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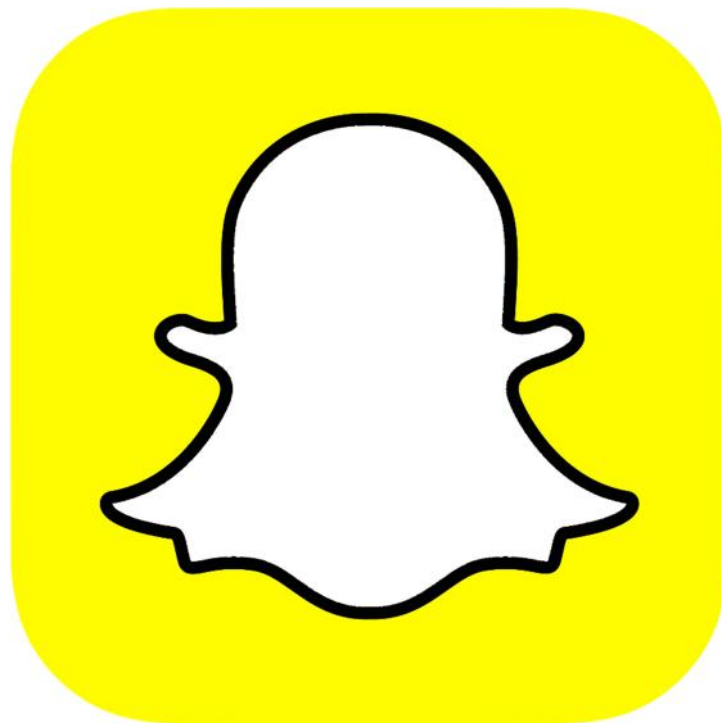
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# SNAPCHAT

## SRS DOCUMENT

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## 1. INTRODUCTION TO SNAPCHAT

### 1.1. PURPOSE

This document describes the software requirements and specifications of Snapchat. Snapchat is an online application that allows us to add as many friends around the globe. This app enables the user to communicate with his/her friends and build streaks. This app can be installed from the Google play store or the Apple play store.

### 1.2. DOCUMENT CONVENTIONS

Text formats:

Font : - Times New Roman (Body), Constantia (Headings)

Font size: - 13 for Body, 14 for Sub-Headings and 22 for Headings.

Document conventions:

| MNEMONICS | MEANING              |
|-----------|----------------------|
| DB        | Database             |
| DDB       | Distributed Database |
| DFD       | Data Flow Diagram    |
| ER        | Entity Relationship  |
| SS        | Screenshot           |

### 1.3. INTENDED AUDIENCE AND READING SUGGESTIONS

The document is intended for all the stakeholder customers and the developers – designers, coders, testers and maintainers. The reader is assumed to have basic knowledge of Mobile OS, databases and user accounting along with knowledge and understanding of DFDs and Use-case diagrams.

### 1.4. DEFINITIONS

#### 1.4.1. User Account

A user account is a location on a network server used to store a computer username, password, and other information. A user account allows or does not allow a user to connect to a network, another computer, or other share. Any network that has multiple users requires user accounts.

### **1.4.2. Mobile Operating System**

A mobile operating system, also called a mobile OS, is an operating system that is specifically designed to run on mobile devices such as mobile phones, smartphones, PDAs, tablet computers and other handheld devices.

### **1.4.3. Database**

A database is a collection of information that is organized so that it can easily be accessed, managed, and updated. In one view, database can be classified according to types of content.

### **1.4.4. Distributed Database**

A distributed database is a database in which storage devices are not all attached to a common processing unit such as the CPU, and which is controlled by a distributed database management system together sometimes called a distributed database system network.

### **1.4.5. Entity Relationship**

An entity relationship model, also called an entity-relationship (ER) diagram, is a graphical representation of entities and their relationships to each other, typically used in computing in regard to the organization of data within databases or information systems.

### **1.4.6. DFD**

A data flow diagram (DFD) is a graphical representation of the "flow" of data through an information system, modelling its process aspects. A DFD is often used as a preliminary step to create an overview of the system, which can later be elaborated.

### **1.4.7. Use Case Diagram**

In software and systems engineering, a use case is a list of actions or event steps, typically defining the interactions between a role (known in the Unified Modeling Language as an actor) and a system, to achieve a goal. The actor can be a human or other external system.

## **1.5. PROJECT SCOPE**

*“Experience the world in new ways, every day”*

Snapchat is an online instant messaging application that enables the user to send friend requests to other users – from his own phonebook using Snapchat (or) by searching profiles nearby (or) by searching someone’s username (or) from quick add (or) by inviting a contact to Snapchat – such that the app establishes a communication portal to the users on both ends. Users can send text messages, snap messages, video messages and audio messages, make audio & video calls or even share media and location with their friends. Users can

also subscribe to pages of their interest.

Tap on your face to try on a new look, swap faces with a friend, or even play a game! After you take a photo, just swipe to add artwork based on where you are, what’s going on near you, and more. This app needs internet to access some of its services (For example: Snaps can be taken offline but can’t be posted/shared unless an internet connection is active). Snapchat is totally a free application that aims at integrating the world with more realistic communication.

The approximate time invested on building Snapchat was estimated to be roughly 500 hours+ with basic features and approximately 1400+ hours with complex features. It costs about \$10K for the iOS platform and \$9K for Android just to code one feature: Automatic self-destructive messages. \$1.4 Revenue per user: Consider the fact that there are 300M+ active Snapchat users per month. 2015 Snapchat’s annual revenue was estimated to be \$100M and the recent reports say that 2019’s revenue may touch a \$500M easily.

## 1.6. REFERENCES

<https://www.snapchat.com/>

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## 2. OVERALL DESCRIPTION

### 2.1. HISTORY

Snapchat is a multimedia messaging app used globally, created by Evan Spiegel, Bobby Murphy, and Reggie Brown, former students at Stanford University, and developed by Snap Inc., originally Snapchat Inc. One of the principal features of Snapchat is that pictures and messages are usually only available for a short time before they become inaccessible to their recipients. The app has evolved from originally focusing on person-to-person photo sharing to presently featuring users' "Stories" of 24 hours of chronological content, along with "Discover", letting brands show ad-supported short-form content. Snapchat has become notable for representing a new, mobile-first direction for social media, and places significant emphasis on users interacting with virtual stickers and augmented reality objects.

As of February 2018, Snapchat has 187 million daily active users.

## 2.2. PRODUCT PERSPECTIVE

Snapchat is one of the world's most popular social media apps despite what seems like a highly counter-intuitive premise. Unlike other social networks, Snapchat was built on the idea that posts should be temporary. Instead of archiving everything people said or did forever (like Facebook, etc.), they decided to act as a daily diary written in disappearing ink. On Snapchat there is no permanent record of your thoughts and actions, unless people cheat by taking screenshots. That disappearing-content feature made the app popular immediately, as people would post pictures that were perhaps indiscreet without having to worry that the pictures would come back to haunt them at a job interview or college admission process.

## 2.3. PRODUCT FEATURES

### 2.3.1 Automatic self-destructive messages

Self-destructing messages are a custom feature of Snapchat and one of the things that made it so popular among teenagers. The idea is straightforward, and it is provided in a few steps:

- a. The user sends a friend a message, and it is uploaded to the Snapchat servers.
- b. The recipient gets push notification of the arrival of a new snap. Then the snap is downloaded in a temporary location on the phone.
- c. When the recipient has viewed the message, the time starts to run out. The app deletes the temporary copy of the snap in the phone and alerts the Snapchat server.
- d. The snap is destroyed from Snapchat's servers. If the recipient has not viewed the snap within 30 days, it is deleted automatically.

Texts sent in Chat are deleted, by default. But you can always save something important (or hilarious) with one tap, or a screenshot.

### 2.3.2. Snap/Camera

Users can create multimedia messages called "snaps." These snaps can comprise photo or a short video; they can be edited with filters and effects, text captions, and drawings. In Chat 2.0 recent update you can send audio notes, make video and audio calls. Snaps can be directed privately to selected contacts, or a semi-public "Story." The privately sent messages can be automatically self-destructed after a few seconds.

### 2.3.3. Snap Map: Location sharing

Snapchatters around the world add photos and videos to Snap Map every day, so you can

see what's going on across the country, or right down the block, in real time. Just pinch to open the Map! Developers can use Apple MapKit and Google Location SDK to implement this feature. It gives them all tools that are necessary to create custom solutions for different operating systems.

#### **2.3.4. Add friends**

It is an essential function for social media app. Besides the standard methods of adding friends via usernames and phone contacts, Snapchat provides some smart ways:

Snapcodes: Black dots that surround Snapchat Ghostface Chilla logo is a personalized QR code. Another user can scan it by using the Snapchat camera, and he begins instantly follow you. Here are used recognition algorithm and an algorithm for the generation of such codes

Add Nearby: It uses your location to scan what other users in your proximity also have Add Nearby open. The app sends the device's coordinates to the server, the server in its turn compares the geolocations of devices with opened Add Nearby screen.

#### **2.3.5. Video and audio calls**

In the updated version of chat, the app users can start talking or video chatting instantly with one tap. If the recipient isn't online, you can send an audio note. The app uses technology from AddLive — a real-time communications provider - to provide video chat feature. It usually takes two months to develop perform this option.

#### **2.3.6. Geo-filters**

A feature is known as "Geofilters" is a special graphical overlay that is available when the user is within a precise geographical location, such as a city, event, or destination. To let your users mark their location on the images, the developers use the geocoding. Geocoding is a computational process that converts the geographic coordinates to a description of a location, usually the name of a place. Then the name of the area is overlaid on the image in some template. It takes about 3 weeks and costs about \$4K per platform to create within the chat app development project.

#### **2.3.7. Lenses or Filters**

The "Lens" is one of the most exciting features of Snapchat. It allows users to add real-time effects and alter video images by using face detection technology. This feature became possible when Snapchat acquired the startup Looksery, which does a facial modification and enables users to simulate their appearance for a photo or video chat in real-time on mobile platforms.

Create and purchase your own Filter to frame birthdays, weddings, and any other event.



It's the perfect way to make any occasion even more special!

### 2.3.8. Stories and Discover

Stories functionality lets users broadcast photo and video content from their lives to friends; each story lasts 24 hours. Later this feature was expanded to "Live Stories." This enables new functionality when Snapchatters who are at the same event location (such as music festivals or sporting events) can contribute snaps to the same Story. "Discover" option provides a new way to explore Stories from different editorial teams. It contains sponsored short-form content from major publishers, such as BuzzFeed, CNN, Mashable, People, and many others. Every edition is refreshed after 24 hours, because, as the Snapchat team believes, “what’s news today is history tomorrow.”

### 2.3.9. Bitmoji

Bitmoji is the digital you — a living cartoon character to instantly express who you are and how you're feeling, in the moment.

### 2.3.10. Snap-scores

Your Snapchat score is a number that acts as a sort of achievement for how well you use Snapchat. Here’s what we’ve found Snapchat uses to calculate your score:

- a. Sending and receiving snaps typically equals a point each, with some snaps occasionally equaling more.
- b. Sending snaps to multiple people at once doesn’t equal more points but does add up to your score.
- c. Posting a story on Snapchat increases your score by a point.
- d. Viewing and sending chats doesn’t seem to have any impact on your score.
- e. Viewing other people’s’ stories also has no impact.

### 2.3.11. Snap-streaks

Streak counts keep track of how many days in a row you’ve snapped back and forth with a user.

### 2.3.12. Monetization

Snapchat makes money through in several ways:

- a. **Discover:** Discover feature delivers content from publishers and advertisers. Users can subscribe to media channels of the partners and see promoted content.
- b. **Geofilters and lenses:** Snapchat lets brands create their own filters and lenses.
- c. **Advertising API:** Additionally, Snapchat has opened ads API and announced a vast number of promotional instruments, including snap ads between Stories, expandable

“Snap Ads” and ads API itself. All these features let advertisers use programmatic interfaces to run large-scale campaigns instead of making the manually strike deals with Snapchat.

### 2.3.13. Stickers

Stickers became an inevitable part of modern communication. Snapchat contains 200 stickers built into its app. You can use a custom solution (design your stickers) or use a ready-made solution that is much cheaper.

### 2.3.14. Shazam

When you want to identify a song playing around you, just hold your finger down on the camera screen. After a few seconds, a Shazam window will pop up with the song’s name and artist. From there, you can snap your Shazamed song to your friends and even add the artist as a Snapchat friend.

