Software Engineering Project-Ch2: System analysis

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Online services for real estate and buildings

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Table of contents

1- System Analysis

It is a process of collecting and interpreting facts, identifying the problems, and decomposition of a system into its components.

System analysis is conducted for the purpose of studying a system or its parts in order to identify its objectives. It is a problem solving technique that improves the system and ensures that all the components of the system work efficiently to accomplish their purpose.

1.1- Functional Requirements

Functional requirements are the primary requirements that are to be fulfilled by the Website. Their fulfillment allows the user to use the Website.

Define what a product must do, what its features and functions are.

The proposed system provides features for a different type of users. The following subsections illustrate functional requirements to be fulfilled by the proposed system.

1.1.1 Register

After filling the required data, the Visitor can register himself/herself in our proposed system.

1.1.2 Login

Admin/Member will be able to Login into the system with his unique username and password.

1.1.3 Add Property

Property can only be added by the authenticated Members.

1.1.4 Ask Questions

Member can ask questions and get answers on this Website.

1.1.5 Manage Profile

Member can view, update or delete the profile of his/her own.

1.1.6 Manage Property

Property management can be done by the user in which the user has a facility to view, edit or delete it.

1.1.7 Manage Reports

Admin receives all reports from the members. He can delete ads if he checks them out, and he has the ability to delete any member if he causes fake ads.

1.1.8 Search Property

Member has the facility to search the best available property within the budget on the basis of:

•   The area covered by property

•   City

•   Location

•   Price range

•   Property type

•   Property subtype

•   Purpose

1.1.9 Tools for Development

The Real Estate Management System would be developed using the following tools and technologies:

•   Xampp server

•   HTML 5

•   CSS 3

•   Bootstrap 4

•   PHP

•   MySQL

1. 2- Non-Functional Requirements

Describe the general properties of a system. They are also known as quality attributes.

The subcategories of non-functional requirements given are (Usability, Efficiency, and Security).

1.2.1 Usability

•   The system is easy to learn.

•   The interface designed to be user friendly.

•   Visitors can be able to enter the system without any permission in a very easy and fast way.

•   Rapid move inside the system.

•   System available 24 hours.

1.2.2 Efficiency

•   The system should handle the load without degradation of service.

•   The system shall support an arbitrary number of active requests, that is, no requests shall be lost under any circumstances.

1.2.3 Performance

•   The system shall be fast to respond to orders from more than one user.

1.2.4 Scalability

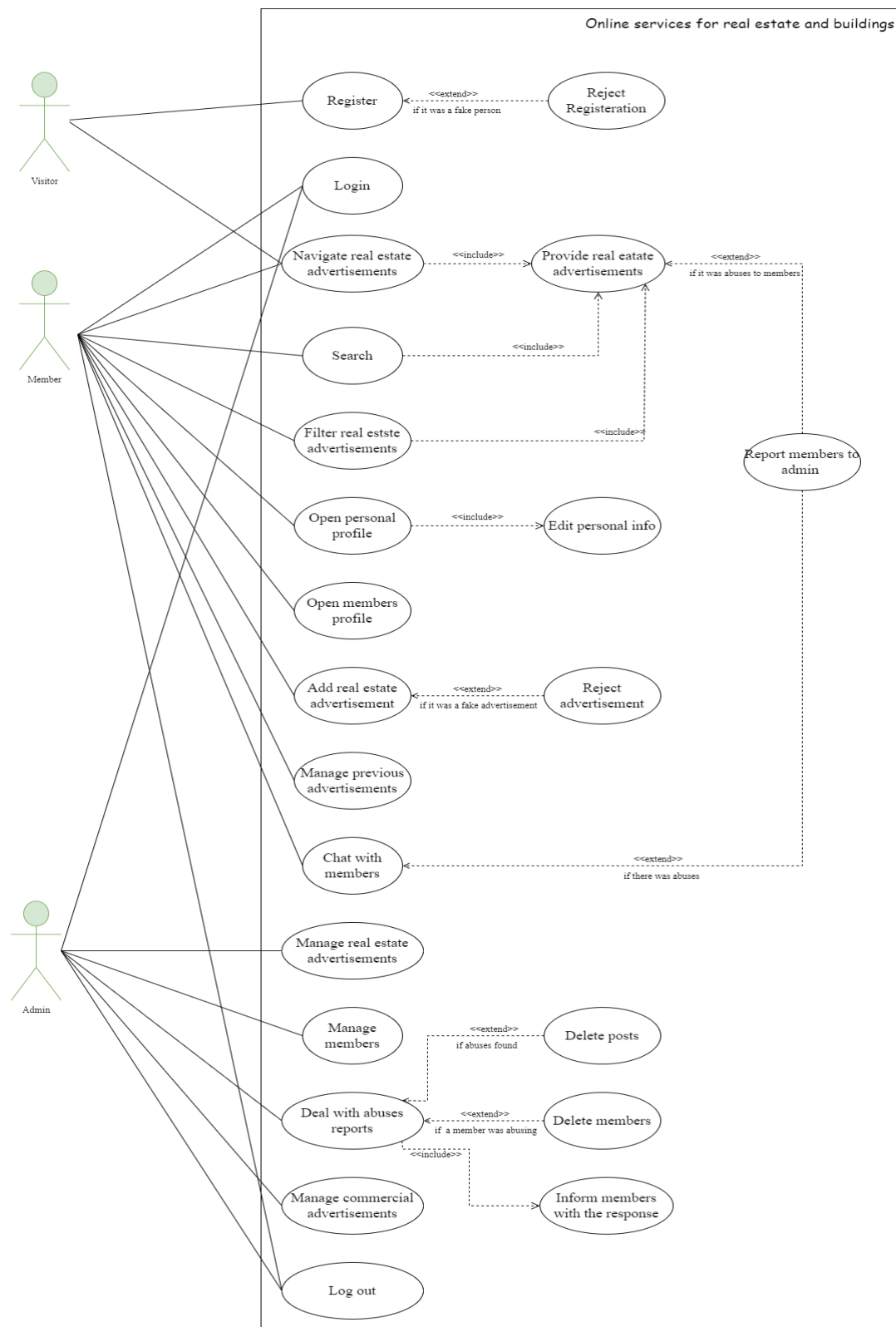• The system can handle with a maximum number of users, terminals, transaction without performance degradation (Capacity).

