Introduction

Jingo, it's a new mobile app that allows users to share useful information via their mobile devices based on social, geographic, temporal, and keyword constraints. It's like some existing applications such as Foursquare, Twitter, Facebook, etc.

Jingo is for users to publish information (small messages or notes) and link these notes to certain locations and certain times. Other users can receive these notes based on their own location, the current time, and based on what type of messages they want to receive.

In this project, we have created a web-based user interface for **jingo**. There are the fundamental functions:

a) User register

b) User login

c) Create user profile

d) Search and add friends

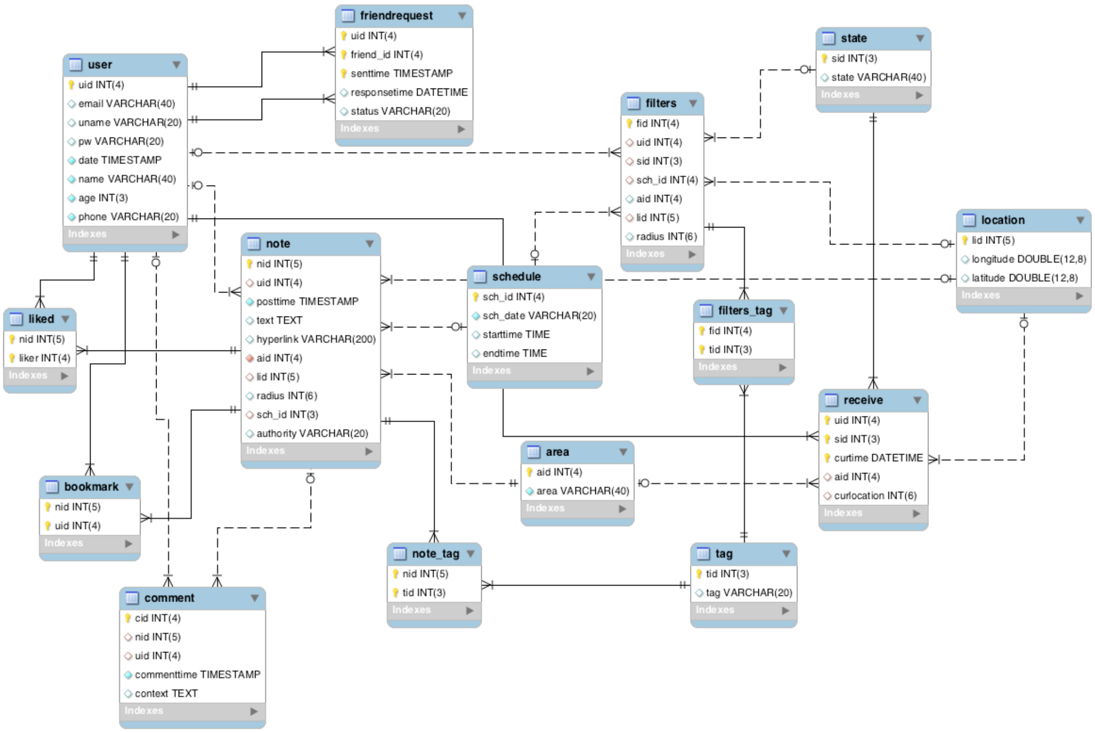
e) Post notes with certain locations and certain times

f) Define filters for receiving notes

g) Receive notes with current time and location

h) Comment on and bookmark notes

1. ER Diagram



Assumption:

1. For the user's registration, the email and username should be unique.

2. While posting notes, a note can contain several tags.

3. While receiving notes, a state can correspond to several filters and a filter can contain several tags.

4. While receiving notes, the user can select his current time and location.

5. While receiving notes, the user's schedule in filters should match the schedule in the note and the user's current time should match the schedule in filters.

6. In the schedule, we set the date to be everyday, Mondays, Tuesdays, Wednesdays, Thursdays, Fridays, Saturdays, Sundays, weekday,

weekend or user can select a specified date.

Extra features:

1. While posting notes, tags can be created as that the user wants to.

2. While defining filters, state can be created as that the user wants to.

3. Adding a “like” button for other users to rate the usefulness of a note.

4. Adding a popular note page to show notes ranked by the popularity.

5. While posting a note, the user can select the authority “everyone”, “friends”, “myself” to set the visibility of the note.

