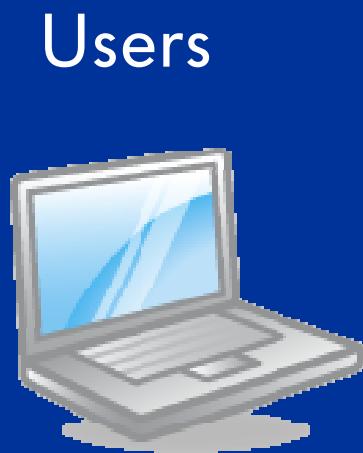
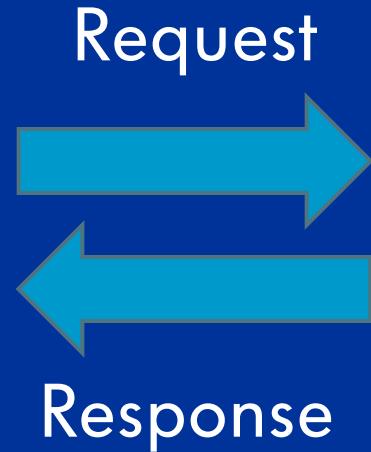


# What is Web API?

- Programmable interfaces that enable use of web services



Users



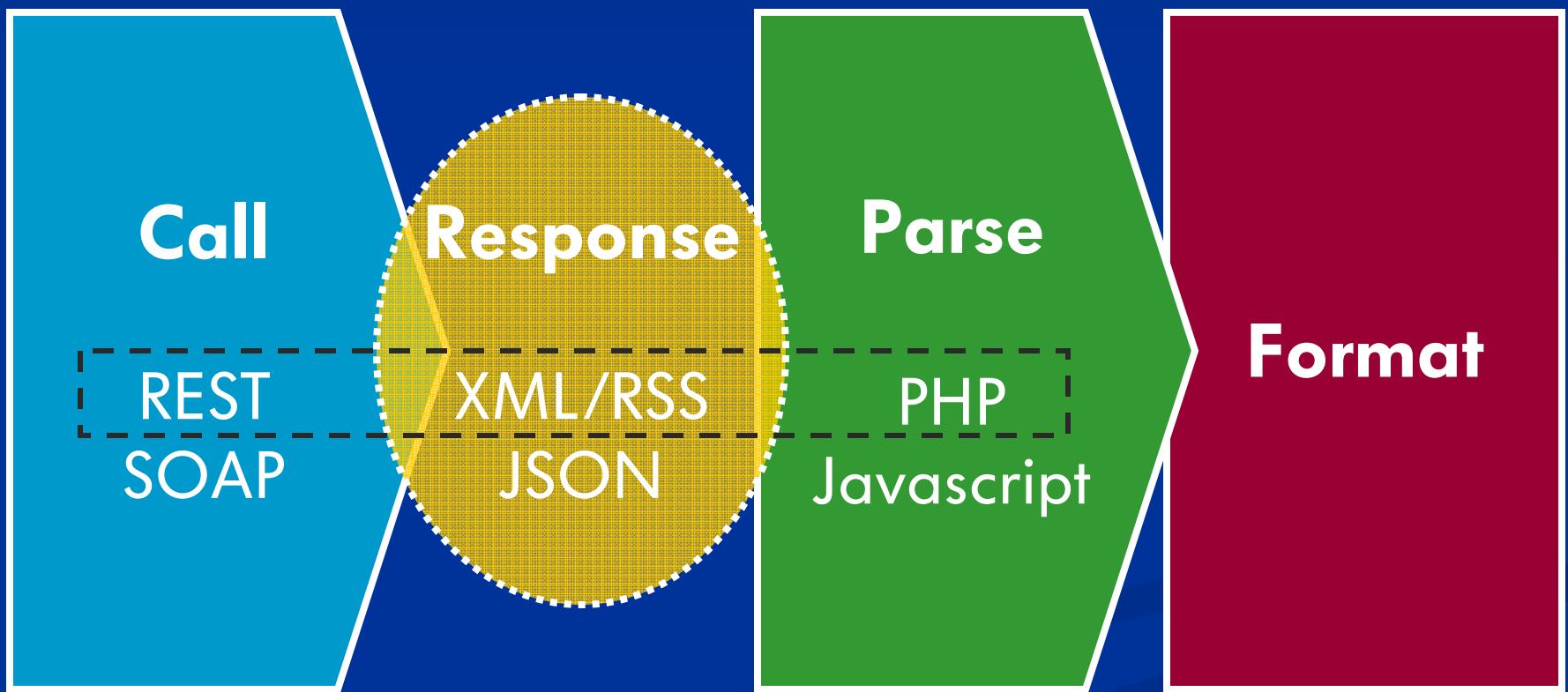
Web services



# Mashups

- Mashups?
  - Web pages that use one or more web APIs
- Example
  - [www.nagle.ul.net](http://www.nagle.ul.net) – Naver + Google search
  - [www.celebrity-maps.com](http://www.celebrity-maps.com) –Google Maps
  - [www.isoma.net/games/goggles.html](http://www.isoma.net/games/goggles.html) - Google Maps
  - [www.flowsr.com](http://www.flowsr.com) – Amazon.com

# Usage of Web API



# Call

## ■ REST (REpresentational State Transfer)

- Uses long GET requests
- Looks like filling out a form
- Simpler
- Example

`http://library.example.com/api.php?devkey=123&action=search&keyword=style`

endpoint URL

API key

desired action

parameters

# Call

- SOAP (Simple Object Access Protocol)
- XML-RPC (XML-Remote Procedure Call)
  - Posts XML object to the server
  - More complex, more organized
  - Example

```
<?xml version="1.0"?>
<methodCall>
  <methodName>examples.getStateName</methodName>
  <params>
    <param>
      <value><i4>40</i4></value>
    </param>
  </params>
</methodCall>
```

# Response

## ■ XML/RSS (Naver.com search API response)

```
<?xml version="1.0" encoding="UTF-8"?>
<rss version="2.0">
  <channel>

    <title>Naver Open API - kin ::'go'</title>
