CTIS411 SENIOR PROJECT- 1 SOFTWARE REQUIREMENTS SPECIFICATION

Neşe Şahin Özçelik

I NEED

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Team 7

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1.   Product Overview

1.1   Product Perspective

I Need is a mobile application and web designed project that will take its most of the parts on social responsibilities. Goal of the project will cover up the deficiency in many branches such as village school construction, lack of clothing in poor areas, animal food that is required in streets for homeless animals. As the globalization takes place and people are spreading all around the world, cooperation and mutualization among people became more and more important. This equation creates a market and this market requires a high non-profit seeking web and mobile application that will connect people to higher their welfare. Our product aims to use user's GPS information to have them encounter in each other and obtainment of the need. In market there are few programs which can create an environment for people to get together. However, the design which we are going to use has not been seen in the market so far.

Our product will consist two parts; a mobile application and a website. Application side of the program will be on Android only and will use GCM to build conversation among users. In both application and web page, there will be a GUI which is based on locations shared.

1.2   Product Features

- Membership is required to use this product. Users are expected to authenticate their accounts.

- Users will have a profile page where they'll able to view their need or their attempts to help.

- Users of the system (reeve, school principal, teacher etc.) will enter their needs, and the ones who want to contribute will be able to find them. These needs can be books, clothes, food or temporary shelter. In the future, there may be different help types can occur like abroad assistance, build assistance (bulldozers, bricks etc.) medical assistance and they may be able to integrate to the program.

- Users will be able to search for a specific area and/or different types of needs for ease of use.

- Users will be notified about their posts regarding needs or helps. Also, users will be notified when they're near an area where a need requested.

- Users can communicate via in-app messaging. They'll be able to inquire more details regarding the need.

