

Location-based Q&A Android App

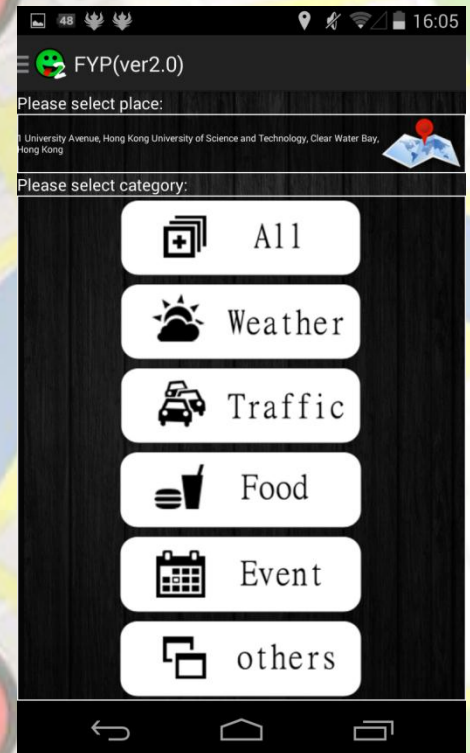
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Objective

Location-based Q&A Android application utilizes the features of Web 2.0: crowdsourcing. Users can ask or answer questions related to a particular location, probably an interesting place.

For example, “Is it raining in Causeway Bay?” and “Where is the nearest car park in Lan Kwai Fong?”. By integrating Google Maps to the app, users can select any point through a nice GUI. People near that particular place will receive a pop up notification, stating that someone needs help.



Overview

Username:
samson

Password
•

Remember my account?

Login Guest

[Don't have an account?](#)
[Forgot Password?](#)

1. Registration & Login

- **There is no need to register for guest. But, guest is only allowed to rank and answer questions, asking question is not allowed.**
- **Login information can be stored internally to prevent retyping username and password again and again.**
- **If user forgets password, the system can send a reminding email containing password.**

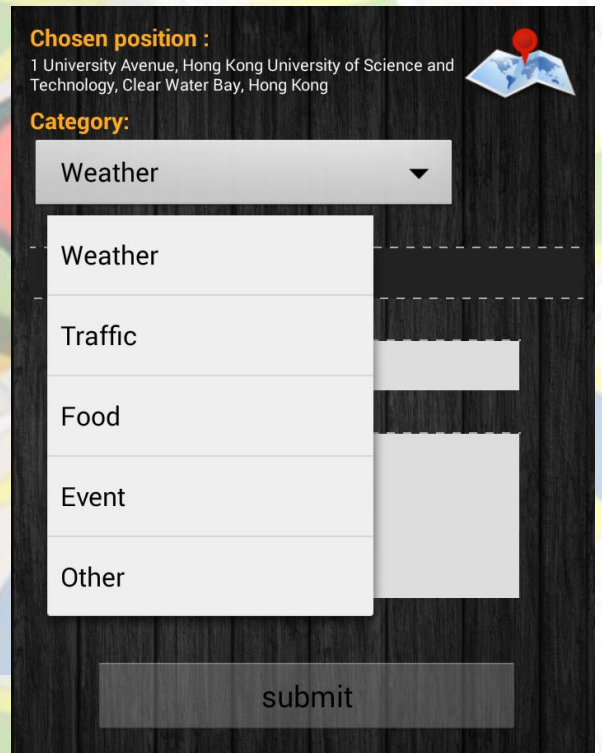
2. Asking & Answer questions

- **Questions are categorized into 6 groups: “Weather”, “Traffic”, “Food”, “Events” and “Others”.**
- **Users can select location through Google Maps. After submitting question related to that location. A marker is created there on map.**
- **Users can adjust the search range (100m, 250m, 500m, 1000m or 2000m). Q&A within that selected coverage appears in question list.**

3. Outdated questions handling

- Remove outdated Q or A continuously. Time limit depends on “categories” it belongs to. Remove if idol time is longer than time limit.

