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Навчально-науковий комплекс
«Інститут прикладного системного аналізу»
Кафедра системного проектування

Лабораторна робота №2

з дисципліни

«Проектування інформаційних систем»

Опис передпроектної документації (Software Requirement Specifications)

Виконала:
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Варіант 24

Київ – 2020

Мета роботи: вивчити основні етапи створення передпроектної документації (SRS).

Задача: використати приклад SRS для створення передпроектної документації згідно індивідуальної темі для виконання лабораторних робіт.

Завдання:

1. Вивчити вимоги до передпроектної документації.

2. Скласти опис передпроектної документації для об'єкта проектування.

3. Скласти 5-7 приймальних тестів для ПО об'єкта проектування.

4. Оформити технічне завдання згідно опис передпроектної документації (використовувати рекомендації IEEE 830).

Task Manager

Software Requirements Specification

Version 1.0

07.10.2020

Sofiia Potapova

Lead Software Engineer

Revision History

Date	Description	Author	Comments
07.10.2020	Version 1.0	Sofiia Potapova	Document creation
31.10.2020	Version 1.1	Sofiia Potapova	Document editing

Document Approval

Signature	Printed Name	Title	Date
	Sofiia Potapova	Lead Software Eng.	

Table of Contents

1. Introduction

1.1 Purpose

The purpose of this SRS is to define functional and non-functional requirements, use cases that describe user interactions that the software must provide to the user for perfect interaction. The audience for which this document is written is developers team and all project maintainers.

1.2 Scope

The software product is produced by name Task Me.

This application will allow users to manage their tasks by creating them with all required information e.g. time, date, comment, approximate lead time, type of task, other users, combining them by folders or individual projects with a list of performers and send notifications.

This application won't allow users to exchange any additional attachments other than text data in the form of tasks.

The benefit of this application is that it will have all the necessary components to maintain but doesn't include too much of them and too complicated components. It represents the middle ground among all other applications of this type.

The goal of creating this product is to make the medium-hard to use application with the most convenient and intuitive interface as possible. The one of most important feature will be the potential to calculate the approximate lead time for the tasks by gradually collected data and their analysis.

1.3 Definitions, Acronyms, and Abbreviations

Term	Definition
Database	Collection of all the information monitored by this system.
Field	A cell within a form.
User	Anyone using the app
Software Requirements Specification	A document that completely describes all of the functions of a proposed system and the constraints under

	which it must operate. For example, this document.
Stakeholder	Any person with an interest in the project who is not a developer.

1.4 References

IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.

1.5 Overview

The rest of the SRS contains general description which is product perspective, function, user characteristics, specific requirements e.g. interface and function requirements, use cases and non-functional requirements. Also analysis models as diagrams.

The SRS is organized as displayed in the table of contents.

2. General Description

This section does not state specific requirements, it only makes those requirements easier to understand.

2.1 Product Perspective

The project perspective is to connect this application with related applications as smart calendars and text editors. But it won't be transformed to complex application with included text editor as "Notion" in order not to be too complicated to use and to stay the middle ground among all other applications of this type.

2.2 Product Functions

The product will allow to:

- create, edit, delete tasks

- give the tasks additional information e.g. date, time, comment, approximate lead time, type of task, other users that will perform this task with the user

- combine the tasks into folders or projects with project roles

- the "type of task" argument will allow to calculate the approximate lead time in future which will be based on the collected information

- send notification about deadlines or new tasks assigned to you

2.3 User Characteristics

The eventual users of the product will be the university or school students, office workers or other teams that need a quick, easy and convenient way to manage tasks and projects.

2.4 General Constraints

Mobile apps will be written to allows product to target all 3 platforms:

