

Introduction

Rich Internet Applications (RIAs) and Web 2.0 have changed the shape of the Web platform. The growth of user generated content is greatly responsible for this. Mashups are considered to have an active role in the evolution of social software and Web 2.0. The objective of the ongoing project reported in this poster is to implement the mashup concept into design and development of an interactive, multi-resolution server-side data mashup application ipl2 (Internet Public Library v2) Newspaper Map to present data from the ipl2 database in a more intuitive and appealing way to the end-user.

This application is designed upon a full Design Pattern Analysis (DPA) and the rigidity of the application architecture is achieved by the encapsulation of 3 component models:

1. Integrated user-interface (UI) artifacts
2. Data
3. Application functionality

The end-user can experience Google's geospatial technology in its full implementation via this application.

Project Objectives

- Design a fast and easy-to-use mapping web application for the ipl2 newspaper database
- Develop the application using tools like Adobe Flex framework, Google Maps API, MySQL, PHP Scripting and Adobe Flash
- Explore other tools that could be used for mashup applications
- Develop better interactivity, usability, and conceptual data representation and coverage on the ipl2 website and in turn, the web.



What is ipl2?



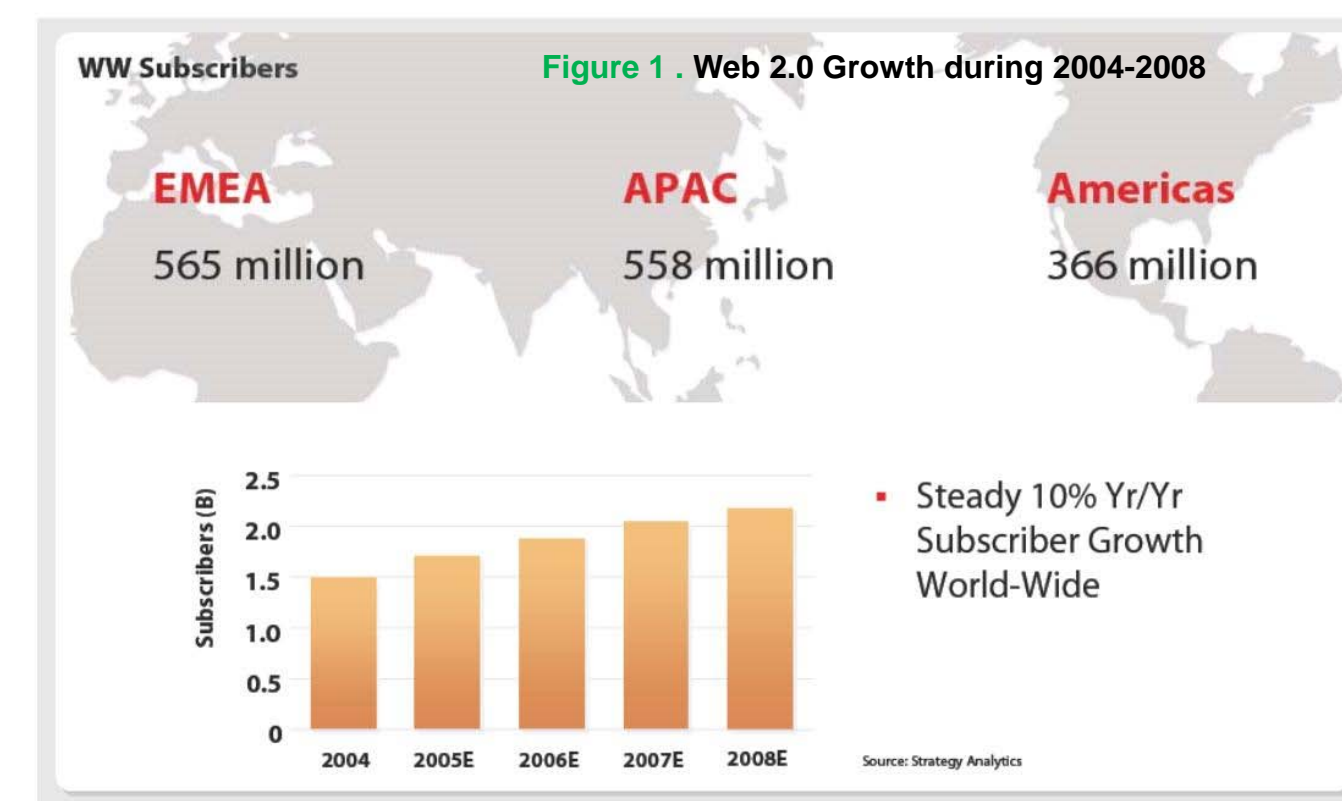
ipl2 (Internet Public Library v2.0) is an online public service organization and a learning/teaching environment. Thousands of students and volunteer library and information science professionals have been involved in in designing, building, creating and maintaining the ipl2's data collections. It is the result of a merger of the Internet Public Library (IPL) and the Librarians' Internet Index (LII). It is sponsored by Intel and Sun Microsystems.



