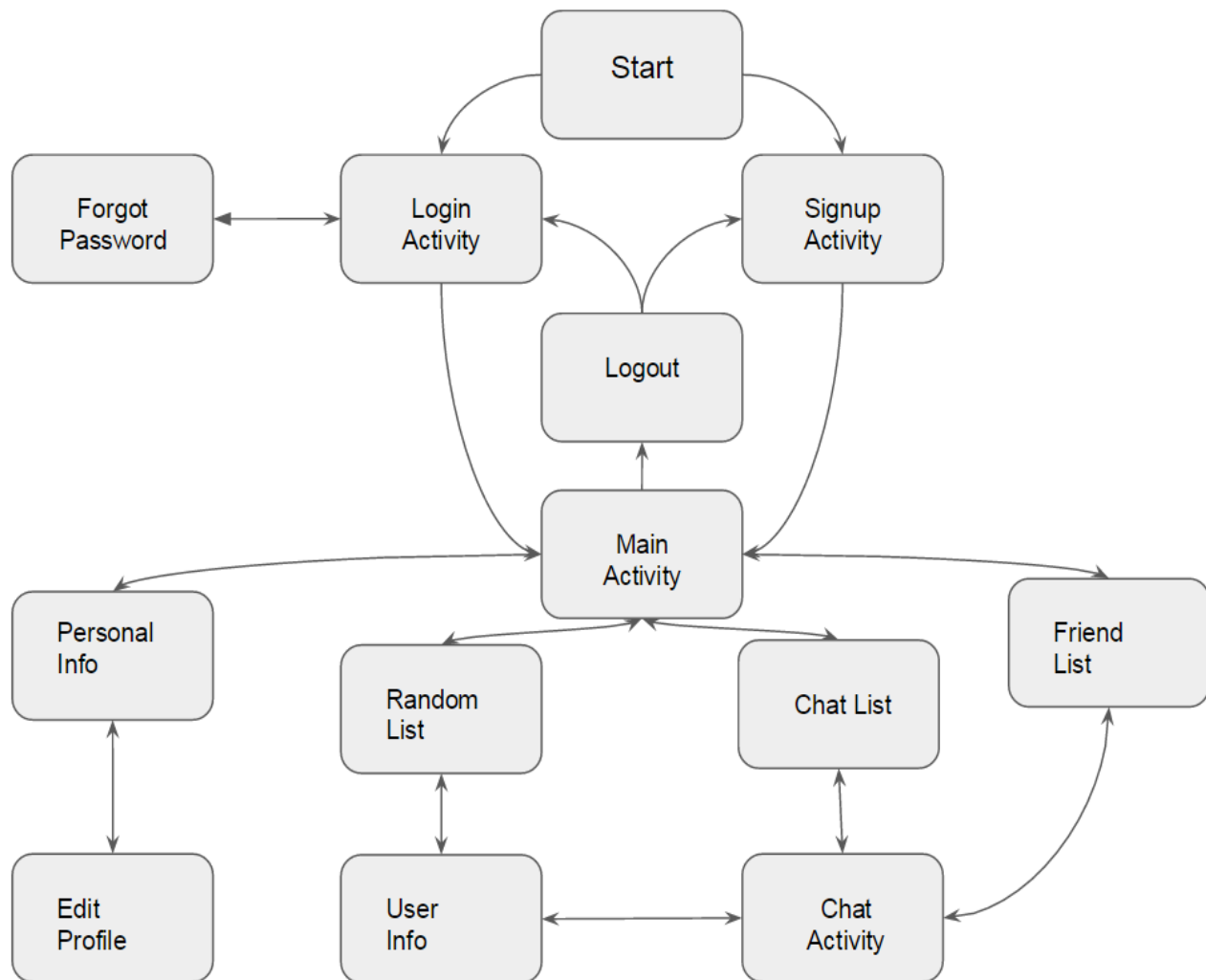# Incremental and Regression Testing

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	Login Activity

Incremental Testing

Defect #	Description	Severity	How to correct
1	If login unsuccessfully, the toast should pop out with "Login failed. Please check your username and password."	3	Add the condition function to check if the information is correct. If it's correct then redirect to the main page, otherwise pop the dialog.