6. Users can bookmark a note.

2. Relational Schema

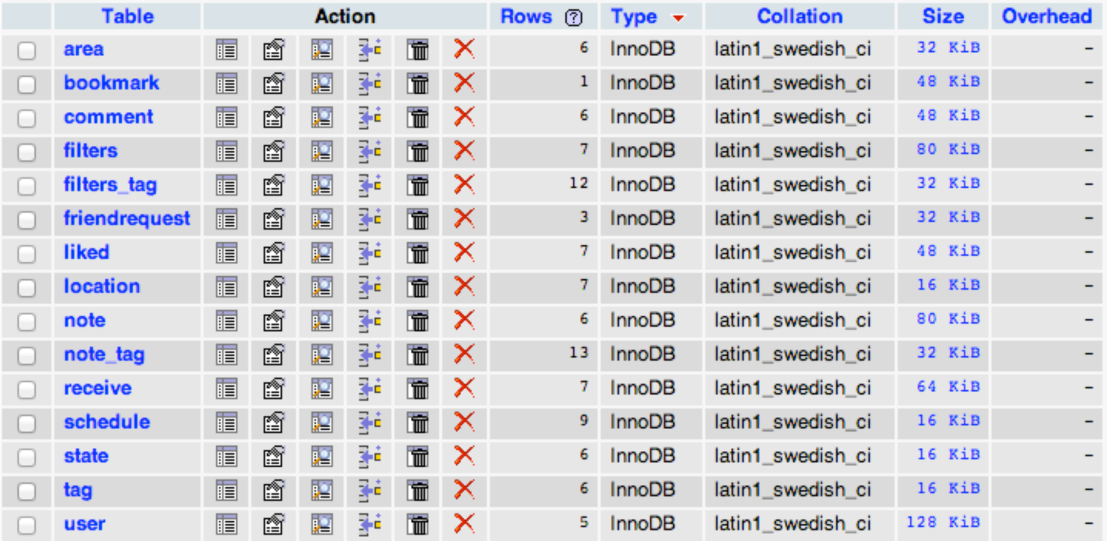


	Table	Action	Rows	Type	Collation	Size	Overhead
□	area	▤ ▤ ▣ ⇉ 🗑 ✕	6	InnoDB	latin1_swedish_ci	32 KiB	-
□	bookmark	▤ ▤ ▣ ⇉ 🗑 ✕	1	InnoDB	latin1_swedish_ci	48 KiB	-
□	comment	▤ ▤ ▣ ⇉ 🗑 ✕	6	InnoDB	latin1_swedish_ci	48 KiB	-
□	filters	▤ ▤ ▣ ⇉ 🗑 ✕	7	InnoDB	latin1_swedish_ci	80 KiB	-
□	filters_tag	▤ ▤ ▣ ⇉ 🗑 ✕	12	InnoDB	latin1_swedish_ci	32 KiB	-
□	friendrequest	▤ ▤ ▣ ⇉ 🗑 ✕	3	InnoDB	latin1_swedish_ci	32 KiB	-
□	liked	▤ ▤ ▣ ⇉ 🗑 ✕	7	InnoDB	latin1_swedish_ci	48 KiB	-
□	location	▤ ▤ ▣ ⇉ 🗑 ✕	7	InnoDB	latin1_swedish_ci	16 KiB	-
□	note	▤ ▤ ▣ ⇉ 🗑 ✕	6	InnoDB	latin1_swedish_ci	80 KiB	-
□	note_tag	▤ ▤ ▣ ⇉ 🗑 ✕	13	InnoDB	latin1_swedish_ci	32 KiB	-
□	receive	▤ ▤ ▣ ⇉ 🗑 ✕	7	InnoDB	latin1_swedish_ci	64 KiB	-
□	schedule	▤ ▤ ▣ ⇉ 🗑 ✕	9	InnoDB	latin1_swedish_ci	16 KiB	-
□	state	▤ ▤ ▣ ⇉ 🗑 ✕	6	InnoDB	latin1_swedish_ci	16 KiB	-
□	tag	▤ ▤ ▣ ⇉ 🗑 ✕	6	InnoDB	latin1_swedish_ci	16 KiB	-
□	user	▤ ▤ ▣ ⇉ 🗑 ✕	5	InnoDB	latin1_swedish_ci	128 KiB	-

user (uid, email, uname, pw, date, name, age, phone)

uname stores username

pw stores user’s password

name stores user’s real name

friendrequest (uid, friend_id, senttime, responsetime, status)

uid,friend_id reference uid in user

uid stores user’s id who sends the friend request friend_id stores user's id who receives the friend request

status stores the response, declined or confirmed

tag (tid, tag)

area (aid, area)

area stores some popular areas

location (lid, longitude, latitude)

schedule (sch_id, sch_date, starttime, endtime)

sch_date stores the frequency, such as "everyday", "weekday", "weekend", "a specified day", "Mondays", etc

note (nid, uid, posttime, text, hyperlink, aid, lid, radius, sch_id, authority)

uid references uid in user, aid references aid in area

lid references lid in location, sch_id references sch_id in schedule

authority stores the note's visibility, "everybody", "friend", "myself"

note_tag (nid, tid)

nid references nid in note, tid references tid in tag

state (sid, state)

filters (fid, uid, sid, sch_id, aid, lid, radius)

uid references uid in user, sid references sid in state

sch_id references sch_id in schedule, aid references aid in area

lid references lid in location

filters_tag (fid, tid)

fid references fid in filters, tid references tid in tag

receive (uid, sid, curtime, aid, curlocation)

uid references uid in user, sid references sid in state

aid references aid in user, curlocation references lid in location curtime stores user’s current time

curlocation stores user’s current location

comment (cid, nid, uid, commenttime, context)

nid references nid in note, uid references uid in user

nid stores the commented note’s id

uid stores the commenter’s id.

liked (nid, liker)

nid references nid in note, liker references uid in user

liker stores the user’s id who likes the note

bookmark (nid, uid)

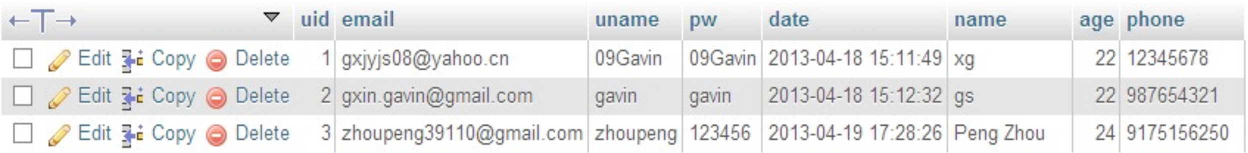
nid references nid in note, uid references uid in user

uid stores the user’s id who bookmarks the note

3. Data Testing

(1) New user signs up.

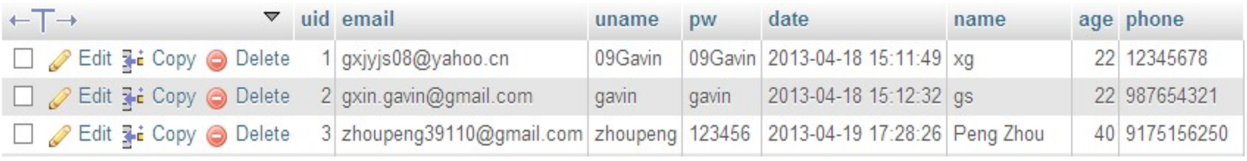
```
INSERT INTO user (email, uname, pw, name, age, phone)
VALUES (zhoupeng39110@students.poly.edu', 'zhoupeng',
'123456', 'Peng Zhou', '24', '9175156250')
```



←T→	uid	email	uname	pw	date	name	age	phone
□ Edit Copy Delete	1	gxjyjs08@yahoo.cn	09Gavin	09Gavin	2013-04-18 15:11:49	xg	22	12345678
□ Edit Copy Delete	2	gxin.gavin@gmail.com	gavin	gavin	2013-04-18 15:12:32	gs	22	987654321
□ Edit Copy Delete	3	zhoupeng39110@gmail.com	zhoupeng	123456	2013-04-19 17:28:26	Peng Zhou	24	9175156250

(2) Edit the profile: edit user’s (uid=3) profile

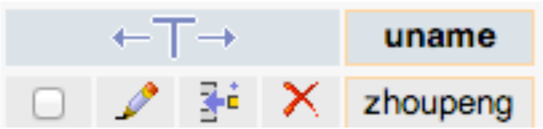
```
UPDATE user SET age = '40' WHERE uid = 3
```



←T→	uid	email	uname	pw	date	name	age	phone
□ Edit Copy Delete	1	gxjyjs08@yahoo.cn	09Gavin	09Gavin	2013-04-18 15:11:49	xg	22	12345678
□ Edit Copy Delete	2	gxin.gavin@gmail.com	gavin	gavin	2013-04-18 15:12:32	gs	22	987654321
□ Edit Copy Delete	3	zhoupeng39110@gmail.com	zhoupeng	123456	2013-04-19 17:28:26	Peng Zhou	40	9175156250

(3) Login with a uname = ‘zhoupeng’ and pw = ‘123456’

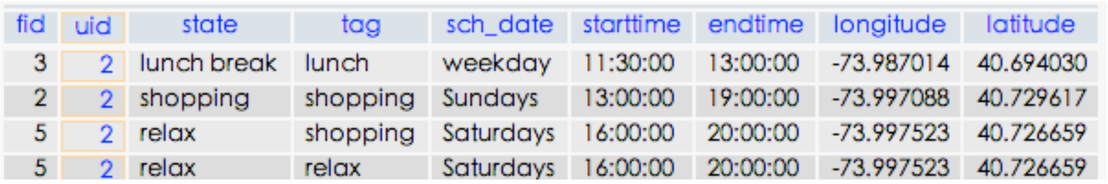
```
SELECT uname FROM user WHERE uname = 'zhoupeng'
AND pw = '123456'
```



←T→	uname
□	zhoupeng

(4) Output all filters of the a particular user (with user_id = 2)

