Kingdom of Saudi Arabia
Ministry of Education
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جامعة الأمير سطّام بن عبدالعزيز
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PROJECT ABOUT

TELEGRAM

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1. Feasibility Study & Project Proposal:

Introduction to Telegram:

Telegram is a popular cloud-based instant messaging application that enables users to connect and communicate with others through text, voice, and video messages. It was developed with a strong focus on security, privacy, and speed, offering users a reliable and feature-rich platform for seamless communication.

Background:

The rapid advancement of technology and the increasing reliance on digital communication have fueled the need for secure and efficient messaging applications. Traditional messaging platforms often lack robust security measures and may compromise user privacy.

Problem:

The widespread use of messaging applications has raised concerns about data security and privacy. Many existing messaging platforms lack end-to-end encryption, leaving user communications vulnerable to interception and unauthorized access.

Proposed Solution:

Telegram proposes a comprehensive solution to address the security and privacy challenges faced by users. It employs end-to-end encryption to protect user communications, ensuring that only the intended recipients can access and decipher the messages. By incorporating advanced encryption protocols, Telegram ensures that messages remain secure and private, mitigating the risk of unauthorized access.

Work Plan:

To implement and maintain the proposed solution, Telegram follows a strategic work plan that focuses on continuous improvement and user satisfaction. The work plan includes the following key elements:

Research and Development, User Education, Regular Updates , Collaboration with Security Experts

And Transparency

By following this work plan, Telegram aims to provide a secure and privacy-focused messaging experience for its users, ensuring that their communications remain confidential and protected from unauthorized access.

2. Project Requirements:

Functional Requirements (FR):

For system

N	Functional	description
1	User Registration and Authentication	The system should allow users to register and create an account.
2	Messaging	The system should support real-time messaging between users.
3	Group Chats	The system should support real-time messaging between users.
4	Voice and Video Calling	The system should provide users with the capability to make voice and video calls.
5	File Sharing	The system should enable users to share files of various formats with other users.
6	Notifications	The system should send notifications to users for new messages, calls, and other relevant activities.
7	Channel Broadcasting	- The system should allow users to create and manage channels for broadcasting messages to a large audience.
8	Security and Privacy	- The system should implement strong encryption techniques to protect user data and messages.