- Android
- IOS
- Windows Phones

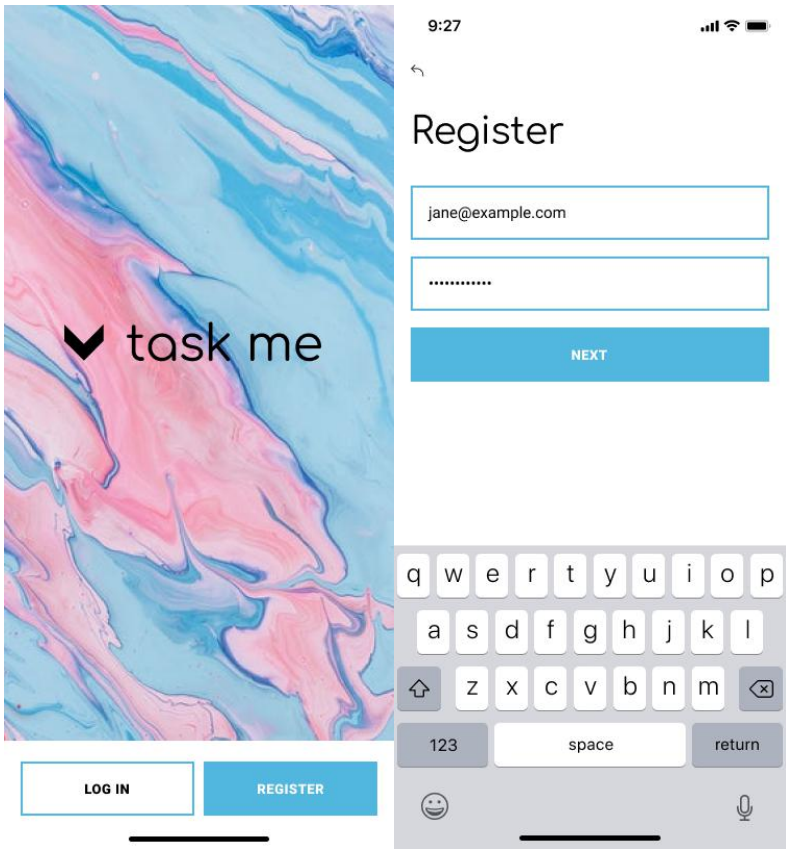
with minor expenses of time and money.