Regression Testing

Defect #	Description	Severity	How to correct
1	Fixing the dialog popping causes the cursor did not automatically redirect to the "password" as soon as the user close the toast.	3	Add the a line of requestfocus function into the condition function, which will be called after toast has been closed

Module	Signup Activity

Incremental Testing

Defect #	Description	Severity	How to correct
1	After successfully type username, application should not accept duplicate name	1	Create an invalid return value by duplicate name exception
2	After successful type password, should not	1	Create and invalid return value by invalid password exception

	accept password is part of username		
Regression Testing			
1	Fixing duplicated username by compare username in data table	1	Catch duplicate name exception by database module , print error message in display
2	Fixing invalid password by compare password with username in data table whether part of password contains username	1	Catch invalid password exception by check password module, print error message in display

Module	Logout		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	When the user logout and is brought back to the login page, if the user hit the back button, the user will return to the main page.	2	When user hits the logout, finish the activity before transition to the login page.
Regression Testing			

Module	Main Activity
Incremental Testing	

Defect #	Description	Severity	How to correct
1	When clicking "GO" button, the program should not crash if there are no matching users.	1	Create an exception when checking in the database and not finding a good match.
Regression Testing			
1	Fixing no matching users in component "Main Activity" but the component "Random List" doesn't display and the application doesn't notify user.	2	Catch no matching exception created in Main Activity Module and prompt an error message.

Module	Forgot Password		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	If the user enters an email not in the database, the program shouldn't crash.	1	When checking if the mail exists in the database, if it fails, return gracefully to the program.
Regression Testing			
1	Fixing entered email not in the database but it will fail to send the email and not notify the user.	3	Prompt a toast error message when the return value indicates the entered email is invalid.

Module	Chat Activity		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	User should not be able to send an empty message	2	Add condition to handle the message after click "send" button to make sure it's not empty
2	After successfully sending a message, the message does not display on the screens of both people.	1	Server should store the message received into message history, and deliver the message back to the user as well as the one he is chatting with.
Regression Testing			
1	Storing the message in message history causes the message history disappears if the person you are chatting with changed his username.	1	Let the server match the person with message history through userID instead of username.

Module	Personal Info		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	Personal Info will cause the app to crash if user information is null in the user object.	1	Initialize user information to empty string instead of null.

Regression Testing			
1	In user's profile page user information will keep empty string even if user have already edited his profile.	3	Change the initialize function only run when information is null.

Module	Edit Profile		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	When editing the profile, whenever user finishes editing a field it is written immediately.	2	Make copies of user input edits and overwrite the original only when user hits the save button.
2	When editing profile, if user does not modify a field and hits the save button, the unmodified field is set to empty.	1	If the copy for the field is unedited by the user, don't overwrite the corresponding previous field.
3	User can change their age without changing their birth date.	3	Tie user's age to his birth date. If user updates one field, the other will be updated to fit accordingly.
Regression Testing			
1	After the user saves the changes in edit profile, the user returns to the personal info page displaying previous unedited info.	1	After user hits the save button, check if the user object is modified and display fields accordingly.

Module	User Info		
Incremental Testing			
Defect #	Description	Severity	How to correct
1	"Add Friend" button is at a wrong position in the layout.	3	Change the attribute of "Add Friend" button in the xml file.
2	"Start Chat" button is at a wrong position in the layout.	3	Change the attribute of "Start Chat" button in the xml file.
3	User profile image can not become a circle image for some rectangle photo.	2	Delete the function onDraw() for the circle image. Instead using the imageListener and create a DrawingView variable for the image.
Regression Testing			
1	Press the button "Start Chat" can not jump to chat room activity.	1	Mistakenly delete the Intent() function in the onCreat() method. Add the function Intent() back.
2	Press the button "Add Friend" with no response so that can not add the friend into the friend list.	1	Change the layout of the "Start Chat" button so that it won't cover the "Add Friend" button implicitly.

Module	Friend List		
Incremental Testing			
Defect #	Description	Severity	How to correct

1	When the user clicks a contact in the friend list, the program should not crash if the friend has deleted this user from the friend list.	1	Create a not-friend-any-more exception when checking in the database and finding out the user has been deleted from his friend's friend list.
Regression Testing			
1	Fixing when the user has been deleted from friend list but there is not respond when the user clicks the contact.	2	Catch the exception created in Friend List module and prompt an error message.