What is a mashup application?

A **mashup application** is a web 2.0 application that combines user generated content and other static and dynamic data from several sources, manipulates that data and presents it to the end-user in a new form.

It implies easy, fast integration, frequently using open APIs and data sources to produce enriching results.



Why make a mashup for ipl2?

- **To foster innovation** by unlocking and remixing in ways not originally planned for
- **To uncover new business insights** by easily assembling information from multiple sources
- **To improve UI experience** by adding a dynamic map with a lot of interactivity
- **To reduce development costs** through lightweight integration, reuse and sharing

Application Functionality

The ipl2 Flex application contains a UIComponent for the map, and it uses function calls from the Google Maps API to create an interactive map inside the UIComponent. It then sends a call to the PHP script, which connects to the ipl2 database of newspapers and outputs them as XML. The Flex application parses the XML and issues other calls to the API to create markers on the map and add additional functionality.

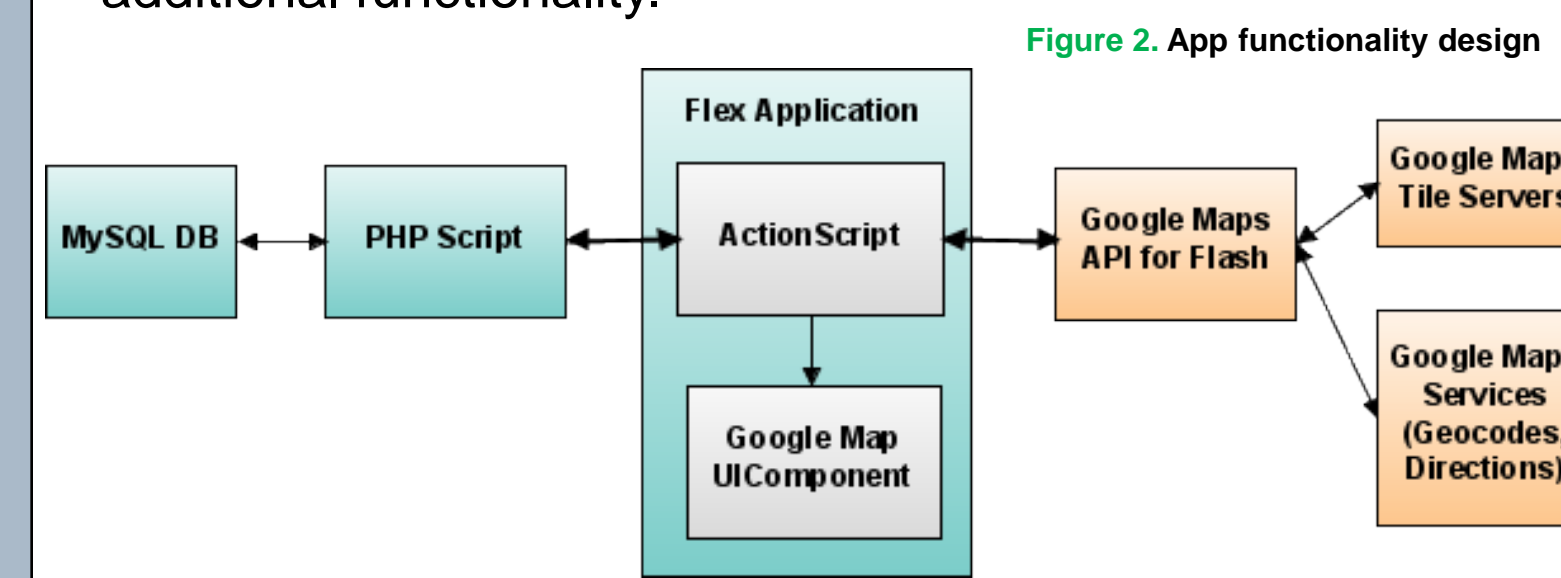


Figure 3 (left). php script for XML parsing

```

function parseToXML($xmlStr)
{
    $xmlStr=str_replace('<','&lt;',$xmlStr);
    $xmlStr=str_replace('>','&gt;',$xmlStr);
    $xmlStr=str_replace('"','&quot;',$xmlStr);
    $xmlStr=str_replace("'",'&#39;',$xmlStr);
    $xmlStr=str_replace("&","&amp;",$xmlStr);
    return $xmlStr;
}
    
```

Figure 4 (right). MySQL db for the current version of app

ID	Name	Address	Lat	Long	Type
1	Devine Media Enterprises	http://www.new-jersey.ws/	40.266511	-74.487805	usa
2	The Tittown News	http://tittown.gmnews.com/	40.223407	-74.707031	usa
3	News Transcript	http://newstranscript.gmnews.com/	39.389748	-74.878192	usa
4	Le Quindien O'Ryan	http://www.lequindien-oryan.com/	28.852031	3.164602	afrika
5	El Mundoahid	http://www.elmundoahid-dz.com/	36.763092	3.019666	afrika
6	The Daily Journal	http://www.thedailyjournal.com	40.252949	-74.712524	usa

Data Structure Design

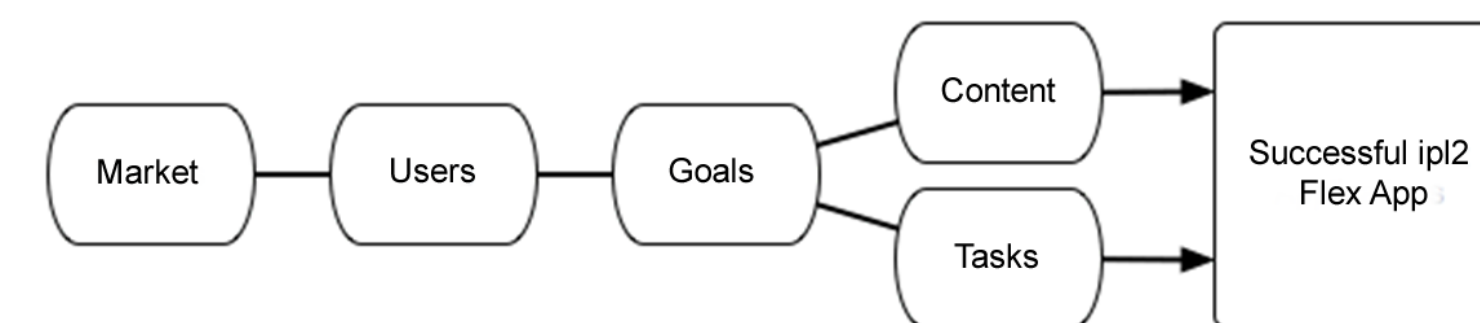


Figure 5 (above). Design for data structure and delivery in our application

Why use Google API?