3. Specific Requirements

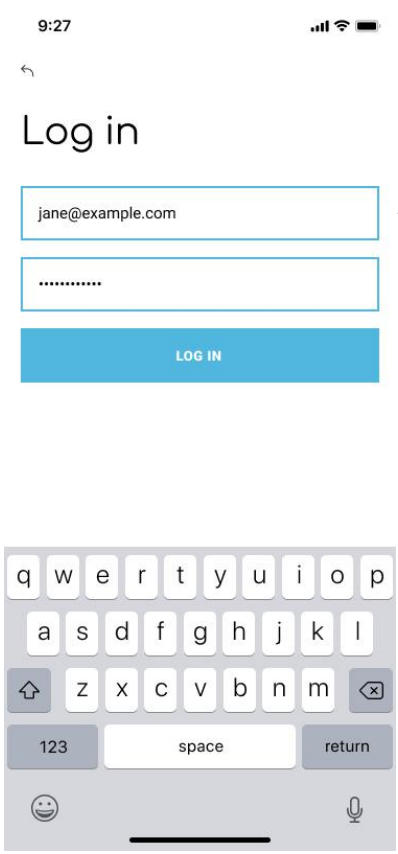
3.1 External Interface requirements

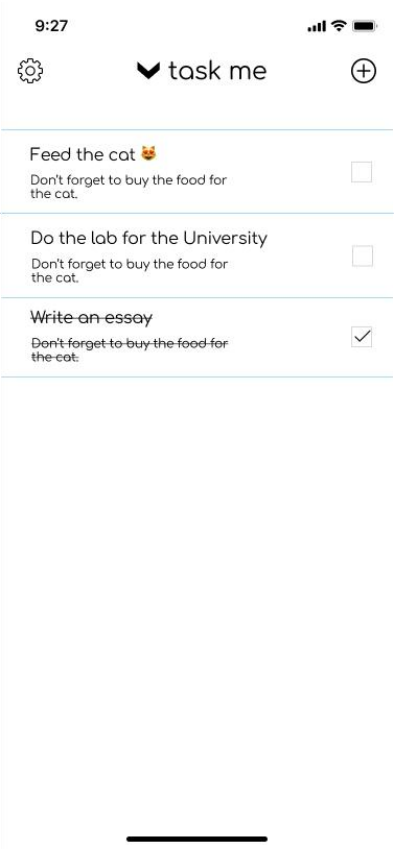
3.1.1 User Interfaces

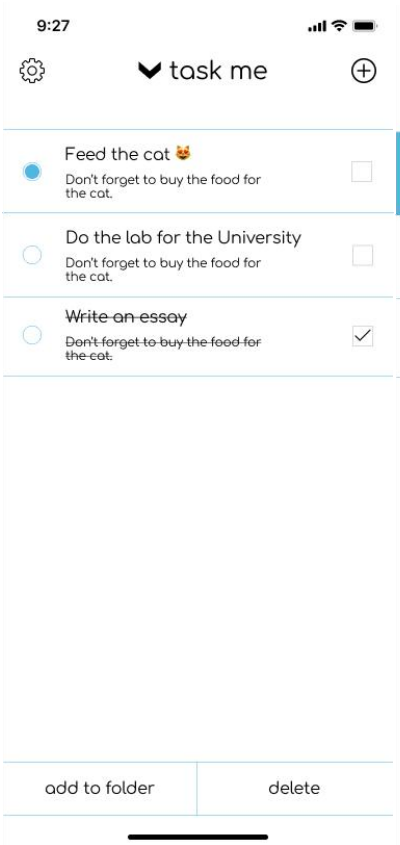
The user interface contains the main page for login or register (via google, etc), user page with customization which can be reached by clicking the customization button in the right corner. The working page with a list of tasks and the button that allows to create a task where there are all the required fields: additional information e.g. date, time, comment, approximate lead time, type of task, other users that will perform this task with the user. The tasks can also be reached in the left menu where you can organize them into folders. The notification button near the customization button where there are notification about deadlines and appointments.

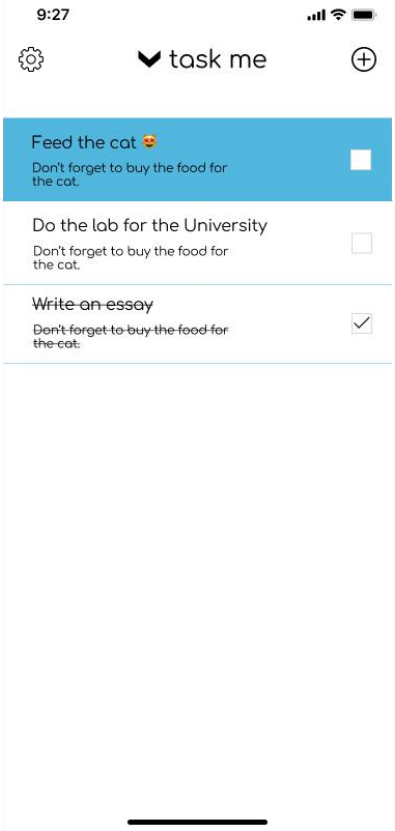

task me
LOG IN
REGISTER

9:27
Register
jane@example.com
NEXT
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
123
space
return

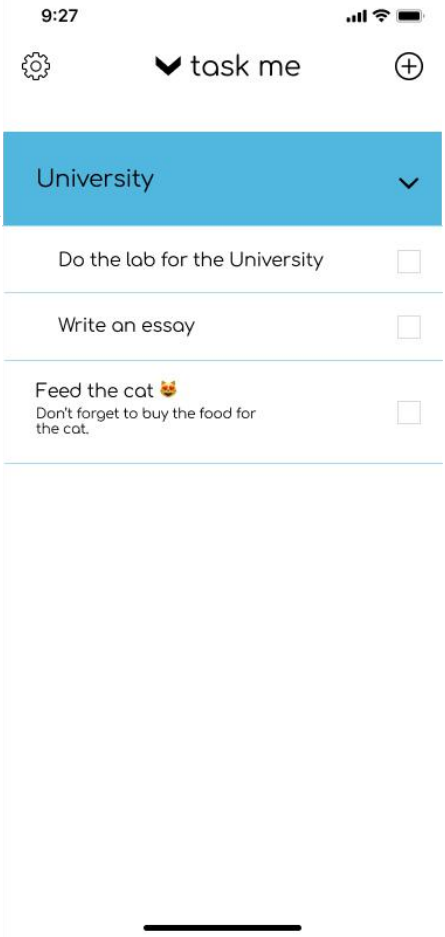

9:27
Log in
jane@example.com
LOG IN
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
123
space
return

