KING SAUD UNIVERSITY
COLLEGE OF COMPUTER AND INFORMATION SCIENCES
INFORMATION TECHNOLOGY DEPARTMENT

جامعة الملك سعود
King Saud University
كلية علوم الحاسب والمعلومات
قسم تقنية المعلومات

IT423

Introduction to IT project management

< ILOCKER >

Prepared by:

Group members:		
Nada Almutairi	[redacted]	*Leader*
Sara Alrasheed	[redacted]	*Member*
Lama Alsulaiman	[redacted]	*Member*
Alanoud Alhamdan	[redacted]	*Member*

Supervised by:

Abeer Aldrees

1st Semester 1442

REVISION TABLE

Page#	Section#	Author	Corrected by (Reviewer)
12	5.1	Nada Almutairi	All members
-	-	Sara Alrasheed	All members
13	5.2	Lama Alsulaiman	All members
13	5.3	Alanoud Alhamdan	All members

ROLES AND RESPONSIBILITIES

Member	Role	Responsibilities
Nada	Leader	COST ESTIMATION
Sara	member	COST ESTIMATION
Lama	member	TOOL COST
Alanoud	member	TOTAL COST UPDATE WBDS

MEETING PLANS

Meeting number	Date	Time	Venue	Attendees
1	19-11-2020	18:00 -20:00	zoom	All

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1. INTRODUCTION

We will propose a plan for this project to make a ‘locker application’. Our application helps users to rent a locker by just a click. The user can choose the rental term and appropriate locker. Also, he can confirm his rent using any payment method. Once the user receives the receipt, the application will notify him of the code that unlocks the locker.

In other hand, the application will help managing locker in an efficient manner. The application will display the locker status for all lockers in each facility. As well as automatically assignment of the lockers with the username. Additionally, the administration can communicate with users through the application. Consequently, the application will save both time and efforts in managing and using lockers.

2. PROJECT INITIATION

2.1. TENDER PROPOSAL FORM

Student Name: Nada Almutairi, Sara Alrasheed, Lama Alsulaiman, Alanoud Alhamdan
Domain: large facilities
Suggested Project Title: ILOCKER
Project Detailed Description: A. Problem Lockers are widely used in various facilities such as hospitals, companies, and universities. Lockers rental administration are having a lot of problems using the ordinary way of management. They administration must assign an employee for each branch to manage it with lots of keys and papers. The employee must handle a bunch of hundreds of requests and make rent contract for each. Also, when the administration wants to communicate with a customer, he needs to find the customer 's phone number that saved in the contract. Moreover, customers may lose their keys and forget the locker numbers or locations. For new customers, they are having trouble finding an available locker in a suitable location.

B. Application solution

ILOCKER is a mobile application that specializes in solving problems of ordinary lockers rental system to save both administrations and users' time from getting waste in these ordinary tasks.

Several function could be provided by this app such as:

- Provide location finder to find all the available lockers and view their location.
- Allow the user to rent the chosen locker and extract the receipt.
- Provide different pay methods.
- Send locker security code to the user in order to open the locker.
- Display instructions on how to use the locker.
- Provide communication between the users and administration.
- Show each locker information and status to administration.

C. Application Type: Mobile Application.

Project Requirements:

Software: Microsoft word, Dart language, Flutter: Mobile Framework,

TestingWhiz, Figma, LuciChart, Google Drive, Illustrator, Play store, AppStore.

Hardware: Android mobile, iPhone, 4 laptops

Project Start Date: 1-1-2021

Project End Date: 1-4-2021

Duration: 3 months (91 days)

2.2.PROJECT PLANNING (WBDS TABLE)