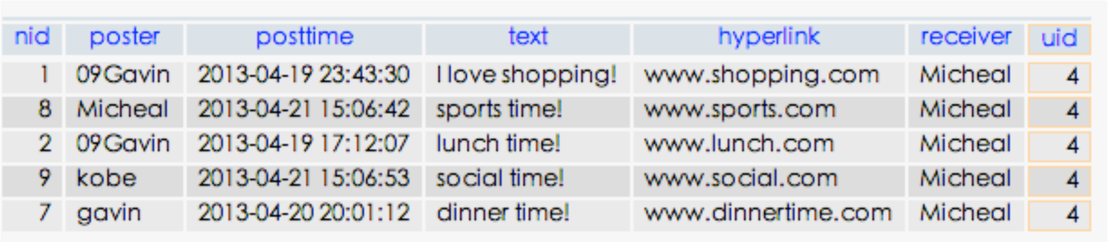
```
SELECT fid,uid,state,tag,sch_date,starttime,endtime,longi
tude,latitude FROM filters NATURAL JOIN filters_tag
NATURAL JOIN tag NATURAL JOIN location
NATURAL JOIN schedule NATURAL JOIN user NATURAL JOIN state
WHERE uid =2
```



fid	uid	state	tag	sch_date	starttime	endtime	longitude	latitude
3	2	lunch break	lunch	weekday	11:30:00	13:00:00	-73.987014	40.694030
2	2	shopping	shopping	Sundays	13:00:00	19:00:00	-73.997088	40.729617
5	2	relax	shopping	Saturdays	16:00:00	20:00:00	-73.997523	40.726659
5	2	relax	relax	Saturdays	16:00:00	20:00:00	-73.997523	40.726659

(5) Select all notes Michael (whose uid is 4) can see:

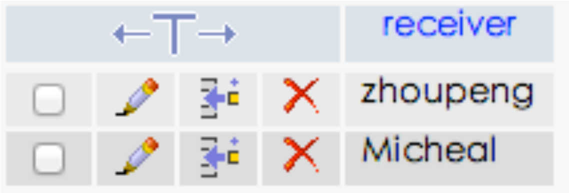
```
SELECT DISTINCT n.nid, n.poster, n.posttime, n.text, n.hy
perlink, r.receiver, r.uid
FROM view_note n, view_receive r
WHERE getDistance(n.latitude, n.longitude, r.latitude, r.
longitude) <= n.radius AND n.tag = r.tag
AND datecheck(n.sch_date, r.sch_date)
AND curdatecheck(r.sch_date, r.curtime) AND timecheck(
r.starttime, r.endtime, n.starttime, n.endtime, r.curtime)
AND r.uid =4
```



nid	poster	posttime	text	hyperlink	receiver	uid
1	09Gavin	2013-04-19 23:43:30	I love shopping!	www.shopping.com	Micheal	4
8	Micheal	2013-04-21 15:06:42	sports time!	www.sports.com	Micheal	4
2	09Gavin	2013-04-19 17:12:07	lunch time!	www.lunch.com	Micheal	4
9	kobe	2013-04-21 15:06:53	social time!	www.social.com	Micheal	4
7	gavin	2013-04-20 20:01:12	dinner time!	www.dinnertime.com	Micheal	4

(6) Select users who can see the note (nid = 1) at the current time ('2013-04-20 18:00:00')

```
SELECT DISTINCT r.receiver
FROM view_receive r, view_note n, (
SELECT uid, MAX( curtime ) AS TIME FROM view_receive
GROUP BY uid) t
WHERE r.uid = t.uid AND r.curtime = t.time AND n.nid =1
AND getDistance( n.latitude, n.longitude, r.f_latitude, r
.f_longitude) <= n.radius AND n.tag = r.tag
AND datecheck(n.sch_date, r.sch_date)
AND curdatecheck(r.sch_date, '2013-04-20 18:00:00')
AND timecheck(r.starttime, r.endtime, n.starttime, n.endt
ime, '2013-04-20 18:00:00')
```

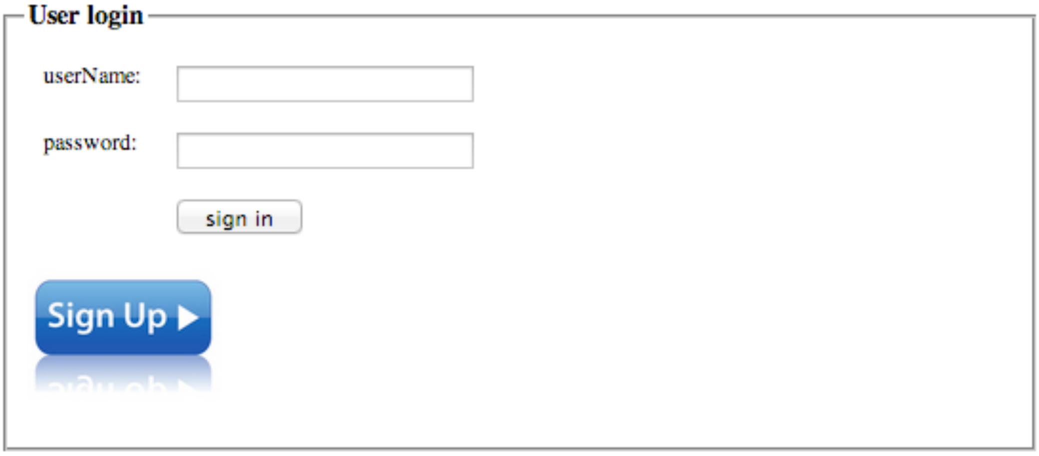


←T→				receiver
□	✎		✕	zhoupeng
□	✎		✕	Micheal

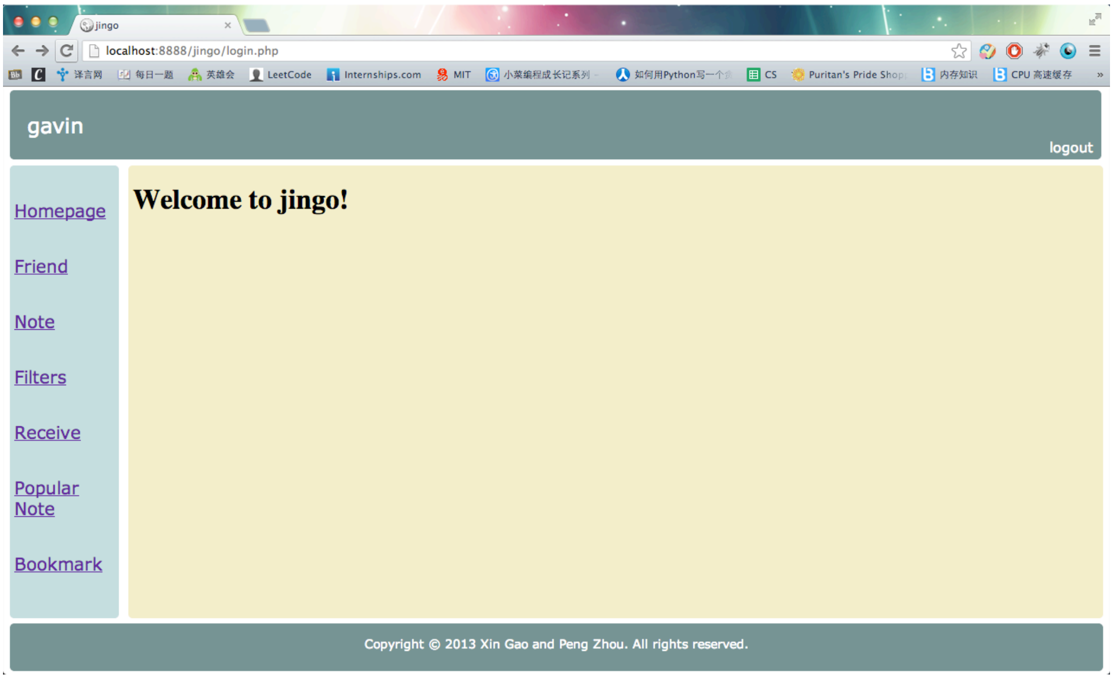
4. Web-based Interface Design

4.1 Login Page

Login to the website with username and password.