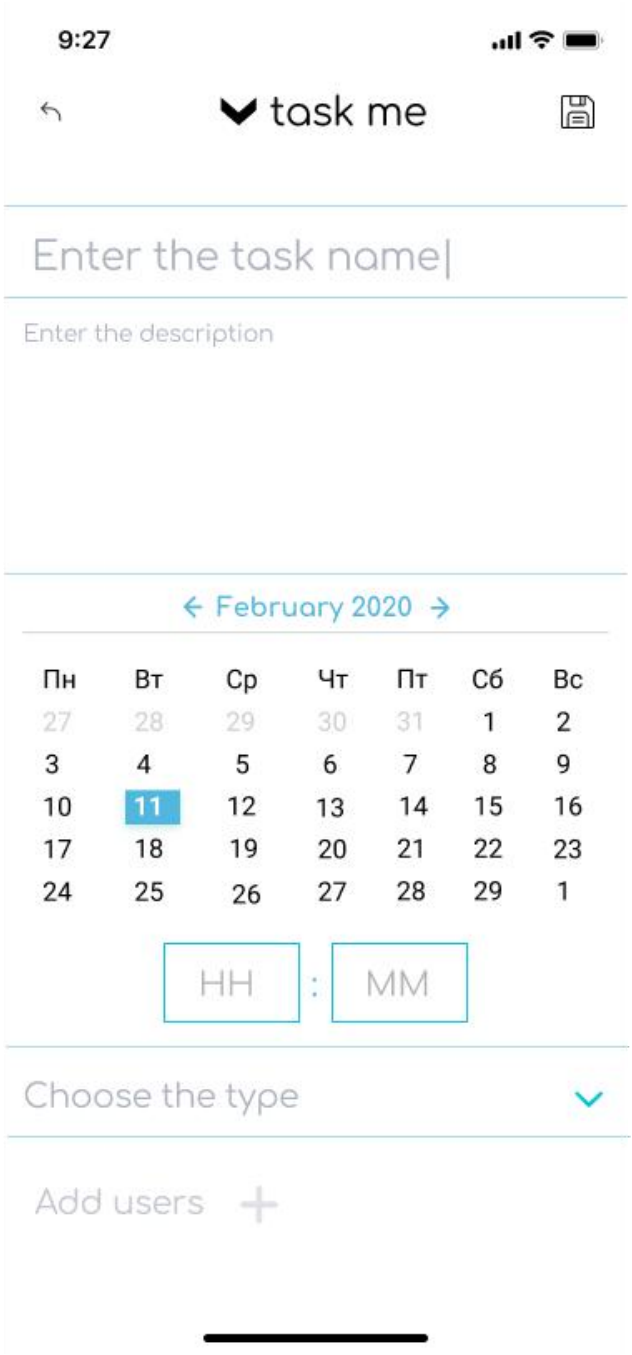

9:27
task me
Feed the cat
Don't forget to buy the food for the cat.
Do the lab for the University
Don't forget to buy the food for the cat.
Write an essay
Don't forget to buy the food for the cat.


9:27
task me
Feed the cat 😻
Don't forget to buy the food for the cat.
Do the lab for the University
Don't forget to buy the food for the cat.
~~Write an essay~~
~~Don't forget to buy the food for the cat.~~
add to folder
delete


9:27
task me
Feed the cat 😻
Don't forget to buy the food for the cat.
Do the lab for the University
Don't forget to buy the food for the cat.
~~Write an essay~~
~~Don't forget to buy the food for the cat.~~


9:27
task me
create task
create folder
Feed the
Don't forget
the cat.
Do the la
Don't forget
the cat.
~~Write an essay~~
~~Don't forget to buy the food for the cat.~~


9:27
task me
University
Do the lab for the University
Write an essay
Feed the cat 😻
Don't forget to buy the food for the cat.


9:27
task me
Enter the task name
Enter the description
February 2020
Пн Вт Ср Чт Пт Сб Вс
27 28 29 30 31 1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 1
HH
MM
Choose the type
Add users

3.1.2 Hardware interface

Hardware interface is represented in form of mobile device which are able to represent this kind of application and supports the touch input.

3.1.3 Software Interface

The mobile device must have an Android or IOS operation system.

3.1.4 Communications Interfaces

3.2 Functional Requirements

3.2.1 Functional requirements of creating the task

3.2.1.1 Introduction

The creating the task feature includes the adding the body of task and all it's attributes, such as date, time, comment, approximate lead time, type of task, other users that will perform this task with the user.

3.2.1.2 Inputs

The text fields are: the name, the comment, the other users that will perform this task with the user and the approximate lead time. The calendar type field for date and clock type field for time (means deadline). The drop box to choose the type of task.

3.2.1.3 Processing

The type of task and approximate lead time is going to be saved and used in future to automation of filling in the approximate execution time field. All the info is saved in the database of tasks of current user.

