Location Base Services Database and Web API

Design Specifications

Version 1.0

Ref: SW060213

Date: 11 February 2013

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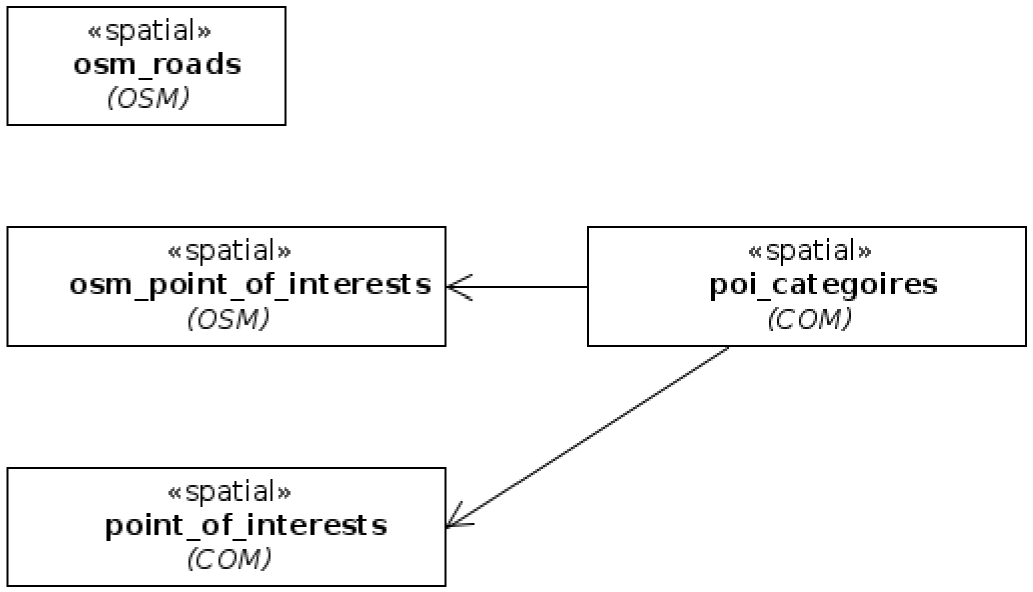
1.0 Database Design

1.1 Schema Brief Design



1.2 Initial Data Creation

To load OSM Roads data into Database.
To load OSM POI data into Database.
To extract OSM POI categories from OSM POI data into Database.

1.3 Data Scope

OSM roads and POI data of whole Myanmar is to be imported into Database.

1.4 Imporantace of Seperate Data Storage

Original OSM data are to be stored in the tables with prefix “osm”.
Company's collected data must be stored in separate database tables.
API will transparently read multiple tables osm or company while searching the database.

2.0 API Design

2.1 Response formats

Following response data type will be avaiable from API;

1. **CSV** : comma separated values file with default “comma” as separator or any separater of client's choice.
2. **JSON** : Javascript object notification format of response data structure
3. **XML** : Extensible markup language format of response data structure