    <link>http://search.naver.com</link>
    <description>Naver Search Result</description>
    <total>190288</total>

    <item>
      <title>바둑이 왜 &lt;b&gt;GO&lt;/b&gt; 인가요?</title>
      <link>http://kin.naver.com/db/detail.php?d1id=2&amp;...</link>
      <description>...  발음은 고(&lt;b&gt;GO&lt;/b&gt;)라고... </description>
    </item>

  </channel>
</rss>
```

## ■ JSON (JavaScript Object Notation)

# Parse

- PHP
  - PHP4
  - PHP5

# Exercise

## ■ Daum 카페 검색

- Request URL: <http://apis.daum.net/search/cafe>
- Request method: REST
- Parameters – **required** + **optional**

Name	Type	Description
<b>apikey</b>	String	Key. Required.
<b>q</b>	String	Query word(s). Required
<b>result</b>	Integer	# of display per page. 1~20 ( <b>10</b> )
<b>pageno</b>	Integer	Page index. 1~500 ( <b>1</b> )
<b>sort</b>	String	date (날짜순), accu (정확도순) ( <b>accu</b> )
<b>output</b>	String	결과 형식. rss, xml, json ( <b>rss</b> )

# Exercise

1. Log in to the server.
2. Copy the template file.
  - wikispaces → server
3. Insert ‘`phpinfo();`’ and execute.
  - check version > 5 and `allow_url_fopen=on`.
4. Make a request url
  - `$request = “http://...”`
  - Inclulde all parameters with default values
5. Call
  - `$response = file_get_contents($request);`
6. Parse
  - `$phpobject = simplexml_load_string($response);`

# References

- <http://www.programmableweb.com>
- <http://dna.daum.net/apis/howto-php>
- <http://developer.yahoo.com/php/#code>