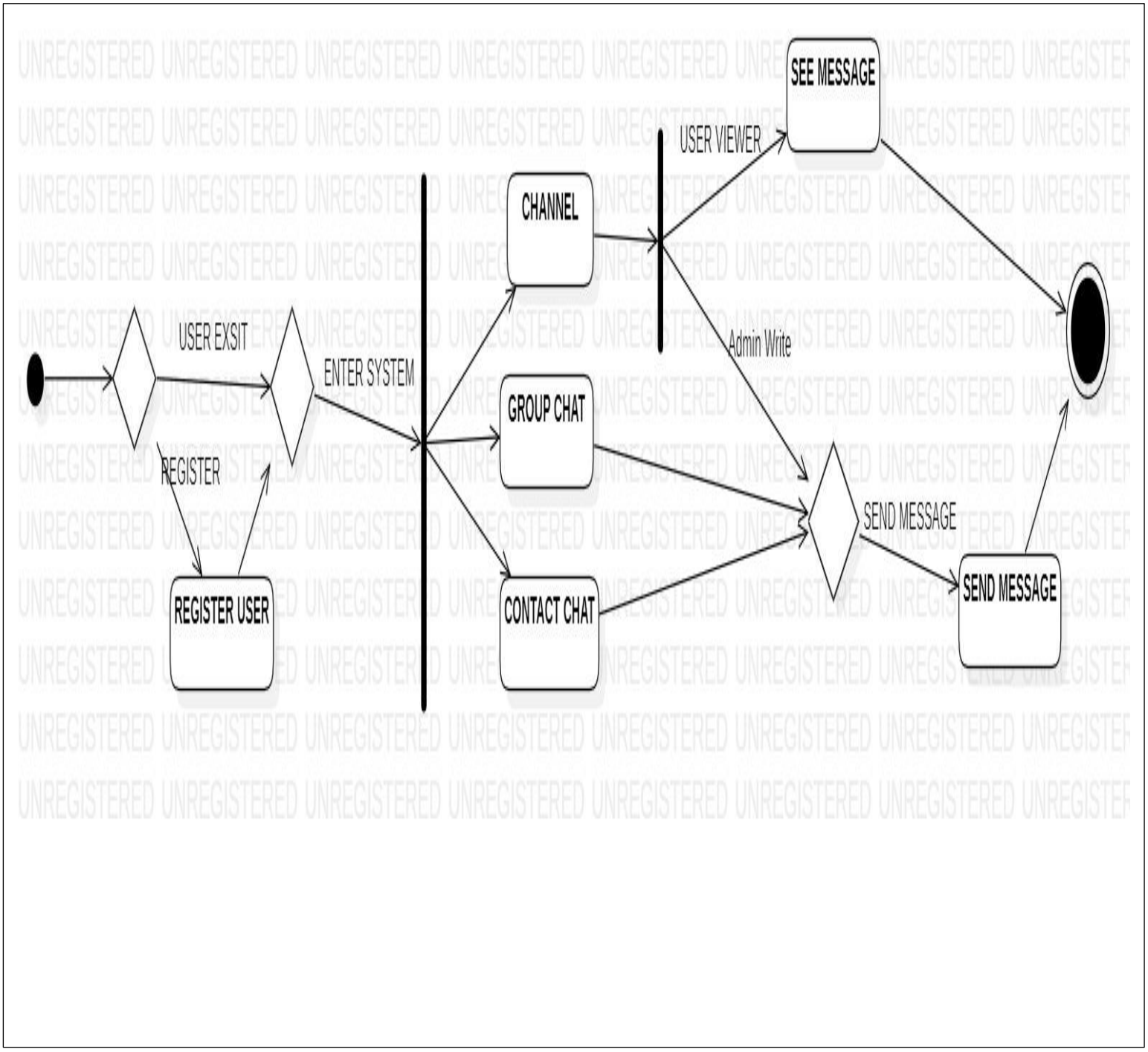
for Users

N	Functional	description
1	Account Management	Users should be able to create and manage their profiles, including updating their personal information.
2	Contacts Management	Users should have the ability to manage their contacts, including adding, removing, and organizing contacts.
3	Chat Customization	Users should be able to customize their chat settings, such as changing the background, notification sounds, and chat themes.
4	Message Editing	Users should have the ability to edit and delete messages they have sent within a specified time frame.
5	Search Functionality	Users should be able to search for specific messages, contacts, and groups within the application.
6	Privacy Settings	Users should have control over their privacy settings, such as choosing who can see their online status, profile picture, and contact information.
7	Block and Report	Users should be able to block and report other users for inappropriate behavior or spamming.
8	Account Deactivation	Users should have the option to deactivate or delete their accounts if they no longer wish to use the Telegram platform.

2.2 Non-Functional Requirements (NFR):

N	Functional	description
1	Security	The application should prioritize user privacy and data security. - All user data, including messages, media files, and personal information, should be protected with robust encryption and secure storage mechanisms.
2	Performance	The application should have a fast and responsive user interface with minimal latency. - Messages and media should be delivered promptly and efficiently.
3	Scalability	The platform should be able to handle a large user base and increasing message traffic. - The application should scale horizontally to accommodate growing user demands without compromising performance.
4	Usability	- The user interface should be intuitive, visually appealing, and easy to navigate. - Users should be able to understand and use the application's features and functionalities without significant effort.
5	Reliability	The application should have high availability and uptime, minimizing service disruptions and downtime. - Messages and media should be reliably delivered to users without loss or corruption.
6	Compatibility	The application should be compatible with a wide range of devices and operating systems. - Users should be able to access Telegram on mobile devices, tablets, and desktop computers seamlessly.
7	Accessibility	The application should adhere to accessibility guidelines to ensure usability for users with disabilities. - Features like text-to-speech, screen reader compatibility, and keyboard navigation should be considered for inclusive user experience.
8	Data Backup and Recovery	The application should provide reliable data backup and recovery mechanisms to prevent data loss in case of system failures or device changes. - User data should be securely stored and recoverable, ensuring the continuity of user conversations and media.