### 2.3.15. Birthday party

Adds a cake emoji next to the name of the birthday boy/girl. This allows friends to send them birthday snaps, displays birthday charms and some other fun surprises from Snapchat. This feature does not reveal the age of the person to other Snapchatters.

### 2.3.16. Spectacles

Spectacles are sunglasses that capture your world, the way you see it — and empower you to share your perspective with the world in a whole new way.

### 2.3.17. Memories

Memories is our data-storage service that makes it easier for you to reminisce anytime, anywhere. By agreeing to these Terms, you automatically enable Memories. Once Memories is enabled, it will remain enabled for as long as you maintain your Snapchat account. But you can always turn off certain Memories features through Settings. One of the options we provide with Memories is the ability to create a restricted area by setting a passcode, which might be a PIN or a passphrase or some other mechanism. This is similar to the device-lock option you may be using on your mobile device; by setting a passcode, you make it less likely that another person who gets hold of your device will be able to see what you saved to the restricted area of Memories. But here’s a big warning: **if you lose or forget your Memories passcode, or if you enter the wrong one too many times, you will lose access to any content you saved in the restricted area of Memories.** We don’t offer any passcode recovery features for this restricted area. You are solely responsible for remembering your passcode.

### **2.3.18. Shape cut-out tool**

This tool is available on any snap. It basically allows the user to cut a desired part of the picture and save it as a sticker for future uses as a sticker. These cut-outs will be available in the stickers section.

### **2.3.19. Timer**

This feature enables the user to apply a self-timer to their snaps for a time of 3s. This means that when the user enables this feature, once he clicks on the ‘click picture-circle’ dot then the picture will be clicked after 3s of clicking the dot. For instance, this feature is helpful while clicking a group picture where everyone needs a few seconds to pose well.

### **2.3.20. Search bar**

The search bar is available on the camera screen, placed on the top of the screen beside your selfie. This feature enables the user to search for any other snapchat user or any location based stories or any events/happenings around him and much more.

### **2.3.21. Friendship Profiles**

Once two users become friends on Snapchat, on clicking the friend’s profile selfie, the user can easily view his friendship profile with the other user. There are charms to determine various factors and enhance knowledge about one person to the other and many more.

### **2.3.22. Snap Games**

Platform to Feature Original and Third Party Games from Game Closure, PikPok, Spry Fox, Zeptolab, and Zynga. Starting 04/04/19, Snap began rolling out a series of made-for-Snapchat games, each designed for high-fidelity, synchronous gameplay:

**1. Bitmoji Party -(Snap Inc.)** - Snap’s flagship, first-party IP for Snap Games features you and your friends, brought to life in 3D as your Bitmoji as you compete across four fast-paced mini-games: Pool Party, Kick Off, Spin Session, and Zombie Escape.

**2. Alphabear Hustle - (Spry Fox)** - Alphabear Hustle is a fast-paced cooperative word game with a twist. Players can work together to spell words, collect cute bears, and build their own personal bear village.

**3. C.A.T.S. (Crash Arena Turbo Stars) Drift Race - (ZeptoLab)** - C.A.T.S. is a multiplayer racing game that invites up to 6 players to use boosters scattered along the track to race faster, or slow down opponents. Along the way, collect new vehicles from the C.A.T.S. universe.

**4. Snake Squad- (Game Closure)** - Snake Squad is a multiplayer battle-royale game. Choose your favorite avatar to go into battle and guide your snake around the battlefield with your squad to grow larger to eliminate your competition.

**5. Tiny Royale - (Zynga)** - Tiny Royale™ is a fast, fun top-down battle royale game — the classic battle royale experience, re-invented for the Snapchat platform. Squad up with friends or go solo during quick 2-minute rounds to loot and shoot your way to victory until only one player—or team—remains.

**6. Zombie Rescue Squad - (PikPok)** - Team up with your fellow Zombie Rescue Squad friends to enter the front lines of the zombie apocalypse. Rescue survivors from the hungry hordes and gather as many supplies as you can. But if you miss the helicopter to safety, you'll be left behind!

### **2.3.23. Grid**

This feature, when chosen, splits the display screen into a grid with a levelling line which would help the snapchatter to click aligned pictures. It is available on the camera screen.

## **2.4. USER CLASSES AND CHARACTERISTICS**

Some exemplary enhancement requests from users have been mentioned below:

### **1. Screenshot:**

Client has requested that he should be able to see any Snapchatter's profile who screenshotted his story or snap or conversation or anything related to his profile.

### **2. Views:**

Client has requested that he should be able to see the number of views that his story has got and also a list of names of viewers be displayed.

### **3. Bitmoji selfie:**

Client wants the freedom to choose his own Bitmoji selfie along with a variety of moods so that he can choose one among many depending upon his mood.

### **4. Notifications:**

Client has requested that he should be notified of whenever:

- i. His friends try to text him.
- ii. He receives any snaps.
- iii. Somebody takes a screenshot of anything related to his profile.
- iv. Some account action needs to be taken.
- v. His account needs some security.

### **5. Choose who can see:**

Our client also wants the liability to choose who can view his story and who cannot such that he can customize his setting whenever he wishes to and this setting should be bounded to one story and not all the stories following. A prompt should be

made asking whether he'd like to continue the settings for all his snaps or he'd like to change them for the future stories.

#### **6. Snap-Kit:**

Our client demands that we provide the facility and platform for developers

## **2.5. OPERATING ENVIRONMENT**

The hardware, software and technology used should have following specifications:

- Ability to connect to the Wi-Fi or mobile network.
- Ability to exchange data over the network.
- Touch screen for convenience or Keypad (in case touchpad not available)
- Processor with speed of 500 MHz
- Continuous power supply
- Ability to use camera, gallery, microphone and other services of mobile
- Ability to take input from user
- Device must have 512MB RAM or above
- Functional on iOS and android only.

## **2.6. DESIGN AND IMPLEMENTATION CONSTRAINTS**

- Create Snapchat account by entering name and verifying mobile number.
- In case of network not available • If not able to exchange data over network, prompt error message "Connection not available"
- In case of not able to access services of mobile hardware  
if eg: camera is not working, prompt error message, "Can't access camera".
- Lock Account:
  - If user failed to follow policies of Snapchat.
  - In case of spamming by 10 users.
  - Maintain Consecutive marked spam Counter.
  - Increment spam Counter.
  - For every consecutive spam, increment logic counter by 1.
  - Deactivate the account as the spam number reaches 10.

## **2.7. ASSUMPTIONS AND DEPENDENCIES**

- Network and data availability
- Power supply
- Better connection for exchanging data over network
- Availability of mobile services

## 2.8. USER DOCUMENTATION

For user manuals and help use help option in the main menu or visit <http://www.snapchat.com/> and click on contact us option.

## 3. SPECIFIC REQUIREMENTS

### 3.1. FUNCTIONAL REQUIREMENTS

#### FUNCTIONAL REQUIREMENT 1 : Camera

**Input:** Click a picture or shoot a video

**Processing state:** User can apply lenses/set timer/enable grid/enable flash and then click a selfie or click a picture.

**Output:** A snap which can be edited and shared

#### FUNCTIONAL REQUIREMENT 2 : Add friends

**Description:** This feature enables user to add other Snapchatters as friends based on various parameters.

**Input:** Search username/click on ‘+’ in quick add/invite your friends to Snapchat and then add them/add friends from phonebook

**Processing state:** This will process the request to the account and once the other user accepts this request, these two people become friends.

**Output:** Friend request sent

#### FUNCTIONAL REQUIREMENT 3 : Bitmoji

**Description:** Bitmoji is your own personal emoji. Create an expressive cartoon avatar, choose from a growing library of moods and stickers - featuring YOU!

**Input:** Go to the Bitmoji corner and click on ‘select selfie’/ ‘edit Bitmoji’/ ‘change your clothes’.

**Processing state:** Snapchat links to Bitmoji app and performs the mentioned tasks.

**Output:** You'll be redirected to the Bitmoji corner.

#### FUNCTIONAL REQUIREMENT 4 : Discover

**Description:** This module allows users to view his friends' stories, stories from all around the globe and they can also share these stories or even take a screenshot or report spam if the content was inappropriate.

**Input:** Swipe left on the snap camera screen

**Processing state:** When user swipes left, this gesture is validated and finally comes as discover and thus this page opens.

**Output:** View friends' stories/ view location-based stories

#### FUNCTIONAL REQUIREMENT 5 : Filters and lenses

**Description:** Lenses are used before clicking the snap while filters are applied on a snap, i.e., after clicking the snap. Lenses use hi-level face recognition technology which helps in building the accuracy of merging the lens on the user's personality.

**Input:** Tap on the snap camera screen and select the desired lens

**Processing state:** Once inputs are taken, Snapchat uses AI technology to sense the surroundings and fir the lens accordingly.

**Output:** The desired lens hold its position right in the picture.

#### FUNCTIONAL REQUIREMENT 6 : Shazam

**Description:** Shazam is an audio matching software which senses audio for 10s and creates a unique audio fingerprint of the audio. It'll then compare this fingerprint with the ones in its database.

**Input:** Long press on snap camera screen

**Processing state:** The music (if any) playing will be sensed and an audio fingerprint will be created. This is then compared with the rest in database.

**Output:** If match is found then it'll display the song details and a share to option else it'll display 'Error: snap not found'.



**FUNCTIONAL REQUIREMENT 7 : Snap-map**

**Description:** Snap map is a real time map powered by mapbox copyrighted by OpenStreetMap and DigitalGlobe. Bitmoji represents everyone using the Snap map meant to resemble them. The bitmoji moves with you, and even jumps into cars of their own when you're driving.

**Input:** Swipe down on the snap camera screen

**Processing state:** The swipe down gesture is matched with its gestures and then redirects user to the snap map page.

**Output:** Snap map will open a Terrain map of the user's whereabouts and his surrounding areas with exact location of his friends.

**FUNCTIONAL REQUIREMENT 8 : Chat**

**Description:** Users can send text messages or pictures or videos or audio/video recording(s) or even call their friends via audio/video. The latest releases of Snapchat also include multiplayer games making Snapchat everyone's favorite application to use, age ranging from 13 to infinity.

**Input:** Swipe right on snap camera screen

**Processing state:** This gesture is validated and is then finalized to chat option.

**Output:** Recent conversations are displayed.

**FUNCTIONAL REQUIREMENT 9 : Snap streak**

**Description:** Snap streaks are a fun way to keep users engaged in snapping different snapchatters everyday. A snapstreak is the longest streak that two people continuously snap each other. This is estimated from atleast one snap per day adds to the streak while missing a day would break the streak.

**Input:** Snap with a friend daily

**Processing state:** The streak counter keeps incrementing in case of daily snapping and would turn to 0 in case of a break in the chain.



**Output:** A fire emoji with a number which mentions the snap streak.

### FUNCTIONAL REQUIREMENT 10 : Snap score

**Description:** Snap scores are a fun way to keep users engaged in snapping different snapchatters everyday. A snapscore is a score assigned to each profile which keeps building upto millions based upon the usage of Snapchat by the user.

**Input:** Use Snapchat to your most usage

**Processing state:** The usage keeps calculating the statistics and build Snapchat scores.

**Output:** A Snapchat score which keeps increasing, displayed below the Snapchat selfie.

### FUNCTIONAL REQUIREMENT 11 : Snap codes

**Description:** Snap codes are a great way to share one's profile.

**Input:** Click on the profile, click on Snapchat selfie

**Processing state:** When the selfie is clicked, the snapcode is generated and then provides some actions on the snapcode

**Output:** Display snapcode → Share snapcode/url

### FUNCTIONAL REQUIREMENT 12 : Memories

**Description:** Memories is a new cloud based platform which enables the user to store a limited number of snaps

**Input:** Swipe up from the snap camera screen

**Processing state:** This gesture is recorded and is evaluated and then snap goes to get stored in cloud , if user wants to save it for longer time and preserve it from vanishing

**Output:** Snaps, stories, Camera roll and MyEyes only

### FUNCTIONAL REQUIREMENT 13 : My Eyes only

**Description:** My eyes only is a private feature of Memories which acts as a snap vault with a safe passcode. This passcode cannot be retrieved once forgotten. Once forgotten, all data within vault too shall be erased.

**Input:** Enter passcode

**Processing state:** The passcode is then validated.

**Output:** In case of correct password the vault opens but in case of wrong passcode it will simply ask you to try entering it again. You'll be provided with two choices: 1. Change passcode 2. Forget passcode

### FUNCTIONAL REQUIREMENT 14 : Search

**Description:** This feature enables the user to search for any other snapchat user or any location based stories or any events/happenings around him and much more.