1.2.5 Security

• Visitors have viewed a page without any details of them.

• Admin only person has to access the web page.

• Sign up the process include a password.

• Prevent data Manipulation.

2- Use case

2. 1- Use case diagram

2. 2- Use case description

2.1- Register case

Use Case ID:	1
Use Case Name:	Register
Actors:	Visitor
Description:	User can create account in website and user has many powers as a member. If the register is fake so system will reject registration.
Preconditions:	1. User browsing with limitation in real estate advertisements
Postconditions:	1. It's time to see more real estate advertisements 2. User can Browsing freely
Normal Flow:	1. User input personal info 2. User submit info 3. Enter mail and password 4. Display login page
Alternative Flows:	In step 2 of the normal flow, if any fields do not fill, Re-enter field. In step 3 of the normal flow, if user forget pass, then send pin to phone number, re-enter new pass and start again entering mail and new pass

2.2- Login case

Use Case ID:	2
Use Case Name:	Login

Actors:	Member Admin
Description:	Member login to website, can add real estate or edit or delete it, edit personal profile and see more advertisements
Postconditions:	Navigate real estate advertisements, add new real estate, chat with other members, browsing personal page
Normal Flow:	1. User enter mail and pass 2. User submit data 3. Display home page
Alternative Flows:	In step 1 of the normal flow, if user forget pass, then send pin to phone number, re-enter new pass and start again entering mail and new pass. In step 2 of the normal flow, if mail not valid, re-enter correct mail If mail does not sign in website, display sign page

2.3- Navigate real state advertisements case

Use Case ID:	3
Use Case Name:	Navigate real state advertisement
Actors:	Visitor Member
Description:	If user is visitor so, he/her can't navigate freely. If user is member so he/her can navigate website without limitation.
Preconditions:	1. Navigate with limitation, visitor cannot search unlike the member
Postconditions:	1. Navigate freely, search and filter real state advertisement
Normal Flow:	1. Navigate as member or visitor
Alternative Flows:	In step 1 of the normal flow, if server shutdown, report the problem to admin.

2.4- Search case

Use Case ID:	4
Use Case Name:	Search
Actors:	Member
Description:	In this case Member has the facility to search the best available property within the budget based on: The area covered by property, City, Location, Price range, Property type, Property subtype and Purpose
Preconditions:	1. Navigate advertisement without search feature
Postconditions:	1. search for ads based on city, location, price…..etc
Normal Flow:	1. Click search icon. 2. Select type of ads, where it is , or any related data 3. Display target ads.
Alternative Flows:	In step 3 of the normal flow, if targe not found, display related advertisement.

2.5- Filter case

Use Case ID:	5
Use Case Name:	Filter
Actors:	Member
Description:	In this case Member has the facility to filter the best available property within the budget.
Preconditions:	1. Display random advertisement.
Postconditions:	1. Display target advertisement.
Normal Flow:	2. Click search icon. 3. Filter advertisements. 4. Display target ads.
Alternative Flows:	In step 3 of the normal flow, if targe not found, display related advertisement.

2.6- Open personal profile case

Use Case ID:	6
Use Case Name:	Open personal profile
Actors:	Member
Description:	User can show his personal profile and edit all fields in page.
Preconditions:	1. Static profile information
Postconditions:	1. Edit profile information
Normal Flow:	1. Click personal icon 2. Edit any info fields 3. Save all edits
Alternative Flows:	In step 3 of the normal flow, if profile edits not update, report problem in help section.

2.7- Open member profile case

Use Case ID:	7
Use Case Name:	Open Member profile

Actors:	Member
Description:	User can show other personal profile to know more about them. Available suggest feature in search icon.
Preconditions:	1. Know a little information about other members
Postconditions:	1. Know a more information about other members
Normal Flow:	1. Click search icon. 2. Type profile name. 3. Press enter. 4. Show target profile and other similar profile
Alternative Flows:	In step 4 of the normal flow, if profile not found, suggest similar profile name.

2.8- Add real estate advertisement case

Use Case ID:	8
Use Case Name:	Add real estate advertisements

Actors:	Member
Description:	User can add new real estate advertisement and delete it if the ads fake, the system will reject ads.
Preconditions:	1. Lose main function of website
Postconditions:	1. Achieve main function of website (Member added real estate advertisement) and navigate between different ads.
Normal Flow:	1. Click Add icon. 2. Select what I want to upload 3. Write description for building 4. Press enter. 5. Uploading ads will be done
Alternative Flows:	In step 5 of the normal flow, if ads not upload, report problem in help section.