3. Activity Diagram:



4. Project Use Case Modeling:

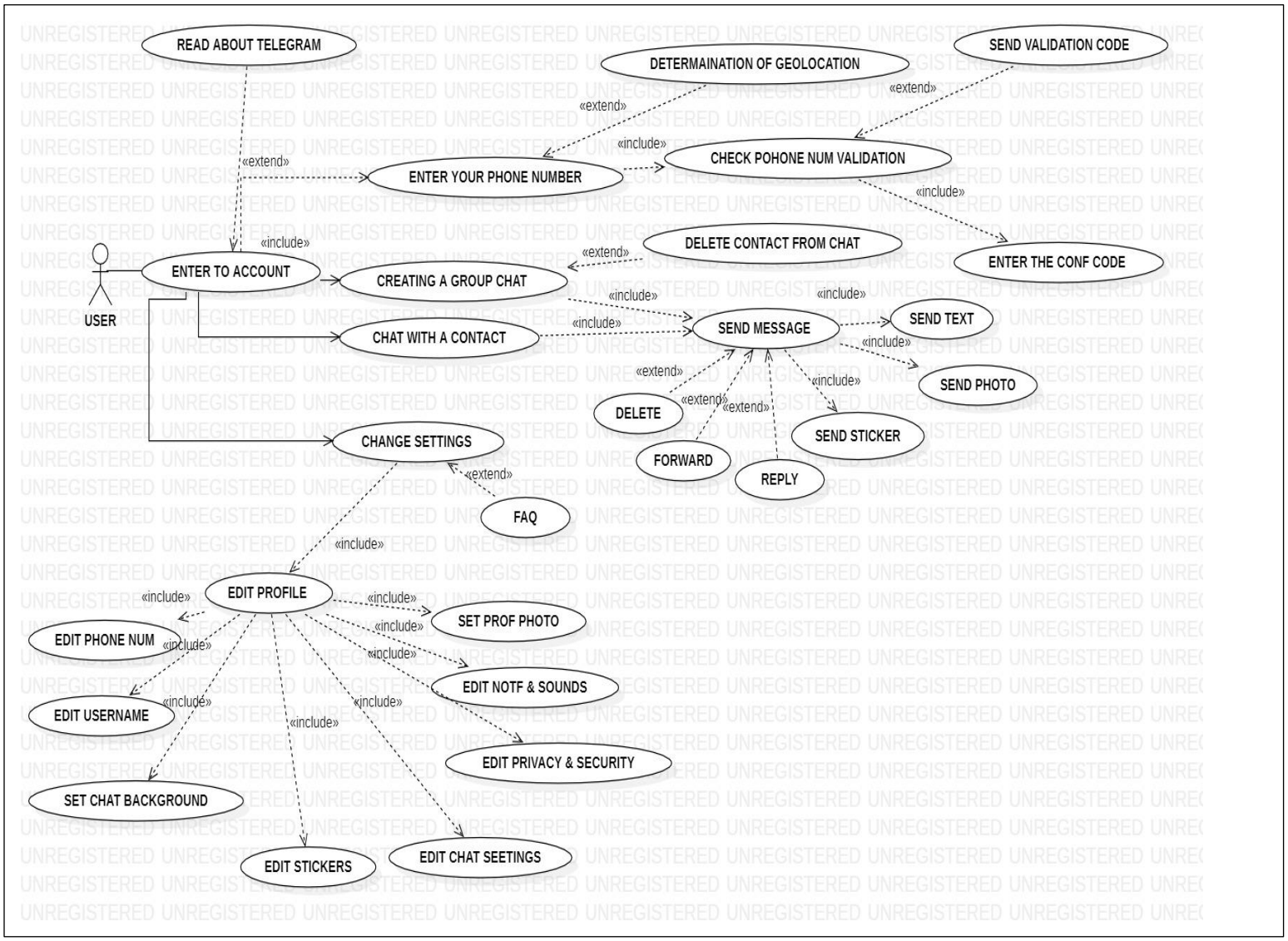


Table 1

Telegram User : Send a message

ACTORS	User
DESCRIPTION	User send a text message to a contact or a group
DATA	Message content, recipient
STIMULUS	User composes and sends a message
RESPONSE	The message is sent and delivered