**Input:** Some keywords in the search bar

**Processing state:** These keywords are matched with those in the Snapchat's database. After the search is processed

**Output:** All the matched results are displayed, in case of 0 matched results, an error message will be displayed stating no snaps found.

### FUNCTIONAL REQUIREMENT 15 : Support

**Description:** Snapchat support webpage has everything what a user needs. Visit the following webpage to follow the support guidelines:

<https://support.snapchat.com/en-US>

**Input:** User will input queries in the 'What can we help you with?' text box.

**Processing state:** Snapchat's intelligent systems will try to match all keywords with those recorded in the database and display related queries. In case of 0 matches, it would provide an option to directly contact Snapchat.

**Output:** Related queries are displayed or contact us page will open.

### FUNCTIONAL REQUIREMENT 16 : Settings – Add/Modify/Remove user data

**Input:** Sensitive user information can be added/updated/deleted

**Processing state:** New data is captured and updated in the database.

**Output:** Changes to the user data are made successfully

### **FUNCTIONAL REQUIREMENT 17 : User registration**

**Input:** Click on signup button and enter credentials

**Processing state:** Validate user data, verify credentials; if all conditions are met, assign the account to this new user with all new user information.

**Output:** Post-signup, the snap camera screen appears

### **FUNCTIONAL REQUIREMENT 18 : Group chats**

**Description:** Snapchat is a platform which encourages fun. It believes with the principle ‘The more the merrier’. The user can create multiple groups with people of his choice in the group. The group admins can decide the settings for their respective groups. Once a group is created, user can go for group chats.

**Input:** Swipe right on the snap camera screen

**Processing state:** Once the gesture is validated, tap on the group chat and type to send a text/click to send a snap/video/audio/video recordings/audio, video calls.

**Output:** Group chats are enabled and the user can contact anyone on the group/play games/make calls. Information is exchanged.

### **FUNCTIONAL REQUIREMENT 19 : Snap status**

**Description:** User must be able to get information on whether the snap sent has been received by the intended recipient.

**Input:** Send any snap or message to intended recipient.

**Processing state:** The snap travels all the way to the recipient’s inbox.

**Output:** Display **delivered** for just delivered snaps and **received** for received snaps.

## **3.2. EXTERNAL INTERFACES REQUIREMENTS**

### 3.2.1. USER INTERFACES

The Snapchat user interface should be intuitive, such that 99.9% of all new Snapchat users are able to use the app without any assistance.

### 3.2.2. HARDWARE INTERFACES

The hardware should have following specifications:

- Ability to read gallery
- Ability to exchange data over network
- Touch screen for convenience
- Keypad (in case touchpad not available)
- Continuous power supply
- Ability to connect to network
- Ability to take input from user
- Ability to validate user
- Ability to connect to different applications
- Ability to attach hyperlinks to snaps
- Ability to locate user on a real-time map
- Able to recognize faces using face recognition algorithms
- Ability to sense and hear the music around whenever Shazamed
- Ability to keep a track of all birthdates of each and every user and send them a cake, wishes and many more..
- Ability to show relevant ads
- Should be user friendly

### 3.2.3. SOFTWARE INTERFACES

The software interfaces are specific to the target other user's Snapchat software systems. Snapchat demands software like GPS, camera, etc... on the following mobileOS (environment):

1. iOS
2. Android

## 3.3. PERFORMANCE REQUIREMENTS

### 3.3.1. SCALABILITY

Snapchat should be able to provide instant messaging services to 1 billion users at any given time.

### 3.3.2. ROBUSTNESS

In case user's device crashes, a backup of their chat history must be stored on remote database servers to enable recoverability.

### **3.3.3. PERFORMANCE**

Application must be lightweight and must send messages instantly.

### **3.3.4. SPEED**

Application's processing speed should be so high that there should be no delay in executing user's instructions. Also, the application should not crash repeatedly.

### **3.3.5. CACHE MEMORY**

The app shall not consume more cache memory. Even if it does, it must provide a choice to the user to clear app cache manually.

## **3.4. OTHER NON-FUNCTIONAL REQUIREMENTS**

### **3.4.1. PRIVACY**

The users are provided with the benefit of customizing their privacy settings. Hence, they shall make the best use of these settings. Eg: Choose who can view your story and so on.

### **3.4.2. SECURITY AND SAFETY**

Keep your password safe and don't share it with any other people, applications, or websites under any circumstances. We also suggest using a different password for every service you use.

### **3.4.3. RELIABILITY**

It is very important that the app is reliable as 3B+ users use Snapchat simultaneously. All data collected by Snapchat shall be preserved safely and should follow data hiding.

### **3.4.4. PORTABILITY**

Snapchat can be used on any apple or android phones and tablets.

### **3.4.5. MAINTAINABILITY**

Snapchat is a popular app and hence has maintenance on loop. Snapchat Beta releases all new updates first and looks for acceptance from its customers. Snapchat always surprises its users by releasing fresh updates.

### **3.4.6. USER FRIENDLY**

This application is user-friendly, meaning to say even if one just installs the app and uses it for the first time, he'd find it easy to operate the application.

### 3.4.7. PERMISSIONS

The following permissions need to be granted in order to access all the features of the application:

#### ANDROID PERMISSIONS:

1. **Read phone status and identity:** Autofill your phone number when you register for Snapchat, for your convenience.
2. **Receive text messages (SMS):** Autofill the SMS code that Snapchat sends you during phone number verification, for your convenience.
3. **Take pictures and videos:** Use your camera to take Snaps, video chat, add friends by pointing your camera at their Snapcode, and more.
4. **Record audio:** Use your microphone to record audio for Snaps, video chat, and more.
5. **Modify or delete the contents of your USB storage:** Save Snaps and Stories to your device's photo gallery, send photos and videos in Chat, and more. Snapchat also uses your device's storage to save settings and cache content you send and receive.
6. **Read the contents of your USB storage:** Snapchat automatically loads app settings that you've previously saved.
7. **Find accounts on the device:** Receive notifications when friends contact you on Snapchat, when other Snapchatters add you, and for other important events.
8. **Full network access:** Send and receive Snaps, chats, and other data.
9. **Receive data from the internet:** Receive Snaps and chats, and other content from other Snapchatters.
10. **View Network Connections:** Snapchat optimizes Snap delivery based on the strength of your internet connection.
11. **Clipboard:** Allow Snapchat to access your clipboard so you can attach links quickly with the Paperclip tool.
12. **Change your audio settings:** On some devices, Snapchat adjusts audio settings to let you video chat.
13. **Prevent phone from sleeping:** Your screen won't automatically turn off while you're using Snapchat.
14. **Control vibration:** Allows you to enable vibration for Snapchat notifications.
15. **Control flashlight:** Use your flash to take better photos in the dark.
16. **View Wi-Fi Connections:** Snapchat optimizes Snap quality based on the strength of your Wi-Fi connection.
17. **Change network connectivity:** Connect directly to Spectacles via Wi-Fi.

18. **Connect & disconnect from Wi-Fi:** Import Snaps from Spectacles via Wi-Fi.
19. **Access Bluetooth settings:** Automatically pair with Spectacles you’ve previously set up.
20. **Pair with Bluetooth devices:** Pair with Spectacles via Bluetooth.
21. **Read your own contact card:** Auto fill your full name when you edit it in Snapchat settings, for your convenience.
22. **Read your contacts:** We may collect and use information from your device's address book so you can invite friends and so we can improve the app.
23. **Precise location (GPS and network-based):** Use your location for features like Geofilters and Live Stories, and for other services that improve your experience.

### IOS PERMISSIONS:

1. **Location:** Use your location for features like Geofilters and Our Stories, and for other services that improve your experience.
2. **Camera:** Use your camera to take Snaps, video chat, add friends by Snapcodes, and more.
3. **Microphone:** Use your microphone to record audio for Snaps, video chat, and more.
4. **Notifications:** Receive notifications when friends contact you on Snapchat, when other Snapchatters add you, and for other important events.
5. **Photos:** Save Snaps and Stories to your device’s Camera Roll, send photos and videos in Chat, and more.
6. **Contacts:** We may collect and use information from your device’s address book so you can invite friends, and so we can improve the app.
7. **Clipboard:** Allow Snapchat to access your clipboard so you can attach links quickly with the Paperclip tool.

### 3.4.8. SUPPORT

A good software is one which listens to its customers’ feedback and helps them whenever they need something. Snapchat has all supportive help documentation ready.

### 3.4.9. BACKUP & RESTORE

This feature is the most important. Today, we exchange devices like crazy and thus there’s no guarantee of us using the same device for forever. So Snapchat provides a backup and automatic restore facility relating to the online cloud database which back up all your data (upon given your permission) and all the backed up information can be easily restored later.

**3.4.10. REPORT SPAM**

In case of irrelevant, inappropriate content, misbehavior by any snapchatter, or anything uncomfortable or fishy, the snap users are free to report a complaint to Snapchat. Strict action shall then be taken against the individual or post or anything that's been reported spam.

**3.4.11. FEEDBACK/WRITE A REVIEW**

Once the app has been installed, the customer/user can write his valuable feedback. He can rate the app accordingly and can openly share his thoughts since Snapchat always welcomes opinioned suggestions.

**3.5. CONSTRAINTS**

Important constraints:

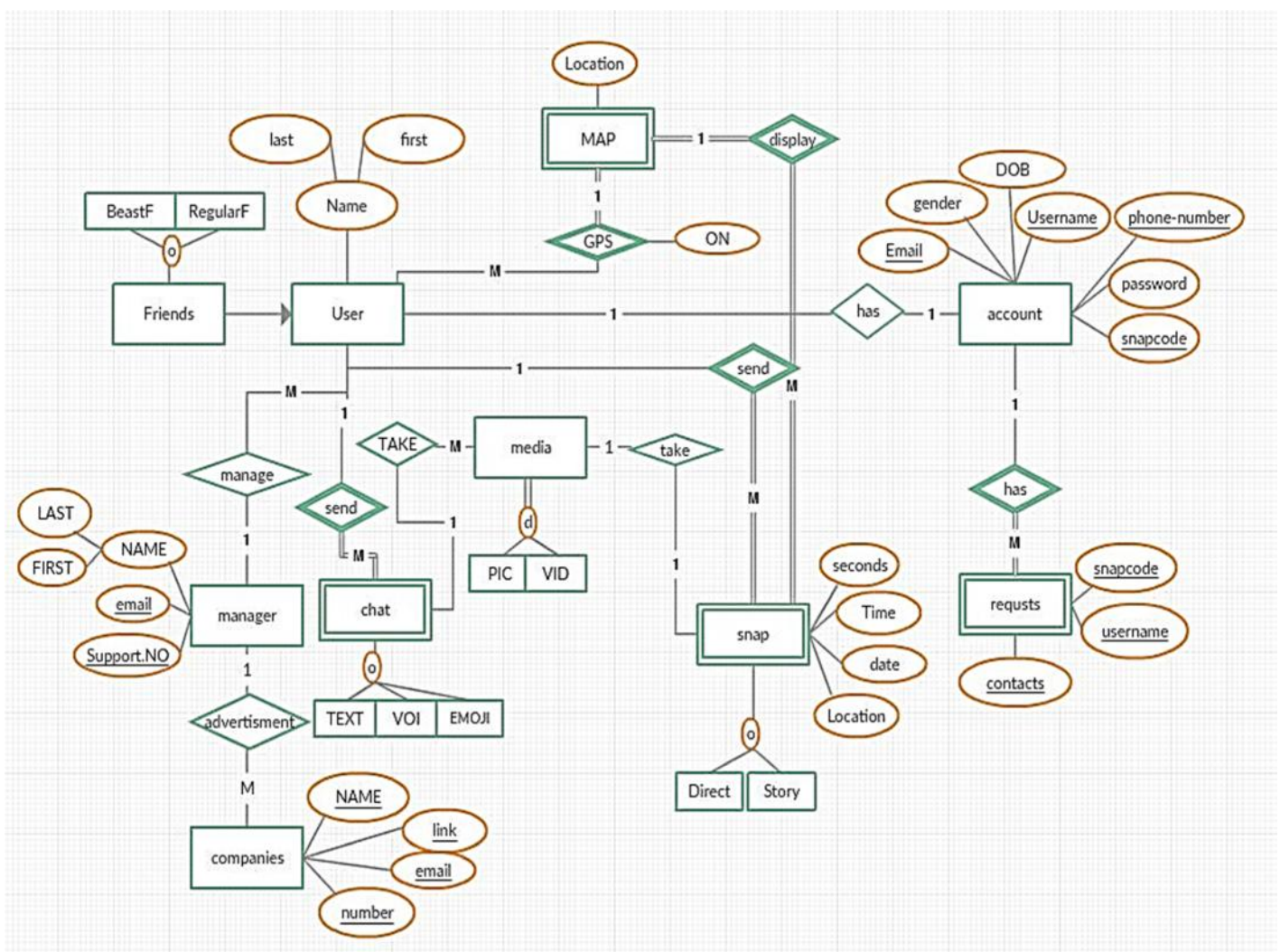
1. Login id & password of user must be valid
2. Signup details – mandatory valid details must be provided by user.
3. New accounts with existing account details cannot be created.
4. Sufficient memory must be available in order to click and store snaps – 294 MB
5. Internet availability
6. If location of a user is located in unusual places within frequent intervals, verify user's presence and use of app.
7. If someone reports against a user the report count increments. If this count reaches 10, the user's account must be informed and then should be locked forever.
8. OS required: Android (4.4+), iOS (10+)– mobile/tablet platform
9. User **MUST AGREE** to all terms & conditions lay by Snapchat lest he cannot use the application.



## 4. DESIGN

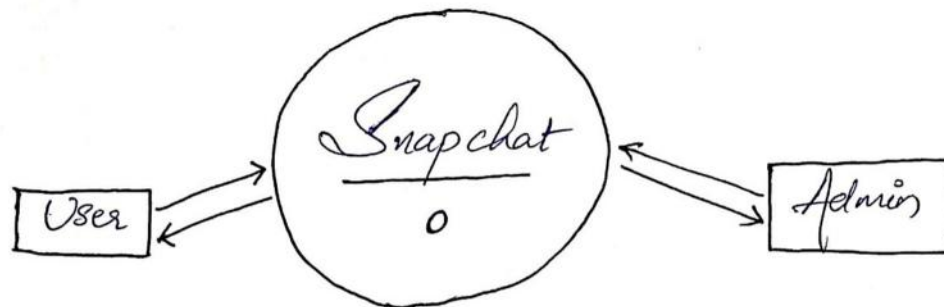
### 4.1. ENTITY RELATIONSHIP DIAGRAM

An entity-relationship model describes interrelated things of interest in a specific domain of knowledge. A basic ER model is composed of entity types and specifies relationships that can exist between entities.

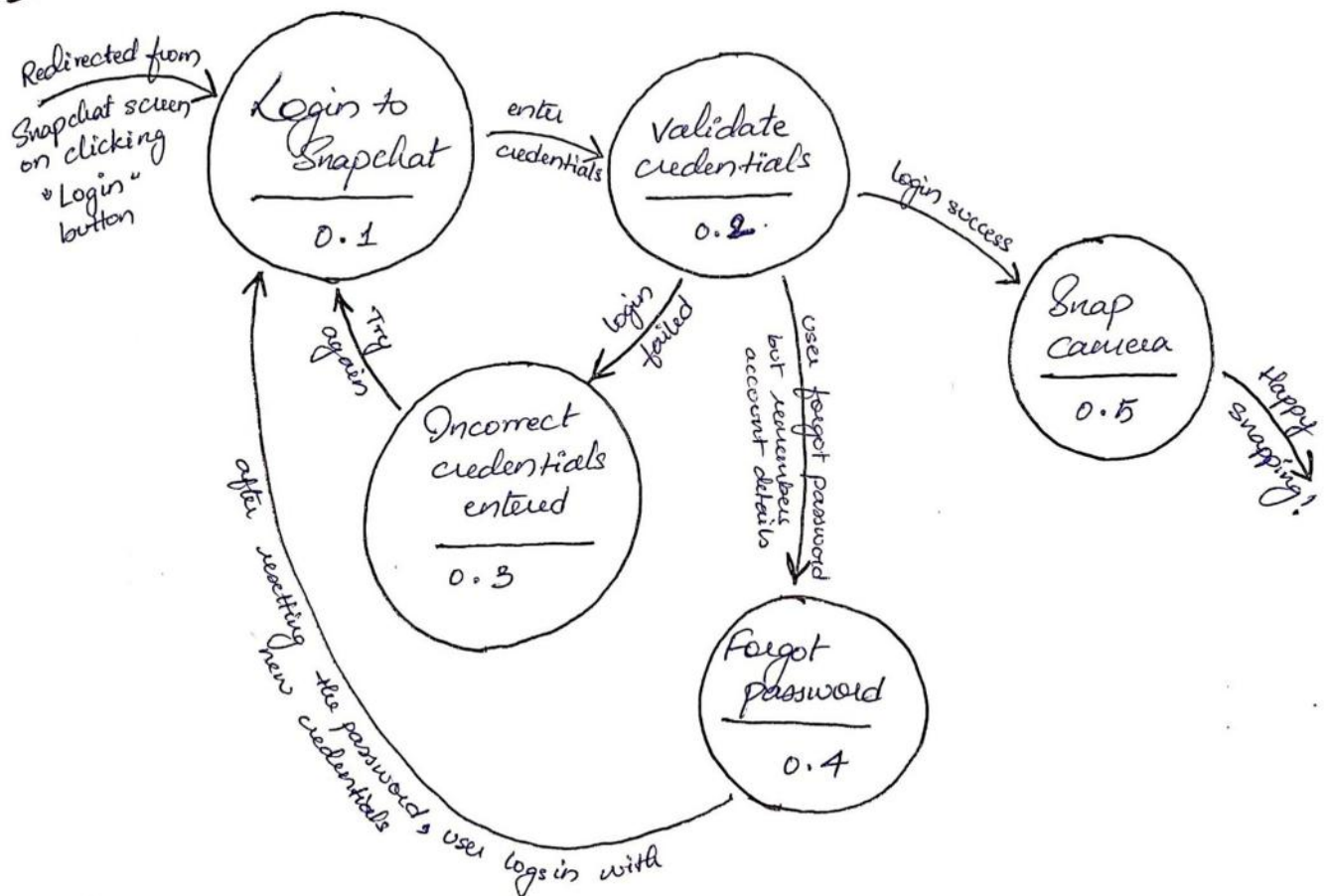


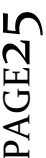
#### 4.2. DATA FLOW DIAGRAM (DFD)

Level 0:



Level 1:

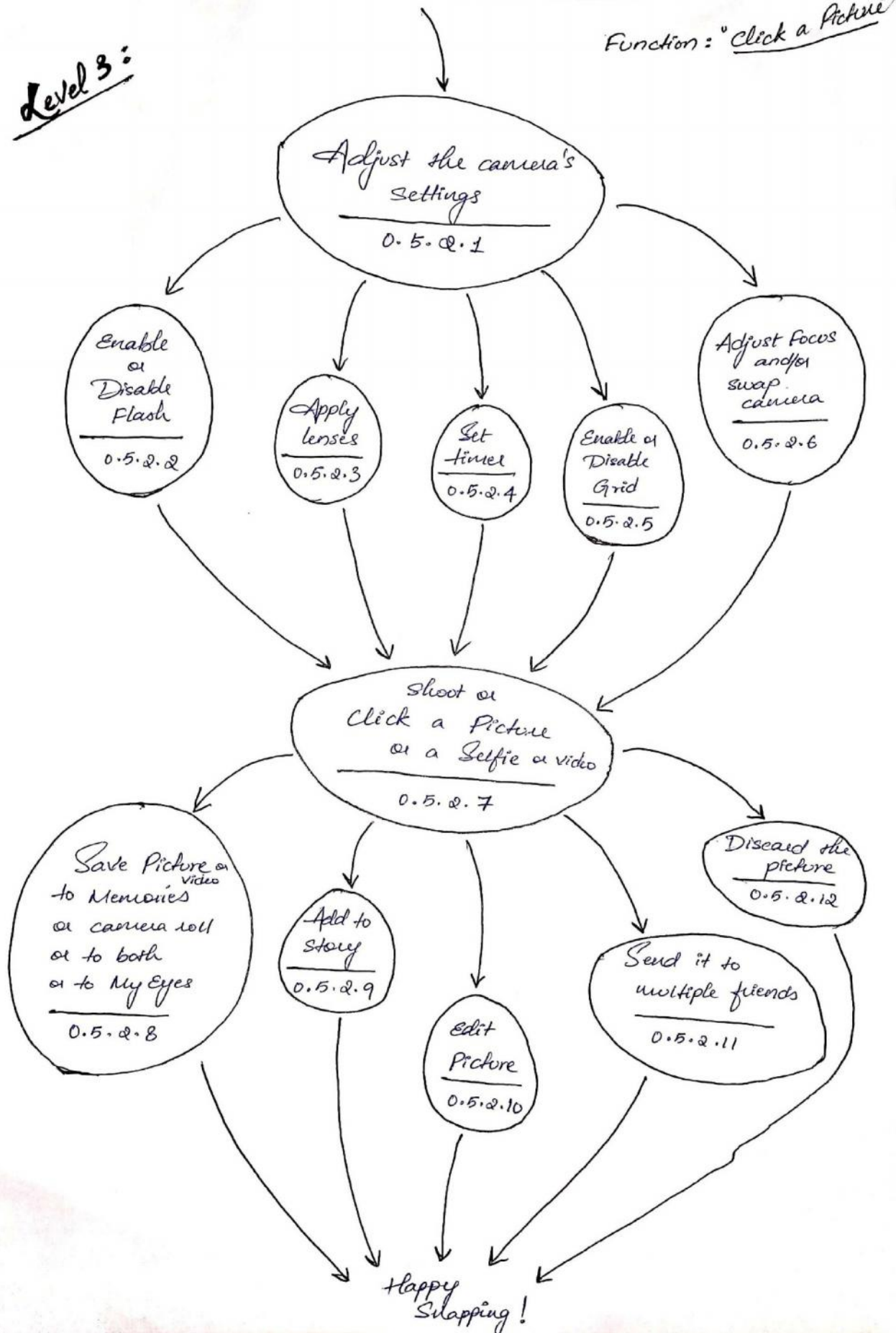






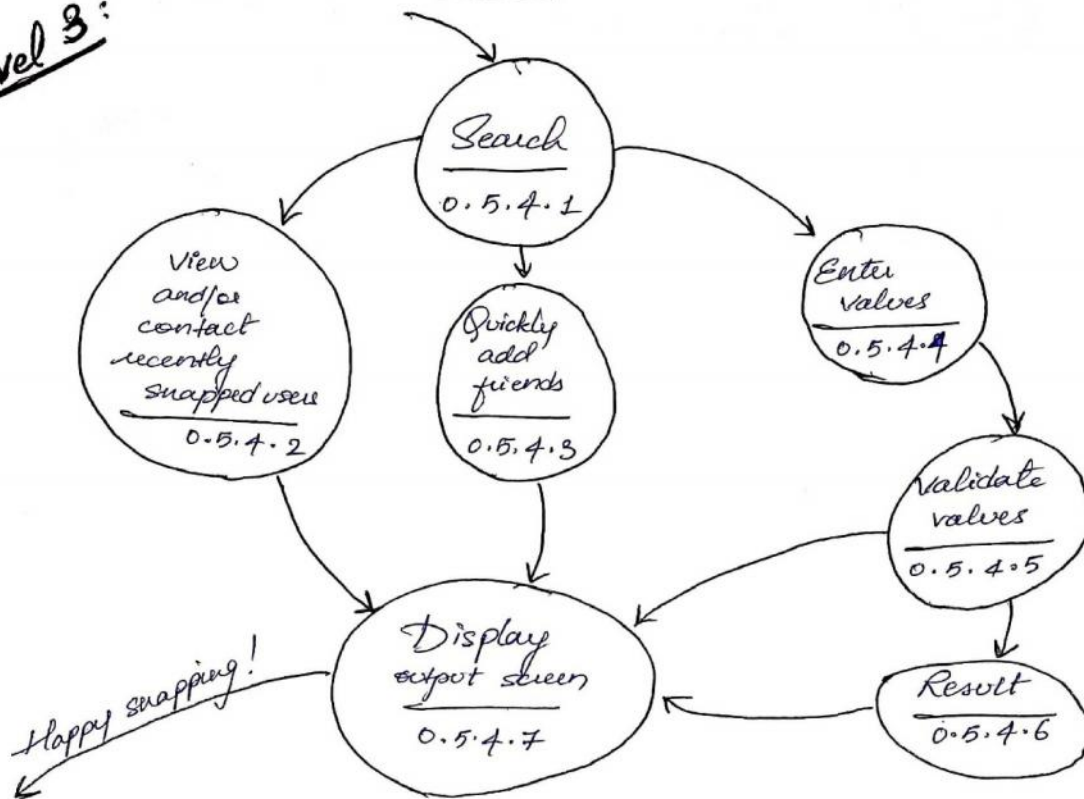
Level 3:

Function: "Click a Picture"

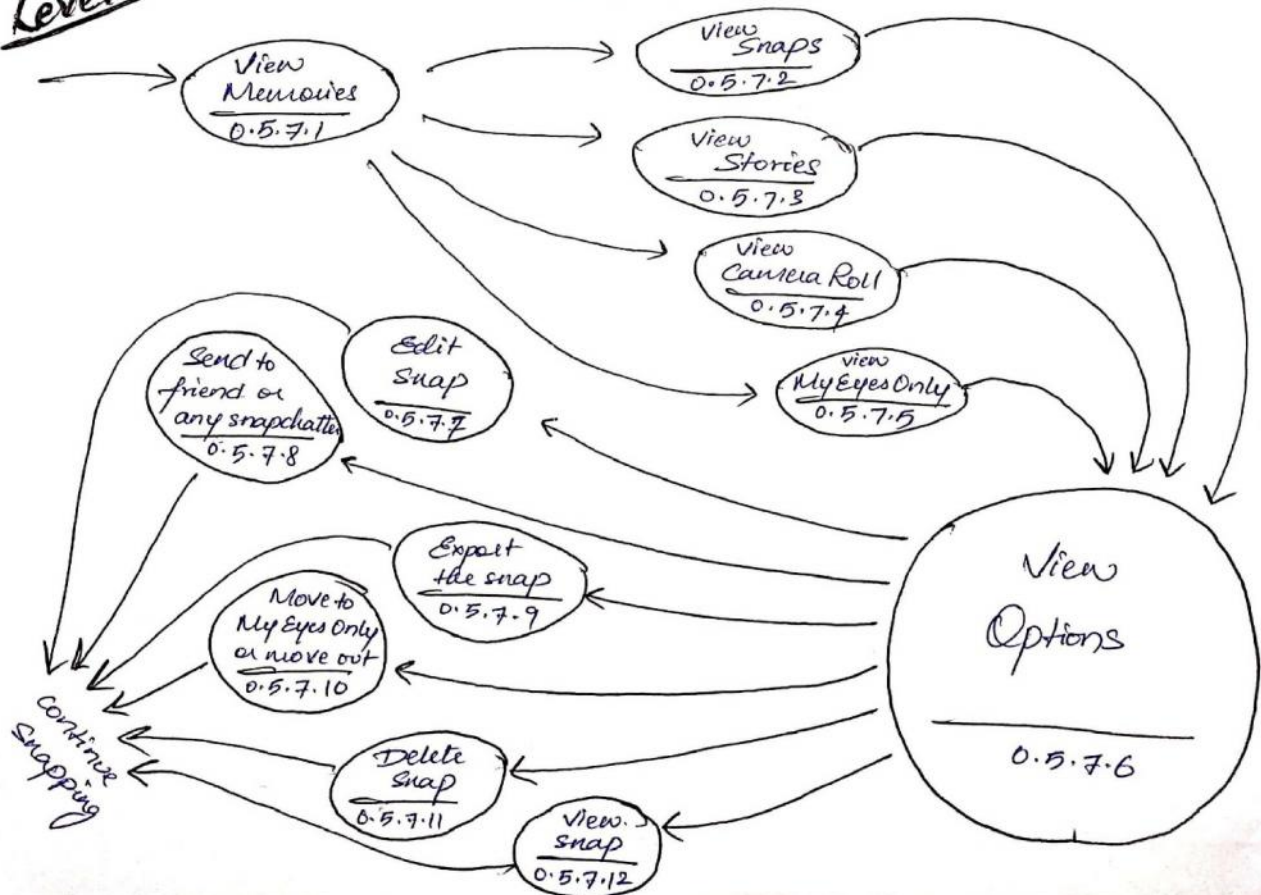


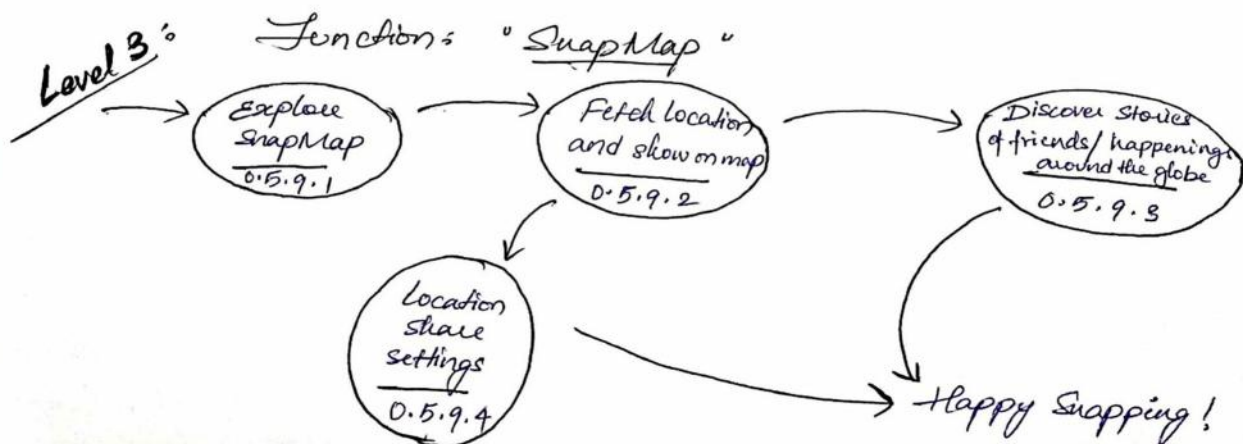
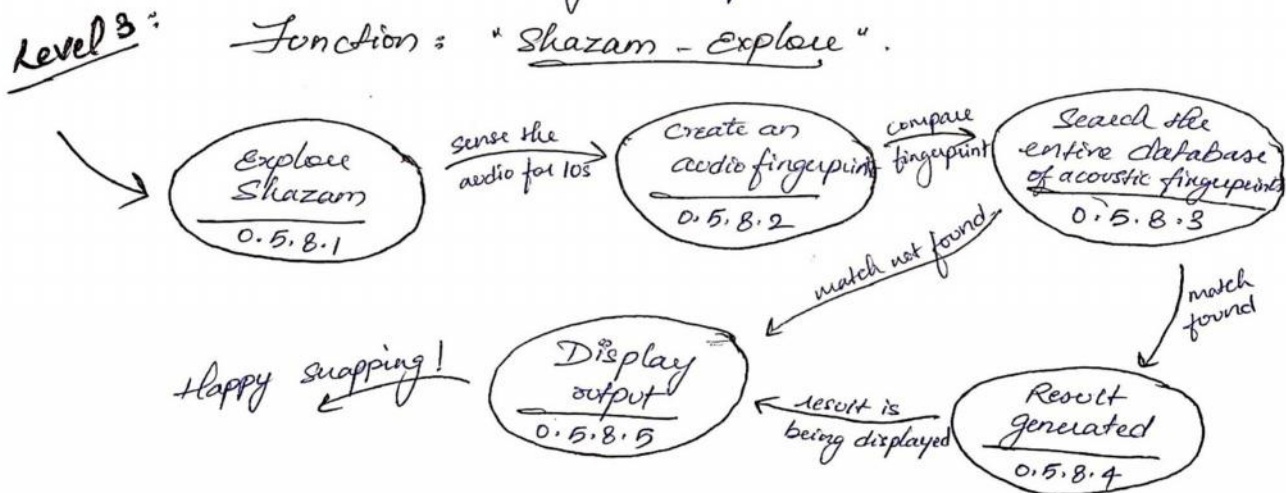
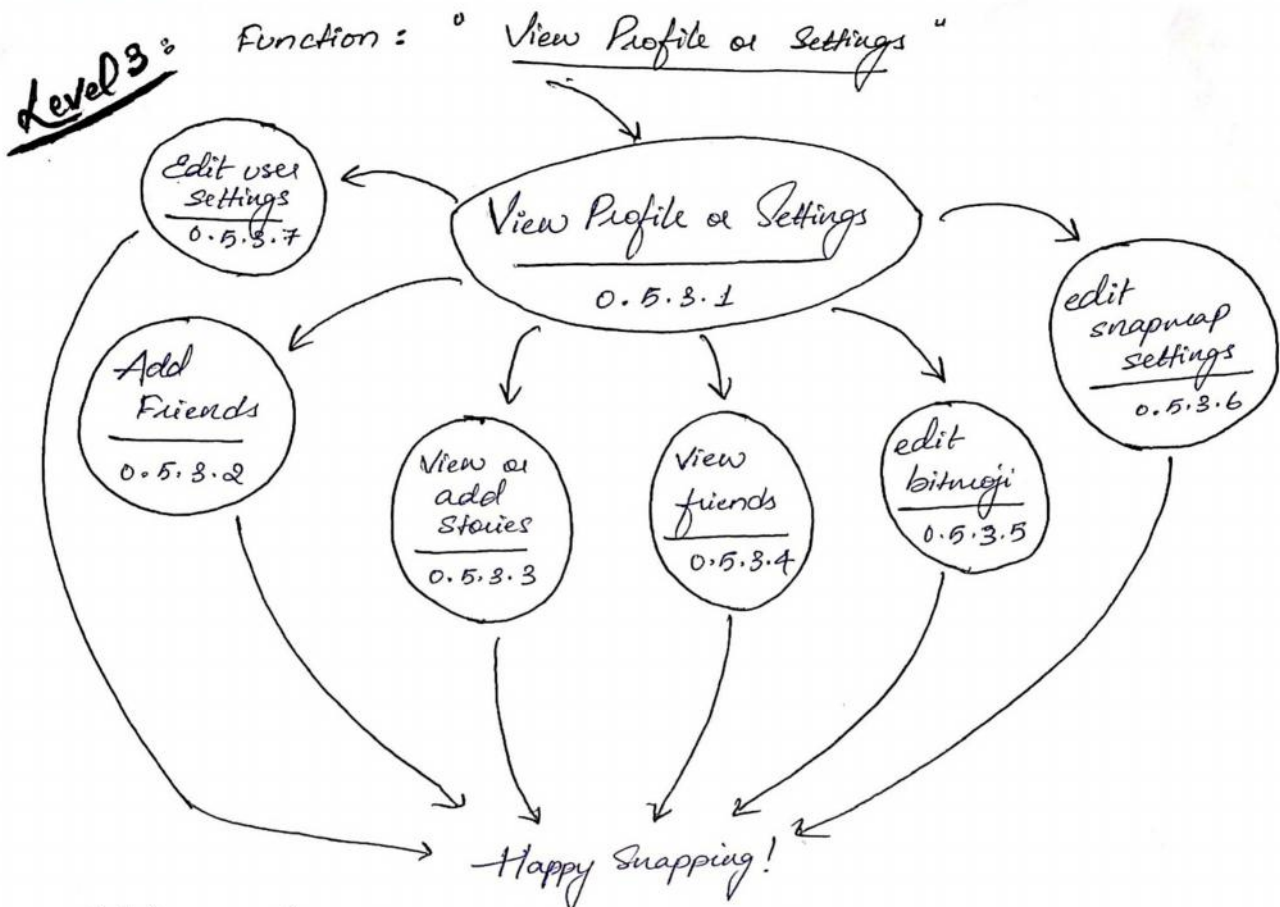
Level 3:

Function: "Search"

Level 3:

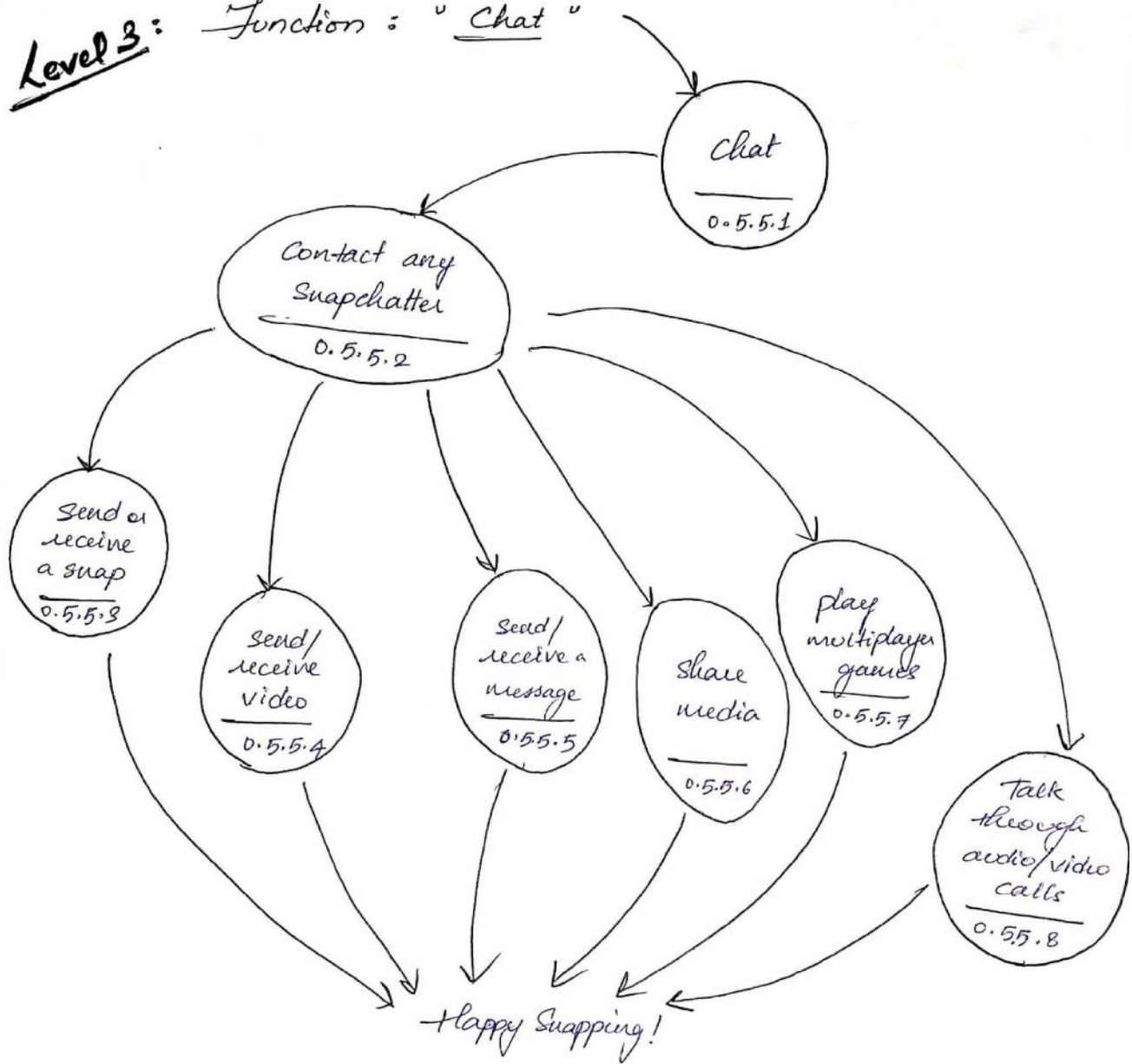
Function: "View Memories"



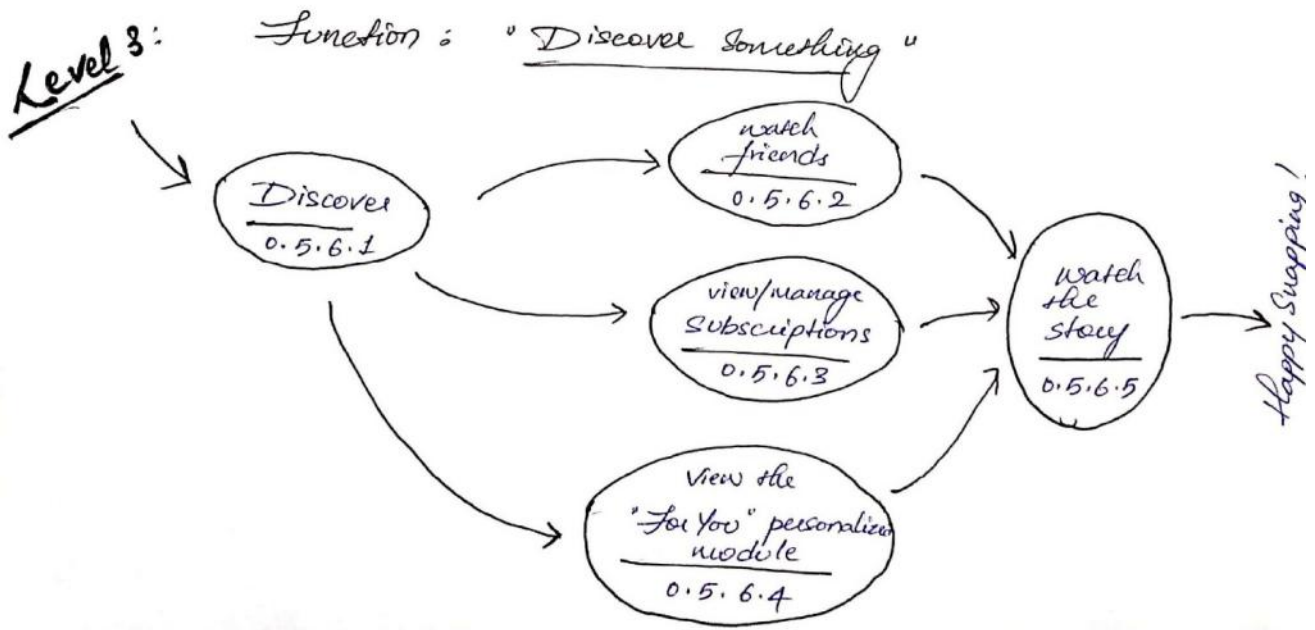




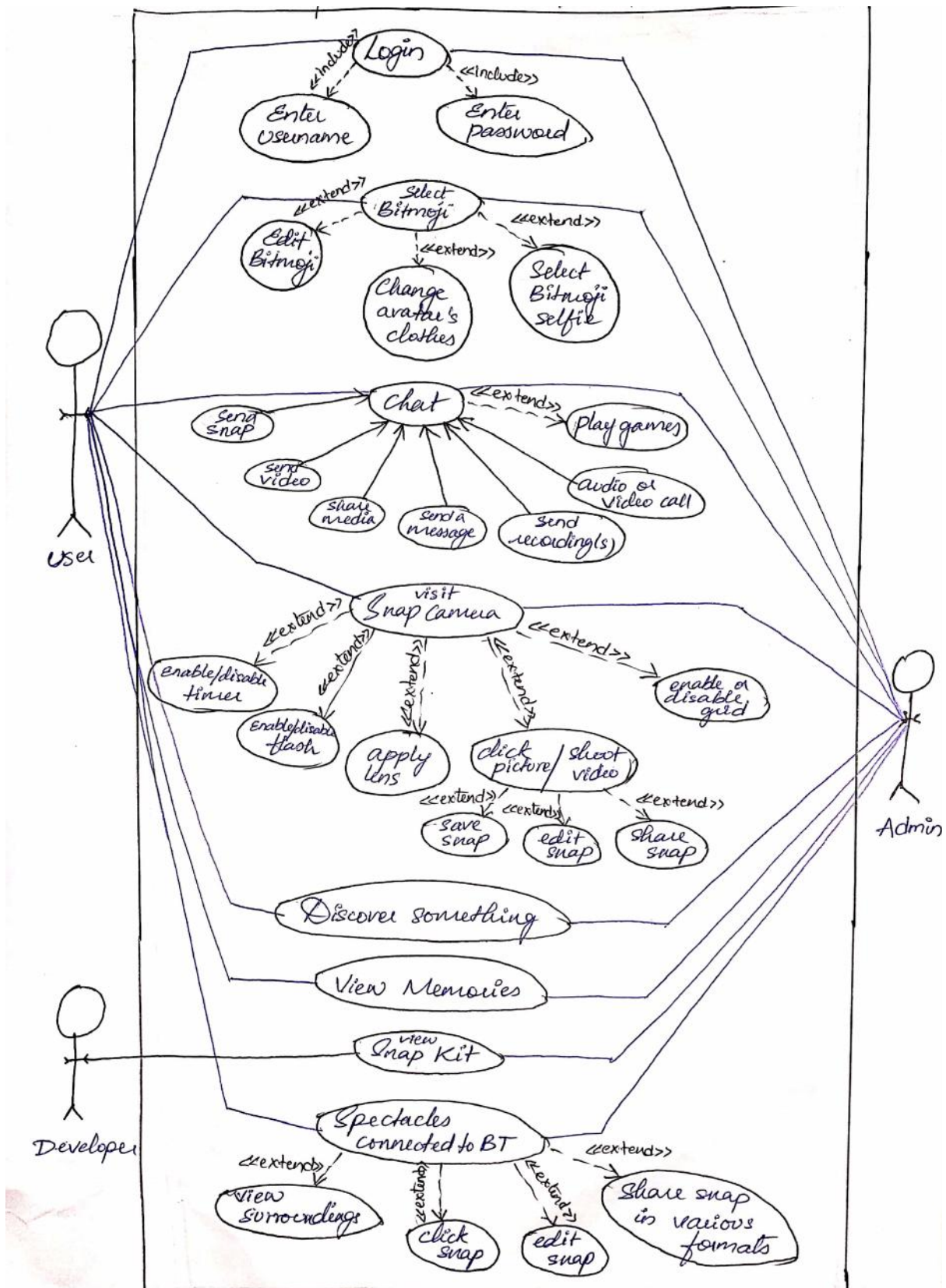
Level 3: Function: "Chat"



Level 3: Function: "Discover something"



## 4.3. USE CASE DIAGRAM





## 5. TESTING

### 5.1. BLACK BOX TESTING

Black-box testing is a method of software testing that examines the functionality of an application without peering into its internal structures or workings. This method of test can be applied virtually to every level of software testing: unit, integration, system and acceptance.

### 5.2. WHITE BOX TESTING

White-box testing is a method of software testing that tests internal structures or workings of an application, as opposed to its functionality. In white-box testing an internal perspective of the system, as well as programming skills, are used to design test cases.