2. Functional Requirements

2.1.1 Use Case Diagram
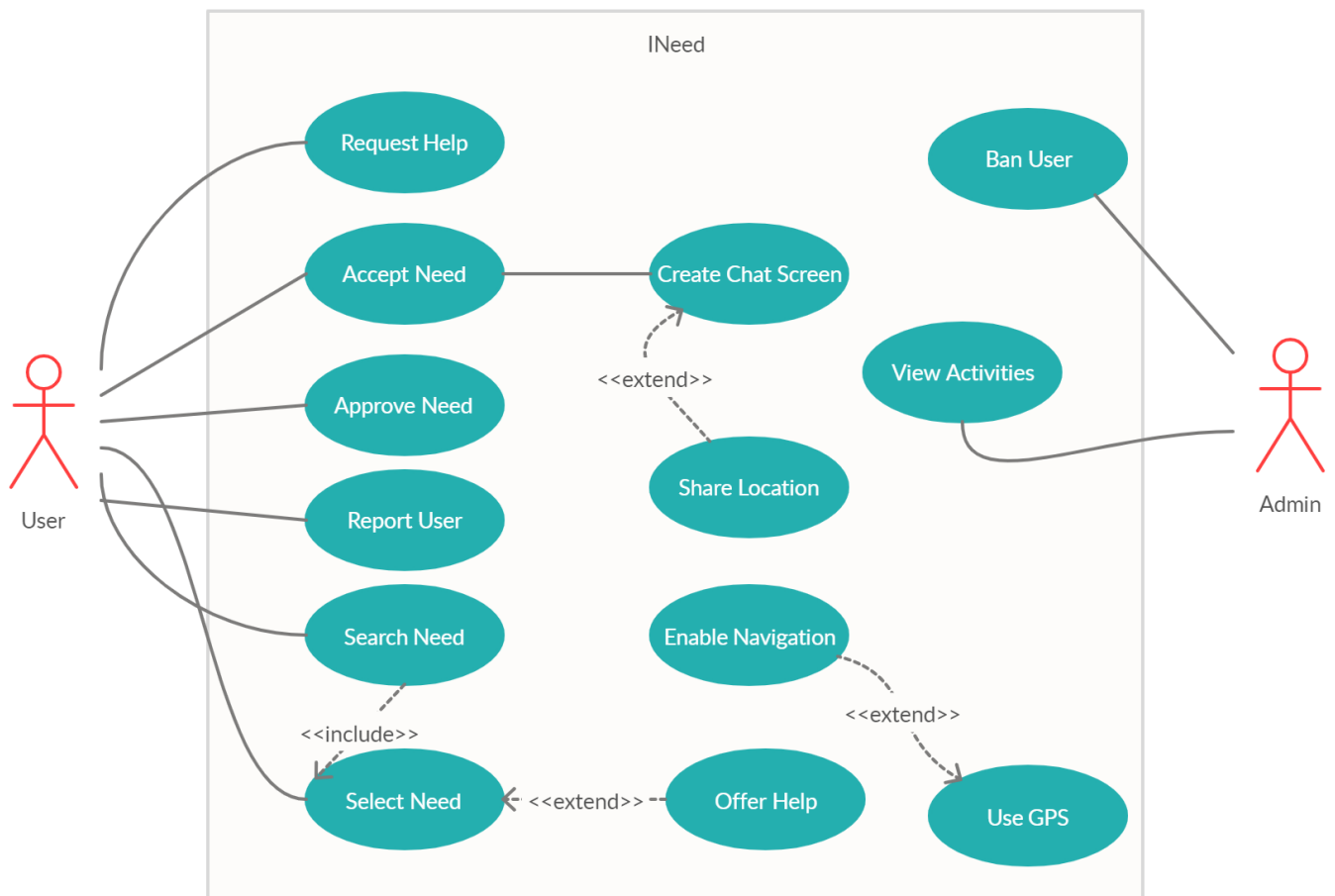
2.1.2 Use Cases Narratives

System Analysis Use Case	
Use Case Name:	Request Help
Use Case ID:	1
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	None
Primary Actor(s):	User
Participating Actor(s):	None
Description:	User requests a certain need.
Precondition:	User must enter login correct credentials for his/her profile.
Trigger:	User clicks on "Request Need" button.

Main Scenario:	Actor Action	System Response
	1) User opens request need page and specifies the need.	
	2) User clicks "Request" button to request the need.	2. 1) System creates the request with "Needing" status and makes it online for all users.
Alternate Scenarios:	1a) User enters inappropriate request. 1.System denies it. Return to main(1).	
Exceptions:	None	

Conclusion:	User can request a need which can be satisfied by another user.
Open Issues:	None

System Analysis Use Case	
Use Case Name:	Accept Need
Use Case ID:	2
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	None
Primary Actor(s):	User
Participating Actor(s):	None
Description:	User accepts the offered help.
Precondition:	There must be a valid contribution to the need.
Trigger:	User clicks on "Accept" button when the help offered.

Main Scenario:	**Actor Action**	**System Response**
	1) User recieves a notification.	
	2) User sees the offered help.	
	3) User evaluates the offer.	

Alternate Scenarios:	3a) User declines the offer. 3b)User accepts the offer 3.1)System automatically creates chat screen between users.

	3.2)System changes need's status "Needing" into "Waiting for approval".
Exceptions:	None
Conclusion:	User can accept an offer.
Open Issues:	None

System Analysis Use Case	
Use Case Name:	Approve Need
Use Case ID:	3
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	None
Primary Actor(s):	User
Participating Actor(s):	None
Description:	User approves the requested need have been satisfied.
Precondition:	User must have accepted the offered help.
Trigger:	User clicks "Approved" button.

Main Scenario:	Actor Action	System Response
	1) User clicks on "Approved" button to confirm the help satisfied.	1.1) System updates the help from "Waiting for Approval" into "Approved".

Alternate Scenarios:	1a) User clicks "Disapproved" button to disapprove the help. 1.1) System updates the status of the need.
Exceptions:	None
Conclusion:	User can approve whether the offered help satisfies the need or not.
Open Issues:	None

System Analysis Use Case	
Use Case Name:	Report User
Use Case ID:	4
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	None
Primary Actor(s):	User
Participating Actor(s):	None
Description:	User reports another user according to actions of the user.
Precondition:	None
Trigger:	User clicks on "Report User" button.
Main Scenario:	**Actor Action**	**System Response**

	Actor Action	System Response
	1) User clicks "Report User" button.	1.1) System asks for an explanation.
	2) User explains the situation in 3-4 sentences. 3) User clicks "Send Report" button.	3.1) System uploads the report for admins.

Alternate Scenarios:	None
Exceptions:	None
Conclusion:	User can report another user and give an explanation.
Open Issues:	None

System Analysis Use Case	
Use Case Name:	Search Need
Use Case ID:	5
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	Select Need(6)
Extending Use Case(s):	None
Primary Actor(s):	User
Participating Actor(s):	None
Description:	Users of the system searches need by its ID. Users of the system selects among specified types to find need.
Precondition:	None
Trigger:	User clicks "Search" button.

Main Scenario:	Actor Action	System Response
	1) User specifies the search type or ID then clicks "Search" button.	1.1) System opens a screen which contains the searched criteria.
Alternate Scenarios:	None	

Exceptions:	None
Conclusion:	Users can search a help by using its ID or type.
Open Issues:	None

System Analysis Use Case		
Use Case Name:	Select Need	
Use Case ID:	6	
Use Case Type:	System Analysis	
Version Number:	1.0	
Included Use Case(s):	None	
Extending Use Case(s):	Offer Help ()	
Primary Actor(s):	User	
Participating Actor(s):	None	
Description:	User selects an specified type of need.	
Precondition:	None	
Trigger:	User clicks "Select Need" button.	
Main Scenario:	**Actor Action**	**System Response**
	1) User clicks "Select Need" button.	1.1) System shows content of the need.
Alternate Scenarios:	None	
Exceptions:	None	

Conclusion:	User can select a need.
Open Issues:	None

System Analysis Use Case	
Use Case Name:	Create Chat Screen
Use Case ID:	7
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	Share Location(9)
Primary Actor(s):	User
Participating Actor(s):	User
Description:	System creates chat screen between users.
Precondition:	Offer must be accepted.
Trigger:	Needer clicks "Accept Need" button.

