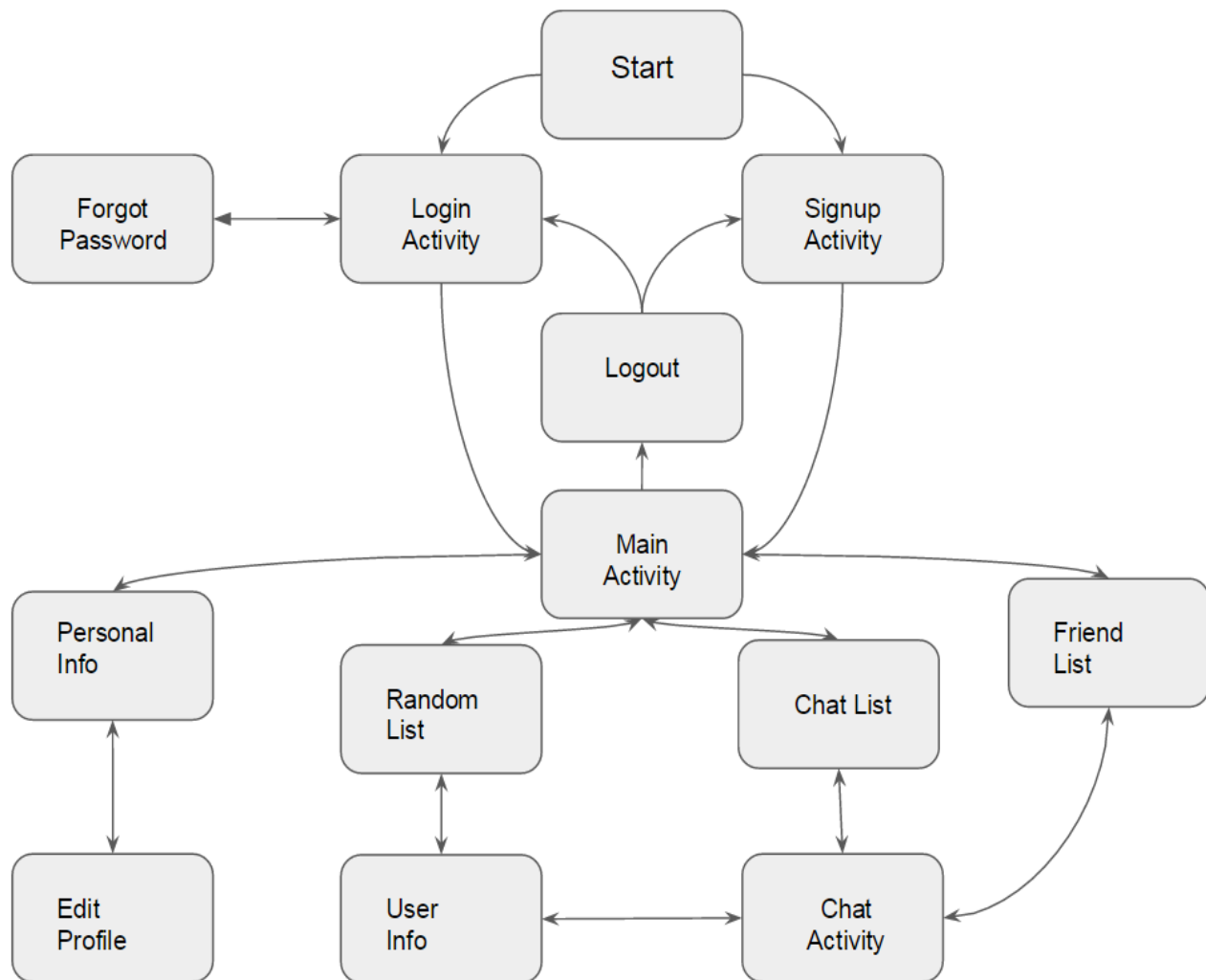# Incremental and Regression Testing

Classification of Component

Component Structure:

- Start
  - Input: None
  - Output: None
  - Parent Dependency: None
  - Child Dependency: Login Activity, Signup Activity

- Login Activity
    - Input: Username, Password
    - Output: Credential Validation(Success/Fail)
    - Parent Dependency: Start, Forgot Password, Logout
    - Child Dependency: Forgot Password, Main Activity

- Forgot Password
    - Input: Email address
    - Output:
    - Parent Dependency: Login Activity
    - Child Dependency: Login Activity