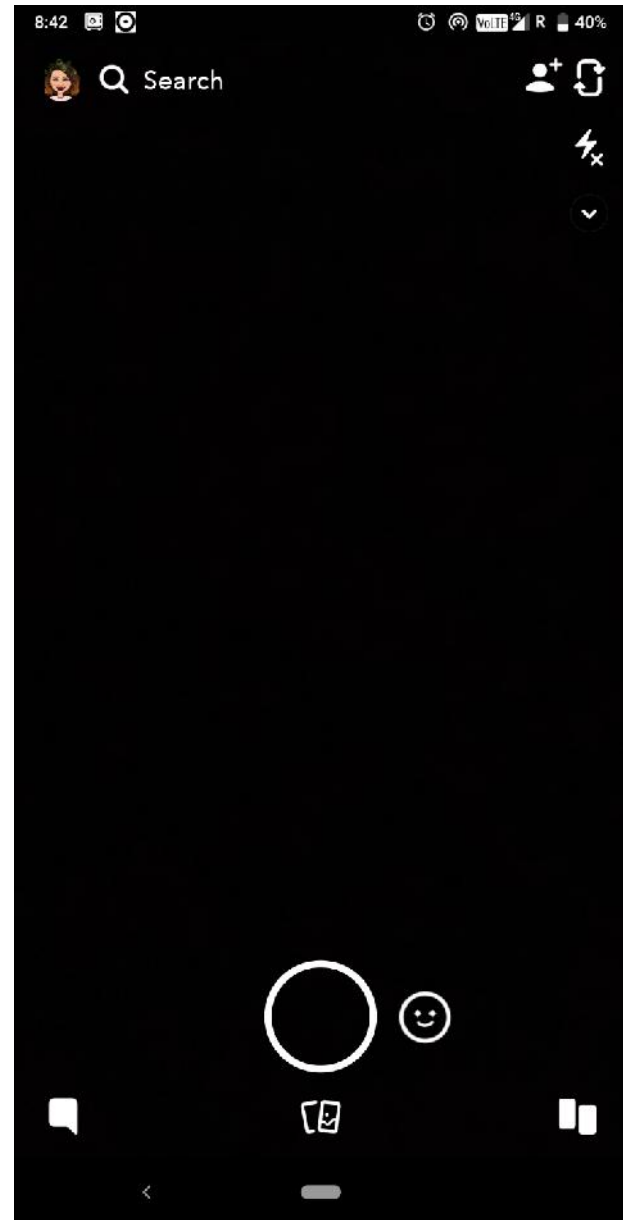
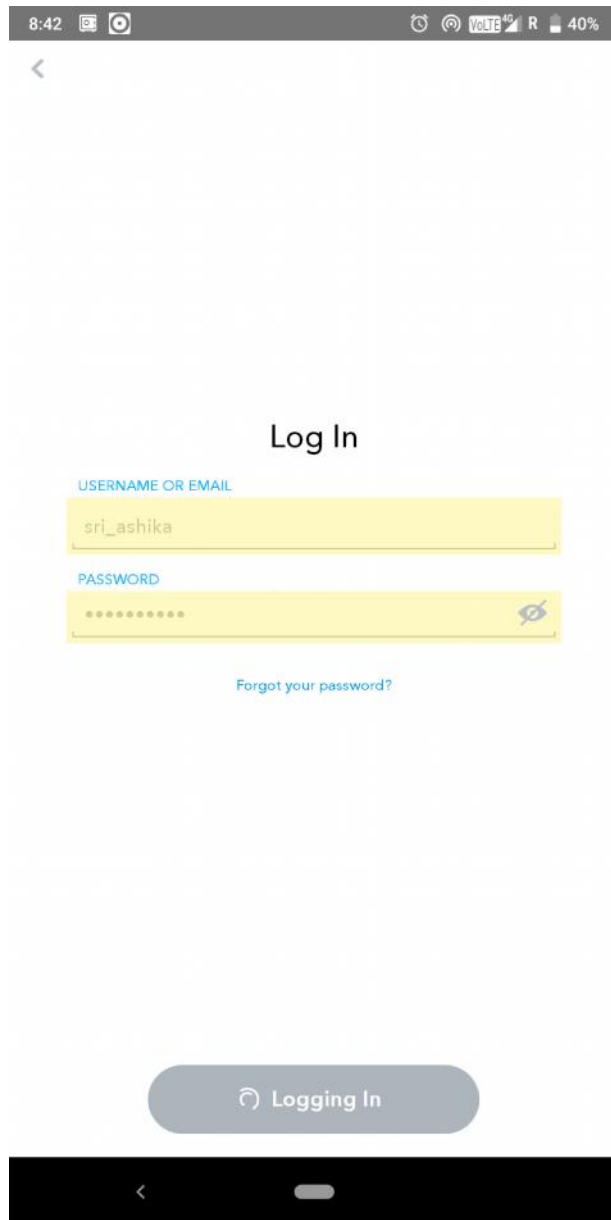
### 5.3. SNAPCHAT BETA

Look out for a “**Snapchat Beta**” option in **Snapchat** Settings. Use **Snapchat**!

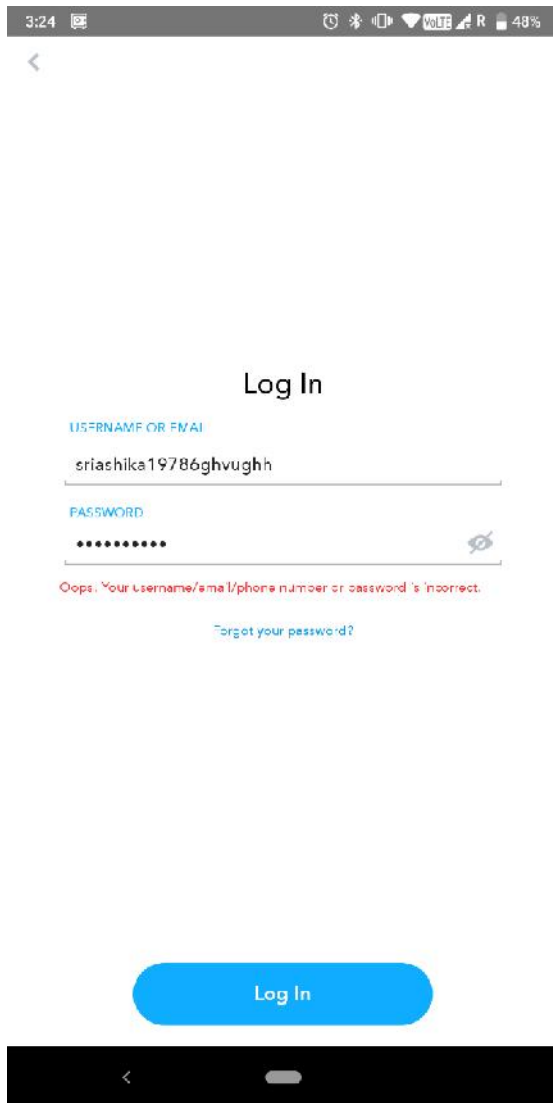
The **Beta** may include more bugs and other inconsistencies than you're used to – that's where you come in. Shake to Report bugs and problems you encounter in the app. You can shake for issues you find with new features and with old features, too!

## 5.4. POSSIBLE TEST CASES WITH SNAPSHOTS

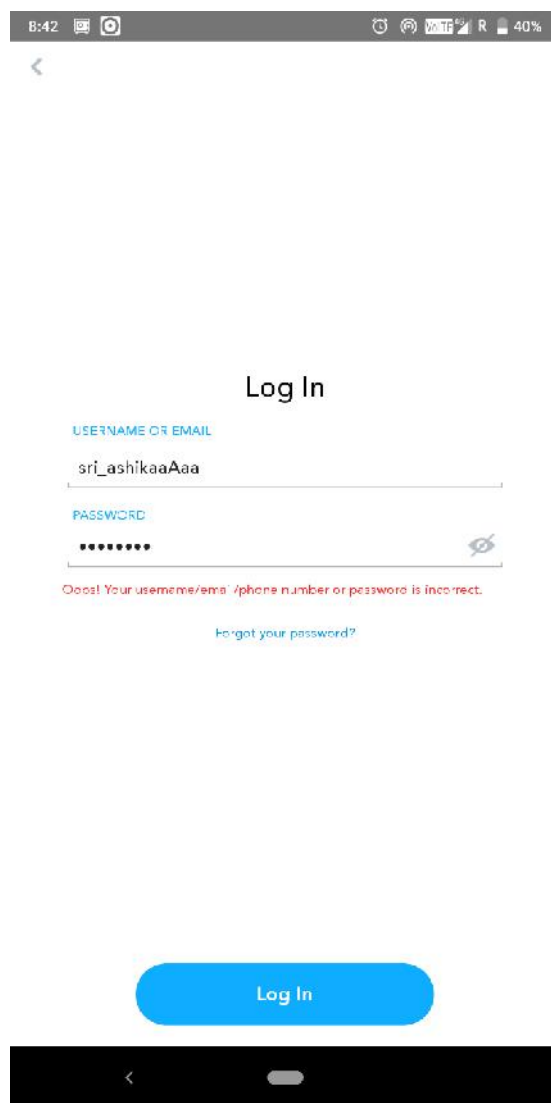
**5.4.1. CORRECT LOGIN ID AND PASSWORD ARE ENTERED OF AN EXISTING ACCOUNT. OUTPUT SHOULD BE SUCCESSFUL LOGIN AND SHOULD BE REDIRECTED TO THE SNAP CAMERA PAGE.**



