>10</td>
<td>2018/11/15</td>
<td>Midterm Exam Week / Project Presentation</td>
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<tr>
<td>11</td>
<td>2018/11/22</td>
<td>Case Study on Social Media Apps Programming and Marketing in Google Play and App Store</td>
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<tr>
<td>12</td>
<td>2018/11/29</td>
<td>Google Cloud Platform</td>
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<tr>
<td>13</td>
<td>2018/12/06</td>
<td>Google App Engine</td>
</tr>
<tr>
<td>14</td>
<td>2018/12/13</td>
<td>Google Map API</td>
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<tr>
<td>15</td>
<td>2018/12/20</td>
<td>Facebook API (Facebook JavaScript SDK) (Integrate Facebook with iOS/Android Apps)</td>
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<td>16</td>
<td>2018/12/27</td>
<td>Twitter API</td>
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<tr>
<td>17</td>
<td>2019/01/03</td>
<td>Final Project Presentation</td>
</tr>
<tr>
<td>18</td>
<td>2019/01/10</td>
<td>Final Exam Week / Final Project Presentation</td>
</tr>
</tbody>
</table>
Google Maps API

https://developers.google.com/maps/
Google Maps API

Build the next generation of location experiences

We have the world mapped. With more than one billion global monthly active users in over 200 countries, our data gives you accurate real-time information for mapping, navigation and places.

Google Scale
Build on the same infrastructure that Google Maps is built on for maximum app performance.

Global Coverage
Provide your users with the reliable location information they need throughout the world.

Real-time Data
Build better user experiences with data based on real-time mapping and traffic signals.

https://developers.google.com/maps/
Google Maps API
Get Started

Web APIs

- Google Maps JavaScript API
  Customize maps with your own content and imagery.

- Google Places API
  JavaScript Library
  Up-to-date information about millions of locations.

- Google Static Maps API
  Simple, embeddable map image with minimal code.

- Google Maps Embed API
  Add a Google Map to your site without code or quota limits.

- Google Street View Image API
  Real-world imagery and panoramas.

https://developers.google.com/maps/get-started/
Google Maps JavaScript API

Demos and sample code

```html
<!DOCTYPE html>
<html>
<head>
</head>
```

[https://developers.google.com/maps/documentation/javascript/]
Google Maps JavaScript API
Base Maps

<!DOCTYPE html>
<html>
<head>
  <!-- This stylesheet contains specific styles for displaying the map
       on this page. Replace it with your own styles as described in the
       documentation:
       https://developers.google.com/maps/documentation/javascript/tutorial -->
  <link rel="stylesheet" href="/maps/documentation/javascript/demos/demos.css">
</head>
<body>
  <div id="map"></div>
  <script>
    function initMap() {
      // Create a map object and specify the DOM element for display.
      var map = new google.maps.Map(document.getElementById('map'), {
        center: {lat: -34.397, lng: 150.644},
        zoom: 8
      });
    }
  </script>
  <script src="https://maps.googleapis.com/maps/api/js?key=YOUR_API_KEY&callback=initMap" async defer></script>
</body>
</html>
function initMap() {
    var chicago = {lat: 41.85, lng: -87.65};
    var indianapolis = {lat: 39.79, lng: -86.14};

    var map = new google.maps.Map(document.getElementById('map'), {
        center: chicago,
        zoom: 7
    });

    var directionsDisplay = new google.maps.DirectionsRenderer(
        {map: map});

    // Set destination, origin and travel mode.
    var request = {
        destination: indianapolis,
        origin: chicago,
        travelMode: 'DRIVING'
    };

    // Pass the directions request to the directions service.
    var directionsService = new google.maps.DirectionsService();
    directionsService.route(request, function(response, status) {
        if (status == 'OK') {
            // Display the route on the map.
            directionsDisplay.setDirections(response);
        }
    });
}

