Incremental and Regression Testing

Classification of Components

```
                          ┌────────────┐
                          │ Main Frame │
                          └─────┬──────┘
              ┌─────────────────┴─────────────────┐
              ▼                                     ▼
      ┌──────────────┐                      ┌──────────────┐
      │   Facebook   │                      │    Signup    │
      │    Login     │                      │              │
      └──────┬───────┘                      └──────┬───────┘
             └─────────────────┬──────────────────┘
                               ▼
                        ┌────────────┐
                        │ Main Page  │
                        └─────┬──────┘
   ┌──────────┬──────────┬────┴─────┬──────────┬──────────┐
   ▼          ▼          ▼          ▼          ▼          ▼
┌──────┐ ┌────────┐ ┌─────────┐ ┌────────┐ ┌─────────┐ ┌────────┐
│Logout│ │Share an│ │Like an  │ │Comment │ │Display  │ │Map with│
│      │ │event   │ │event    │ │on an   │ │event    │ │marker  │
│      │ │        │ │         │ │event   │ │         │ │        │
└──────┘ └────────┘ └─────────┘ └───┬────┘ └─────────┘ └───┬────┘
                                    ▼                       ▼
                              ┌──────────┐            ┌──────────┐
                              │Display   │            │Create an │
                              │the       │            │event     │
                              │conmment  │            │          │
                              └──────────┘            └──────────┘
```
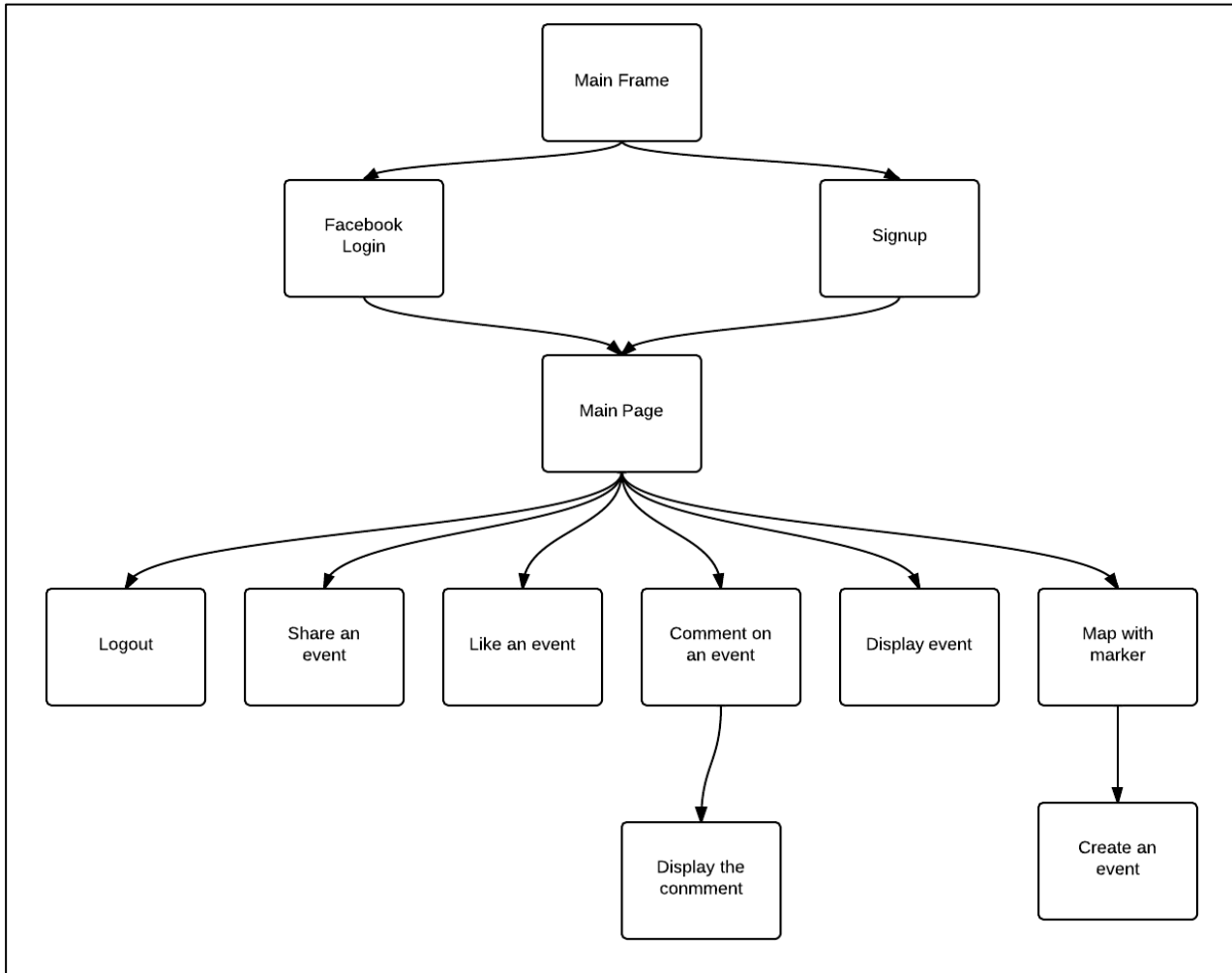
- **Component Structure**
- **Details for each component**
    - **Main Frame**
        - Input: None
        - Output: None
        - Parent Dependency: None
        - Child Dependency: Facebook Login, Signup
    - **Facebook Login**
        - Input:Facebook username: Facebook password
        - Output: Credential validation(Success / Failure
        - Parent Dependency: Main Frame
        - Child Dependency: Main page for user