Main Scenario:	Actor Action	System Response
	1) Needer clicks "Accept Help" button.	1.1) System automatically creates a chat screen between users.

Alternate Scenarios:	None
Exceptions:	None
Conclusion:	System can create a chat screen for encountered users.

Open Issues:	None

System Analysis Use Case	
Use Case Name:	Ban User
Use Case ID:	8
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	None
Primary Actor(s):	Admin
Participating Actor(s):	User
Description:	Admin bans the user.
Precondition:	User must be reported.
Trigger:	Admin clicks "Ban User" button.

Main Scenario:	**Actor Action**	**System Response**
	1) Admin clicks on "Ban User" button.	1.1) System sends notification to the banned user. 1.2) System blocks the user's account.

Alternate Scenarios:	None
Exceptions:	None
Conclusion:	Admin can ban a user.

Open Issues:	None

System Analysis Use Case	
Use Case Name:	View Activities
Use Case ID:	9
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	None
Primary Actor(s):	Admin
Participating Actor(s):	None
Description:	Admin views activities of a certain user.
Precondition:	None
Trigger:	Admin clicks "View Activities" button.

Main Scenario:	**Actor Action**	**System Response**
	1) Admin clicks on "View Activities" button.	1.1) System brings the past activities of a certain user.

Alternate Scenarios:	None
Exceptions:	None
Conclusion:	Admin can view past activities of a certain user.
Open Issues:	None

System Analysis Use Case

Use Case Name:	Use GPS
Use Case ID:	10
Use Case Type:	System Analysis
Version Number:	1.0
Included Use Case(s):	None
Extending Use Case(s):	Enable Navigation()
Primary Actor(s):	None
Participating Actor(s):	User
Description:	System uses users' GPS info.
Precondition:	None
Trigger:	User clicks "Use GPS" button.

Main Scenario:	**Actor Action**	**System Response**
	1) Users click "Use GPS" button.	1.1) System enables the GPS system at first level.

Alternate Scenarios:	None
Exceptions:	1e) If location services in the user's phone is closed. Warn with a message.
Conclusion:	User can use GPS in the app.
Open Issues:	None

Extended Use Case

Use Case Name:	Share Location	
Use Case Type:	Extended	
Version Number:	1.0	
Base Use Case(s):	Create Chat Screen(8)	
Participating Actor(s):	User	
Description:	Users' location information shared among them.	
Precondition:	Users' GPS information must be open.	
Trigger:	Users' click "Share Location" button.	
Main Scenario:	**Actor Action**	**System Response**
	1) Users click on "Share Location" button.	1.1) System shares their GPS information among them.
Alternate Scenarios:	None	
Exceptions:	None	
Conclusion:	Users' GPS information can be shared among them.	
Open Issues:	None	

Extended Use Case	
Use Case Name:	Offer Help
Use Case Type:	Extended
Version Number:	1.0

Base Use Case(s):	Select Need(6)	
Participating Actor(s):	User	
Description:	User offers a certain help to another user's need.	
Precondition:	User must have selected a need.	
Trigger:	User click "Offer Help" button.	
Main Scenario:	**Actor Action**	**System Response**
	1) User specifies the offered help by filling the criterias.	
	2) User clicks on "Offer Help" button.	2.1) System sends a notification to the needer. 2.2) System updates the status of the need.
Alternate Scenarios:	None	
Exceptions:	None	
Conclusion:	User can offer a certain help to another user.	
Open Issues:	None	

Extended Use Case	
Use Case Name:	Enable Navigation
Use Case Type:	Extended
Version Number:	1.0
Base Use Case(s):	Use GPS(10)

Participating Actor(s):	User	
Description:	User enables navigation to use it.	
Precondition:	User must click "Use GPS" button earlier.	
Trigger:	User clicks on "Enable Navigation" Button	
Main Scenario:	**Actor Action**	**System Response**
	1) User clicks on "Enable Navigation" button.	1.1) System starts using user's location information to inform them.
Alternate Scenarios:	None	
Exceptions:	None	
Conclusion:	User can enable navigation to find others by the info it provides.	
Open Issues:	None	

Included Use Case	
Use Case Name:	Select Need
Use Case Type:	Included
Version Number:	1.0
Base Use Case(s):	Search Need(5)
Participating Actor(s):	User
Description:	User selects a need.
Precondition:	None

Trigger:	User clicks on a need.	
Main Scenario:	**Actor Action**	**System Response**
	2) User selects a need and clicks on it.	1.2) System brings the needs page.
Alternate Scenarios:	None	
Exceptions:	None	
Conclusion:	User can select a need.	
Open Issues:	None	