2.9- Manage previous advertisement case

Use Case ID:	9
Use Case Name:	Manage Previous advertisement

Actors:	Member
Description:	Member can see previous ads (delete it.).
Preconditions:	1. Member can't manage (previous ads).
Postconditions:	1. Availability to manage previous advertisement.
Normal Flow:	1. Click personal profile 2. Navigate personal ads 3. Manage advertisement
Alternative Flows:	In step 3 of the normal flow, if user can't manage ads, report problem in help section.

2.10- Chat with member case

Use Case ID:	10
Use Case Name:	Chat with member
Actors:	Member
Description:	It's a feature that provides chat with other member to view the location and deal with him foe the date of payment. If the member is abuses, he/she can report him/her or if there is any problem in deals
Preconditions:	There is advertisement not clear, want to deal with owner
Postconditions:	All information about advertisement and possibility to view the building
Normal Flow:	1. Click chat icon on advertisement or profile page 2. Chat with member 3. Send message to ask him/her about some details or problem he/she faced or to deal with him/her 4. Report member
Alternative Flows:	In step 3 of the normal flow, if member does not reply on message or there is any problem in deal, report the problem to help section If broker (advertisement owner) not answer, ignore this ads.

2.11- Manage real estate advertisement case

Use Case ID:	11
Use Case Name:	Manage real estate advertisement
Actors:	Admin
Description:	Check if advertisement fake or real.
Preconditions:	There is a fake report after performing the algorithm
Postconditions:	Filtration the reports if its fake so admin will delete the advertisement.
Normal Flow:	1. Check notifications of reports 2. Display the report details 3. Manage it by deleting if its fake one.

2.12- Manage members case

Use Case ID:	12
Use Case Name:	Manage member
Actors:	Admin
Description:	View members profile and delete member profile if he is abuser
Preconditions:	There is a member is abuser and posts many fake ads
Postconditions:	Response the member or delete if member have many fake ads
Normal Flow:	1. Click icon member profile 2. Visit member profile 3. Check ads 4. Response member or delete if member have many fake ads

2.13- Deal with abuses reports case

Use Case ID:	13
Use Case Name:	Deal with abuses reports
Actors:	Admin
Description:	In this case check all reported reports, able to delete ads, able to delete or response member.
Preconditions:	There is many reports.
Postconditions:	Filtration the reports if its fake so admin will delete the advertisement.
Normal Flow:	1. Check notifications of reports 2. Display the report details 3. If abuses report found, delete the post. 4. If member have only one fake ads, admin will response him/her 5. If member is too abuser, admin delete member.

2.14- Manage commercial advertisement case

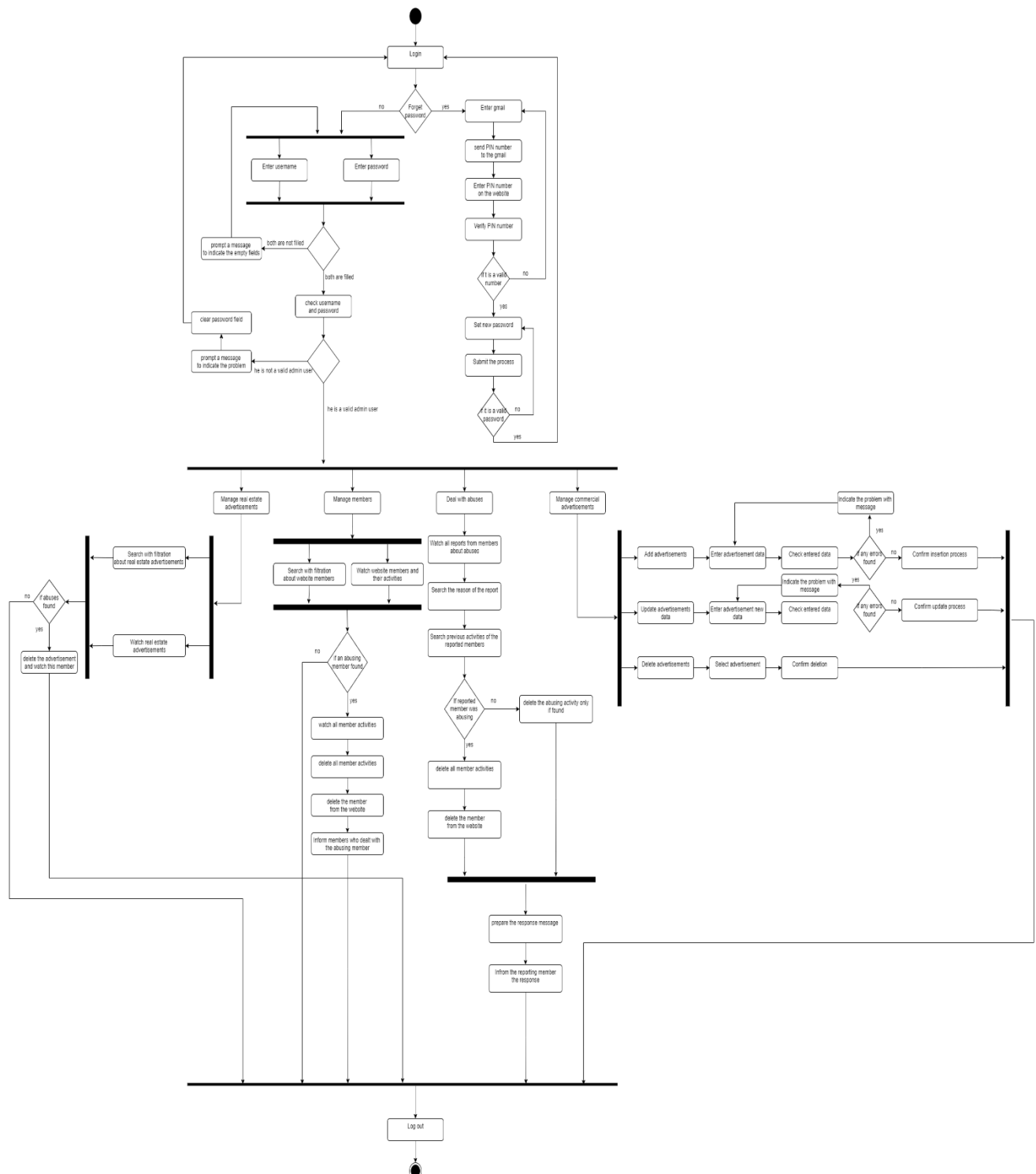| Use Case ID:	14
Use Case Name:	Manage commercial advertisement
Actors:	Admin
Description:	It's the only way to benefit from our free website.
Preconditions:	There isn't way to maintain website.
Postconditions:	Availability to maintenance our website.
Normal Flow:	1. Add details of ads 2. Add image ads