API Performance Comparison			
Provider	Render Time (sec)	Files	Size (KBs)
Yahoo	3.05	24	207
Google	3.18	27	223
Microsoft	3.65	20	236

The Yahoo API is quicker to load, but we used Google because it is more accurate and more popular.

Tests were performed on a Mozilla Firefox browser on Windows and Macintosh with a browser restart and clean cache each time.

User Interface (UI) Artifacts

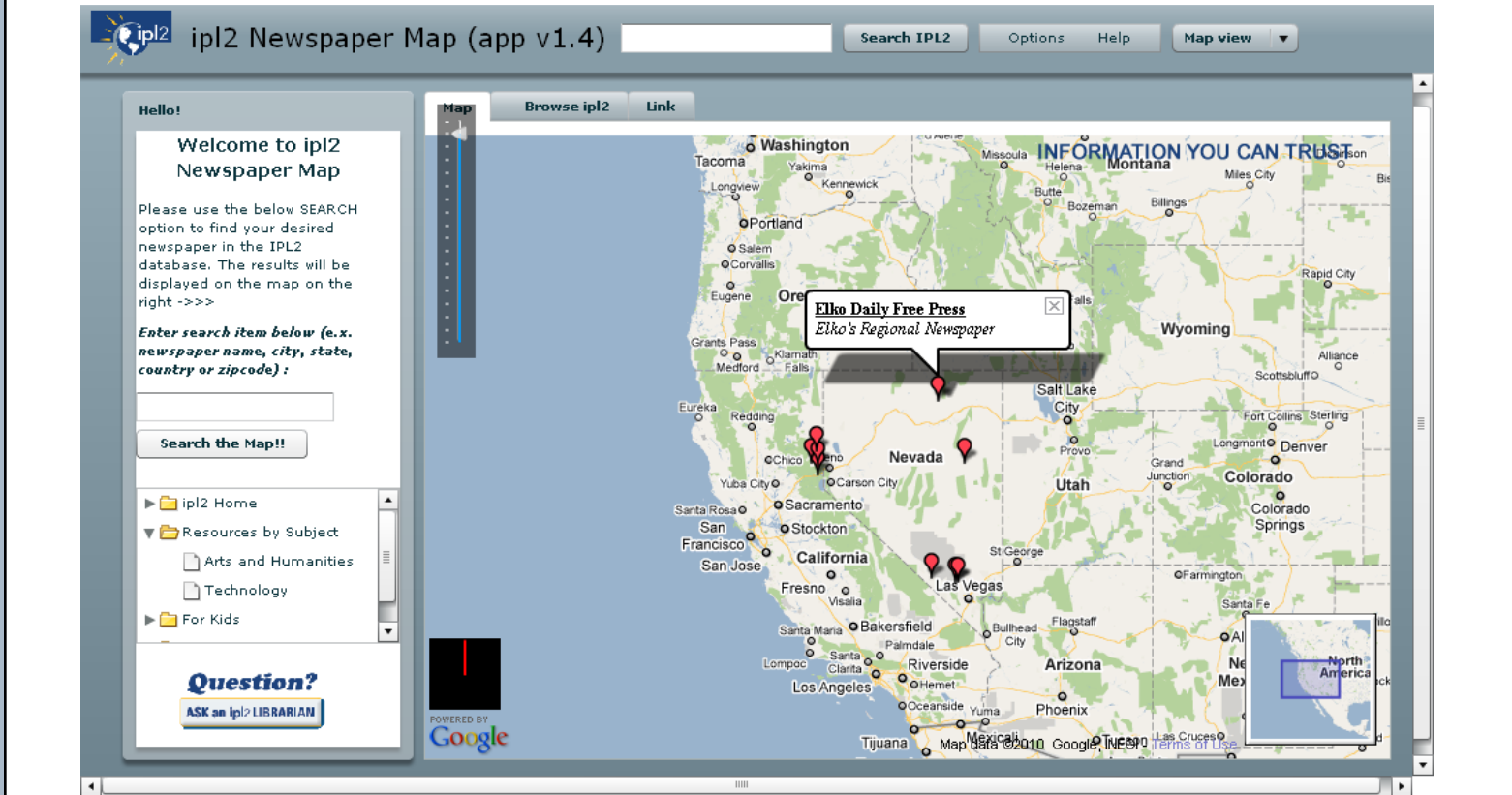


Figure 6 (above). Full-screen snip of our application

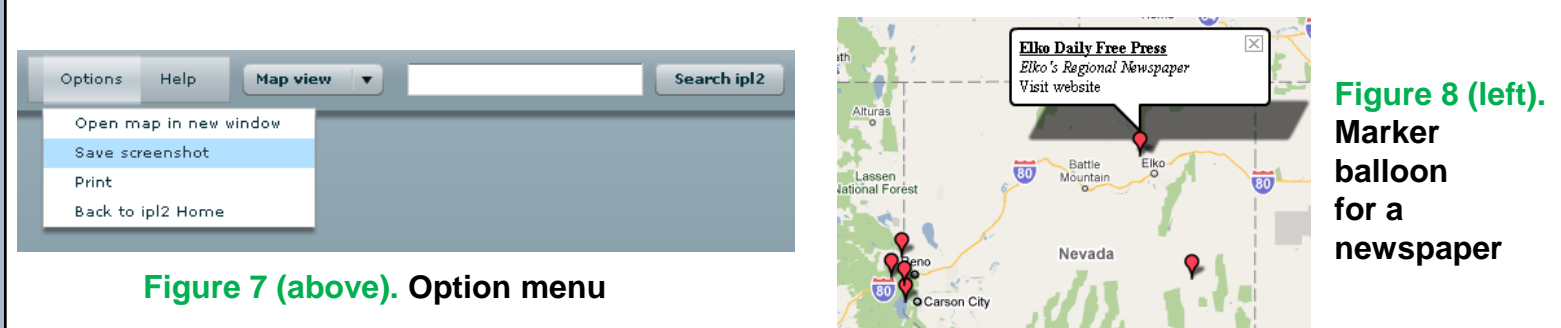


Figure 7 (above). Option menu

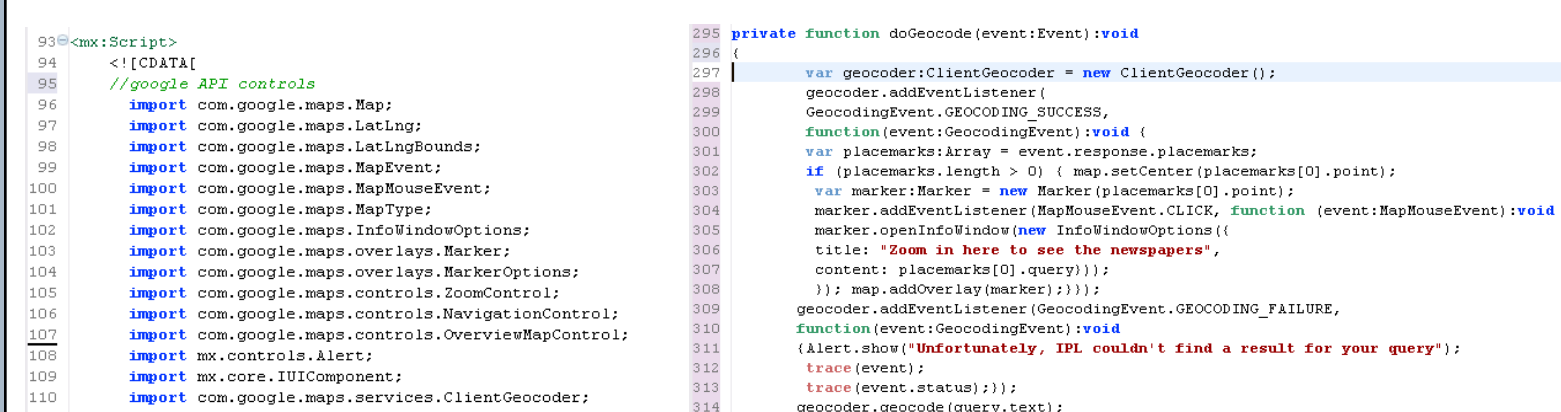