3.   Other Requirements

3.1   Non-Functional Requirements of Product

- The system shall be accessible from mobile and web user interfaces.
- The system shall be available %99 of time.
- Users shall be notified if system is unavailable.
- Password shall never be viewable.
- Users' information shall not be revealed until agreement between users.
- Users shall receive notifications about help when they are traveling around that region.
- System shall be scalable for any technical or non-technical needs.
- System shall be secure and private about user information.
- System shall provide secure communication between users.
- System shall provide authentication to have reliable and trustworthy environment.
- System shall provide regulation in order to have healthy user base.
- User's provided location shall have an accuracy of %90.
- System shall be maintainable as system expands.
- System shall notify users when its required.
- User interface shall be user-friendly to make it usable for all range of age.

3.2   Constraints of the Product

- Internet connection is required to post needs and provide help to needs. Also, to be able to get updates on map application, it is necessary to have internet connection.
- In-app messaging can bring unwanted harassment or more to users.
- Database must have capacity to serve all the users. In high traffic, database should be able cope fetch and requests.
- If user uses mobile app, it will be only available on android, and if user wants to use mobile web page, mobile phone should have proper GPS to use functionality of system.
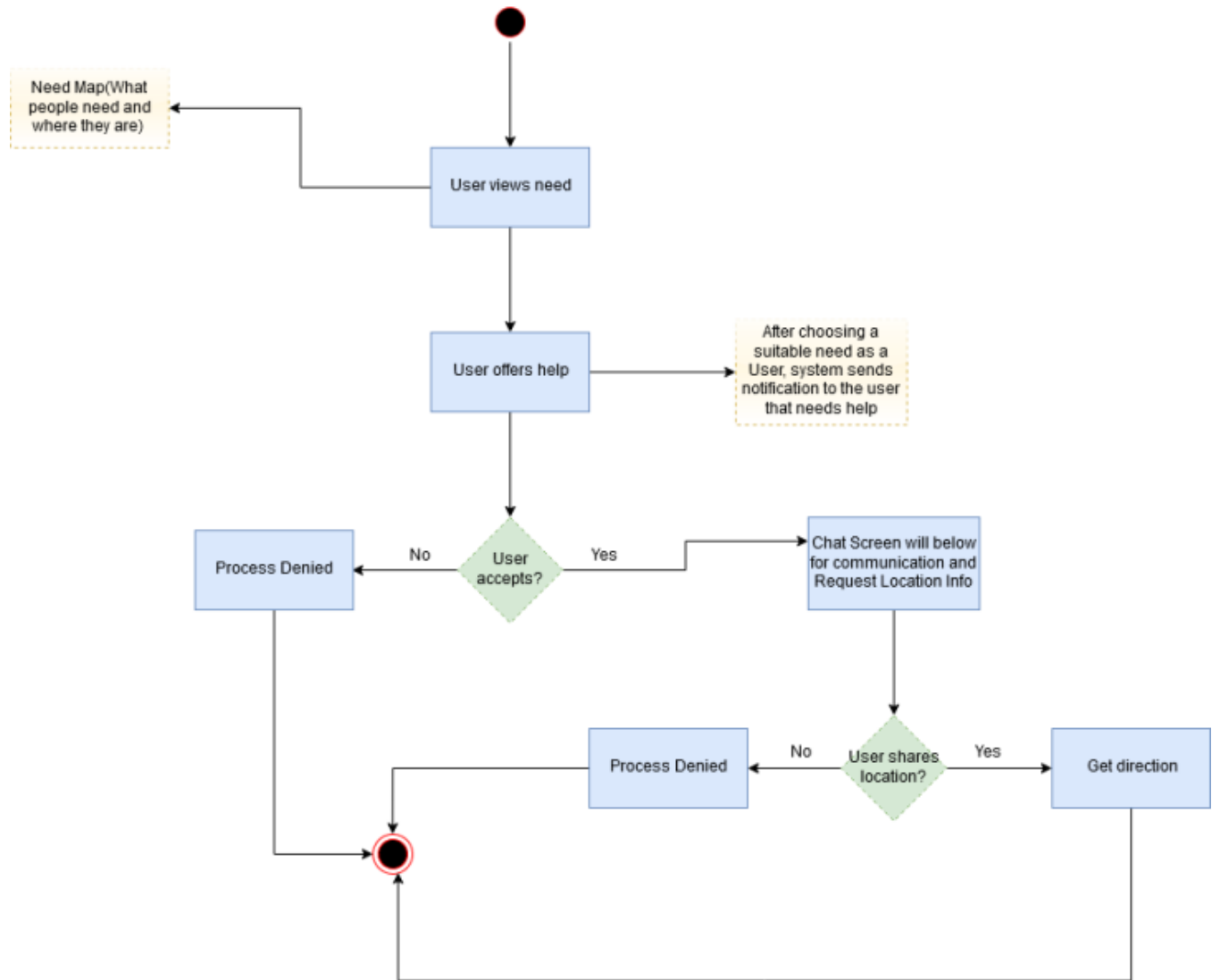
4. System Models

