Nearest Neighbor Public Services Search System for Myanmar Land

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Many foreigners are interesting in Myanmar.

Foreigners cannot know all the places except famous places in Myanmar.

They will interest and want to know the address and phone number of public services such as restaurant, hotel, shopping center, bank, etc., within minimum time.

That requirements concern with geographic information system (GIS) that contains location-based data, searching user location services, finding nearest public services, etc.,
Our Vision

- The geographic information system (GIS) is essentially required for developing country Myanmar.

- We intend to establish the GIS project of Myanmar land and develop the useful applications for foreigners who interest in Myanmar to easy get required information very quickly.
Project Parts

- Location-based Services Search System
- Shortest Paths Finding System
- Detecting Urban Area Change
- Modeling 3D for Urban Area
Creating Database

Downtown Area

- Collection Data:
  - latitude, longitude
  - Location of public service (bus, station, Supermarket, ...)
  - Famous places and its image.

Spatial Database

4x,xxx parts of sub images

0.15 square kilometer
Location-based Services

- Location-based services are very useful for users who are strange with new places.
- Location-based services allow users on the go with access to geographic data from micro-laptops, tablet, PCs, PDA etc.
- It is a software application for both mobile and web users.
- User’s current location or mobile’s GPS location is important in location-based services.
This research is the part of ongoing Geographical Information System (GIS) project of University of Computer Studies, Yangon, Myanmar.

Now, this system mainly focus on location-based services searching for one or more users’ requirements.

We create own dataset that contains public services.

By using this system, user can find the nearest public services, all nearest places within given range and nearest place between two users for static location.
Objectives

- To find nearest neighbor points of the user’s current location (query points) within minimum time (K-NN keyword query).
- To find required object that are most suitable distance for two user within minimum time (ANN keyword query).
- To find all objects within user defined range that contain required keyword (Range keyword query).
- To correct inconsistencies of user’s input keyword.
- To provide exact and useful information for users within a few second.
For one user service, user need to input their current location, required services name as an input and need to choose services type and ranked type.

According to the users’ input, this system calculates distance between users’ current location and public service and then output the most suitable results.
<table>
<thead>
<tr>
<th>Name</th>
<th>Address</th>
<th>Phone No.</th>
<th>Distance (Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myanmar Oriental Bank (PhoneGyiLan branch)</td>
<td>110, Phone Gyi Lan, Yangon, Myanmar</td>
<td>01-222975</td>
<td>0.67305</td>
</tr>
<tr>
<td>Yoma Bank (Phone Gyi Street branch)</td>
<td>80/82, Phone Gyi Street, Yangon, Myanmar</td>
<td>01 211563</td>
<td>0.67305</td>
</tr>
<tr>
<td>Myawaddy Bank (LanThit Street branch)</td>
<td>59, Lan Thit Street, Yangon, Myanmar</td>
<td>01-647500</td>
<td>0.76342</td>
</tr>
<tr>
<td>Co-Operative Bank (CB Bank) (Lannmadaw branch)</td>
<td>797, Maha Bandoola Road, Yangon, Myanmar</td>
<td>01 212125, 222982-3</td>
<td>0.78371</td>
</tr>
<tr>
<td>Yoma Bank (Lan Thit Road branch)</td>
<td>38, Lan Thit Road, Yangon, Myanmar</td>
<td>01 640020</td>
<td>0.78562</td>
</tr>
<tr>
<td>Ayeyarwaddy Bank (Lanmataw branch)</td>
<td>778, Corner of Mahabandoola Street and 14th Street, Yangon, Myanmar</td>
<td>01 218467-471</td>
<td>0.85793</td>
</tr>
</tbody>
</table>
For two or more users service, users need to input their current location, required services name as an input.

According to the users’ input, this system calculates distance between users’ current location and public service and then output the minimum distance service between two users as a suitable result.
As an ongoing work, we will consider distance of places on real road network when searching nearest services.

Moreover, the system will consider for finding nearest services by choosing transportation type in advance such as by bus, by train, by car or on foot, etc., and for continuous moving objects to get best answer while travelling.

Also, we will continue to adapt this system that can search with many languages for Asian nations.
This system can combine with transit route finding system to solve the address finding problem and avoid the closed road for fire emergency situation and to find the shortest route among the locations of fire stations and incident location.
Conclusion

- This system intend to search required services within minimum times.
- This system also intend for foreigners who want to search services and places depending on their location and requirements and for becoming more and more useful for tourism services of Myanmar.
Thank You