Category:	Time limit (Q)	Time limit (R)
Weather	15 min	25 min
Traffic	20 min	30 min
Food	7 days	7 days
Event	14 days	14 days
Others	1 month	1 month



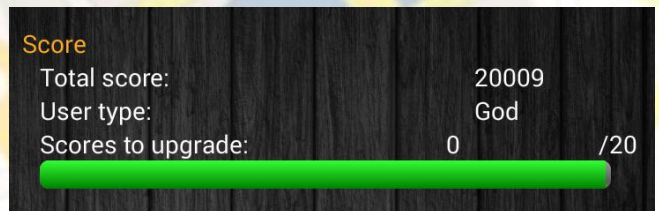
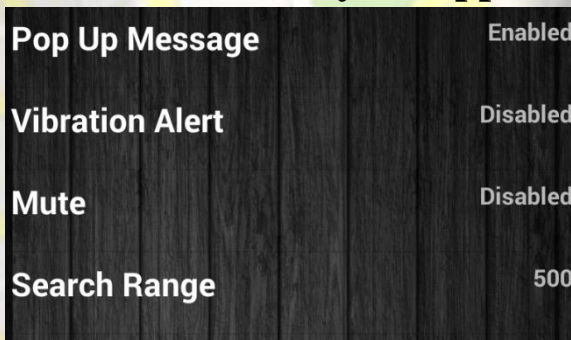
4. Reward system

Action:	Change of point:
Ask 1 question	-3
Answer 1 question	+2
Rank 1 answer	+1
Set 1 question to “urgent”	-10

* “Urgent” questions are shown upper in the question list

5. System setting

- Users can choose whether receive pop up message or not.
- When someone answered your question / a new question created nearby, the system will send a notification to your app.



6. Rules for sorting answers

Priority	Rules
1	Answers with more positive ranking (“Likes”) display upper
2	For same no. of “Likes”, answers provided by user with better reputation display first *
3	If the result processed by rule 1 & 2 above is same, answers are sorted by time

*Reputation depends on user’s total number of point in the reward system

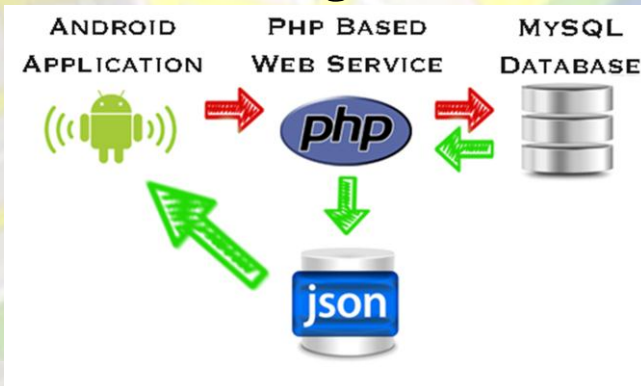
Implementation

1. Location technology

- “LocationListener” is used to get longitude and latitude. These values are translated into address by Google Maps API.
- “Maker” on map shows question title, clicking it can enter Q&A page.
- R-tree is used to speed up spatial access.
- Blue circle represents search range of questions.



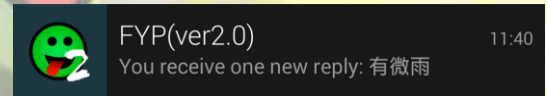
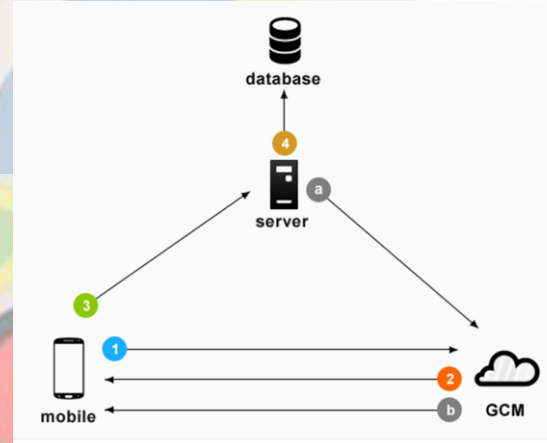
3. Data exchange and handling



- Event scheduler is used to delete outdated Q&A in database
- SQLite is used to store username, password and system setting into phone's internal storage

2. Pop-up Notification

- Google Cloud Messaging is used together with PushBot to develop push notification function.



4. Layout development

- Slide panel action bar
- Alert Dialog
- custom expandableListViews
- Progress bar
- Swipe deleting function

Conclusion

- All planned functions were successfully implemented on schedule.
- Testing and evaluation results show that the app is reliable and user-friendly.
- Our group achieved the goal of developing a location-based application which allows people to ask questions and submit answers based on the location information.