- Signup Activity
    - Input: Email, Password
    - Output: None
    - Parent Dependency: Start, Logout
    - Child Dependency: Main Activity

- Main Activity
    - Input: Current user ID
    - Output: Chat list of the current user
    - Parent Dependency: Login Activity, Signup Activity, Personal Info, Friend List, Random List, Chat List
    - Child Dependency: Logout, Personal Info, Friend List, Random List, Chat List

- Logout
    - Input: None
    - Output: Login Activity, Signup Activity

- Parent Dependency: Main Activity

- Child Dependency: Login Activity, Signup Activity

- Personal Info

    - Input: None

    - Output: None

    - Parent Dependency: Main Activity, Edit Profile

    - Child Dependency: Main Activity, Edit Profile

- Edit Profile

    - Input: Name, Intro, Gender, Country, Age, Birth, Contact Email

    - Output: None

    - Parent Dependency: Personal Info

    - Child Dependency: None

- Random List

    - Input: None

    - Output: List of contacts

    - Parent Dependency: Main Activity, User Info

    - Child Dependency: Main Activity, User Info

- Chat List

    - Input: None

    - Output: User's conversations

    - Parent Dependency: Main Activity, Chat Activity

    - Child Dependency: Main Activity, Chat Activity

- Friend List

- Input:

- Output:

- Parent Dependency: Main Activity, Chat Activity

- Child Dependency: Main Activity, Chat Activity

- User Info

    - Input:

    - Output:

    - Parent Dependency: Random List, Chat Activity

    - Child Dependency: Random List, Chat Activity

- Chat Activity

    - Input: Message

    - Output: Updated conversation stream

    - Parent Dependency: User Info, Chat List, Friend List

    - Child Dependency: User Info, Chat List, Friend List

Top-down incremental testing

In this project, we followed top-down incremental testing. We tested tasks from "Start" to "Chat Activity" following the control flow. This allowed us to discover the defects occurring in the top of the program. Using top-down testing ensured the major components could work well which helped us test the rest parts of the system easier. Also, early skeletal program allows demonstrations and boosts morale.

Incremental Testing and Regression Testing

Module	Chat Activity		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	After finish chatting and click the back button, the chat list information will not update.	3	Reset background thread to poll for new messages when going back from chat activity.
2	When send message in chat window, can't connect to internet, sent message disappear.	2	When app can't connect to database, save message to buffer to avoid losing data.

Module	Personal Info		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	After user change his avatar from the edit profile page, his profile image doesn't change at the personal info page.	2	Refresh the current user info page again and get the user's new avatar from the server.
Regression Testing			
1	Main activity's personal info does not get modified after returning from edit profile.	2	Refresh current user info in main activity.
2	After user change profile picture, the thumbnail gets	3	Update current full resolution personal image to the latest.

	updated. When click on the thumbnail, it still show full screen of previous image.		

Module	Edit Profile		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	After taking image from camera, only the preview image is sent to the crop image activity.	2	Sent uri of file to crop image activity instead of the preview image byte array.
2	After taking image from camera, image is sent to crop image activity. Image does not load sometimes.	2	Problem is probably due to image not saved completely to file before crop image activity access it. Load image after 1 second.
3	Fix image crop again. Image still does not show sometimes.	2	Use software rendering to load image instead of hardware rendering.
4	After multiple tries, crop image activity will start showing the previous image taken.	1	Was saving to same file over and over previously. File had some error when overwriting. Generate different image files with timestamp.
Regression Testing			
1	If uri is sent from camera instead of gallery to crop image activity, app will crash.	1	Check if uri is coming from camera. Avoid using Android's contentresolver to obtain image.
2	App will generate a lot of temp image files and it will take up a lot of storage.	2	When taking image, remove all temp image files. Original copy of image will be left untouched.

3	If user cancel upload image, app crashes when returning to personal info activity.	1	Check if image is null before trying to update imageview in personal info activity.

Module	User Info		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	User can add the same person multiple times. This will let the same person appears in the friend list many times.	2	When adding into the friend list, check whether the friend is already added or not. If added, toast a warning message.
Regression Testing			
1	The newly added friend can not start chat instantly after add to the friend list.	2	Refresh the page and set enable the "start chat" button after adding the friend.

Module	Friend List		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	The friend list will loading very slow if a friend's profile avatar using large picture.	2	Use the smaller byte array image instead of original image to show in the friend list.
Regression Testing			
1	The avatar of a friend will shows nothing instead of a real image after the change above.	1	Change the loading function from loading parse file (using function getDataInBackground()) to using byte array directly.