



Software Requirement Analysis (SRS) for the **facebook**® Application

Validation and Verification of the Android **facebook**® Application

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1 INTRODUCTION

This document is prepared in order to determine a software requirement specification for Facebook. Facebook is a social network on which people can add their friends, share videos and photos, send and receive messages, comment and like on the links etc. In order to gain an overview about the report, the purpose and scope of this document will be given. Then, an overall description of Facebook system is followed. In addition to these, system features such as uploading photo, sharing videos, adding friends, etc. are described deeply.

1.1 PURPOSE

The SRS is needed to evolve as the development of the software product processes. The purpose of this document is to give a complete description about how Facebook social network system can be developed. This document is to provide information about what the software product is to do to customers and establish an agreement between customers and suppliers and also become helpful for development. In addition to these, it provides a basis for validation and verification.

1.2 SCOPE

The name of the software product is Facebook. The aim of Facebook is to provide information to the users about the events and the people whom they know. The users of Facebook can add friends, share videos which they want with their friends, watch and upload photos, comment on their friends' shares, chatting with their friends and become informed about their friends. Moreover, people can create social groups for such as university clubs, football clubs or for social awareness. Users can be informed about the events by the help of these groups or their friends.

1.3 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

When a user logs in Facebook, they can see their home page, which is named as "News Feed"; that provides users to see what their friends share, what their friends write as statuses. Moreover, at the left of this page, a user can see the event invitations and the birthdays of their friends. Therefore, News Feed is the main page which combines daily friend interactions.

2 OVERALL DESCRIPTION

In this section, background information about what type of requirements the system should have will be provided.

2.1 PRODUCT PERSPECTIVE

Facebook is an independent and world-wide social network website. Every person can use it online without a fee. The Facebook is not a part of a larger system, it is an independent system. People from different regions of the world can connect to it and exchange information with other people. In order to control the contents of the sharing's and comments done by the other people, Facebook has also a control mechanism. People can deliver their complaints about any part of the Facebook to the "Facebook Administrators". Then, "Facebook Administrators" might take appropriate actions according to the complained situation which is against the rules.

2.2 PRODUCT FUNCTIONS

After creating an account and starting to use the Facebook, first thing he or she will make is searching for friends. The user will search people by their names and can send an invitation to them to add as a friend and to be able to see their shared items on Facebook. If the person accepts the invitation, these two persons become friends on Facebook and can interact more closely such as sending messages to each other. Any user can share his/her status as desired. Friends of this person can make a comment on that. Furthermore, if a user shared a photo, video, link or anything, any friend of that user can share

that shared item also. Users can upload photo and video to their profiles and create an album. Anyone can create a group and invite people to join in the group. Similarly, people can attend the activities where they are invited.

2.3 USER CLASSES AND CHARACTERISTICS

Facebook does not require any specific computer knowledge to use it except the developers and administrators of it. Standard users are thought to be from any age, any gender and from any nationality who can use just computer's browser. On the other hand, administrators and potential developers need a high level of expertise to understand web technologies.

2.4 DESIGN & IMPLEMENTATION CONSTRAINTS

Being a social network website, the software should ensure the safety of information given by the user and provide some privacy settings options to the user. Firstly, Facebook provides people the right to choose the category of people who will be able to view their shared items. Some users may not desire the access of some people to their shared items and information. If this is the case, users can set their privacy settings to prevent some people's access to their information. Secondly, Facebook cannot sell the private information of users to someone else.

3 SPECIFIC REQUIREMENTS

In this section, all software requirements will be explaining some information of the user in detail. All requirements are divided into two groups; as functional and non-functional.

3.1 FUNCTIONAL REQUIREMENTS

A functional requirement (F.R.) defines a function of a system or its component.

- **F.R. 1 – Create Account**
 - DESCRIPTION - If user is new and does not have Facebook account.
 - INPUT - Request for first name, last name, email id/phone no. and password.
 - PROCESSING - Retrieves the provided information and makes a new account for user.
 - OUTPUT - Displays created account.
- **F.R. 2 – Searching Friends**
 - DESCRIPTION - User searches for friends to add in friend list.
 - INPUT - Click on search, enter name of friend.
 - PROCESSING - User clicks on search, enters name and then list of persons displayed of that name.
 - OUTPUT - Name of Friend displayed.
- **F.R. 3 – Sending Request**
 - DESCRIPTION - User can send request to a person he/she wants to add in his/her friend list.
 - INPUT - Tap on 'add friend'.
 - PROCESSING - When user tap on 'add friend', friend request sent displayed.
 - OUTPUT - Friend request sent.

- **F.R. 4 – Accepting Friend Request**

- DESCRIPTION - When someone sends friend request to user, user gets notification whether he wants to 'accept' or 'delete'.
- INPUT - Click on 'accept' button.
- PROCESSING - User clicks on 'accept' and friend added to his/her friend list.
- OUTPUT - Friend added in friend list.