When user login the account successfully, it will go to the welcome page. User can click on the left navigation bar to go to other pages. In the top right corner, user can click on the logout to log out the account.

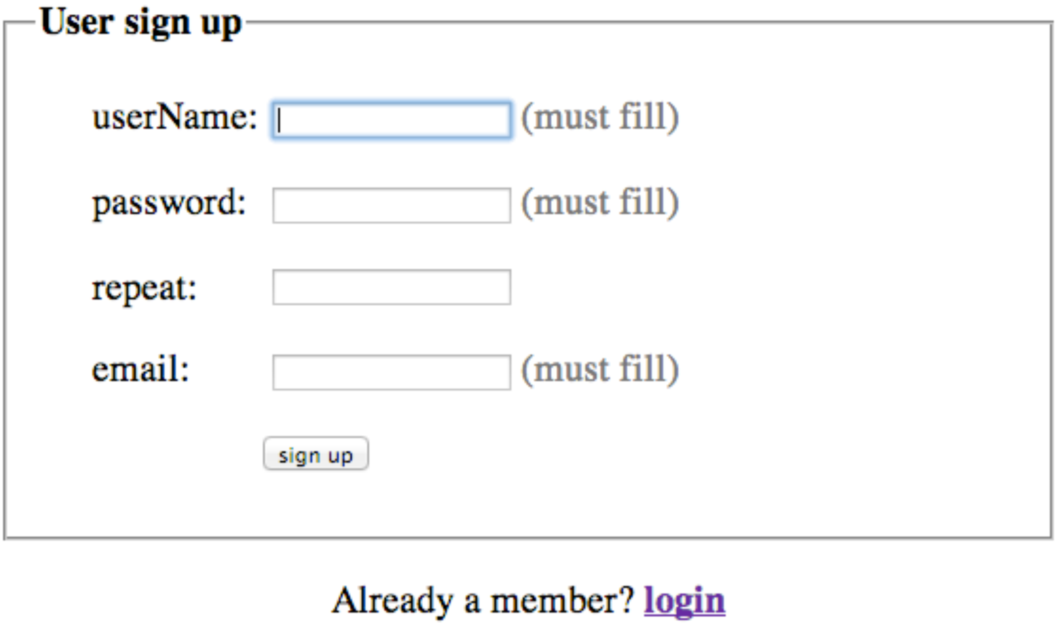


Welcome to jingo!

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

4.2 Sign Up Page

This is a page for user to create an account. User needs to input username, password and email to create an account. The username and email should be unique. The userName, password and email must be filled, and repeat password must be the same as password. If not, it will pop up a window to report the error.



User sign up

userName: (must fill)

password: (must fill)

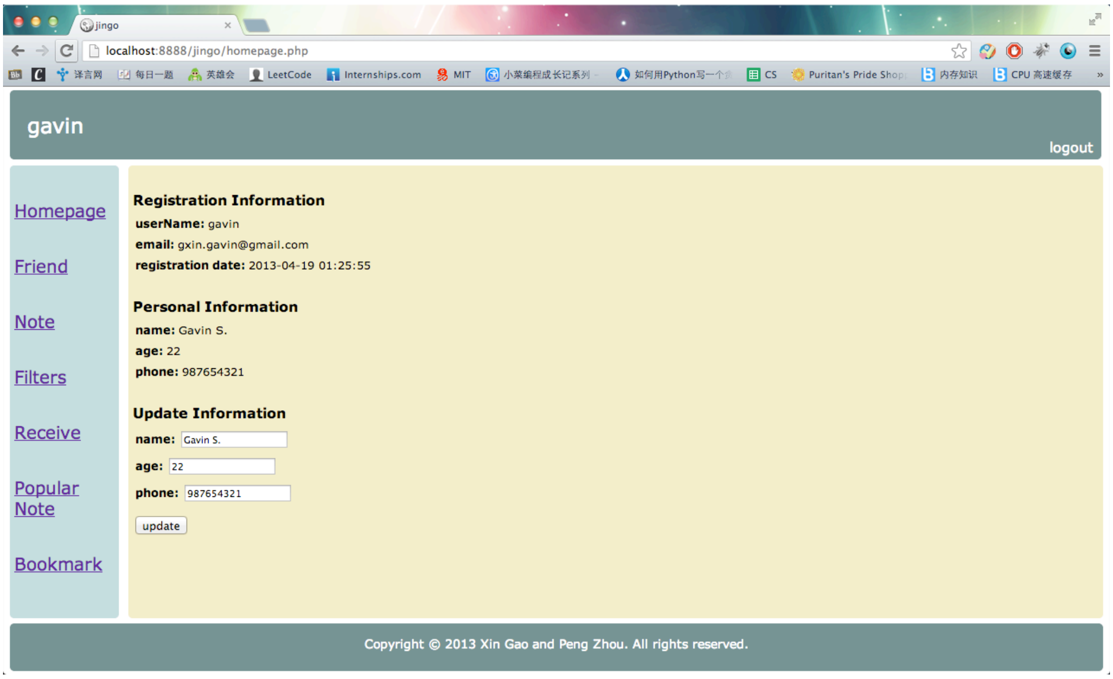
repeat:

email: (must fill)

Already a member? login

4.3 HomePage

This page shows user’s information. User also can update his personal information.



Registration Information

userName: gavin

email: gxin.gavin@gmail.com

registration date: 2013-04-19 01:25:55

Personal Information

name: Gavin S.

age: 22

phone: 987654321

Update Information

name: Gavin S.

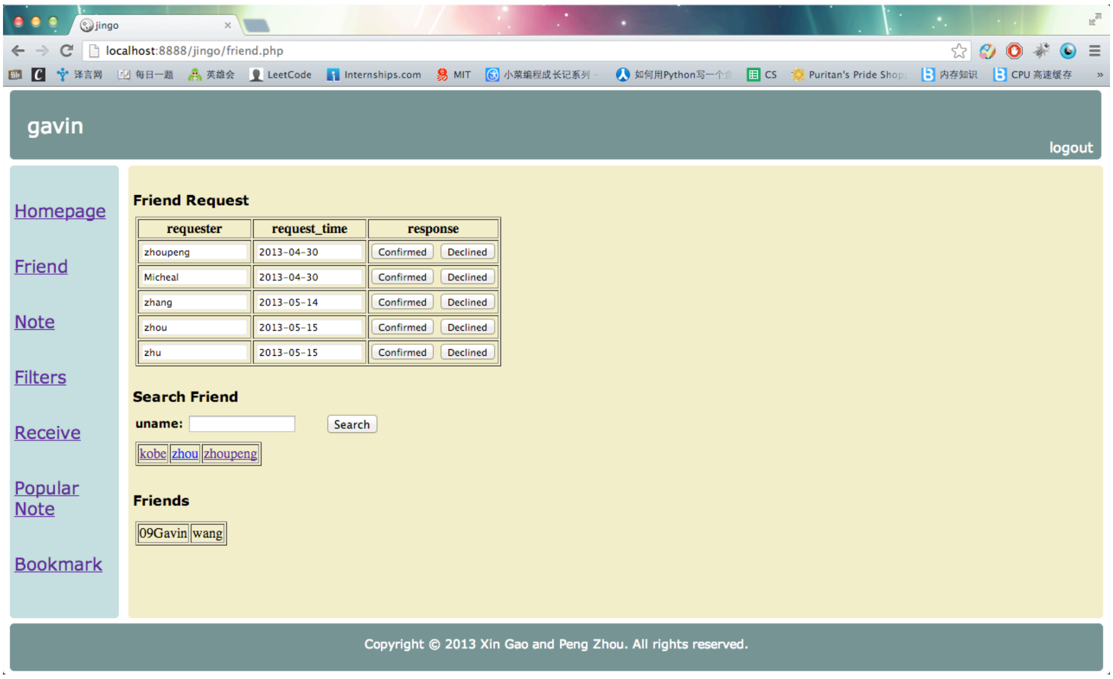
age: 22

phone: 987654321

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

4.4 Friend Page

This page shows the friend requests the user has received and the user’s friends. User can click on declined or confirmed to response these requests. User also can use uname to search friends. When user clicks on the uname in the search results, it will send a friend request to the selected user.



localhost:8888/jingo/friend.php

gavin

logout

Homepage
Friend
Note
Filters
Receive
Popular Note
Bookmark

Friend Request

requester	request_time	response
zhoupeng	2013-04-30	Confirmed Declined
Micheal	2013-04-30	Confirmed Declined
zhang	2013-05-14	Confirmed Declined
zhou	2013-05-15	Confirmed Declined
zhu	2013-05-15	Confirmed Declined

Search Friend

uname: Search

kobe zhou zhoupeng

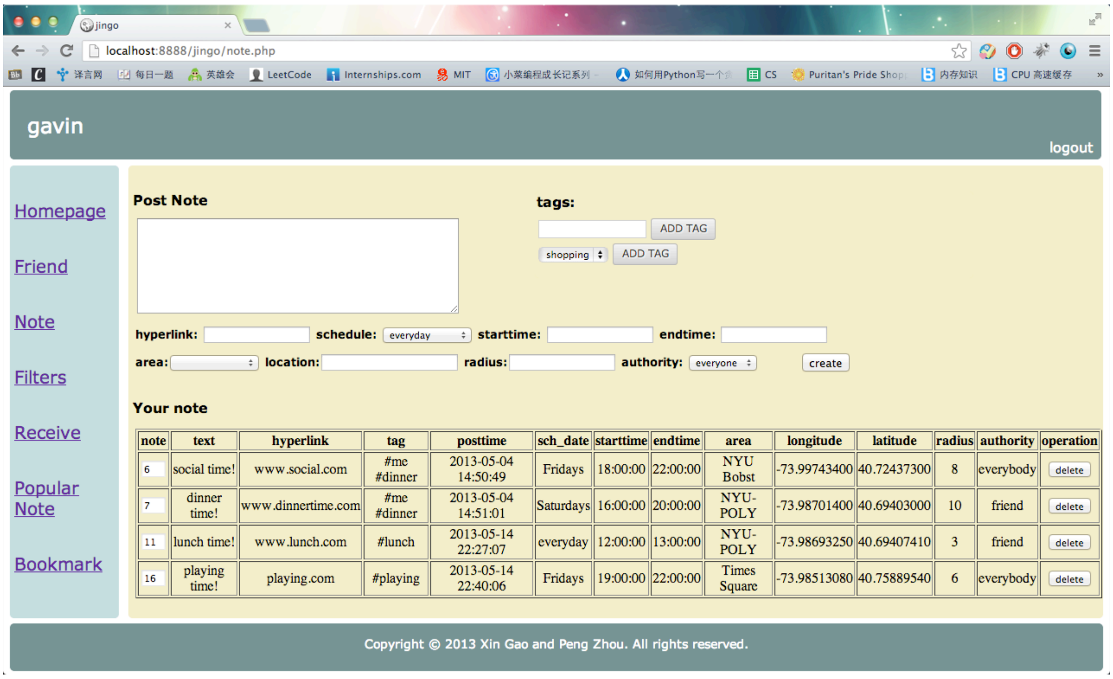
Friends

09Gavin wang

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

4.5 Note Page

In this page, user can post notes with certain locations and times, a hyperlink, a few tags to indicate what kind of notes this is, a schedule specifying when this note will be visible, a location and radius specifying where this note will be visible.



localhost:8888/jingo/note.php

gavin

logout

Homepage
Friend
Note
Filters
Receive
Popular Note
Bookmark

Post Note

tags: ADD TAG

shopping ADD TAG

hyperlink: **schedule:** everyday **starttime:** **endtime:**

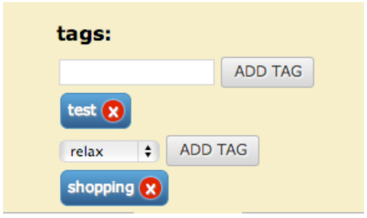
area: **location:** **radius:** **authority:** everyone create

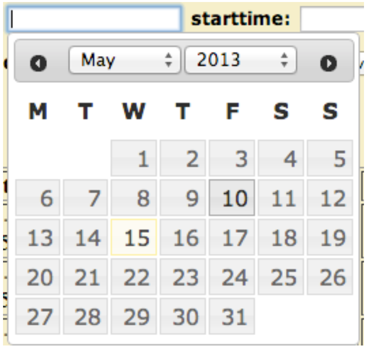
Your note

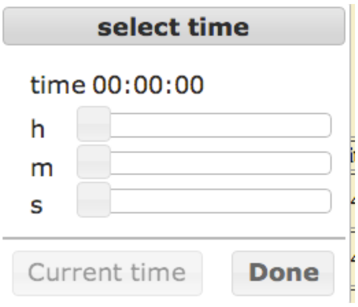
note	text	hyperlink	tag	posttime	sch_date	starttime	endtime	area	longitude	latitude	radius	authority	operation
6	social time!	www.social.com	#me #dinner	2013-05-04 14:50:49	Fridays	18:00:00	22:00:00	NYU Bobst	-73.99743400	40.72437300	8	everybody	delete
7	dinner time!	www.dinnertime.com	#me #dinner	2013-05-04 14:51:01	Saturdays	16:00:00	20:00:00	NYU-POLY	-73.98701400	40.69403000	10	friend	delete
11	lunch time!	www.lunch.com	#lunch	2013-05-14 22:27:07	everyday	12:00:00	13:00:00	NYU-POLY	-73.98693250	40.69407410	3	friend	delete
16	playing time!	playing.com	#playing	2013-05-14 22:40:06	Fridays	19:00:00	22:00:00	Times Square	-73.98513080	40.75889540	6	everybody	delete

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

The user can select tags, and also can create his own tags. For schedule, the user can select a specified day from datepicker, and select starttime and endtime from timepicker.



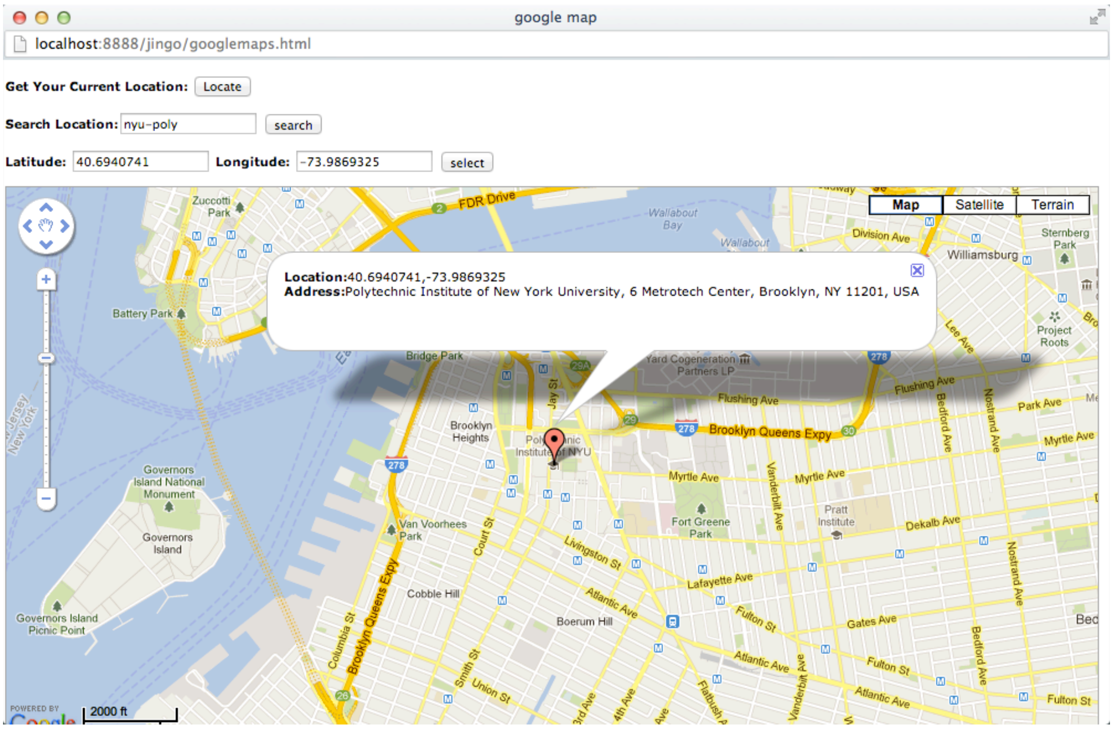




By clicking on the location textbox, it will open the googlemaps page to select the location and it will return the longitude and latitude of the selected location.

4.6 Googlemaps Page

By click on the locate button, user can get his current location. User also can search the location or select location on the map. At last, when user clicks on the select button, it will return the longitude and latitude of the selected location.


google map

localhost:8888/jingo/googlemaps.html

Get Your Current Location: Locate

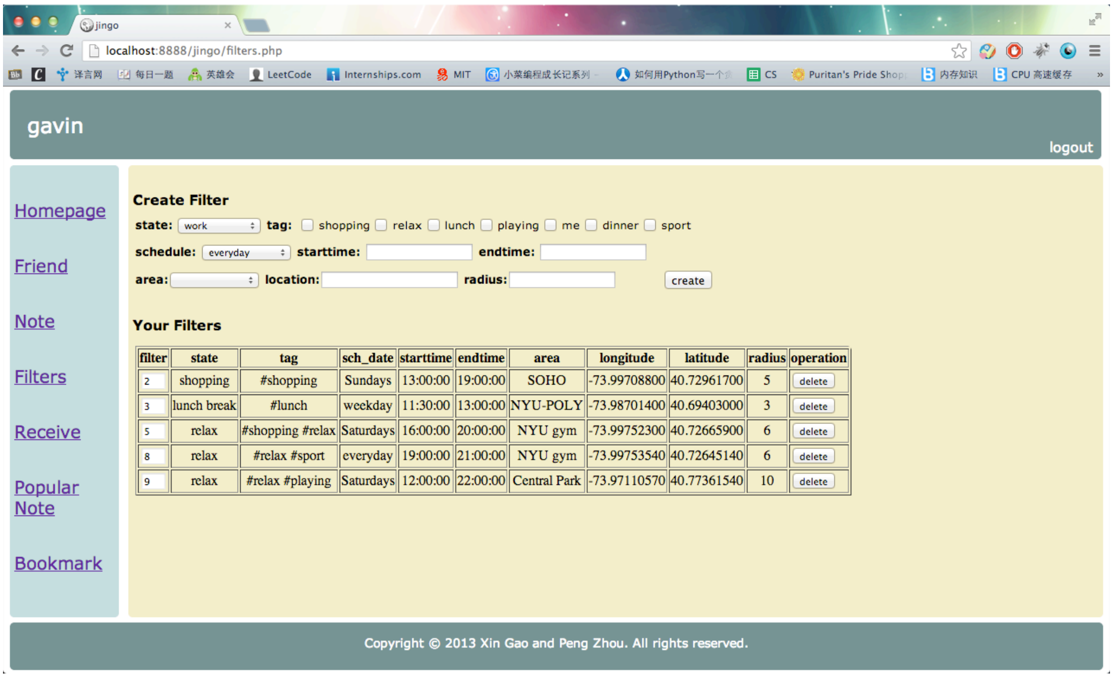
Search Location: nyu-poly search

Latitude: 40.6940741 **Longitude:** -73.9869325 select

Location:40.6940741,-73.9869325
Address: Polytechnic Institute of New York University, 6 Metrotech Center, Brooklyn, NY 11201, USA

4.7 Filters Page

In this page, user can set their filters to control what kind of notes they want to receive, including the features like tags, states, schedule, area， etc. And, a user can have different filters on what they want to see based on their current state, the current time, and their current location.