<script src="https://maps.googleapis.com/maps/api/js?key=YOUR_API_KEY&callback=initMap" async defer></script>
Google Maps API

https://developers.google.com/maps/
Google Maps API

Google Maps, available on every screen

55 million downloads can’t be wrong. Bring the popularity of Google Maps to your app with the Google Maps SDK for iOS.

https://developers.google.com/maps/
Google Maps API Demos

http://www.morethanamap.com/
Google Maps API Demos

http://www.morethanamap.com/demos
Google Maps API Demos

http://www.morethanamap.com/demos/basemaps/new-york
Google Maps API Demos

http://www.morethanamap.com/demos/routing/cycling
Google Maps JavaScript API v3

Build highly customisable maps with your own content and imagery

Create rich applications and stunning visualisations of your data, leveraging the comprehensiveness, accuracy, and usability of Google Maps and a modern web platform that scales as you grow.

In only a few lines of JavaScript code, build and style a map to call your own. With plenty of Google libraries and services at your disposal (including Geocoding, Directions, Street View and more) your imagination is truly the limit.

Get Started with the JavaScript API v3

https://developers.google.com/maps/web/
Google Maps JavaScript API v3

Getting Started

Audience

This documentation is designed for people familiar with JavaScript programming and object-oriented programming concepts. You should also be familiar with Google Maps from a user's point of view. There are many JavaScript tutorials available online.

https://developers.google.com/maps/documentation/javascript/tutorial
Obtaining an Google Maps API Key

Obtaining an API Key

All Maps API applications* should load the Maps API using an API key. Using an API key enables you to monitor your application’s Maps API usage, and ensures that Google can contact you about your application if necessary. If your application’s Maps API usage exceeds the Usage Limits, you must load the Maps API using an API key in order to purchase additional quota.

* Google Maps API for Work developers must not include a key in their requests. Please refer to Loading the Google Maps JavaScript API for instructions.

To create your API key:

1. Visit the APIs Console at https://code.google.com/apis/console and log in with your Google Account.
2. Click the Services link from the left-hand menu.
3. Activate the Google Maps JavaScript API V3 service.
4. Click the API Access link from the left-hand menu. Your API key is available from the API Access page, in the Simple API Access section. Maps API applications use the Key for browser apps.

https://developers.google.com/maps/documentation/javascript/tutorial
Demo:
Integrate
Google Maps JavaScript API with
jQuery Mobile
Start using the Google APIs console

https://code.google.com/apis/console
https://code.google.com/apis/console/?noredirect&pli=1
### Google APIs Console

#### All services

Select services for the project.