### 5.4.2. INCORRECT LOGIN ID AND PASSWORD ARE ENTERED OF AN EXISTING ACCOUNT. OUTPUT SHOULD BE RETRY LOGGING IN.



case 1

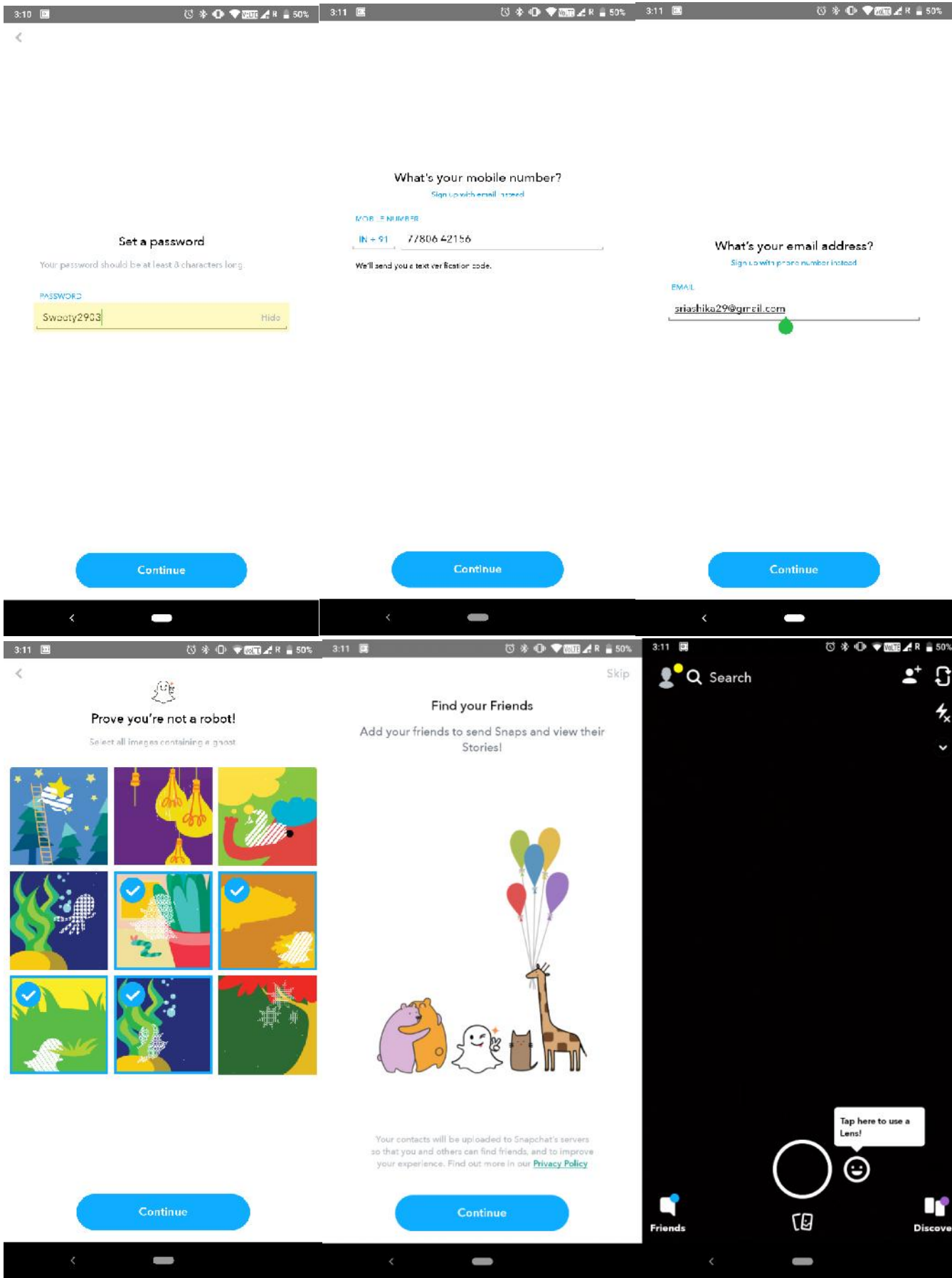


case 2

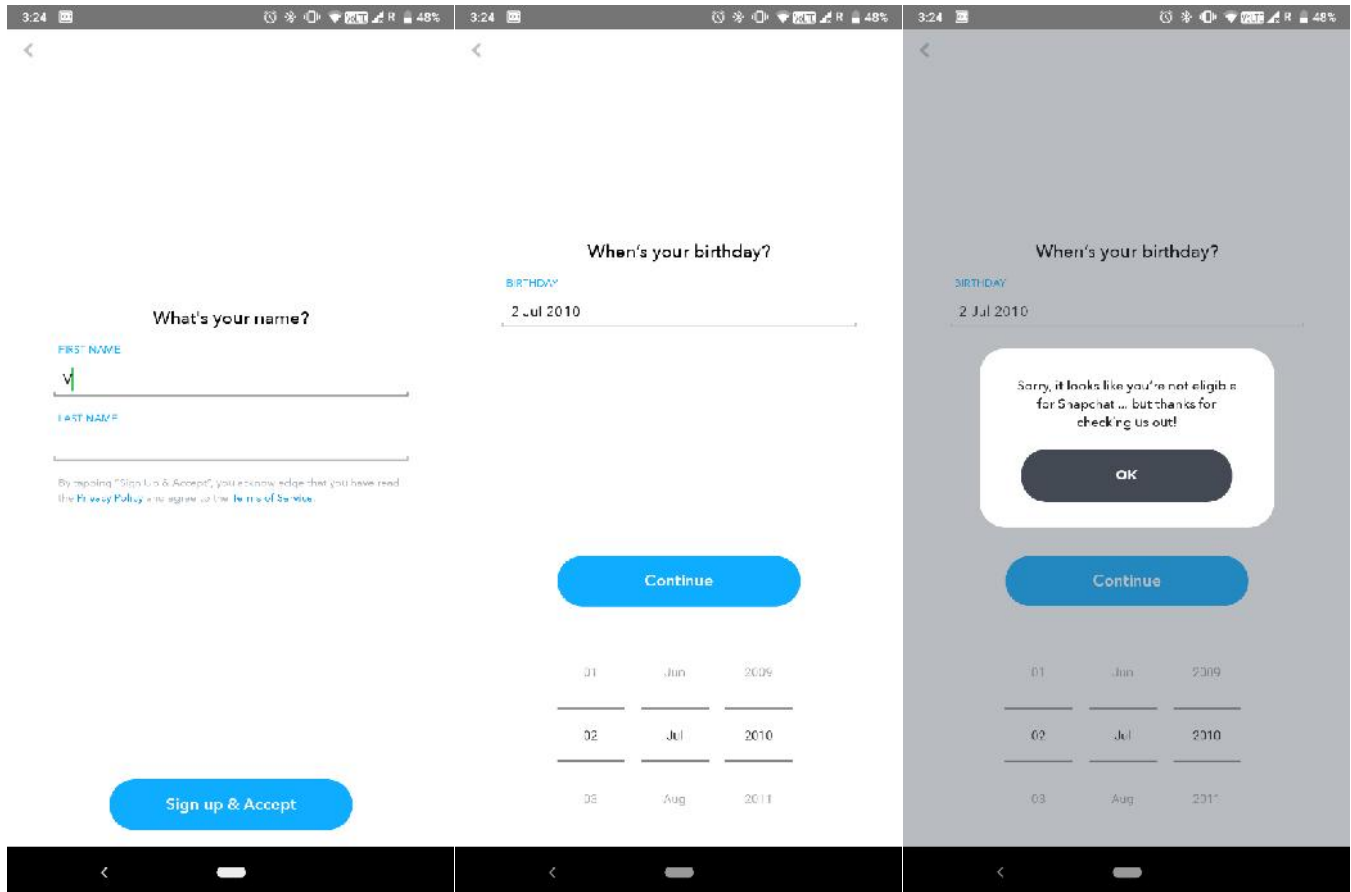
### 5.4.3. VALID DETAILS DURING SIGNUP PROVIDED. OUTPUT SHOULD BE SUCCESSFUL CREATION OF ACCOUNT.

The screenshot displays the Snapchat signup interface with the following elements:

- Top Bar:** Status bar at the top showing time (3:10), signal strength, and battery level (50%).
- Navigation:** Back arrows are present at the top of the screen.
- Form Fields:**
  - What's your name?:** Includes fields for **FIRST NAME** (Sriashika) and **LAST NAME** (Addala).
  - When's your birthday?:** Includes a **BIRTHDAY** field showing 29 Sep 1999.
  - Your username:** Field showing sriashika19 with a [Change my username](#) link below it.
- Buttons:**
  - Continue:** A large blue button in the center.
  - Sign up & Accept:** A blue button at the bottom left.
  - Continue:** A blue button at the bottom right.
- Footer:** A black bar at the bottom with three white dots for navigation.
- Text:** A small disclaimer at the bottom left: "By tapping 'Sign Up & Accept', you acknowledge that you have read the [Privacy Policy](#) and agree to the [Terms of Service](#)."



#### 5.4.4. INVALID DETAILS DURING SIGNUP PROVIDED. OUTPUT SHOULD BE FAILED CREATION OF ACCOUNT.



**5.4.5. VALID DETAILS OF AN EXISTING ACCOUNT ARE PROVIDED IN SIGNUP. OUTPUT SHOULD BE, ‘THERE EXISTS AN ACCOUNT WITH THIS \*\*\*\*\*’.**

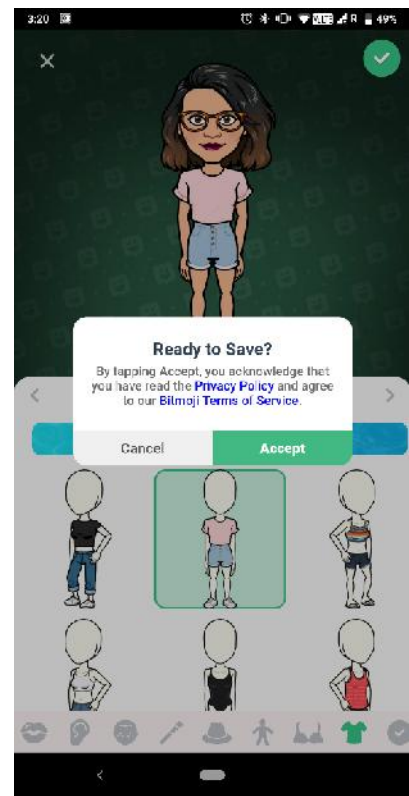
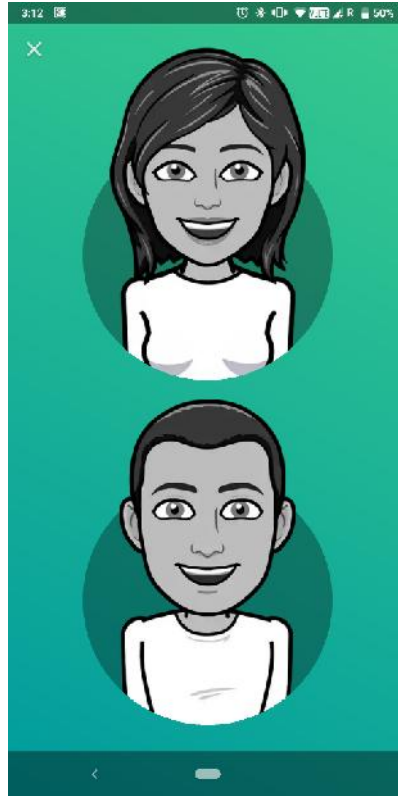
The image displays two screenshots from the Snapchat mobile application. The left screenshot shows the 'Settings' screen, specifically the 'MY ACCOUNT' section. It lists the following details: Name (Ashh! ❤️), Username (sri\_ashika <), Birthday (29/09/1999), Mobile Number (91 73868 55624), Email (ashika2k8@gmail.com), Password, Two-Factor Authentication, Connected Apps, Notifications, Bitmoji, and Shazam. Below this is the 'ADDITIONAL SERVICES' section with a 'Manage' option, and the 'WHO CAN ...' section with a 'Contact Me' option set to 'My Friends'. The right screenshot shows the email signup screen with the heading 'What's your email address?' and a link 'Sign up with phone number instead'. Below this is a text input field labeled 'EMAIL' containing 'ashika2k8@gmail.com'. A red error message states 'That email is already associated with a username.' At the bottom of this screen is a grey 'Continue' button.

| Section             | Field                     | Value               |
|---------------------|---------------------------|---------------------|
| MY ACCOUNT          | Name                      | Ashh! ❤️            |
|                     | Username                  | sri_ashika <        |
|                     | Birthday                  | 29/09/1999          |
|                     | Mobile Number             | 91 73868 55624      |
|                     | Email                     | ashika2k8@gmail.com |
|                     | Password                  |                     |
|                     | Two-Factor Authentication |                     |
| ADDITIONAL SERVICES | Manage                    |                     |
|                     | WHO CAN ...               |                     |
| WHO CAN ...         | Contact Me                | My Friends          |

## 6. APPENDICES

### 6.1. BITMOJI

#### 6.1.1. CREATE

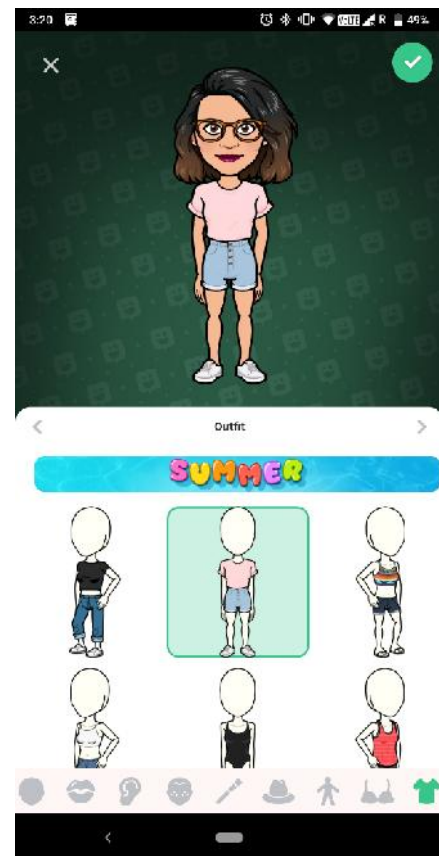




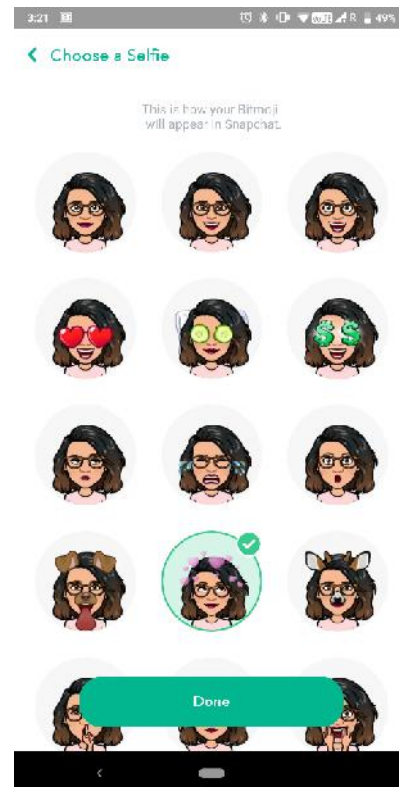
### 6.1.2. EDIT



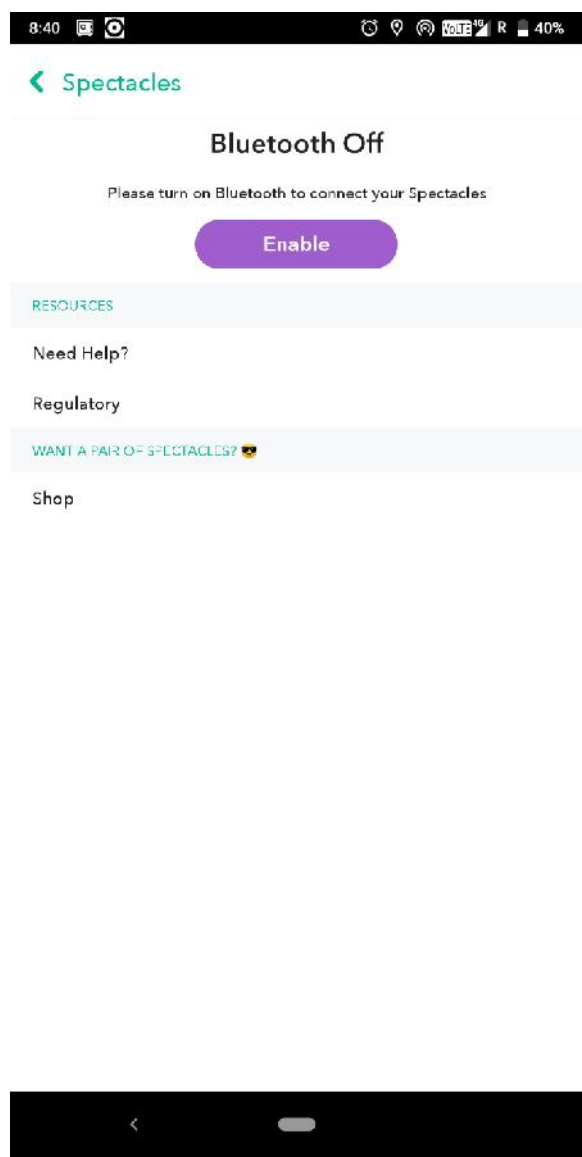
### 6.1.3. CHANGE OUTFIT



### 6.1.4. CHOOSE SELFIE



6.2. SPECTACLES



6.4. SHAZAM