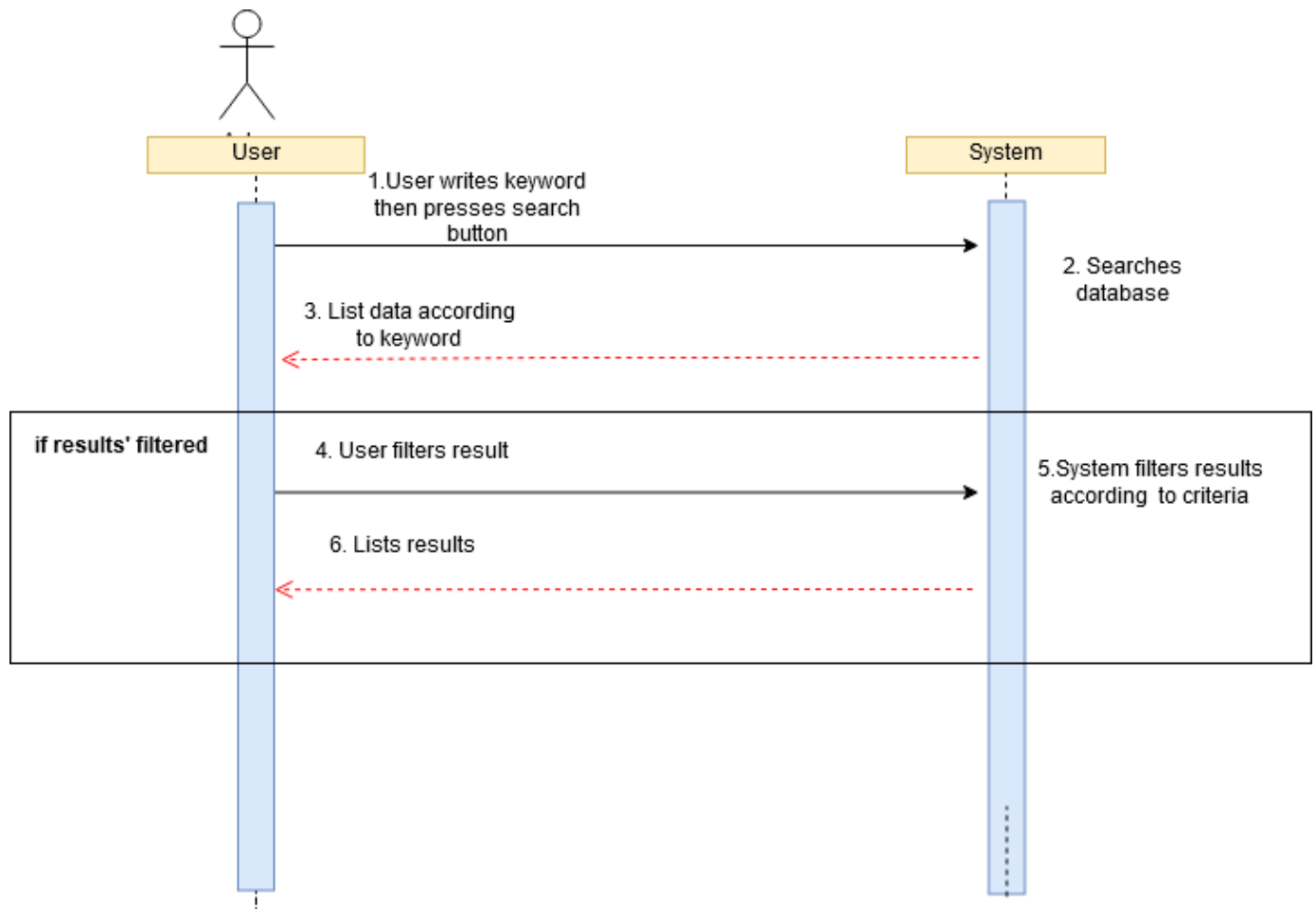## 4.1 Activity Diagrams (with swim-lanes) or State Diagrams