2.15- Logout case

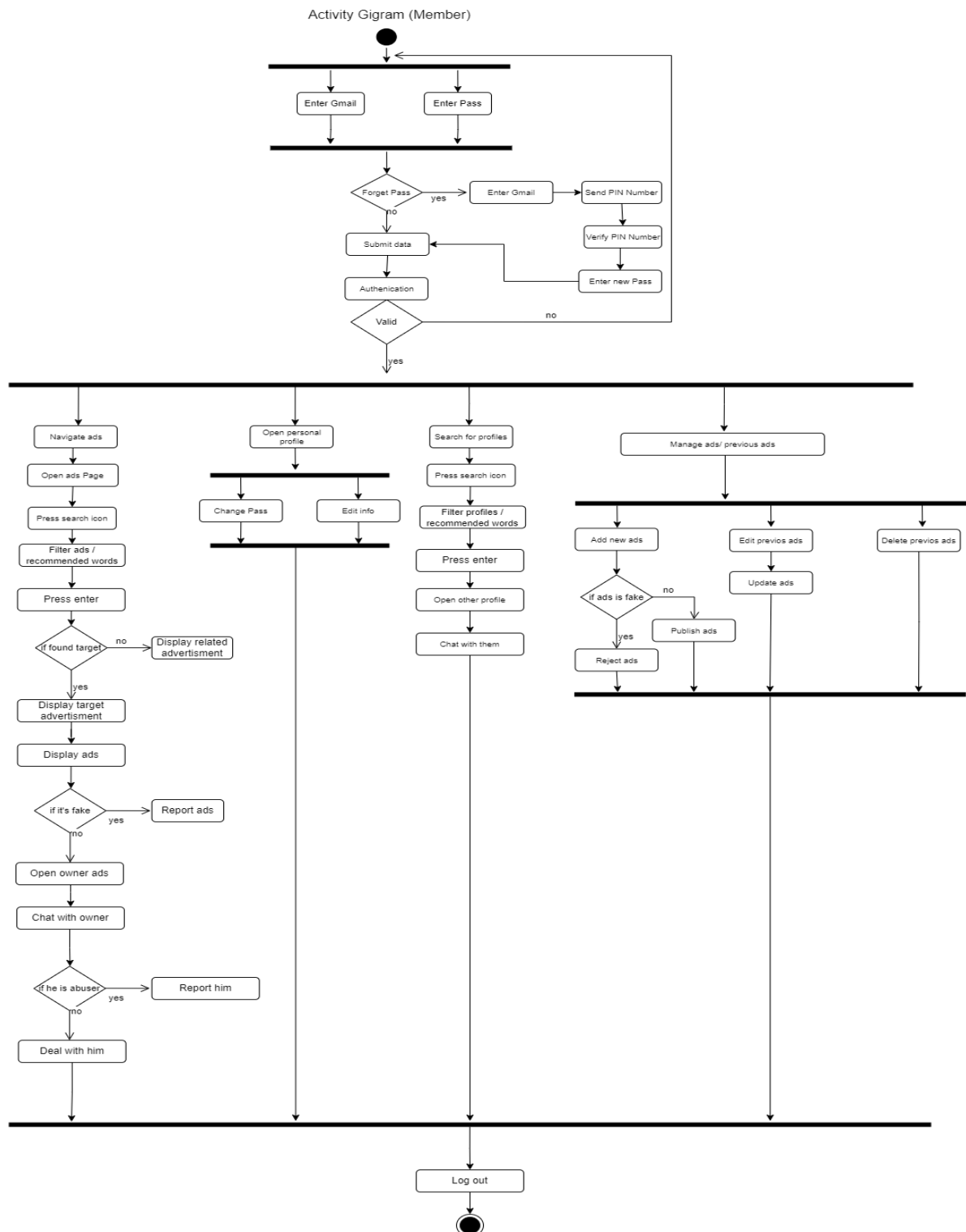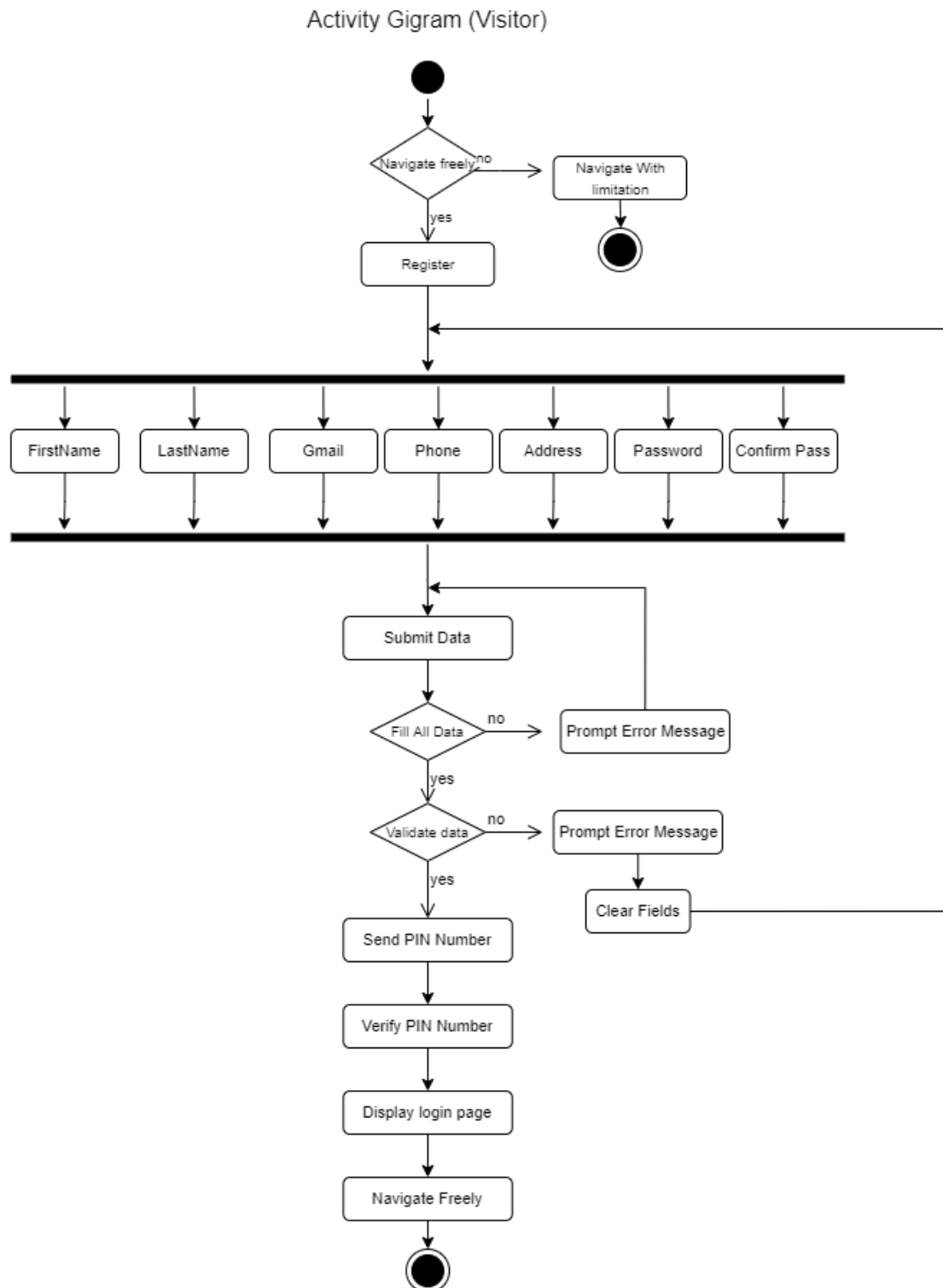| Use Case ID:	15
Use Case Name:	Logout
Actors:	Member Admin
Description:	In this case allows members and admin to log out from the website.
Postconditions:	Ability to logout from website.
Normal Flow:	1. Click on log out pattern. 2. System end process. 3. Display login page.