- ○ **SignupWithFacebook**
  - ■ Input: First Name(auto filled by facebook api): Last Name(auto filled by facebook api): Username; Email(auto filled by facebook api); Type of user (normal user/ event organizer)
  - ■ Output: Each field of input are validated and stored in the database
  - ■ Parent Dependency: Main Frame
  - ■ Child Dependency: Main page for user
- ○ **Main Page**
  - ■ Input: Current Location of user (via browser)
  - ■ Output: Events that are around the user; Google map with a marker to show the event's location;
  - ■ Parent Dependency: Facebook Login; Signupfor FreeFoodEngine
  - ■ Child Dependency: LogOut, Share an event; Like an event;Comment an event; Display event; Map with markers; Create an event(only for event organizer)
- ○ **Logout**
  - ■ Input: None
  - ■ Output: Login
  - ■ Parent Dependency: Main page
  - ■ Child Dependency: None
- ○ **Share an event**
  - ■ Input: None
  - ■ Output: Content of a specific free food event in shared on user's timeline
  - ■ Parent Dependency: Main page
  - ■ Child Dependency: None
- ○ **Like an event**
  - ■ Input: OnClick action on a like button
  - ■ Output: Display a like on the event with the username
  - ■ Parent Dependency: Main Page
  - ■ Child Dependency: None
- ○ **Comment on an event**
  - ■ Input: Input into the comment box of a specific event
  - ■ Output: Stores the comment into database; Display the comment
  - ■ Parent Dependency: Main Page
  - ■ Child Dependency: Display the comment
- ○ **Display Event**
  - ■ Input: None
  - ■ Output: Information about various event's are displayed in a tile format

- - ■ Parent Dependency: Main Page
  - ■ Child Dependency: None
  - ○ **Map with markers**
    - ■ Input: Data about an event from database
    - ■ Output: A map with various marker's about an free food event
    - ■ Parent Dependency: Main Page
    - ■ Child Dependency: Create an event
  - ○ **Create an event**
    - ■ Input: Name of the event; Location of the event; Type of food provided; Date of the event; Upload a poster
    - ■ Output: Validate each field (success/Failure); Stores data into the database;Places event into google map via a marker
    - ■ Parent Dependency: Map with marker
    - ■ Child Dependency: None
  - ○ **Display the comment**
    - ■ Input: None
    - ■ Output: Display the comment on a specific event in the main page
    - ■ Parent Dependency: Comment on an event
    - ■ Child Dependency: None