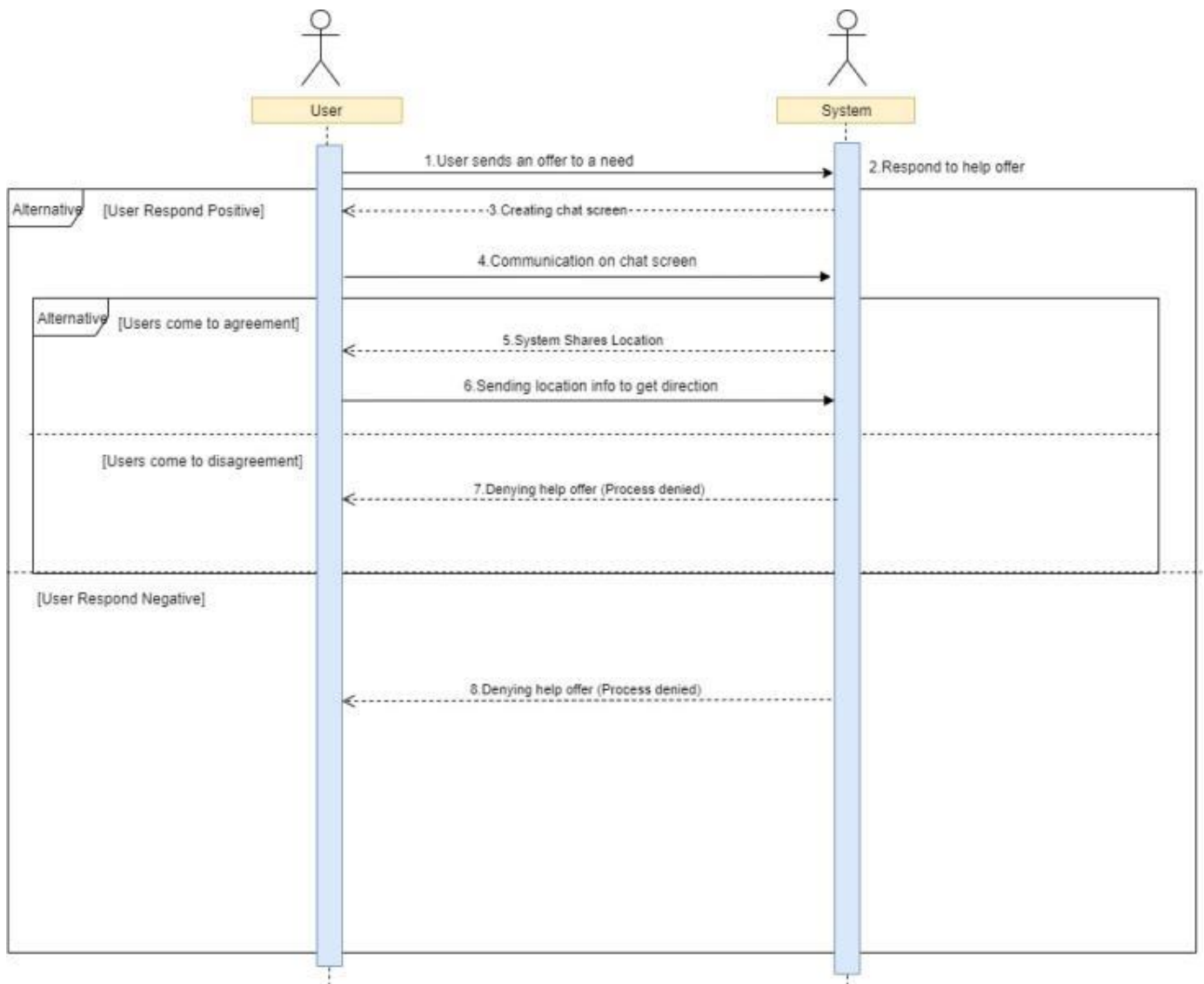
4.1.1 Search
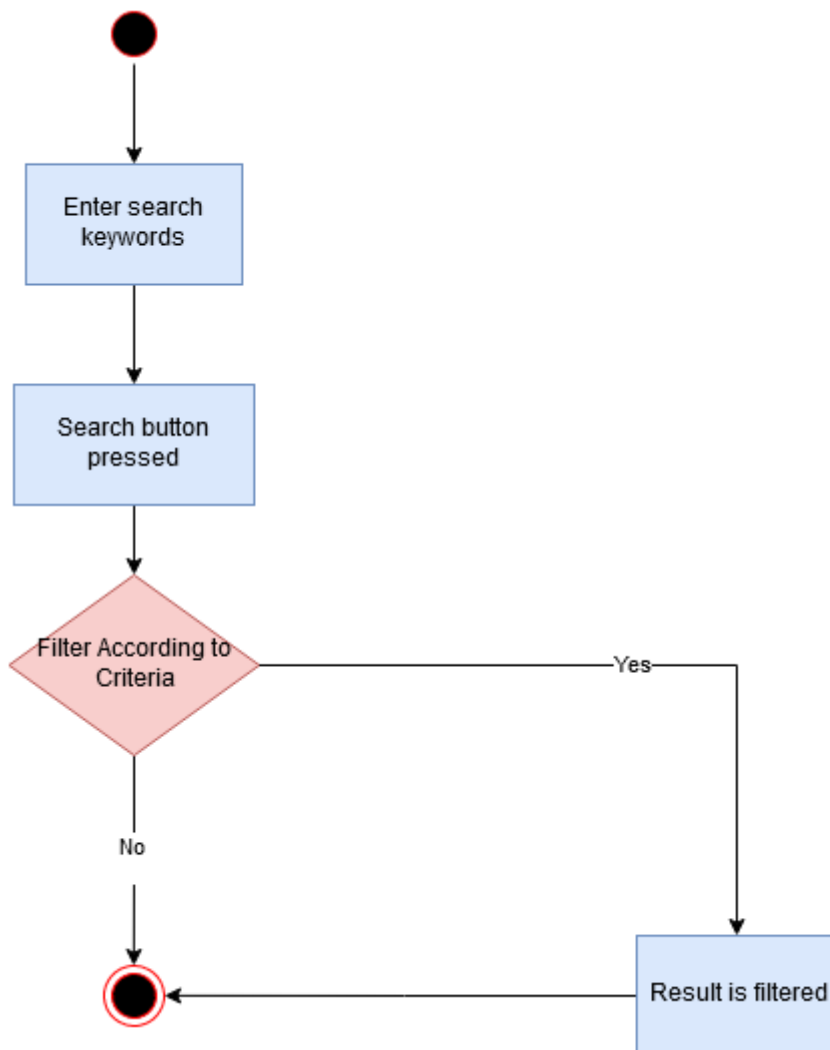
4.1.2 Offer Help