<table>
<thead>
<tr>
<th>Service</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ad Exchange Buyer API</td>
<td>OFF</td>
<td>Courtesy limit: 1,000 requests/day</td>
</tr>
<tr>
<td>Ad Exchange Seller API</td>
<td>OFF</td>
<td>Courtesy limit: 10,000 requests/day</td>
</tr>
<tr>
<td>Admin SDK</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>AdSense Host API</td>
<td>OFF</td>
<td>Courtesy limit: 100,000 requests/day</td>
</tr>
<tr>
<td>AdSense Management API</td>
<td>OFF</td>
<td>Courtesy limit: 10,000 requests/day</td>
</tr>
<tr>
<td>Analytics API</td>
<td>OFF</td>
<td>Courtesy limit: 50,000 requests/day</td>
</tr>
<tr>
<td>Audit API</td>
<td>OFF</td>
<td>Courtesy limit: 10,000 requests/day</td>
</tr>
<tr>
<td>BigQuery API</td>
<td>OFF</td>
<td>Courtesy limit: 10,000 requests/day • Pricing</td>
</tr>
<tr>
<td>Blogger API v3</td>
<td>OFF</td>
<td>Courtesy limit: 10,000 requests/day</td>
</tr>
<tr>
<td>Books API</td>
<td>OFF</td>
<td>Courtesy limit: 1,000 requests/day</td>
</tr>
<tr>
<td>CalDAV API</td>
<td>OFF</td>
<td>Courtesy limit: 1,000,000 requests/day</td>
</tr>
<tr>
<td>Calendar API</td>
<td>OFF</td>
<td>Courtesy limit: 100,000 requests/day</td>
</tr>
<tr>
<td>Chrome Web Store API</td>
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<tr>
<td>API Name</td>
<td>Status</td>
<td>Courtesy Limit</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>Google Apps Reseller API</td>
<td>OFF</td>
<td>10,000 requests/day</td>
</tr>
<tr>
<td>Google Civic Information API</td>
<td>OFF</td>
<td>25,000 requests/day</td>
</tr>
<tr>
<td>Google Cloud Datastore API</td>
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<td>10,000,000 requests/day</td>
</tr>
<tr>
<td>Google Cloud Messaging for Android</td>
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<td>Google Cloud Messaging for Chrome</td>
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<td></td>
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<td>Google Cloud SQL API</td>
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<td>Google Cloud Storage</td>
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<td>Google Cloud Storage JSON API</td>
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<tr>
<td>Google Compute Engine</td>
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<tr>
<td>Google Contacts CardDAV API</td>
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<td>10,000 requests/day</td>
</tr>
<tr>
<td>Google Maps Android API v2</td>
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<td></td>
</tr>
<tr>
<td>Google Maps API v3</td>
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<td>Google Maps Coordinate API</td>
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<td>1,000 requests/day</td>
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<tr>
<td>Google Maps Engine API</td>
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<td>10,000 requests/day</td>
</tr>
<tr>
<td>Google Maps Geolocation API</td>
<td>OFF</td>
<td>0 requests/day</td>
</tr>
<tr>
<td>Google Maps SDK for iOS</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Google Maps Tracks API</td>
<td>OFF</td>
<td></td>
</tr>
</tbody>
</table>
Google Maps/Google Earth APIs Terms of Service

Last Updated: May 10, 2013

1. Your relationship with Google.

1.1 Use of the Service is Subject to these Terms. Your use of any of the Google Maps/Google Earth APIs (referred to in this document as the "Maps API(s)" or the "Service") is subject to the terms of a legal agreement between you and Google (the "Terms"). "Google" means either (a) Google Ireland Limited, with offices at Gordon House, Barrow Street, Dublin 4, Ireland, if Customer's billing address is in any country within Europe, the Middle East, or Africa ("EMEA"); (b) Google Asia Pacific Pte. Ltd., with offices at 8 Marina View Asia Square 1 #03-01 Singapore 018960, if Customer's billing address is in any country within the Asia Pacific region ("APAC"); or (c) Google Inc., with offices at 1600 Amphitheatre Parkway, Mountain View, California 94043, USA, if Customer's billing address is in any country in the world other than those in EMEA and APAC.

1.2 The Terms include Google's Legal Notices and Privacy Policy.

(a) Unless otherwise agreed in writing with Google, the Terms will include the following:

(i) the terms and conditions set forth in this document (the "Maps APIs Terms");
(ii) the Legal Notices; and
(iii) the Privacy Policy.

I agree to these terms.

Accept Decline
Google APIs Console

Active services
Select services for the project.

<table>
<thead>
<tr>
<th>Service</th>
<th>Status</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Google Maps API v3</td>
<td>ON</td>
<td>Courtesy limit: 25,000 requests/day • Pricing</td>
</tr>
</tbody>
</table>
Welcome to Google Cloud Platform

Use the same infrastructure that powers Google's own applications.

- [x] I have read and agree to all Terms of Service for the Google Cloud Platform products.
- [x] I'd like to receive email about Google Cloud Platform updates, special offers, and events.