Form of Incremental testing

We are using the top down incremental testing that beginning with the top level objects which is the UI including the user interactions and progressively adds in the lower level. Lower level modules are typically first simulated by writing some stubs to mimic the desired functionality since we have not yet finish the interfaces. When going deeper to the lower level, independent low-level objects will be then implemented and the stubs will be then replaced by the actual code. By using top down, we can avoid writing out the drivers for low-level modules and it could provide an early working module to let the design defects be found and corrected in early stage.

Incremental and Regression Testing

Module	MainFrame

Incremental Testing

Defect #	Description	Severity	How To Correct
1	Main frame should pop up a facebook credential check after clicking facebook login.	1	Update the facebook php sdk to the latest and call $facebook->getUser() within facebook login component.
2	Main frame does not format correctly when brower are still fetching the js/css files.	2	Create the cache option in the Mainframe component.

Regression Testing

Defect #	Description	Severity	How To Correct
1	Fixing the cache option will cause the main frame not updated when there is some change made in the js/css files.	2	Change the cache frequency to every week or day.

Module	Facebook login

Incremental Testing

Defect #	Description	Severity	How To Correct
1	After the credential check of facebook, the main frame should be redirected to the main page if user is not first time using the app. If first time user, should redirect user to SignupWithFacebook.	1	Added redirection url in the facebook app console in the facebook developers center

Regression Testing

Defect #	Description	Severity	How To Correct
1	After adding redirection url, when user input the url start with "http" instead of "https", there will be a error message when redirecting by facebook login	1	Added all the possible urls in the facebook app console.

Module	SignUpWithFacebook

Incremental Testing

Defect #	Description	Severity	How To Correct

2	Users that trying to sign up for name that has already been registered will be able to and when logging in a crash will occur	2	Add username as a unique key in the database. Utilize a hash function to find placement in server to see if username already exists
3	Users may input for password/ username/email inputs that are either too short/long or inputs may involve special characters that are not appropriate ("%" "*" "$$" etc).	1	Before check to ensure no double registrations, check inputs for length (if var.length > x && var.length < y throw error), and invalid characters (cmp inputs for each invalid character)

Regression Testing

Defect #	Description	Severity	How To Correct
1	It is a possibility that in utilizing a hash table, the hash key could potentially map two inputs to the same key	3	Linked List per Key in the table, or make the hash table dynamic

Module	Main page

Incremental Testing

Defect #	Description	Severity	How To Correct
1	Main page should show a map widget centered by user's current coordinates and around events. If fetch around events fails, there is no error message.	1	Catch the ajax exception and add pop up box telling user when an ajax fetch fails and inform user to refresh the page.
2	Website will stop loading before user clicking "allow to get location".	2	Save the user's location to database. Load the user's last login location that saved in the server first. At the same time, get user's current location and update the map.
3	Main page does not dynamically refresh or update user's location and around events.	3	Add javascript to fetch user's position every amount of time and send ajax calls to fetch events too.

Regression Testing

Defect #	Description	Severity	How To Correct
1	After fixing the dynamically updating map, the website may be running slow because of heavy number of requests send back and forth.	3	Decrease the frequency of sending ajax calls in the module.

Module	Logout		
Incremental Testing			
Defect #	**Description**	**Severity**	**How To Correct**
1	When logged in with either facebook and original sign in. User should be redirected to the main frame.	1	Added redirection in the logout component and unset the Sessions.
2	Logout without a promotion	3	Create a pop out dialog to remind the user.
Regression Testing			
Defect #	**Description**	**Severity**	**How To Correct**
1	Pop out dialog doesn't have a cancel button.	2	Add cancel button to the logout confirmation dialog.

Module	Share an event		
Incremental Testing			
Defect #	**Description**	**Severity**	**How To Correct**
1	When clicked on the share button, the event information should be shared to user's facebook timeline.	1	Call facebook api and event module to share the current event's information.
2	The "Share" button remained the same after user clicking it.	2	After user clicking "share" button, change the text from "share" to "shared" and make the button unable to be clicked any more.
Regression Testing			
Defect #	**Description**	**Severity**	**How To Correct**
1	After user logout and login again, the "share" button changed back from "shared" and it is clickable.	2	Save the status of "shared" event to user table in the database so it will always shows "shared" even user logged out.

Module	Like an event		
Incremental Testing			
Defect #	**Description**	**Severity**	**How To Correct**

| 1 | Clicking the "like" button multiple times will display user's username several times and increment the count of likes. | 2 | After user click "like" button, make the button unable to be clicked again. |
| 2 | After clicking "like" button, user's username is displayed instead of user's real name. | 3 | Query the database with username to find out the user's real name and display it on the event. |

Regression Testing

Defect #	Description	Severity	How To Correct
1	Users with Chinese names show garbled character.on the events.	1	Change the type of name field in database from varchar to big5

Module	Comment on an event

Incremental Testing

Defect #	Description	Severity	How To Correct
1	When user was editing a comment, accidentally clicking some buttons that lead user to other pages will lose the unsubmitted comment.	2	Notify user there is some unsubmitted comment before allowing user to go to any other page.
2	Comment box should pop below when user clicks on the comment hyperlink.The input of comment should not be empty and exceeding the length of 140 characters.	1	Make the submit button unable when the content of comment is empty or exceeding the length.

Regression Testing

Defect #	Description	Severity	How To Correct

Module	Display a Comment

Incremental Testing

Defect #	Description	Severity	How To Correct
1	Displaying too many comments at a time	2	Implement a load more/less feature which would query the server for a certain number of comments after the last comment displayed

2	Comments deleted by owner under comment history are still displayed under the event(sometimes).	1	Changed deleting algorithm. Instead of deleting a comment from database, we marked the comment as hidden and don't display it anymore.

Regression Testing

Defect #	Description	Severity	How To Correct

Module	Map with markers

Incremental Testing

Defect #	Description	Severity	How To Correct
1	Events with the same location will overlap each other and some events cannot be selected.	1	Create a list for those events with the same location. Clicking on the location on map will display the list instead of one single event.

Regression Testing

Defect #	Description	Severity	How To Correct

Module	Create Event

Incremental Testing

Defect #	Description	Severity	How To Correct
1	After create event button, an event creation form should popup. User input the fields and submit the form.	1	If a field is not in correct format. Prevent the default submitting event. And highlight the incorrectly entered filed with error message besides it.
2	Create two identical events is allowed by the database.	2	Add a check of database for existence of identical event before doing an insert query.
3	Multiple submissions in a short amount of time is allowed.	2	Add a table in the database to check if a same IP address submit

			multiple events in a fairly short amount of time.
Regression Testing			
Defect #	**Description**	**Severity**	**How To Correct**
1	After fixing identical events in the database by checking each column name. User could trick the database by input a slightly different name.	3	Use like function with regex in the query to check the identical events.

Module	Display Event		
Incremental Testing			
Defect #	**Description**	**Severity**	**How To Correct**
1	If an event should be over based on time, the event may display	1	A script could be implemented which at the hour, 15, 30 and 45 minute mark--goes through the database and any events with end time coinciding with the current time are removed
2	The events in the event list don't match the events shown on map.	2	Change the php query that make sure only events shown on map could be listed.
Regression Testing			
Defect #	**Description**	**Severity**	**How To Correct**