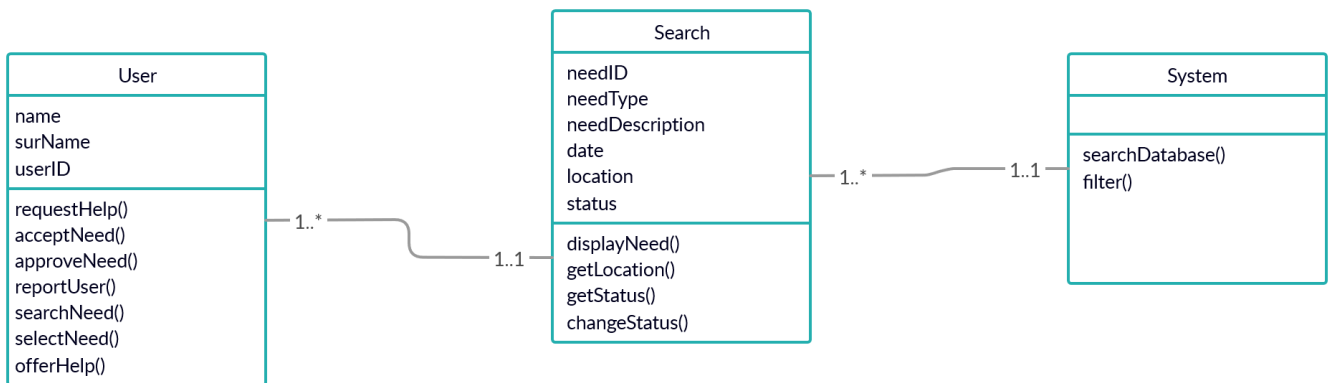## 4.2   System Sequence Diagrams

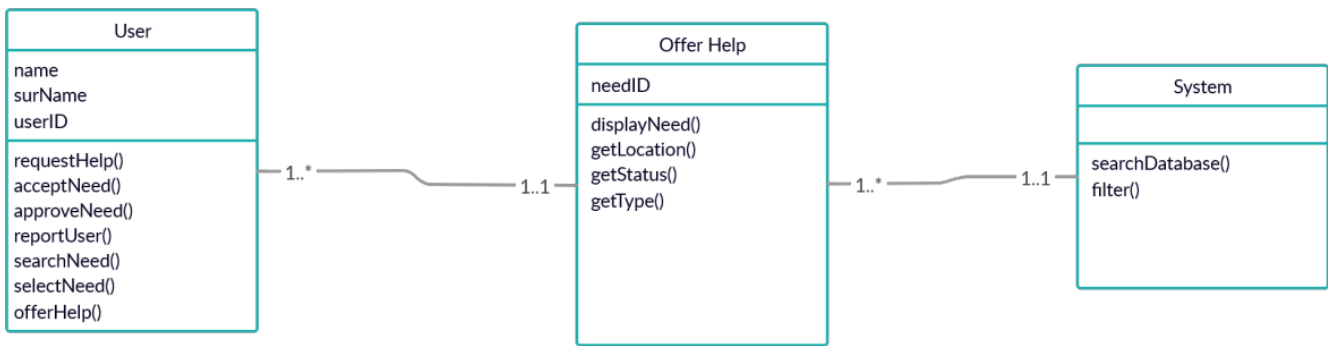### 4.2.1 Search Sequence

4.2.2 Offer Help Sequence
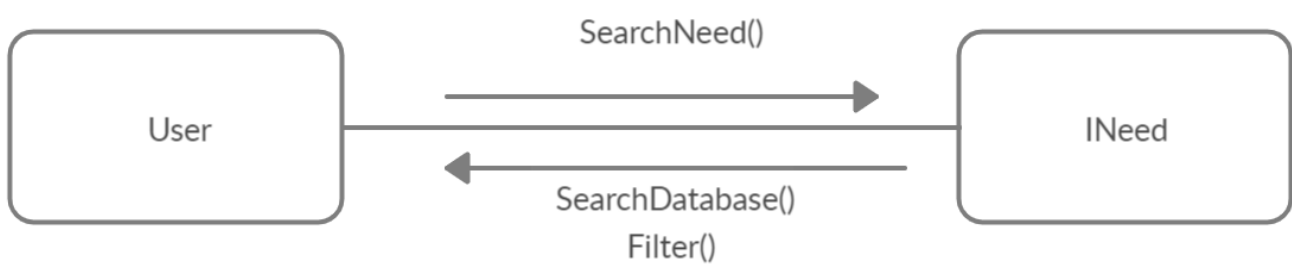
4.3 Analysis Class Diagram

4.3.1 Search Class