Related Use Case: Forward Message

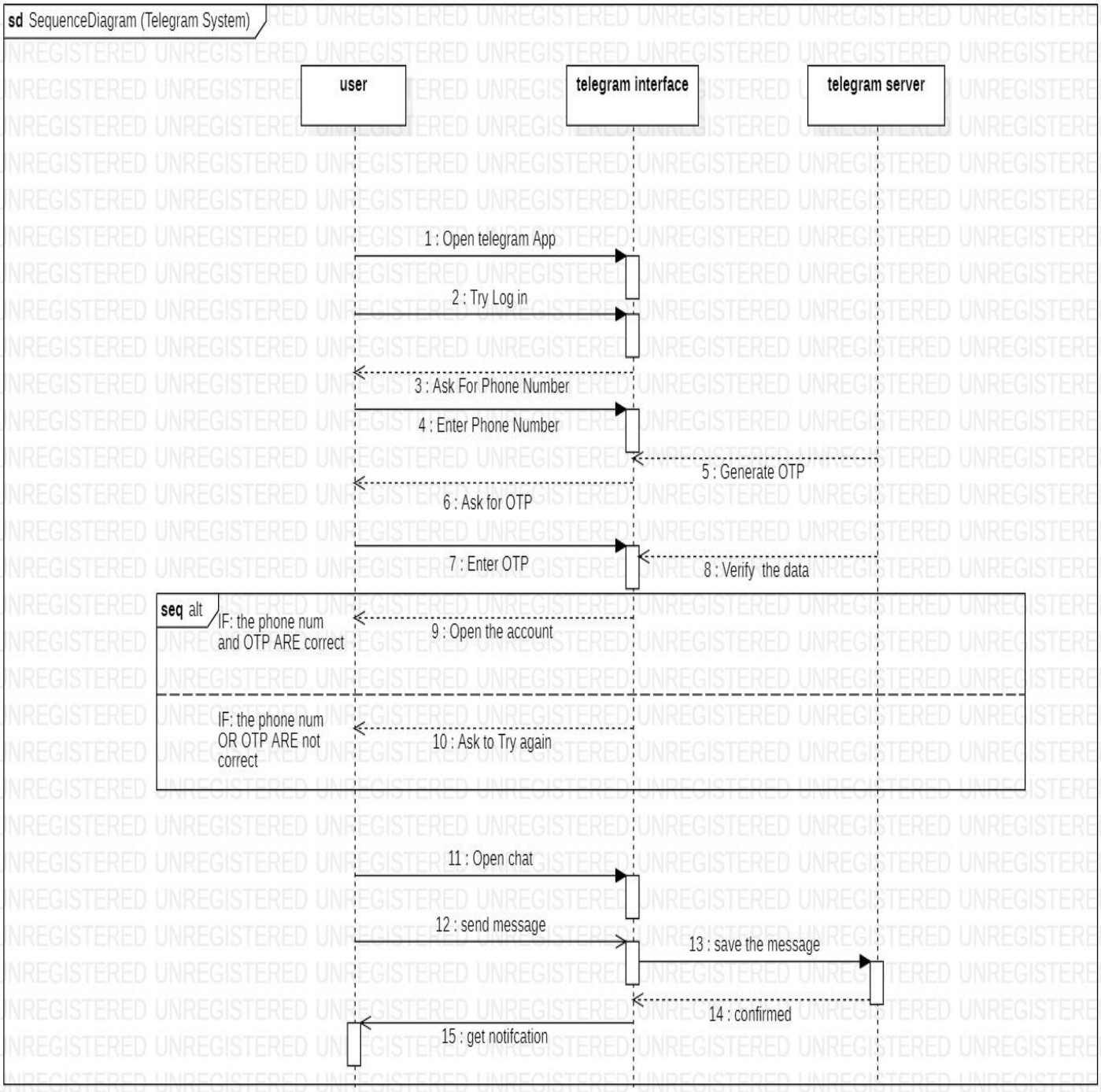
Table 2

Telegram User : Create a group chat

ACTORS	User
DESCRIPTION	Enables a User to create a new group chat and add participants
DATA	Group name , participants
STIMULUS	User initiates the creation of a group chat and adds participants
RESPONSE	A new group chat is created, and participants are added to the chat

Related Use Case: Leave a group chat

5. Creating Sequence Diagrams:



6. Creating a Class Diagram: