SNAPCHAT FILTERS

# Software Requirements Specification (SRS)

## 1.Introduction

The purpose of this document is to provide a detailed description of the requirements for the Snapchat Filter App. The scope of the project, the functionalities, and the performance requirements are outlined in this document.

### 1.1 Purpose of the document

The purpose of this document is to define the requirements for the development of a Snapchat Filter App. The document will act as a guideline for the developers to design, develop, test, and deploy the application.

### 1.2 Scope of the project

The Snapchat Filter App will be a mobile application for both iOS and Android platforms. The app will allow users to apply filters to their photos and videos to make them more appealing and fun. The app will include a wide range of filters, including face filters, location-based filters, and event-based filters.

### 1.3 Overview of the Snapchat Filter App

The Snapchat Filter App will be a mobile application that allows users to apply filters to their photos and videos. The app will have a simple and user-friendly interface, which will allow users to easily navigate and apply filters.

The app will also have the following features:

- A wide range of filters: The app will offer a variety of filters, including face filters, location-based filters, and event-based filters.
- Sharing: Users will be able to share their filtered photos and videos on Snapchat and other social media platforms.
- User profiles: Users will be able to create profiles and follow other users.
- In-app purchases: The app will include in-app purchases for premium filters and features.
- Notifications: Users will receive notifications when new filters or features are added to the app.
- Analytics: The app will include analytics to track user engagement and filter usage.

## 2. Functional Requirements

### 2.1 User Requirements

The Snapchat Filter App will be designed to cater to the following user requirements:

- Users should be able to create an account and log in to the app
- Users should be able to apply filters to their photos and videos
- Users should be able to save and share their filtered photos and videos on Snapchat and other social media platforms
- Users should be able to follow other users and view their profiles
- Users should be able to purchase premium filters and features
- Users should receive notifications when new filters or features are added to the app

#### 2.1.1 User Types

The Snapchat Filter App will support the following user types:

- Regular users: These users will be able to use the app to apply filters to their photos and videos, follow other users, and share their filtered content.
- Admin users: These users will have access to the admin interface and will be able to manage user accounts, filters, and analytics.

#### 2.1.2 User Interface

The user interface for the Snapchat Filter App should be easy to use, visually appealing, and consistent with Snapchat's branding. The following requirements should be met:

- The home screen should have a simple, user-friendly layout that allows users to navigate to different sections of the app.
- The camera view should allow users to see themselves on the screen, apply filters, and take photos or videos.
- The filter selection screen should have a range of filter options that are easy to scroll through and select.
- The saved filters screen should allow users to view and manage their saved filters.

#### 2.1.3 User Authentication

The Snapchat Filter App should have a user authentication system that ensures user privacy and security. The following requirements should be met:

- Users should be able to create an account using their email or phone number.
- Users should be able to log in to their account using their email or phone number and password.
- The app should have a password recovery feature that allows users to reset their password if they forget it.

2.1.4. User Profile

The Snapchat Filter App should allow users to create and manage their profile information. The following requirements should be met:

- Users should be able to edit their profile information, including their name, profile picture, and bio.
- Users should be able to view their saved filters and filter usage statistics.
- Users should be able to connect with their friends on the app and view their friends' saved filters.

2.1.5. Camera Access

The Snapchat Filter App should have access to the mobile device's camera to allow users to take photos and videos. The following requirements should be met:

- The app should have access to the front and back cameras.
- The camera view should be easy to use and allow users to switch between photo and video modes.

2.1.6. Filter Selection

The Snapchat Filter App should provide users with a range of filter options to apply to their photos and videos. The following requirements should be met:

- Filters should be easy to select and apply to the photo or video.
- Users should be able to preview the filter before applying it.
- Filters should be categorized to allow for easy navigation.

2.2 Admin requirements

2.2.1 Admin Interface

The admin interface for the Snapchat Filter Admin Panel should be easy to use, visually appealing, and consistent with Snapchat's branding.
The following requirements should be met:

- The home screen should have a simple, user-friendly layout that allows admins to navigate to different sections of the app.
- The user management screen should allow admins to manage user accounts, including creating, editing, and deleting accounts.
- The filter management screen should allow admins to manage filters, including creating, editing, and deleting filters.
- The analytics screen should allow admins to view analytics data for the app, including user usage statistics and filter popularity.

2.2.2 User Management

The Snapchat Filter Admin Panel should allow admins to manage user accounts for the Snapchat Filter App.
The following requirements should be met:

- Admins should be able to create user accounts, including setting up authentication and profile information.
- Admins should be able to edit and delete user accounts.
- Admins should be able to view user usage statistics, including the number of filters used and the frequency of app usage.

**3.Non-functional Requirements**

3.1 Performance:

Performance refers to how well a system or application functions in terms of speed, responsiveness, efficiency, and resource utilization. In general, good performance means that a system is able to handle a large number of requests or users without experiencing significant slowdowns or crashes. Performance can be measured using various metrics such as response time, throughput, and scalability.

3.2 Availability:

Availability refers to the extent to which a system or application is operational and accessible to users when they need it. High availability means that the system is able to function continuously without interruption, even in the face of hardware or software failures. Availability is typically expressed as a percentage of uptime, where 100% availability means the system is always available.

3.3 Security:

Security refers to the protection of systems, data, and users from unauthorized access, use, or modification. A secure system or application is one that is designed to prevent and detect threats and vulnerabilities, such as hacking, viruses, or malware. Security can be achieved through various methods, such as encryption, access controls, and firewalls.

3.4 Usability:

Usability refers to how easy it is for users to use and interact with a system or application. A usable system or application is one that is intuitive, easy to navigate, and efficient in performing tasks. Good usability can help to improve user satisfaction, reduce errors and increase productivity. Usability can be assessed through user testing and feedback.

3.5 Compatibility:

Compatibility refers to the ability of a system or application to work with other systems, applications, or devices. A compatible system or application is one that can communicate and share data with other systems without encountering compatibility issues or errors. Compatibility is important for interoperability and seamless integration between different systems and technologies.

## 4.System Architecture

4.1 System Components:

The system components of Snapchat filters include the following:

- User device: The device (such as a smartphone) used by the user to take pictures or record videos.
- Snapchat app: The app used by the user to apply filters to pictures and videos.
- Snapchat server: The server that processes user requests and sends the appropriate filters back to the user's device.
- Machine learning algorithms: The algorithms that analyse the user's pictures and videos to detect faces and apply the appropriate filters.

4.2 Data Flow:

The data flow of Snapchat filters includes the following:

- User takes a picture or records a video on their device.
- The Snapchat app sends the picture or video to the Snapchat server.
- The Snapchat server analyses the picture or video using machine learning algorithms to detect faces and apply the appropriate filters.
- The Snapchat server sends the filtered picture or video back to the user's device.
- The Snapchat app displays the filtered picture or video to the user.

## 5.Technical Requirements

5.1Programming languages:

Python: Python is a programming language that can be used for developing the machine learning algorithms that analyse user-generated content and apply filters.

5.2Frameworks and libraries:

OpenCV: OpenCV is an open-source computer vision library that can be used for developing image and video processing algorithms for detecting faces and applying filters.

## 6.User Acceptance Testing

6.1 Acceptance Criteria:

- The app should have a variety of filters to choose from, including popular filters and new filters.
- The filters should be easy to apply and remove.
- The filters should work smoothly and not cause the app to crash or freeze.
- The filters should accurately track facial features and apply the filter accordingly.
- The app should allow users to save their filtered photos and videos to their device or to share them directly to social media.
- The app should provide clear instructions and guidance on how to use the filters.

6.2 Test Scenarios:

Scenario 1: Applying filters

- Test the ability to easily apply and remove filters from photos and videos
- Test the app's ability to accurately track facial features and apply filters correctly
- Test the performance of the app when multiple filters are applied at once

Scenario 2: Saving and sharing filtered media

- Test the ability to save filtered photos and videos to the user's device
- Test the ability to share filtered media directly to social media platforms

6.3 Test Cases:

- Verify that the app can access the camera and the user's photos.
- Verify that the app displays a list of available filters.
- Verify that the app allows the user to select a filter from the list.
- Verify that the selected filter is applied to the camera preview in real-time.
- Verify that the app allows the user to capture a photo or video with the selected filter applied.
- Verify that the app saves the photo or video to the user's camera roll.
- Verify that the app allows the user to share the photo or video on social media platforms such as Facebook, Instagram, or Twitter.
- Verify that the app allows the user to edit the photo or video by adding text, stickers, or other effects.
- Verify that the app allows the user to delete a photo or video from their camera roll.

- Verify that the app provides an option to purchase additional filters or features.
- Verify that the app supports multiple languages and works correctly with different localizations.
- Verify that the app displays appropriate error messages if there are any issues with accessing the camera or photos, or if the app crashes.
- Verify that the app is optimized for performance and doesn't lag or freeze while applying filters or capturing photos or videos.
- Verify that the app complies with privacy and security guidelines, and doesn't access or share the user's personal information without their consent.
- Verify that the app works correctly on different devices, screen sizes, and operating systems, and provides a consistent user experience across platforms.