3- Activity diagram

3.1- Admin activity diagram

Admin activity diagram
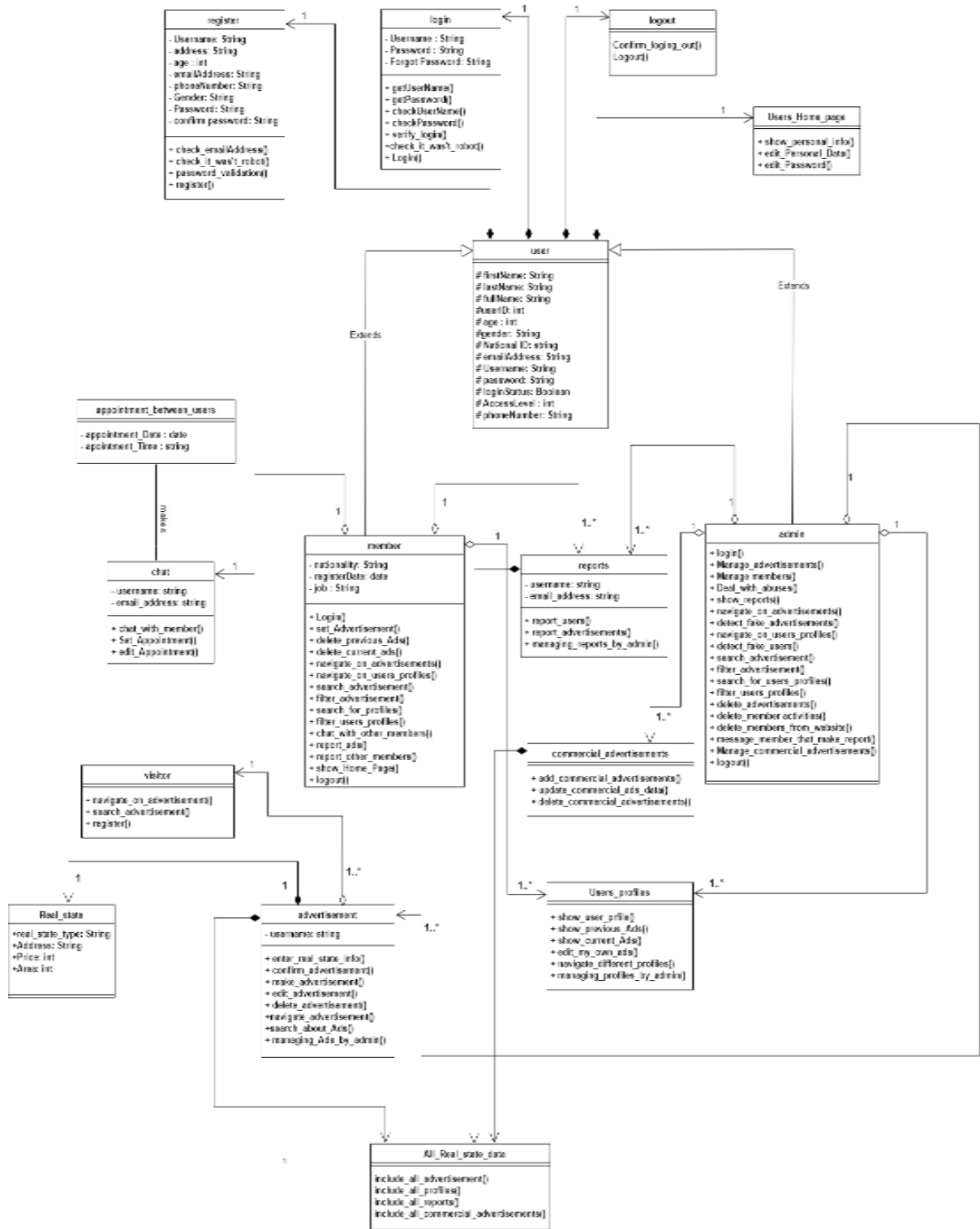
3.2- Member activity diagram

Activity Gigram (Member)

- Enter Gmail
- Enter Pass

Forget Pass
  - yes → Enter Gmail → Send PIN Number → Verify PIN Number → Enter new Pass
  - no → Submit data

Submit data → Authenication → Valid
  - no →
  - yes ↓

Navigate ads
- Open ads Page
- Press search icon
- Filter ads / recommended words
- Press enter
- If found target
  - no → Display related advertisment
  - yes → Display target advertisment
- Display ads
- if it's fake
  - yes → Report ads
  - no → Open owner ads
- Chat with owner
- if he is abuser
  - yes → Report him
  - no → Deal with him

Open personal profile
- Change Pass
- Edit info

Search for profiles
- Press search icon
- Filter profiles / recommended words
- Press enter
- Open other profile
- Chat with them