# Daum Cafe Search API

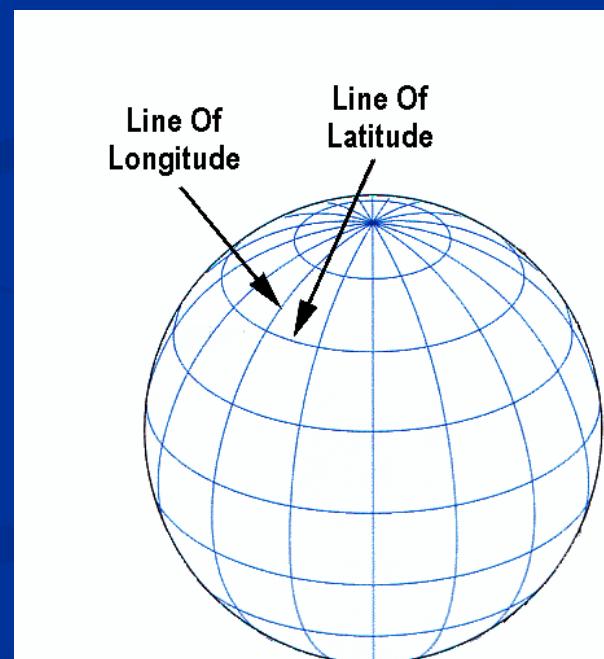
- api01/daum\_cafe\_search.php
  - \$request에 REST url을 만들어서 저장
    - 검색어는 urlencode를 이용해서 넣음
  - 터미널 설정: character encoding → UTF-8
  - echo \$request;
- 나온 결과를 굽어서 브라우저 주소에 붙여 넣기
- RSS 결과 확인
  - Parameter들을 바꿔서 기능이 작동하는지 확인

# Google Maps API

- Goal: show YUST on the Google map
- Copy example code to your directory
  - cp /home/hibyun/api02/google\_maps\_start.php .

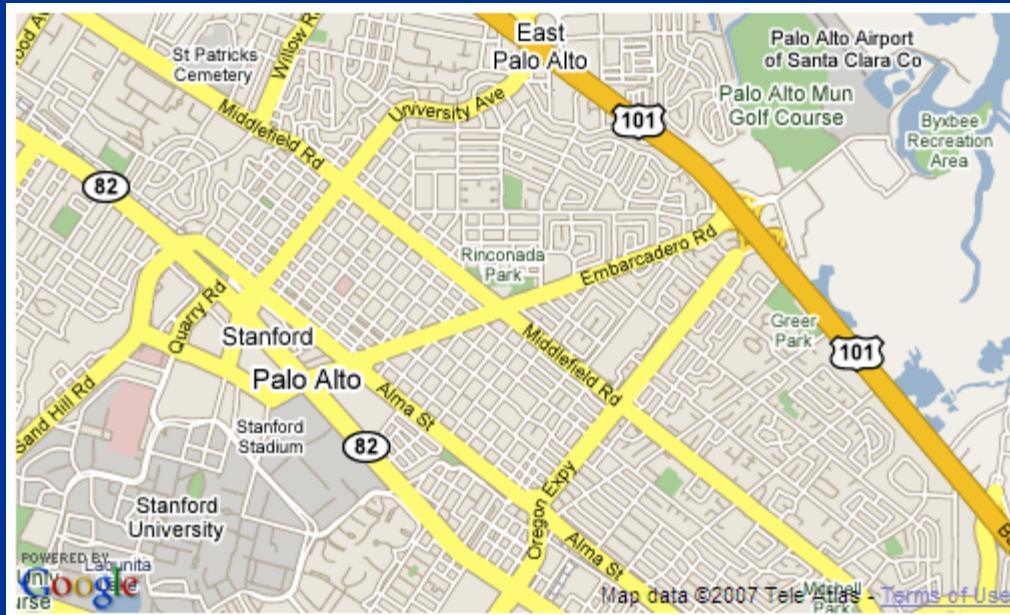
- Palo Alto in California, USA  
→ Latitude = 37.4419,  
Longitude = -122.1419