localhost:8888/jingo/filters.php

gavin

logout

Homepage

Friend

Note

Filters

Receive

Popular Note

Bookmark

Create Filter

state: work **tag:** □ shopping □ relax □ lunch □ playing □ me □ dinner □ sport

schedule: everyday **starttime:** **endtime:**

area: **location:** **radius:** create

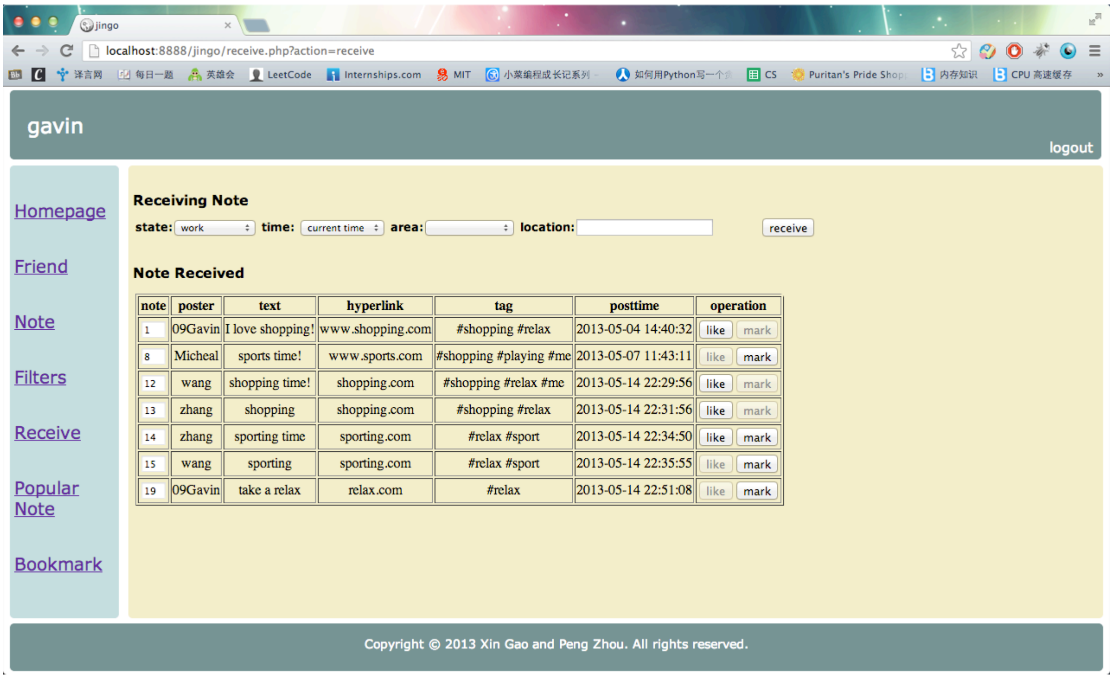
Your Filters

filter	state	tag	sch_date	starttime	endtime	area	longitude	latitude	radius	operation
2	shopping	#shopping	Sundays	13:00:00	19:00:00	SOHO	-73.99708800	40.72961700	5	delete
3	lunch break	#lunch	weekday	11:30:00	13:00:00	NYU-POLY	-73.98701400	40.69403000	3	delete
5	relax	#shopping #relax	Saturdays	16:00:00	20:00:00	NYU gym	-73.99752300	40.72665900	6	delete
8	relax	#relax #sport	everyday	19:00:00	21:00:00	NYU gym	-73.99753540	40.72645140	6	delete
9	relax	#relax #playing	Saturdays	12:00:00	22:00:00	Central Park	-73.97110570	40.77361540	10	delete

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

4.8 Receive Page

This page simply shows the notes that the users can receive based on his current state, time, location and the rules (filters) he creates in the filters page. User can like or bookmark the notes he has received. By clicking on the note number of the note, it will go to the comment page and user can comment on the note.


jingo
localhost:8888/jingo/receive.php?action=receive
gavin
logout
Homepage
Friend
Note
Filters
Receive
Popular Note
Bookmark
Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

Receiving Note

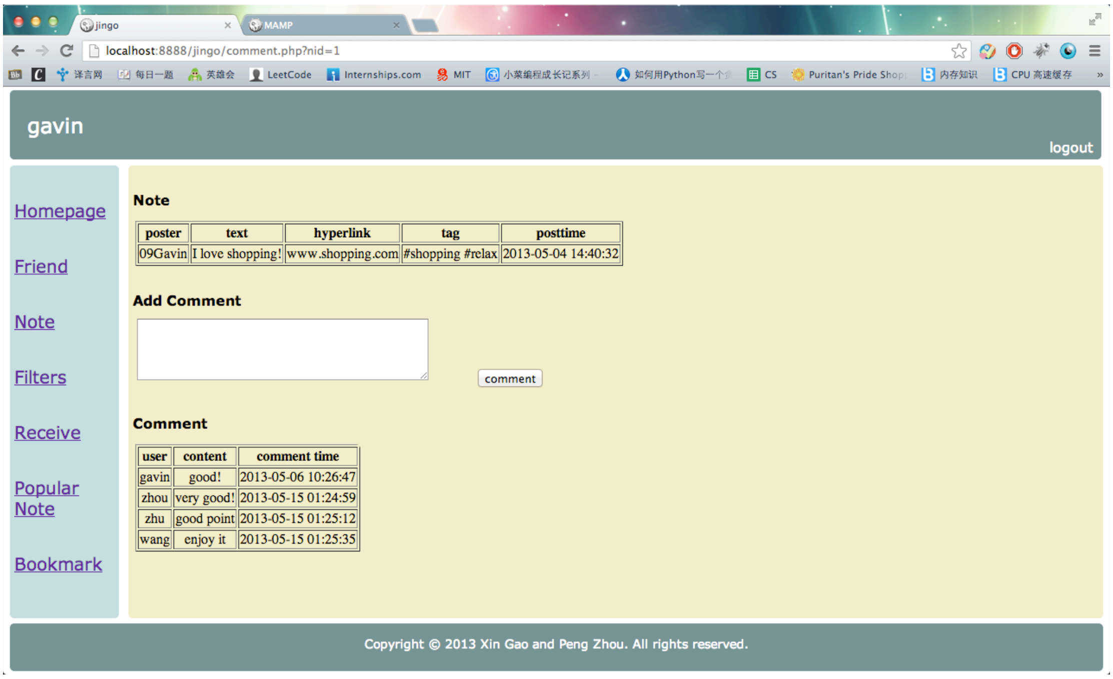
state: work time: current time area: location: receive

Note Received

note	poster	text	hyperlink	tag	posttime	operation
1	09Gavin	I love shopping!	www.shopping.com	#shopping #relax	2013-05-04 14:40:32	like mark
8	Micheal	sports time!	www.sports.com	#shopping #playing #me	2013-05-07 11:43:11	like mark
12	wang	shopping time!	shopping.com	#shopping #relax #me	2013-05-14 22:29:56	like mark
13	zhang	shopping	shopping.com	#shopping #relax	2013-05-14 22:31:56	like mark
14	zhang	sporting time	sporting.com	#relax #sport	2013-05-14 22:34:50	like mark
15	wang	sporting	sporting.com	#relax #sport	2013-05-14 22:35:55	like mark
19	09Gavin	take a relax	relax.com	#relax	2013-05-14 22:51:08	like mark

4.9 Comment Page

This page shows all comments of the selected note. User can add comment on this note.