Manage ads/ previous ads
- Add new ads
  - if ads is fake
    - no → Publish ads
    - yes → Reject ads
- Edit previos ads → Update ads
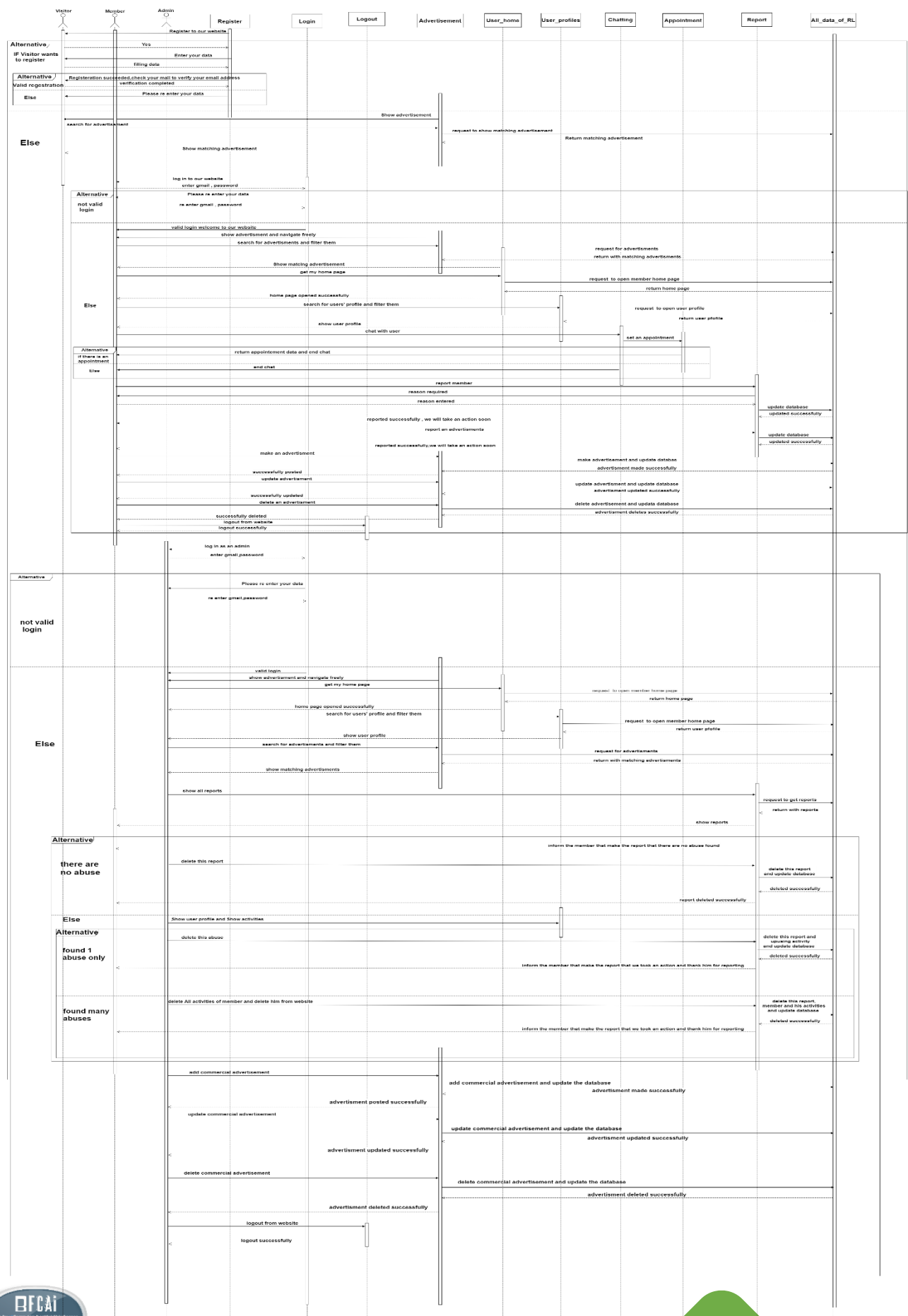- Delete previos ads