Geocoding



# Google Maps API

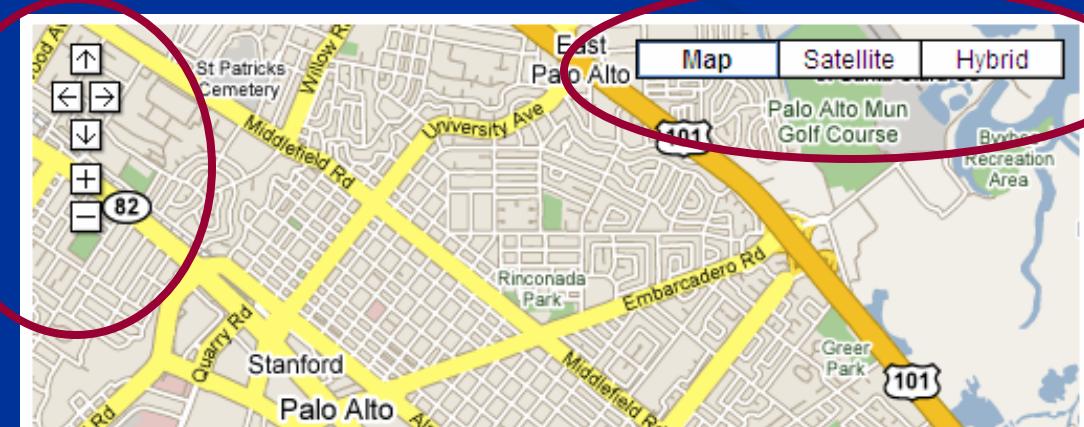
- Execute `google_map_start.php`
  - Do you get this?



# Google Maps API

## ■ Adding controls to the map

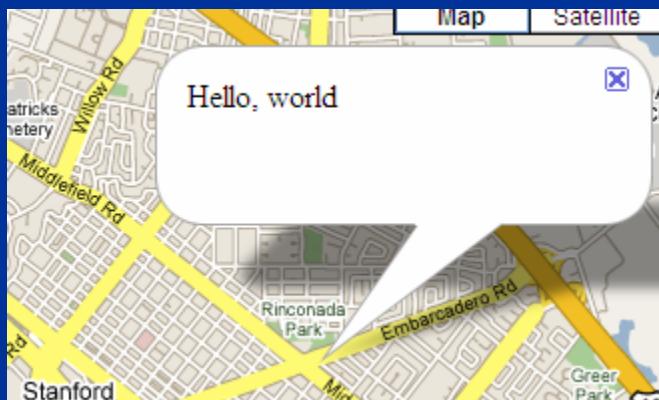
```
var map = new GMap2(document.getElementById("map"));
map.addControl(new GSmallMapControl());
map.addControl(new GMapTypeControl());
map.setCenter(new GLatLng(37.4419, -122.1419), 13);
```



# Google Maps API

## ■ Opening an info window

```
var map = new GMap2(document.getElementById("map"));
map.addControl(new GSmallMapControl());
map.addControl(new GMapTypeControl());
map.setCenter(new GLatLng(37.4419, -122.1419), 13);
map.openInfoWindow(map.getCenter(),
    document.createTextNode("Hello, world"));
```