Figure 8 (left). Marker balloon for a newspaper

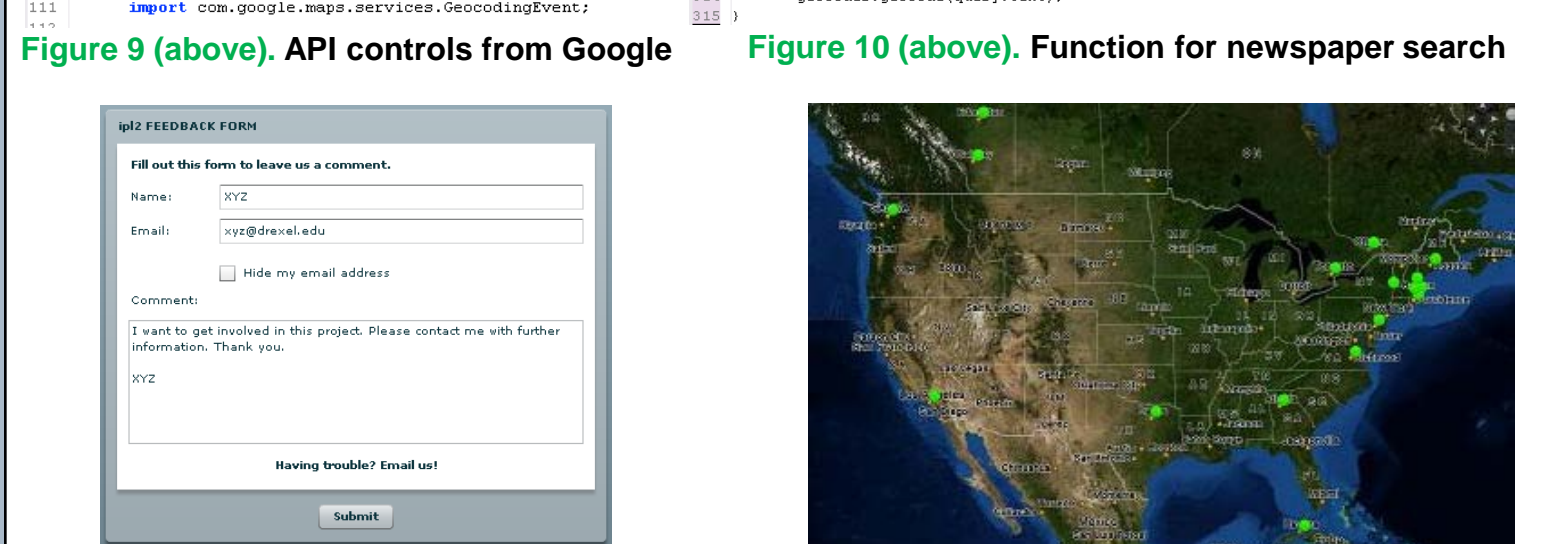


Figure 9 (above). API controls from Google

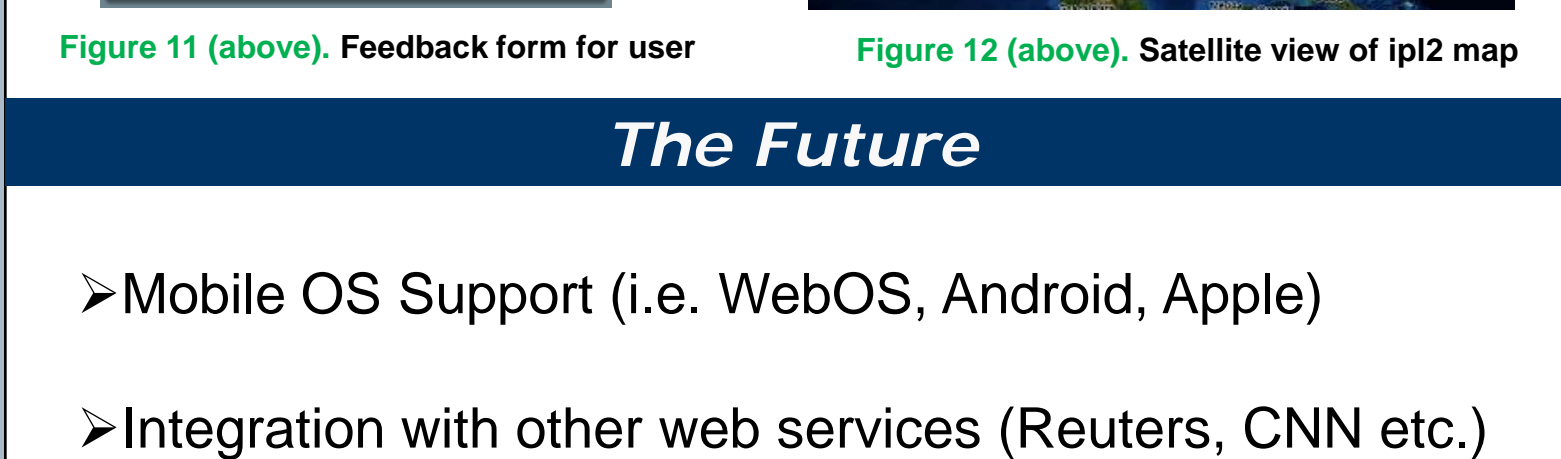


Figure 10 (above). Function for newspaper search

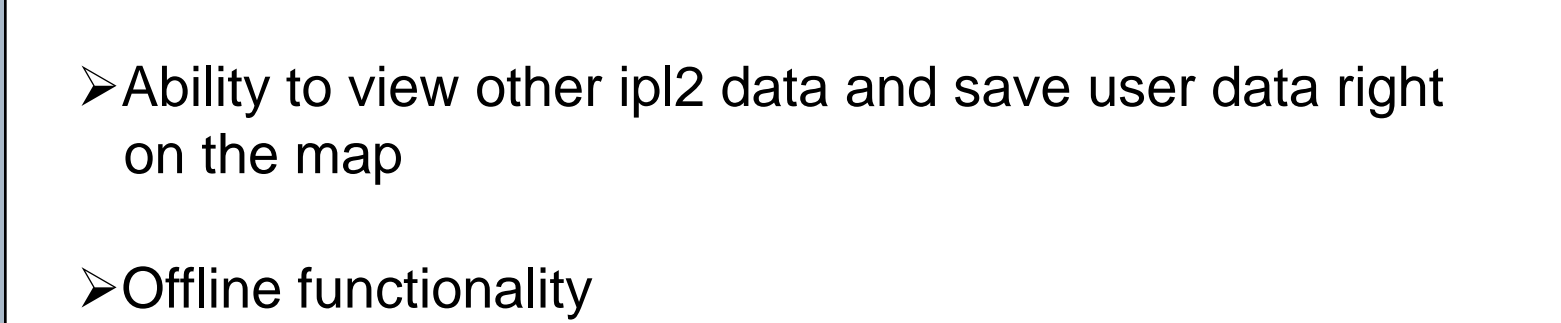


Figure 11 (above). Feedback form for user



Figure 12 (above). Satellite view of ipl2 map

The Future

- Mobile OS Support (i.e. WebOS, Android, Apple)
- Integration with other web services (Reuters, CNN etc.)
- Ability to view other ipl2 data and save user data right on the map
- Offline functionality

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