- **F.R. 5 – Creating Groups**

- DESCRIPTION - One can create groups on Facebook and add some peoples from his/her friend list.
- INPUT - Click 'profile' at the top, click 'groups', click 'see all', tap 'create group', name group, add some people, add description, select privacy and click 'save'.
- PROCESSING - When someone click on 'groups' transferred to 'see all' and adds the name, people, description and selects privacy transferred to 'save'.
- OUTPUT - Group created.

- **F.R. 6 – Adding Posts**

- DESCRIPTION - One can create/add a post on Facebook like follows:
 1. Posts can be created with plain text only.
 2. Posts can be created with text on background only.
 3. Posts can be created with text and Images/Videos.
 4. Posts can be created with Images/Videos only.
 5. Posts can be created with captioned Images/Videos.
 6. Posts can be created while tagging friends.
 7. Posts can be created while expressing a feeling.
 8. Posts can be created while checking into a location.
 9. Posts can be created with prerecorded Images/Videos from Gallery.
 10. Posts can be created with live camera feed.
 11. Posts can be created with animated GIFs.
 12. Posts can be created with tagged music track.
 13. Posts can be created with tagged album.
 14. Posts can be created with collaged images from Gallery.
 15. Posts can be created with a music track from a playlist.
 16. Posts can be liked, reacted upon, and commented upon after posting.
 17. Posts can be edited, deleted and archived.
- INPUT – Tap on the plus button and tap on "Post".

- PROCESSING – Get creative with the post and then tap “Post”. Post data is being uploaded.
- OUTPUT - Post created and then redirected to the top of the News Feed.
- **F.R. 7 – Adding Stories**
 - DESCRIPTION - One can create/add a story on Facebook like follows:
 1. Stories can be created with text on background only.
 2. Stories can be created with text on single prerecorded Image/Video from Gallery.
 3. Stories can be created with text on multiple prerecorded Images/Videos from Gallery.
 4. Stories can be created with text on single prerecorded Image/Video from the hardware cameras.
 5. Stories can be created with scenes.
 6. Stories can be created from selfies and applied filters.
 7. Stories can be created and viewed by specific friends/people.
 8. Stories can be created with enabled/disabled comments from friends/people.
 9. Stories can be created and shared automatically with Instagram.
 10. Stories can be created with captioned Images/Videos.
 11. Stories can be liked, reacted upon, and commented upon after sharing.
 12. Stories can be muted.
 - INPUT – Tap on the plus button and tap on “Story”.
 - PROCESSING – Get creative with the post and then tap “Share”. Story data is being uploaded.
 - OUTPUT – Story created and then redirected to the top of the News Feed.
- **F.R. 8 – Creating Groups**
 - DESCRIPTION - One can create groups on Facebook and add some peoples from his/her friend list.
 - INPUT - Click ‘profile’ at the top, click ‘groups’, click ‘see all’, tap ‘create group’, name group, add some people, add description, select privacy and click ‘save’.
 - PROCESSING - When someone click on ‘groups’ transferred to ‘see all’ and adds the name, people, description and selects privacy transferred to ‘save’.
 - OUTPUT - Group created.
- **F.R. 9 – Uploading Photos**
 - DESCRIPTION - User can add photos on Facebook to update his activities.
 - INPUT - Tap ‘photo’, select photo to upload, tap ‘done’.

- PROCESSING - user clicks on 'photo', transferred to 'select', photo selected by user then transferred to tap 'done'.
- OUTPUT - Photo uploaded successfully.
- **F.R. 10 – Creating Albums**
 - DESCRIPTION - User can add Facebook photos and create album.
 - INPUT - Go to 'update status', create 'photo album', choose order of photos, choose album cover, choose privacy and post.
 - PROCESSING -
 - OUTPUT - Album Created.
- **F.R. 11 – Sharing Status**
 - DESCRIPTION - When someone clicks Share below a post, they are able to share your photos, videos or status updates through Facebook.
 - INPUT - Search post to share, tap 'share', tap 'write post' and tap 'share now'.
 - PROCESSING - User clicks on share, transferred to write post and then clicks on 'share now' to share.
 - OUTPUT - Post shared by the user.
- **F.R. 12 – Create New Page**
 - DESCRIPTION - One can create a new page on Facebook to add his/her activities and connect to friends.
 - INPUT - Tap on 'pages', tap 'create page', tap 'get started', select name, select categories, add cover photo, profile picture for page, tap 'visit page'.
 - PROCESSING - User tap on 'pages', transferred to 'create page' and then clicks 'get started', transferred to add name, cover photo, profile photo and then tap on 'visit page' to see the created page.
 - OUTPUT - A new page created
- **F.R. 13 – Sending Message**
 - DESCRIPTION - User should be able to send instant message to any contact on their contact list. User should be notified when message is successfully delivered to recipient by displaying a tick sign next to message sent. Using the Messenger section can be through:
 1. Making a voice call.
 2. Making a video call.
 3. Changing the chat theme.
 4. Tagging a location in a message.
 5. Adding Images/Videos from the hardware cameras.
 6. Adding prerecorded Images/Videos from the Gallery.
 7. Adding a voice note.