3.2.1.4 Outputs

The output is a card of the task with all the input information which can be edited or deleted.

3.2.1.5 Error Handling

If the creation of the task failed not because of the app, but because of the system, etc, the draft is saved locally.

3.2.2 Functional requirements of combining the tasks into projects (folders)

3.2.2.1 Introduction

The combining the tasks into projects (folders) can be done in two ways: by creating the project itself and then create or add the tasks in it or to add tasks to project and creating it in the same time.

3.2.2.2 Inputs

The name of the project (folder), tasks that will be in it and the users attached to it if it is required.

3.2.2.3 Processing

The saving the project and copying it to the attached users accounts.

3.2.2.4 Outputs

The visual representation of folders with drop down menu with the tasks.

3.2.2.5 Error Handling

If the creation of the project failed not because of the app, but because of the system, etc, the draft is saved locally.

3.3 Use Cases

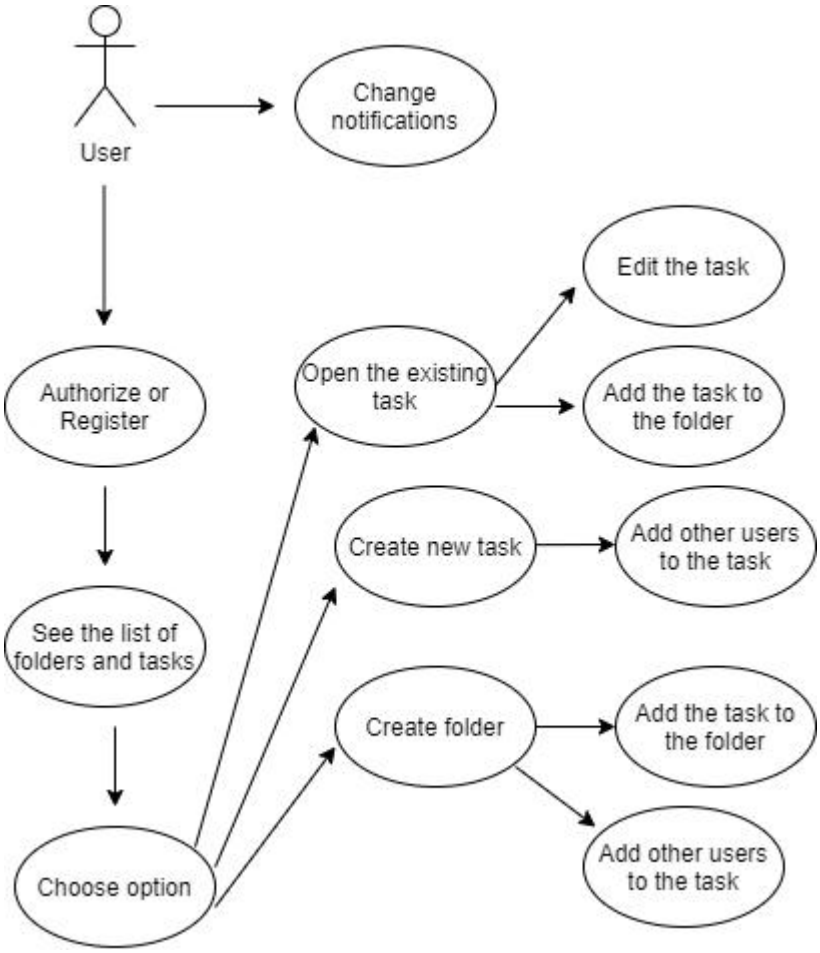


Diagram 1 - User Use Case

Use Case Name	Authorize/Register use-case
Trigger	The Reader assesses the Task Manager app
Precondition	Phone is running and connected to the Internet

Basic Path	1. The User enters username and password. 2. The User clicks Log in button
Alternative Paths	In step 1, if the User clicks Sign Up button 2. The User enters username, password, and re-enter password for verification. 3. The User clicks Sign Up button.
Postcondition	The Userr is logged in and the system displays main screen with the list of tasks.
Exception Paths	The User may not be able to log in if Internet connection is lost.
Other	The password and username is sent to database and userId is returned to client.

Use Case Name	Change Notifications
Trigger	The Notification button is pressed.
Precondition	The user is logged in.
Basic Path	1. The User press the notification button. 2. The notification menu is displayed. 3. Required notification changed. 4. The Save button is pressed. 5. The notification menu is closed.
Alternative Paths	None.
Postcondition	The notifications are changed.
Exception Paths	The User may not be able to change the notifications if Internet connection is lost.
Other	The notifications are applied to the account.