Note

poster	text	hyperlink	tag	posttime
09Gavin	I love shopping!	www.shopping.com	#shopping #relax	2013-05-04 14:40:32

Add Comment

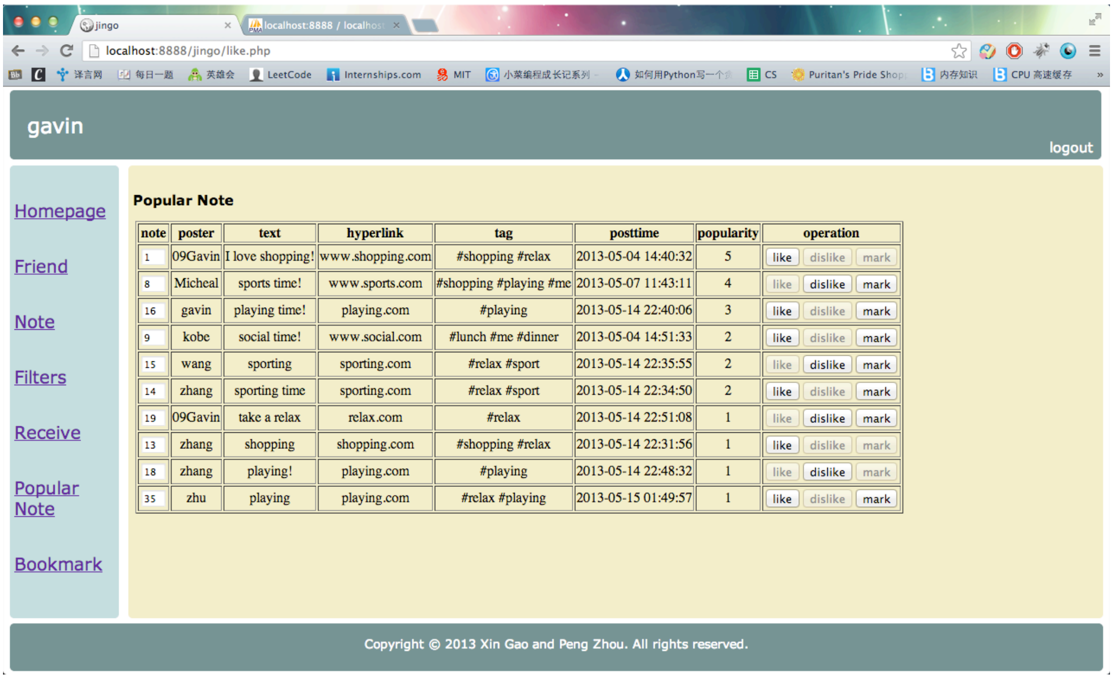
Comment

user	content	comment time
gavin	good!	2013-05-06 10:26:47
zhou	very good!	2013-05-15 01:24:59
zhu	good point	2013-05-15 01:25:12
wang	enjoy it	2013-05-15 01:25:35

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

4.10 Popular Note Page

The page shows the most popular public notes and ranks these notes by their popularity. User can do some operations on these notes, such as like, dislike and mark these notes. User also can comment on these notes by clicking on the note number of the note.



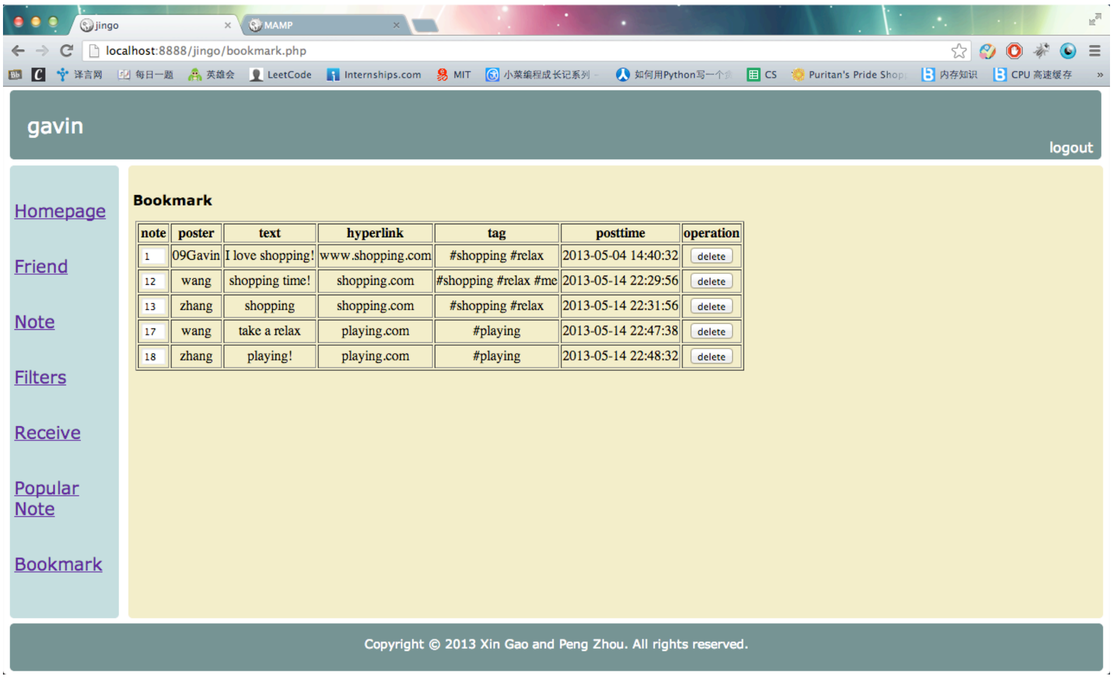
Popular Note

note	poster	text	hyperlink	tag	posttime	popularity	operation
1	09Gavin	I love shopping!	www.shopping.com	#shopping #relax	2013-05-04 14:40:32	5	like dislike mark
8	Micheal	sports time!	www.sports.com	#shopping #playing #me	2013-05-07 11:43:11	4	like dislike mark
16	gavin	playing time!	playing.com	#playing	2013-05-14 22:40:06	3	like dislike mark
9	kobe	social time!	www.social.com	#lunch #me #dinner	2013-05-04 14:51:33	2	like dislike mark
15	wang	sporting	sporting.com	#relax #sport	2013-05-14 22:35:55	2	like dislike mark
14	zhang	sporting time	sporting.com	#relax #sport	2013-05-14 22:34:50	2	like dislike mark
19	09Gavin	take a relax	relax.com	#relax	2013-05-14 22:51:08	1	like dislike mark
13	zhang	shopping	shopping.com	#shopping #relax	2013-05-14 22:31:56	1	like dislike mark
18	zhang	playing!	playing.com	#playing	2013-05-14 22:48:32	1	like dislike mark
35	zhu	playing	playing.com	#relax #playing	2013-05-15 01:49:57	1	like dislike mark

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

4.11 Bookmark Page

In this page, user can see the notes he has bookmarked. User also can delete the bookmark.



Bookmark

note	poster	text	hyperlink	tag	posttime	operation
1	09Gavin	I love shopping!	www.shopping.com	#shopping #relax	2013-05-04 14:40:32	delete
12	wang	shopping time!	shopping.com	#shopping #relax #me	2013-05-14 22:29:56	delete
13	zhang	shopping	shopping.com	#shopping #relax	2013-05-14 22:31:56	delete
17	wang	take a relax	playing.com	#playing	2013-05-14 22:47:38	delete
18	zhang	playing!	playing.com	#playing	2013-05-14 22:48:32	delete

Copyright © 2013 Xin Gao and Peng Zhou. All rights reserved.

5. Conclusion

This web-based interface has fulfilled the fundamental functions of the requirements. Users can register, create a profile, log in, post notes and comment on notes they have received. Users also can define filters for receiving notes, send and answer friend requests. Next step, we will transplant this interface into the ios platform. Hope you enjoy it!