Phase Name	Start Date	End Date	Duration	Cost	Qualifications	Tools	Deliverables
Analysis	1/1/2021	21/1/2021	3 weeks	1266.3 SR + 27400 SR + 4200 SR 32866.3 = SR	Analyzer	-Microsoft word -LuciChart - Google Drive	Analyses documentation (stakeholder needs, requirement, user story, system analyses)
Design	22/1/2021	11/2/2021	3 weeks	4200 SR + 1467 SR = 5667 SR	Designer	- Figma -Illustrator	Interface, prototype, ER design.
Implementation	12/2/2021	11/3/2021	4 weeks	6000 SR	Programmer	-Flutter - Dart	Software application
Test	12/3/2021	25/3/2021	2 weeks	2800 SR	Programmer, End user	-TestingWhiz	Errors and debugging
Deployment	26/3/2021	1/4/2021	1 week	1400 SR + 371.25 SR 93.75 SR = 1865 SR	Programmer	-AppStore -Play store	Full application

3.PROJECT MANAGEMENT TOOLS SETUP

3.1. PROBLEM DESCRIPTION

Lockers are widely used in various facilities such as hospitals, companies, and universities. Lockers are used to store people's stuff instead of carrying them all the time, especially for the people who spend lots of time in their working place. As much as the lockers are important and useful, the lockers' rental administration is having a lot of problems using the ordinary way that has many drawbacks. In ordinary lockers rental system, the administrator must assign an employee for each branch to manage it with lots of keys and papers, the employee must handle a bunch of hundreds of requests and make rent contract for each and when the administration wants to communicate with a customer, s/he needs to find the customer 's phone number that saved in the contract. Additionally, customers may lose their keys and forget the locker numbers or locations. For new customers, they may have trouble finding an available locker in a suitable location. As a result, both administrators and users' time and efforts are wasted.

3.2. GOALS AND OBJECTIVES

The overall goal of this project is to build a mobile application that solves the problems caused by using ordinary lockers rental system. The application will facilitate the process of looking for available lockers and knowing their locations via location finder, allowing to rent a locker and choose the suitable payment method. Moreover, this application will provide an easy way of communication between the administration and the users. Consequently, both administrators and users' time will be saved.

3.3. SOLUTION

ILOCKER is a mobile application that provides a better way to manage lockers rental and solves the problems of using ordinary lockers rental system. As a result, both administrators and users' time and effort will be saved from getting waste.

Several function will be provided in this application such as:

- Provide location finder to find all the available lockers and view their location.
- Allow the user to rent the chosen locker and extract the receipt.
- Provide different pay methods.
- Send locker security code to the user in order to open the locker.
- Display instructions on how to use the locker.

- Provide communication between the users and administration.
- Show each locker information and status to administration.

3.4. MAIN FUNCTIONAL AND NON-FUNCTIONAL REQUIREMENTS (PROJECT SCOPE)

FUNCTIONAL REQUIREMENTS:

Customer:

1. The customer shall be able to view all available lockers.
2. The customer shall be able to view lockers locations with their status.
3. The customer shall be able to rent the chosen locker.
4. The customer shall be able to extract the receipt.
5. The customer shall be able to pay using different methods.
6. The customer shall be able to receive the security code to open the locker s/he rented.
7. The customer shall be able to communicate with the administration.
8. The customer shall be able to view instructions on how to use the locker.

Administrator:

1. The administrator shall be able to communicate with the customer.
2. The administrator shall be able to view lockers information (lockers ID, lockers locations, lockers status).
3. The administrator shall be able to approve customer reservation.
4. The administrator shall be able to access customers security codes.
5. The administrator shall be able to change customer security code.
6. The administrator shall be able to keep track of lockers.

NON-FUNCTIONAL REQUIREMENTS:

- Security: After the rental expires the locker security code will be change
- Performance: The response time for any function should be done in less than five seconds
- Availability: More than one user can use the application at any time
- Maintainability: The application is daily updated

- Usability: The application interfaces are clear and understandable for everyone.

3.5. HARDWARE AND SOFTWARE TOOLS

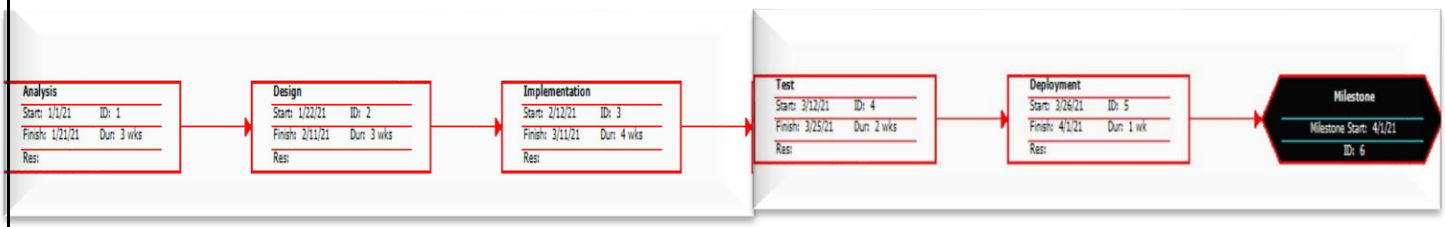
Software: Microsoft word, Dart language, Flutter: Mobile Framework, TestingWhiz, Figma, LuciChart, Google Drive, Illustrator, Play store, AppStore.

Hardware: Android mobile, iPhone, 4 laptops

3.6. PM TOOL

Project plan 365

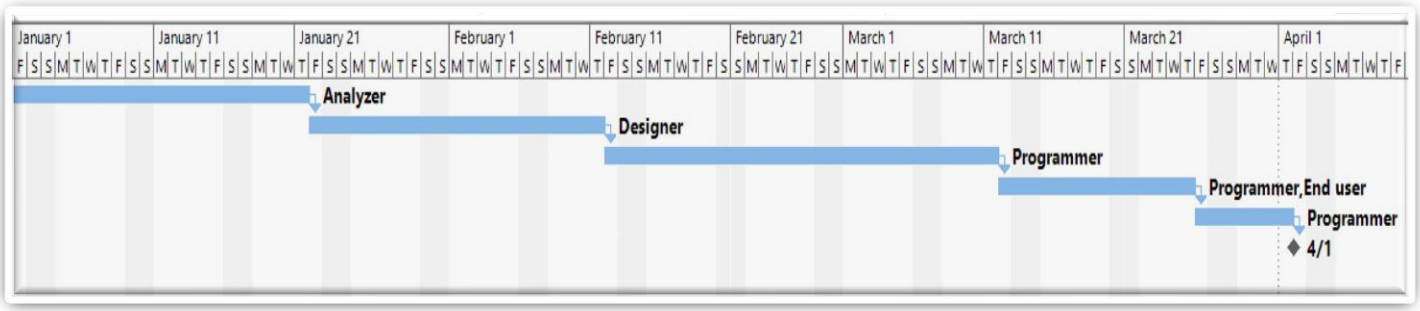
4. TECHNICAL OUTCOMES AND CHARTS



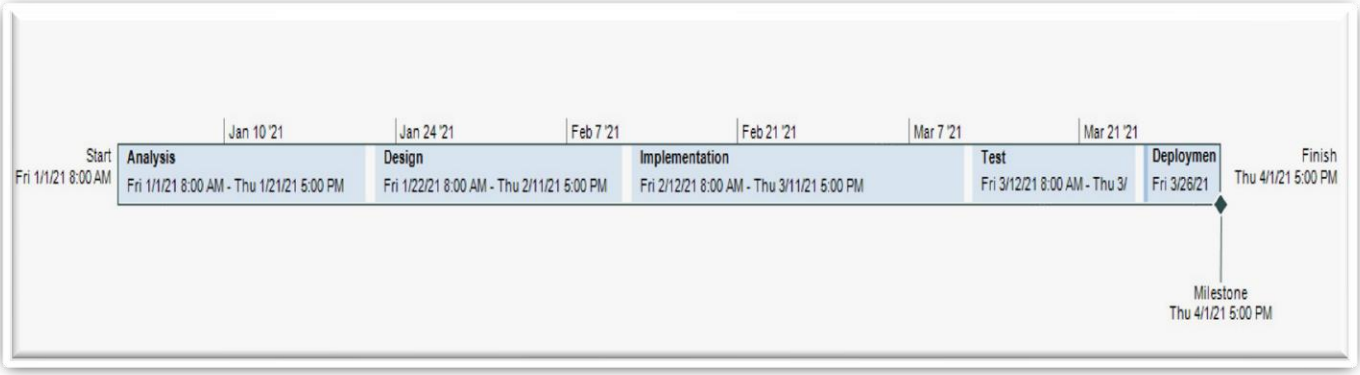
4.1 NETWORK DIAGRAM WITH CRITICAL PATH

(We only have one critical path)