8. Sending a Like message.
 9. Reacting to a message.
 10. Sharing a message to another chat.
- INPUT – Tap on the Messenger button. Browse for a friend. Open their chat. Get creative with the message and tap the Send action button to send it.
 - PROCESSING - Message sent to another user.
 - OUTPUT – Recipient profile picture move in front of a message once viewed by them.
- **F.R. 14 – Send Attachments**
 - DESCRIPTION - User should be able to send audio, video and images as attachments.
 - INPUT - File attached.
 - PROCESSING - Send to other side user.
 - OUTPUT - Tick on file.
 - **F.R. 15 – Commenting**
 - DESCRIPTION - Facebook comments are key to understanding how users engage with one's content.
 - INPUT - Click the comment link, type comment, press enter to publish.
 - PROCESSING - Post the comment on user's attachment.
 - OUTPUT - Comment attached.
 - **F.R. 16 – Uploading Videos**
 - DESCRIPTION - User can upload video in his/her account.
 - INPUT - Click 'add video' button, choose file, add description and post.
 - PROCESSING - User clicks on 'add video', transferred to choose files and then clicks on 'post' to upload and then video uploaded.
 - OUTPUT - Video uploaded successfully.
 - **F.R. 17 – Notes**
 - DESCRIPTION - User can add notes
 - INPUT - Select 'more' at right of profile picture, click 'notes', click 'add notes', drag file, create note and 'publish'.
 - PROCESSING - User clicks on 'more', choose notes and clicks to add, and then attaches file then click to create and 'publish'.
 - OUTPUT - Note published.
 - **F.R. 18 – Videos**
 - DESCRIPTION - User can watch uploaded videos on Facebook.
 - INPUT - Search videos, click to watch.

- PROCESSING - User searches for a video in 'search' and a list of videos related to search displayed and then click to watch.
- OUTPUT - video watched by user.
- **F.R. 19 – Notifications**
 - DESCRIPTION - Notifications are updates about activity on Facebook.
 - INPUT - Tap the globe icon, click see all.
 - PROCESSING - user click on globe icon then list of notifications displayed.
 - OUTPUT - List of notifications displayed.
- **F.R. 20 – Edit Profile**
 - DESCRIPTION - Asks to upload photo of user, add a nickname, a birth name, relationship, about you, etc. and modifies the profile.
 - INPUT - Upload photo, nickname, birth name, relationship, about you, etc.
 - PROCESSING - Check the information and processes the request.
 - OUTPUT - Displays the information provided by user.
- **F.R. 21 – Update Profile**
 - DESCRIPTION - User can update his profile picture, can add birthday, nickname from function 'update profile'.
 - INPUT - Asks to update user's profile picture, cover picture, education, etc.
 - PROCESSING - Check the information and processes the request.
 - OUTPUT - Updates profile as provided by user.
- **F.R. 22 – Creating an Event**
 - DESCRIPTION - User can Create a Facebook Event through his Page to connect to his audience.
 - INPUT - Click on 'create event' tab, choose name, add location and time, choose which friends to invite.
 - PROCESSING - Check the information and process the request.
 - OUTPUT - Event created.
- **F.R. 23 – Privacy Setting**
 - DESCRIPTION - User can properly manage Facebook privacy setting so that he/she known who is/isn't seeing his/her updates photos and more.
 - INPUT - Asks to establish checks like who can view profile, friend list.
 - PROCESSING - Check the information and processes the request and applies to change user's account.
 - OUTPUT - Applied changes are reflected on user's account.

3.2 NON-FUNCTIONAL REQUIREMENTS

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3.3 SECURITY

The system uses SSL (secured socket layer) in all transactions that include any other confidential passenger information. The system must automatically log out in all customers after a period of inactivity. The system should not leave any cookies on the customer's computer containing the user's password, system's back-end servers shall only be accessible to authenticated administrators. Sensitive data will be encrypted before being sent over insecure connections like the internet.

3.4 RELIABILITY

The system provides storage of all databases on redundant computers with automatic switch over. The reliability of the overall program depends on the reliability of the separate components. The main pillar of reliability of the system is the backup of the database which is continuously maintained and updated to reflect the most recent changes. Thus, the overall stability of the system depends on the stability of container and its underlying operating system.

3.5 AVAILABILITY

The system should be available at all times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs. In case of a hardware failure or database corruption, a replacement page will be shown. Also, in case of a hardware failure or database corruption, backups of the database should be retrieved from the server and saved by the administrator. Then the service will be restarted. It means 24/7 availability.

3.6 MAINTAINABILITY

A commercial database is used for maintaining the database and the application server takes care of the site. In case of a failure, a re-initialization of the program will be done. Also, the software design is being done with modularity in mind so that its maintainability can be done efficiently.

3.7 PORTABILITY

The application is HTML and scripting language based. So That end user part is fully portable and any system using any web browser should be able to use the features of the system, including any hardware platform that is available or will be available in the future. An end-user is using this system on any OS; either it is Windows or Linux. The system shall run on PC, Laptops, and PDA etc.