4.3.2 Offer Help Class

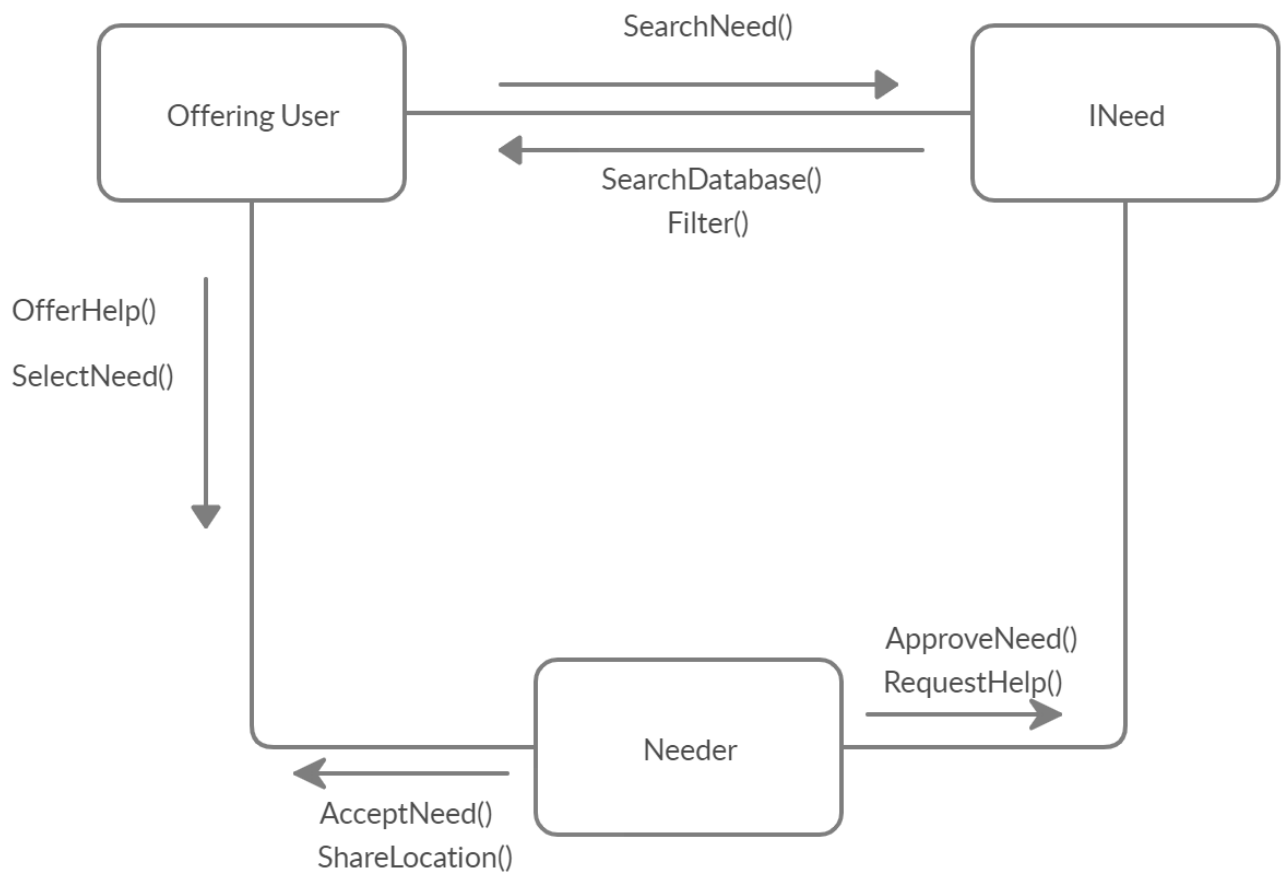## 4.4 Analysis Interaction (Sequence or Communication) Diagrams

4.4.1 Search

5.   References

Şağban Ö.M, Kutluk E.M, Delice V.O, Yılmaz M. "I NEED Initial Plan", Ankara, 2019 Non-print Document