4.2 A COMPLATE GANTT CHART



4.3 PROJECT TIMELINE



4.4 TASK ALLOCATION SCHEDULE

Task Name	Duration	Resource Names	Start	Finish	Work
Analysis	3 wks	Analyzer	Fri 1/1/21 8:00 AM	Thu 1/21/21 5:00 PM	120 hrs
Design	3 wks	Designer	Fri 1/22/21 8:00 AM	Thu 2/11/21 5:00 PM	120 hrs
Implementation	4 wks	Programmer	Fri 2/12/21 8:00 AM	Thu 3/11/21 5:00 PM	160 hrs
Test	2 wks	Programmer, End user	Fri 3/12/21 8:00 AM	Thu 3/25/21 5:00 PM	160 hrs
Deployment	1 wk	Programmer	Fri 3/26/21 8:00 AM	Thu 4/1/21 5:00 PM	40 hrs
Milestone	0 days		Thu 4/1/21 5:00 PM	Thu 4/1/21 5:00 PM	0 hrs

4.5 TASK DEPENDENCIES TABLE

	Task Name	Duration	Resource Names	Start	Finish	Work	% Complete	Predecessors
	Analysis	3 wks	Analyzer	Fri 1/1/21 8:00 AM	Thu 1/21/21 5:00 PM	120 hrs	0%	
	Design	3 wks	Designer	Fri 1/22/21 8:00 AM	Thu 2/11/21 5:00 PM	120 hrs	0%	1
	Implementation	4 wks	Programmer	Fri 2/12/21 8:00 AM	Thu 3/11/21 5:00 PM	160 hrs	0%	2
	Test	2 wks	Programmer, End user	Fri 3/12/21 8:00 AM	Thu 3/25/21 5:00 PM	160 hrs	0%	3
	Deployment	1 wk	Programmer	Fri 3/26/21 8:00 AM	Thu 4/1/21 5:00 PM	40 hrs	0%	4
	Milestone	0 days		Thu 4/1/21 5:00 PM	Thu 4/1/21 5:00 PM	0 hrs	0%	5

5. COST ESTIMATION

5.1. DEVELOPMENT COST

- AFP (Adjusted Function Points)

number of input FPs = 20
number of output FPs = 30
number of file FPs = 10
number of inquiry FPs = 5
number of interface FPs = 10
Total Function Points (FPs) = 75 FPs
Adjustment Factor = 1.2
Adjusted Function Points (AFPs) = 75 * 1.2 = 90 FPs

- ASLOC (number of lines of generated code)

The programming language that will be used to program this project is Java, and it is estimated needs 50 LOC/FC.

Number of Line of Generated Code(ASLOC) = 50 * 90 = 4500 LOC

- Number of staff -Month

The productivity of 1 the programmer is 1500 LOC/month
Number of Staff-Month = 4500 / 1500 = 3 staff-month
The project duration is 3 months so we will have 1 staff for three months.

- Salary for development staff

Staff-Dev Cost = 1 person * 6000 SR * 3.1 months = 18600 SR

5.2. TOOLS COST

Software Tools Cost

Microsoft word	1266.3 SR
LuciChart	Free of Charge
Google Drive	Free of Charge
Figma	405 SR
Illustrator	1062 SR
Flutter	Free
Dart	Free
TestingWhiz	Free
App Store	371.25 SR
Google Play	93.75 SR
Total	3198.3 SR

Hardware

Four Personal Computers	20000 SR
Two Smartphones	7400 SR
Total	27400 SR

5.3. TOTAL COST

Development cost = 18600 SR
Tools Cost = 3198.3 SR + 27400 SR = 30598.3 SR

Total cost = 18600 SR + 30598.3 SR = 49198.3 SR