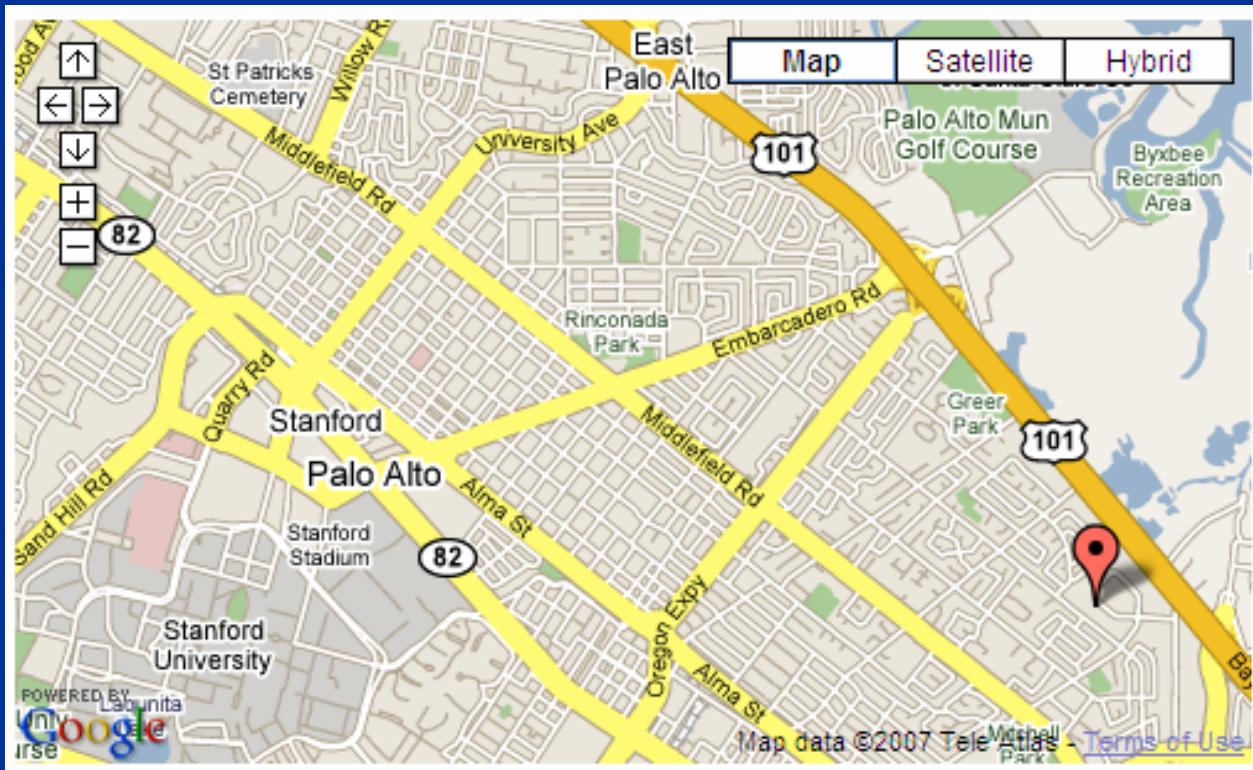
# Google Maps API

- Info window는 잠시 없애두고..

```
var map = new GMap2(document.getElementById("map"));
map.addControl(new GSmallMapControl());
map.addControl(new GMapTypeControl());
map.setCenter(new GLatLng(37.4419, -122.1419), 13);
<!-- map.openInfoWindow(map.getCenter(),
document.createTextNode("Hello, world")); -->
```

# Google Maps API

- Execute your google\_maps\_start.php
- We start from here:



# Google Maps API

## ■ Click handling

- Click하면 그 자리에 marker가 생기게 해본다.

```
GEvent.addListener(map, "click", function(marker, point) {  
    if (marker) {  
        map.removeOverlay(marker);  
    } else {  
        map.addOverlay(new GMarker(point));  
    }  
});  
<!-- var point1 = new GLatLng(37.43, -122.11);  
map.addOverlay(new GMarker(point1)); -->
```

# Google Maps API

- Display info windows above markers
  - Marker를 클릭하면 그에 해당하는 info window 가 뜨게 한다.

```
GEvent.addListener(map, "click", function(marker, point) {  
    if (marker) {  
        map.removeOverlay(marker);  
        marker.openInfoWindowHtml("Marker");  
    } else {  
        map.addOverlay(new GMarker(point));  
    }  
});
```

# Google Maps API

## ■ Get coordinates after dragging

```
GEvent.addListener(map, "moveend", function(){
    var center = map.getCenter();
    map.clearOverlays();
    map.addOverlay(new GMarker(center));
    document.getElementById("number").innerHTML
        = center.toString();
});
```

```
<div id="map" style="width: 500px; height: 300px"></div>
(Latitude, Longitude) = <div id="number"></div>
```

# Google Maps API

- You'll see this after each dragging:



# Yahoo! Weather

- Provides the weather forecast of world cities
- call: REST
  - `http://weather.yahooapis.com/forecastrss?p=CHXX2091&u=c`
- response: RSS
- parse: PHP → tomorrow

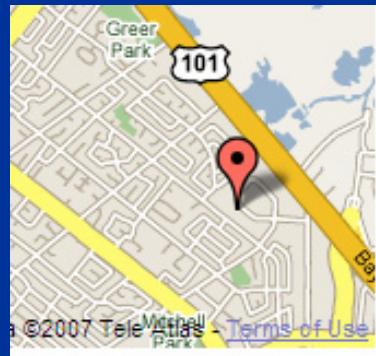
# References

- Google Maps API reference manual
  - <http://www.google.com/apis/maps/documentation/reference.html>
- Yahoo! Weather
  - <http://developer.yahoo.com/weather>

# Google Maps API

## ■ Map overlays - marker

```
<!-- map.openInfoWindow(map.getCenter(),  
                      document.createTextNode("Hello, world")); -->  
var point1 = new GLatLng(37.43, -122.11);  
map.addOverlay(new GMarker(point1));
```



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<!-- var point1 = new GLatLng(37.43, -122.11);  
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    } else {  
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    }  
});
```