Going Mobile with Google Geo APIs

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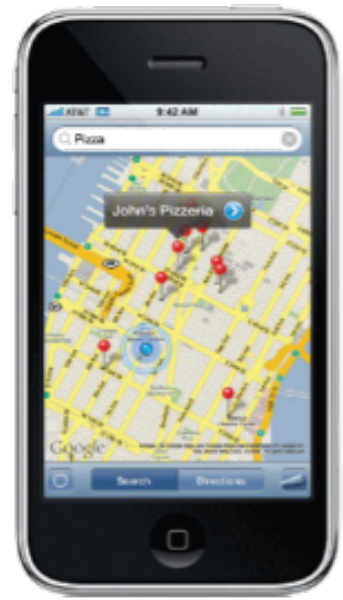
What are we talking about?

Lowest common denominator:
Static Maps



Android, iPhone:
Native APIs

iPhone, Android, soon other smart phones
JavaScript API

What Makes Mobile Different?

- Screen size
- Latency
- User interface and interaction
- Speed
- Location
- Other device services

Two Types of Latency

- Page load: the time until all components of the page are loaded, visible, and usable
- User perceived: the time until the page appears to have loaded

Comparison slide

Browser only

- Multiple Platforms
- API provider solves the cross-device issues
- No app download
- Faster revisions
- No need for app store approval
- HTML 5 GeoLocation

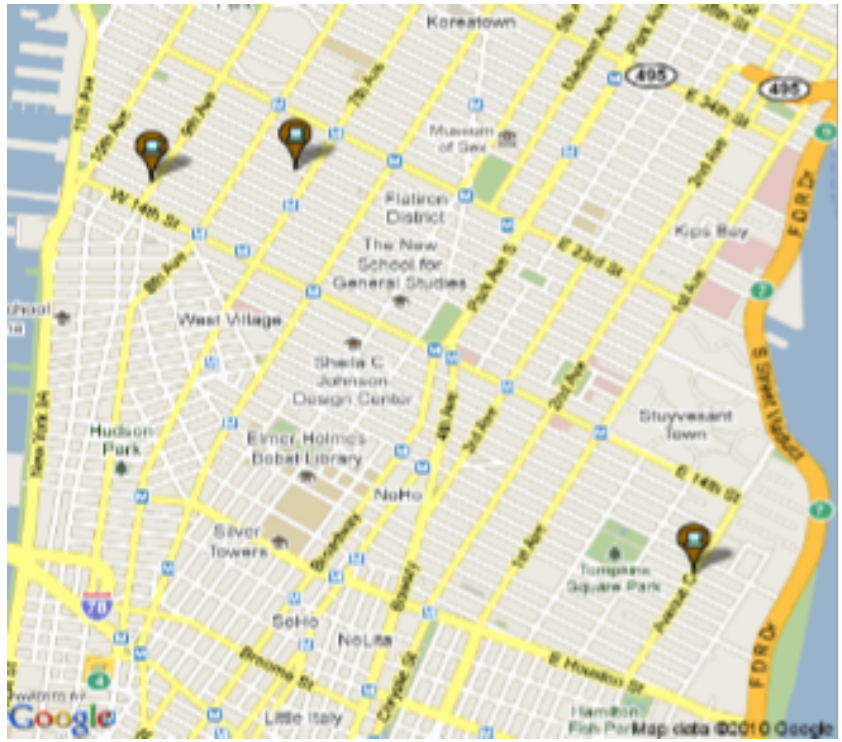
Native App

- Native UI
- Easy integration with your app
- One language
- App store discoverability

- Lower latency

Static Maps API

- Returns a static image
- Version 2 has lots of new features including:
  - encoded polylines
  - special mobile tiles
  - custom icons
- Doesn’t use JavaScript
- No slippy-ness
- Wide compatibility



iPhone Development with MapKit

- iPhone 3.0 SDK
- Apple API
- Objective C
- Less Features than JS API
- Iteration requires new iPhone release
- iPhone UI

Android Development with MapView

- Java Development
- More features than iPhone
- Android look and feel
- Iteration requires new Android release

Hybrid Native + JavaScript

- Use WebView and UIWebView to load V3 page
- Combine App Store discoverability with JavaScript advantages
- Take full advantage of platform features
- More development pain than browser only

HTML 5 GeoLocation

- Device decides what location is:
  - GPS
  - Wifi
  - User Setting
- User decides to share
- Common JavaScript API

Let's Build it

- JavaScript V3 page with GeoLocation
- Static Map for everything else

V3's first benefit!

No Keys Required!

http://maps.google.com/maps/api/js?sensor=true

Starting the code

```
<html>
<head>
<meta name="viewport" content="initial-scale=1.0, user-scalable=no" />
<script type="text/javascript" src="http://maps.google.com/maps/api/js?sensor=true"
></script>
<script type="text/javascript"> var lat = 0; var lng = 0; var map;
  function initialize() {
    var latlng = new google.maps.LatLng(lat,lng);
    var myOptions = {
      zoom: 8,
      center: latlng,
      mapTypeId: google.maps.MapTypeId.ROADMAP
    };
    var map = new google.maps.Map(document.getElementById("map_canvas"),
myOptions);
  }

</script>
```

Add in Geolocation

```
function initialize() {
 var latlng = new google.maps.LatLng(lat,lng);
  if (navigator.geolocation) {
    navigator.geolocation.getCurrentPosition(function(position) {
    lat = position.coords.latitude;
    lng = position.coords.longitude;
    showMapCenter();
    setMapCenter();
     });
}

function setMapCenter(){
  var latlng_new = new google.maps.LatLng(lat,lng);
  map.setCenter(latlng_new);
}
function showMapCenter(){
var latlng_new = new google.maps.LatLng(lat,lng);
var marker = new google.maps.Marker({
      position: latlng_new,
      map: map,
      title:"Map Center"
  });

}
```

Add in HTML

```
</script>

<body onload="initialize()">

  <div id="map_canvas" style="width:100%; height:100%"></div>

</body>

</html>
```

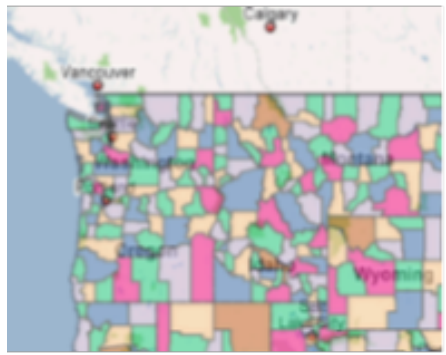
Static Maps API

http://maps.google.com/maps/api/staticmap?
size=480x480&markers=
icon:http://chart.apis.google.com/chart%3Fchst
%3Dd_map_pin_icon%26chld%3Dcafe%257C996600
|***lat,lng*** |&zoom=3&mobile=true&sensor=***true_or_false***

Demos

[Markers, Controls, InfoWindows]

[Geocoding (Forward/Reverse)]



[Custom Overlays]