Log out

3.3- Visitor activity diagram
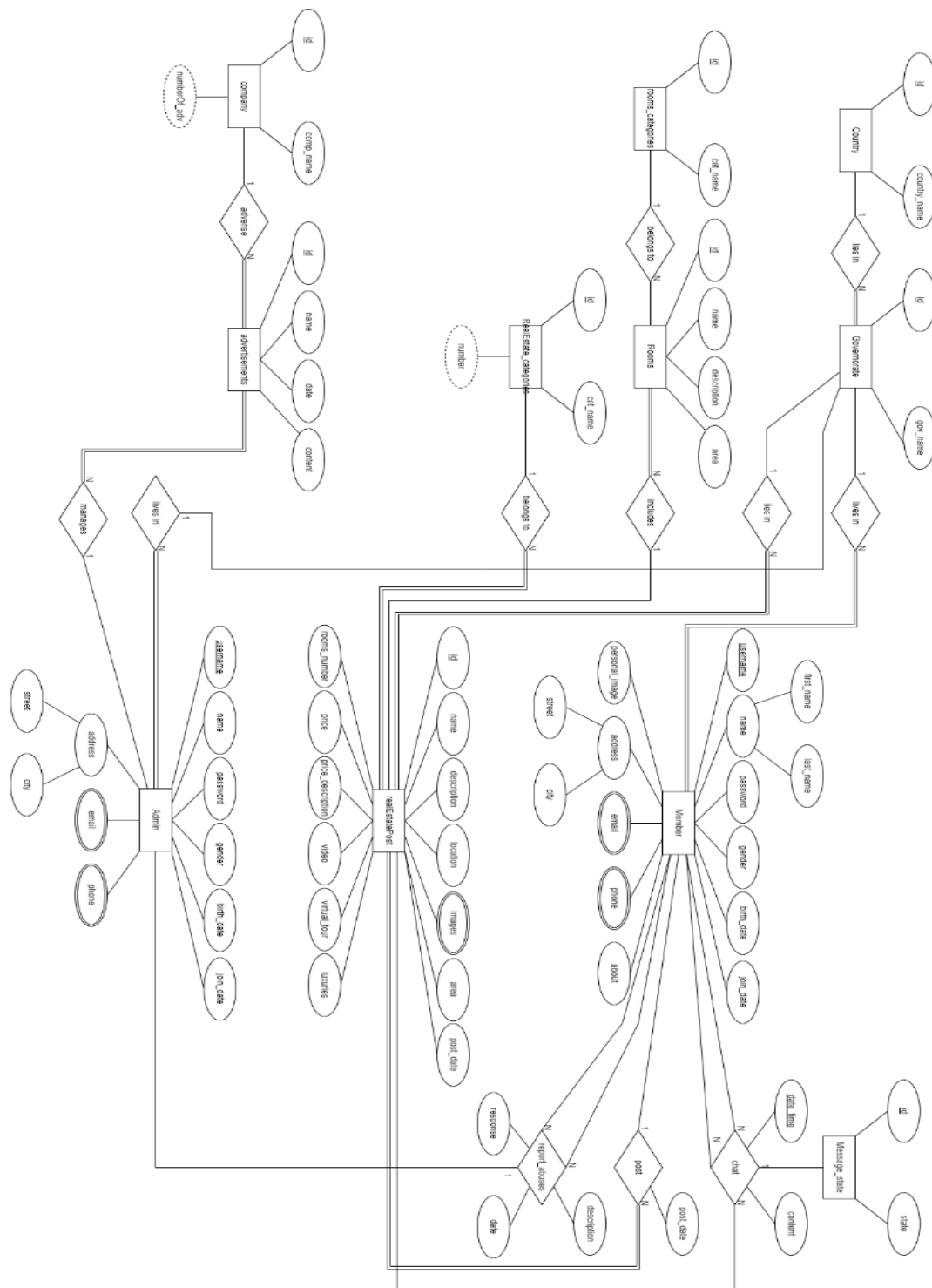
Activity Gigram (Visitor)
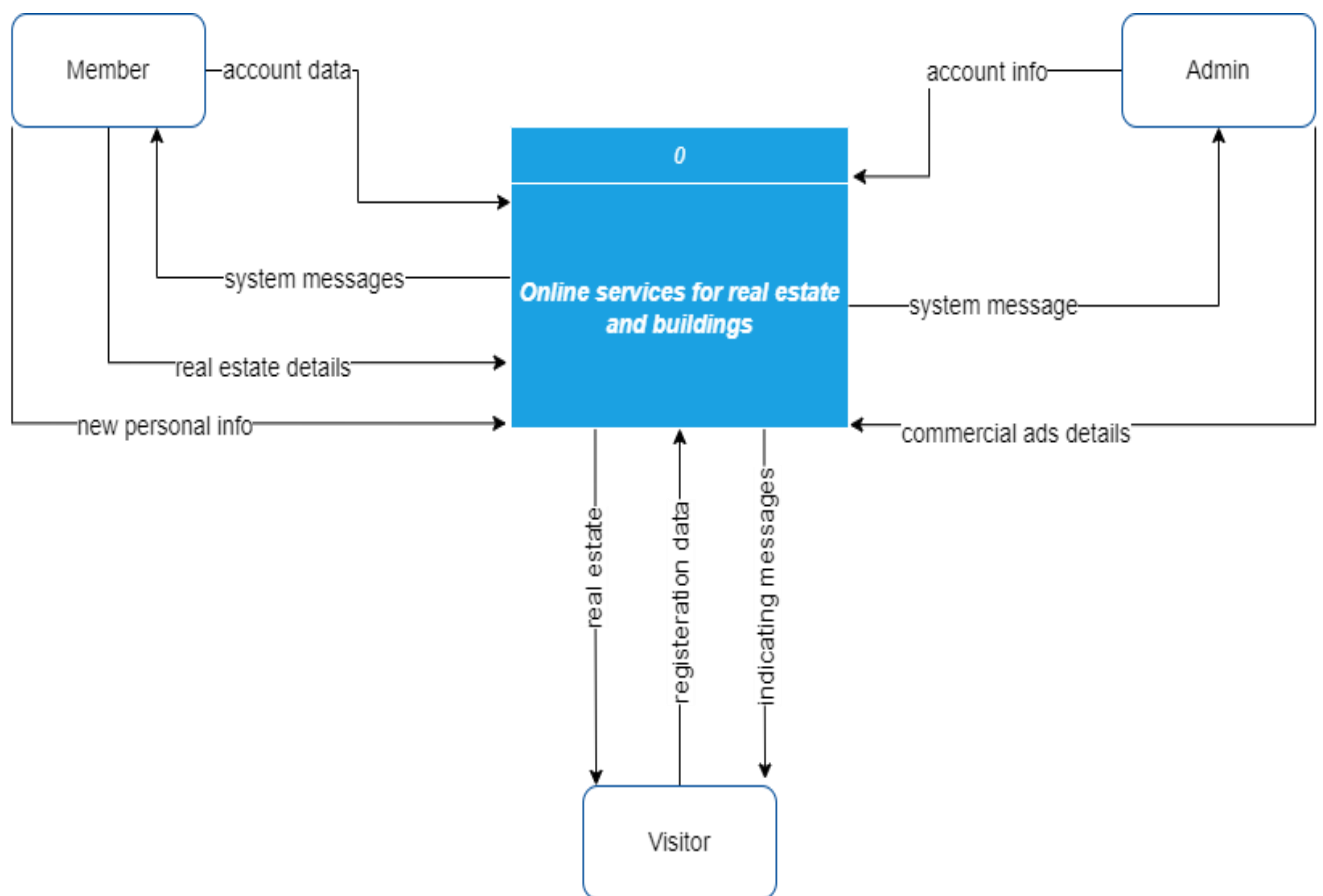
4- Class diagram

5- Sequence diagram

6- Entity relationship diagram

7- Context diagram

8- Data Flow Diagram

Level 0