Continue
Google Maps API v3

The Google Maps API lets you embed Google Maps in your own web pages with JavaScript. Learn more
Hello, World

The easiest way to start learning about the Google Maps API is to see a simple example. The following web page displays a map centered on Sydney, New South Wales, Australia:

```html
<!DOCTYPE html>
<html>
<head>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no" />
  <style type="text/css">
    html { height: 100%; }
    body { height: 100%; margin: 0; padding: 0; }
    #map-canvas { height: 100%; }
  </style>
  <script type="text/javascript">
    src="https://maps.googleapis.com/maps/api/js?key=API_KEY&sensor=SET_TO_TRUE_OR_FALSE">
  </script>
  function initialize() {
    var mapOptions = {
      center: new google.maps.LatLng(-34.397, 150.644),
      zoom: 8
    };
    var map = new google.maps.Map(document.getElementById("map-canvas"),
      mapOptions);
    google.maps.event.addDomListener(window, 'load', initialize);
  }
</head>
<body>
  <div id="map-canvas"/>
</body>
</html>
```

View example (map-simple.html)

https://developers.google.com/maps/documentation/javascript/tutorial
<html>
<head>
<meta name="viewport" content="initial-scale=1.0, user-scalable=no"/>
<style type="text/css">
html { height: 100% }
body { height: 100%; margin: 0; padding: 0 }
#map-canvas { height: 100% }
</style>
<script type="text/javascript">
function initialize() {
    var mapOptions = {
        center: new google.maps.LatLng(-34.397, 150.644),
        zoom: 8
    };
    var map = new google.maps.Map(document.getElementById("map-canvas"),
        mapOptions);
    google.maps.event.addDomListener(window, 'load', initialize);
}</script>
</head>
<body>
<div id="map-canvas"/>
</body>
</html>

https://developers.google.com/maps/documentation/javascript/tutorial
Google Maps JavaScript API: Simple Map

- Simple Map
- Visual Refresh
- Showing pixel and tile coordinates
- Geolocation
- Localizing the map
- Right-to-left languages
- Asynchronous loading
- Custom map projections

View this example full screen.

```html
<DOCTYPE html>
<html>
<head>
  <title>Simple Map</title>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no">
  <meta charset="utf-8">
  <style>
    html, body, #map-canvas {
      height: 100%;
    }
  </style>
</head>
```

https://developers.google.com/maps/documentation/javascript/examples/map-simple
<html>
<head>
  <title>Simple Map</title>
  <meta name="viewport" content="initial-scale=1.0, user-scalable=no">
  <meta charset="utf-8">
  <style>
    html, body, #map-canvas {
      height: 100%;
      margin: 0px;
      padding: 0px
    }
  </style>
  <script>
    var map;
    function initialize() {
      var mapOptions = {
        zoom: 8,
        center: new google.maps.LatLng(-34.397, 150.644)
      };
      map = new google.maps.Map(document.getElementById('map-canvas'),
          mapOptions);
    }
    google.maps.event.addDomListener(window, 'load', initialize);
  </script>
</head>
<body>
  <div id="map-canvas"></div>
</body>
</html>

https://developers.google.com/maps/documentation/javascript/examples/map-simple
<div style="position:absolute; height:100%; width:100%;">
  <div id="map-canvas"></div>
</div>

http://mail.tku.edu.tw/myday/app/map.html
Google Maps JavaScript API

```html
<style>
  #map-canvas {
    height: 100%;
    margin: 0px;
    padding: 0px
  }
</style>

<script>
  function initialize() {
    var mapOptions = {
      zoom: 15,
      center: new google.maps.LatLng(25.174738, 121.450381)
    };

    var map = new google.maps.Map(document.getElementById('map-canvas'),
      mapOptions);
  }

  function loadScript() {
    var script = document.createElement('script');
    script.type = 'text/javascript';
    document.body.appendChild(script);
  }

  window.onload = loadScript;
</script>

http://mail.tku.edu.tw/myday/app/map.html
Google Maps JavaScript API + jQuery Mobile

http://mail.tku.edu.tw/myday/app/map.html
References

• Google Maps API,  
  https://developers.google.com/maps/

• Google Maps JavaScript API,  
  https://developers.google.com/maps/documentation/javascript/

• Google Maps JavaScript API Tutorial,  
  https://developers.google.com/maps/documentation/javascript/tutorial

• Google Maps API Tutorial,  
  http://www.w3schools.com/googleAPI/

• Google Maps Platform,  
  https://cloud.google.com/maps-platform/