Use Case Name	Create new task
Trigger	The task itself is pressed
Precondition	The user is logged in.
Basic Path	1. The list of tasks is displayed. 2. The task is pressed.

	3. The task card is opened. 4. All the attributes of the task is shown.
Alternative Paths	5. The other users are attached to the task. 6. The task is added to the project (folder).
Postcondition	The task is displayed in the list of all the attached users.
Exception Paths	The other users may not be attached if Internet connection is lost.
Other	None

Use Case Name	Create folder
Trigger	The task is created or the create folder button is pressed.
Precondition	The user is logged in.
Basic Path	1. The create folder button is pressed. 2. The name of the folder is set. 3. The other users are attached. 4. The tasks for this folder is chosen.
Alternative Paths	1. The task is created 2. The task is attached to the folder while creation. 3. The new folder is created by previous step.
Postcondition	The folder is displayed in the list on the main page and may be opened to see the list of tasks in it.
Exception Paths	The other users may not be attached if Internet connection is lost.
Other	None

3.4 Non-Functional Requirement

3.4.1 Performance

Speed of system execution depends mostly on Internet connection, and server processor.

3.4.2 Availability

Mobile app will be available to download from the App Store, Google Play or Windows Store respectively on device you are using.

3.4.3 Security

All your personal information is secured and encrypted. The server on which the Mobile App reside will have its own security to prevent unauthorized write/delete/edit access.

3.4.4 Maintainability

System will have regular updates that fix bugs and performance improvements. Besides that could be added new features.

3.4.5 Portability

System targets wide range of devices:

- Android
- IOS
- Windows Phones

3.5 Logical Database Requirements

User

Data Item	Type	Description
id	int	Unique id of the user
name	text	User name
email	text	User email
password	hash	Password that is encrypted

Task

Data Item	Type	Description
id	int	Unique id of the task
name	text	Task name
description	text	Task description
type	text	Task type
date	date	Task deadline date
time	date	Task deadline time
Users_id	int	Id of the attached users

Project (folder)

Data Item	Type	Description
id	int	Unique id of the folder
Task_id	int	Id of the tasks in folders
name	text	Folder name
User_id	int	Id of the attached users

Скласти 5-7 приймальних тестів для ПО об'єкта проектування

Загальна мета тесту	Передумови для виконання тесту	Необхідні дії для проведення тесту	Стан системи після виконання тесту	Дії необхідні для повернення системи у стан до тестування
Створити задачу	Користувач має бути авторизованим	Заповнити усі необхідні поля параметрів задачі	Отримуємо запис задачі у списку задач	Видалити задачу, яку було створено
Створити папку (проект)	Користувач має бути авторизованим	Назвати папку і додати в неї задачі	Отримуємо випадне меню з задачами	Видалити папку, яку було створено
Додати користувачів до завдання	Користувач має бути авторизованим	Відредагувати завдання і назначити йому виконавців	Отримуємо відредаговану задачу	Відредагувати завдання і видалити назначених виконавців
Додати користувачів до папки (проекту)	Користувач має бути авторизованим	Відредагувати проект додавши виконавців	Отримуємо відредаговану задачу з виконавцями	Відредагувати завдання і видалити виконавців
Змінити ім’я	Користувач має бути	Відкрити налаштуванн	Отримуємо відредагова	Знову відкрити

користувача	авторизованим	я, змінити ім’я і зберегти	не ім’я	налаштування, змінити ім’я на попереднє, зберегти

Висновки

У даній лабораторній роботі було вивчено основні етапи створення передпроектної документації (SRS). Було використати приклад SRS для створення передпроектної документації згідно індивідуальної теми для виконання лабораторних робіт, а також було написано декілька приймальних тестів для ПО об’єкта проектування. Також було визначено різницю між функціональними та нефункціональними вимогами, а саме: функціональні вимоги описують, що саме має виконувати система, які функції вона чи її компонент має виконувати, наприклад деякі розрахунки, маніпуляції з даними, їх певна обробка; до нефункціональних вимог відносять будь-які інші вимоги, які відповідають за оцінку функціонування системи, а не конкретну її поведінку, наприклад: вимоги до якості, до безпеки системи, до надійності, оперативні вимоги, вимоги до інтерфейсу, необхідність певних ресурсів і тд.