2.2 API End Points

<table>
<tr><td>Ref Code</td><td>api001</td></tr>
<tr><td>Name</td><td>Query POI Category list</td></tr>
<tr><td>Description</td><td>Get the whole list or partial list of POI Categories</td></tr>
<tr><td>URL</td><td>http://[server]/poi_categories</td></tr>
<tr><td>Method</td><td>GET</td></tr>
<tr><td>Parameters</td><td>
<table>
<tr><td>Name</td><td>Mandatory</td><td>Description</td></tr>
<tr><td><i>p</i></td><td>False</td><td>Page number of the records</td></tr>
<tr><td><i>l</i></td><td>False</td><td>Number of records for each page</td></tr>
<tr><td><i>c</i></td><td>False</td><td>Include the number of POI counts under each category.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Ref Code</td><td>api002</td></tr>
<tr><td>Name</td><td>Query POI list for given POI Category</td></tr>
<tr><td>Description</td><td>Get the whole or partial list of POI for given POI Category.</td></tr>
<tr><td>URL</td><td>http://[server]/poi_list</td></tr>
<tr><td>Method</td><td>GET</td></tr>
<tr><td>Parameters</td><td>
<table>
<tr><td>Name</td><td>Mandatory</td><td>Description</td></tr>
<tr><td><i>p</i></td><td>False</td><td>Page number of the records</td></tr>
<tr><td><i>l</i></td><td>False</td><td>Number of records for each page</td></tr>
<tr><td><i>cat_id</i></td><td>True</td><td>POI Category id.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Ref Code</td><td>api003</td></tr>
<tr><td>Name</td><td>Search POI Categories for a given name</td></tr>
<tr><td>Description</td><td>Search POI Categories for a given name</td></tr>
<tr><td>URL</td><td>http://[server]/poi_categories/search</td></tr>
<tr><td>Method</td><td>GET</td></tr>
<tr><td>Parameters</td><td>
<table>
<tr><td>Name</td><td>Mandatory</td><td>Description</td></tr>
<tr><td><i>l</i></td><td>False</td><td>Number of top records from search result</td></tr>
<tr><td><i>q</i></td><td>True</td><td>Query category name.</td></tr>
<tr><td><i>c</i></td><td>False</td><td>Include the number of POI for each matching POI Categories.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Ref Code</td><td>api004</td></tr>
<tr><td>Name</td><td>Search POI for a given name</td></tr>
<tr><td>Description</td><td>Search POI for a given name</td></tr>
<tr><td>URL</td><td>http://[server]/poi_list/search</td></tr>
<tr><td>Method</td><td>GET</td></tr>
<tr><td>Parameters</td><td>
<table>
<tr><td>Name</td><td>Mandatory</td><td>Description</td></tr>
<tr><td><i>p</i></td><td>False</td><td>Page number of the records</td></tr>
<tr><td><i>l</i></td><td>False</td><td>Number of records for each page</td></tr>
<tr><td><i>cat_id</i></td><td>False</td><td>POI Category id. If provided, search with given category's scope.</td></tr>
<tr><td><i>q</i></td><td>True</td><td>Query POI name.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><td>Ref Code</td><td>api005</td></tr>
<tr><td>Name</td><td>Query nearby POIs for a given coordinate.</td></tr>
<tr><td>Description</td><td>Query nearby POIs for a given coordinate.</td></tr>
<tr><td>URL</td><td>http://[server]/nearby/poi_list</td></tr>
<tr><td></td><td></td></tr>
</table>

Parameters	

Name	Mandatory	Description
p	False	Page number of the records
l	False	Number of records for each page
cat_id	False	POI Category id. If provided, search with given category's scope.
lat	True	Latitude value of the coordinate
lon	True	Longitude value of the coordinate
r	False	Radius distance to search. Default 3km. Maximum 10km (or as defined)

Ref Code	api006
Name	Query nearby Roads for a given coordinate.
Description	Query nearby Roads for a given coordinate.
URL	http://[server]/nearby/roads
Method	GET
Parameters	

Name	Mandatory	Description
p	False	Page number of the records
l	False	Number of records for each page
lat	True	Latitude value of the coordinate
lon	True	Longitude value of the coordinate
r	False	Radius distance to search. Default 3km. Maximum 10km (or as defined)

Ref Code	api007
Name	Save a given POI location information.
Description	Save a given POI location information.
URL	http://[server]/poi_list
Method	POST
Parameters	

Name	Mandatory	Description
name	True	Name of the location.
cat_id	True	POI Category id of the location.

	lat	True	Latitude value of the coordinate
	lon	True	Longitude value of the coordinate
	meta	False	Additional information of the location.

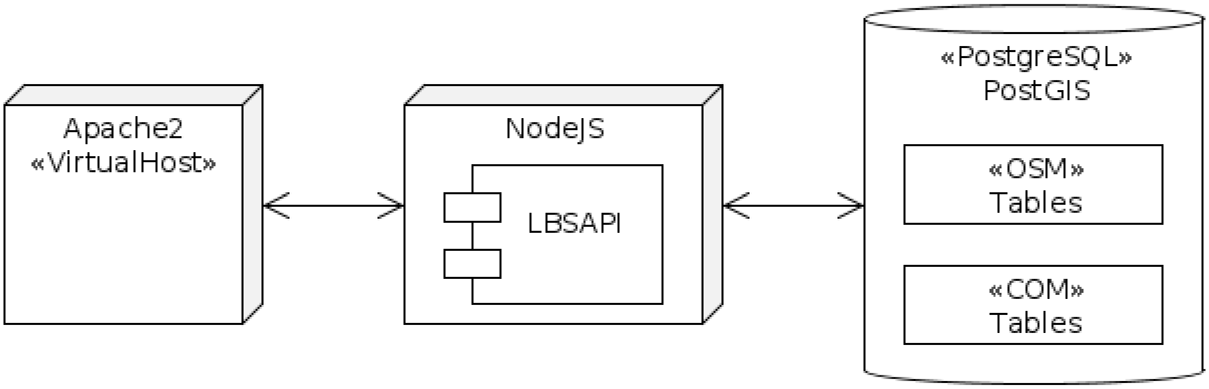
2.3 Testing

NodeJS test code and command-line Curl script tests for API functionalites will be conducted.

2.4 Security

Configurable Simple HTTP Authentication with pre-defined User Name and Password will be implemented to control access of API functionalities.

2.5 Deployment architecture



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