Home Care Application

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Mission Statement

Our vision is to make home-care services and maintenance easier, more accessible, and embedding technology in home-care services rather than the traditional ways, and we aim to achieve that by developing a home-care mobile application that satisfies the customer maintenance-related needs as soon as possible. Also, we try to consider the customer's budget by providing them with the best price ranges available that suits them.

Objectives

1. Provide an efficient application that satisfies the customer maintenance needs like carpentry, plumbing, etc...
2. Supply the customer with the nearest and best workers to ensure satisfaction regarding their schedules.
3. Show the users a variety of options in their price range.
4. Ensuring trustworthy workers and services to all of our customers.
5. Guarantee that our services are always accessible at any time and place.

SWOT Analysis

Business Case

I. Why are we doing this project?

-Implementing better technology in ordering home care services to make people's life easier and less time consuming and improve city sustainability.

II. What is the project about?

- A home care mobile application that offers customers accessibility to order reliable services to take care of their maintenance related problems.

III. How does this solution address key business issues?

-It solves the issue of people being hesitant to look for a trusted service provider in the fastest time possible so houses and buildings will not suffer severe damages.

IV. What is the return on investment and payback period?

-the way this business is going to earn the invested amount back is by taking a percentage of the earnings of the companies/individuals we contracted with for their services as a fee for being the middleman between them and the customer, it should take about 6 months to earn back the entire investment.

V. What are the risks of doing the project?

-Facing competition between rival companies and start-up businesses. Product durability increases with time.

VI. What are the risks of not doing the project?

-People won't be able to receive the maintenance services required in the shortest time and best quality available.

Preliminary investigation overview

Step 1: Understand the Problem or Opportunity

-Business Profile: Our mission is to speed housing maintenance services within a click of a button, we don't provide physical products, but we provide many services such as plumbery, carpentry, painting, electrical services, and as a company that relies on application service the only supplier that will be needed is electronics suppliers such as Smart buy, Plusivo Jordan and City Center that will be needed is electronics suppliers such as Smart buy, Plusivo Jordan and City Center. As of competitors, there are not many major competitors for house services and maintenance in the market. In the future, we aim to expand our company and services to reach multiple regions, not just Jordan.

-Business Process: We are doing this project to provide quick services to our customers in the field of house services! Operating in ways that allow users to take an appointment for housing services. As a company we will provide the user with the nearest service for speed satisfaction. The user also has the option to choose the service needed manually which will give the option to pick the date and time.

- Departments involved are:

- IT department,
- Human Resources department
- Marketing
- Accounting and finance
- Research and development

- Users: There's no specific target for our services,everyone who downloads the app can use it.

Step 2: Define the project scope and constraints

Project Scope:

Must Do:

- Provide most home maintenance services to the user
- Deliver the services at time.
- Ensuring professional and trustworthy workers to serve our customers.

Should Do:

- Consider the customer's budget.
- Making sure that our services are available most of the time.

Could Do:

- Provide more services to our customers.
- Add a variety of payment methods other than cash.
- Create a rating and feedback system for workers.

Won't Do:

- Deliver bad services for our customers.
- Provide an inaccurate schedule for our services.

Examples of project boundaries and constraints:

- **Location boundaries:** Our services are currently limited to Jordan only.
- **Financial boundaries:** We are limited with a budget so we will not be able to achieve all of our goals directly.
- **Department boundaries:** Not enough employees to complete the departments.
- **Governmental boundaries:** Like taxes, fines, ethical constraints.
- **Timeline boundaries:** We are limited in a certain duration.

Step 4: Study usability, cost, benefit, and schedule data

What information must you obtain, and how will you gather and analyze the information?

We will conduct surveys and interview users, an analyst will analyze the information that's obtained from the surveys and interviews.

Will you conduct interviews? How many people will you interview, and how much time will you need to meet with the people and summarize their responses?

Interviews will be conducted. We will interview 5 candidates in three different rounds (5 candidates per round). It will take about a week to meet with the people and summarize their responses.

Will you conduct a survey? Who will be involved? How much time will it take people to complete it? How much time will it take to tabulate the results?

Surveys will be conducted. Users that own and rent houses will be involved.

It will contain 25 questions and it takes less than 8 minutes to complete it. It will take around 6 days to tabulate the results.

How much will it cost to analyze the information and prepare a report with findings and recommendations?

It will cost about 4320 usd

Step 5: evaluate feasibility

Operational Feasibility

User needs, requirements, and expectations:

- Receive a functional maintenance services system.
- Use a fault free system with no errors or bugs.
- Support for multiple languages.
- Providing a simple, easy to use, and learn user interface.

areas that might present problems for users and how they might be resolved:

There are many areas that might present some problems to the users such as not understanding how to use the technology, having trouble with payment methods, ordering workers for wrong jobs, and many more. To resolve these problems, we aim to provide a quick tutorial and guide to new users to make them more familiar with the application and its features.

Technical Feasibility

Hardware:

- Servers
- Computers for employees
- Storage and backup storage

Software:

- Database sql
- Website
- Mobile app
- Email service

Network:

- Cloud services
- Website hosting
- Application servers hosting

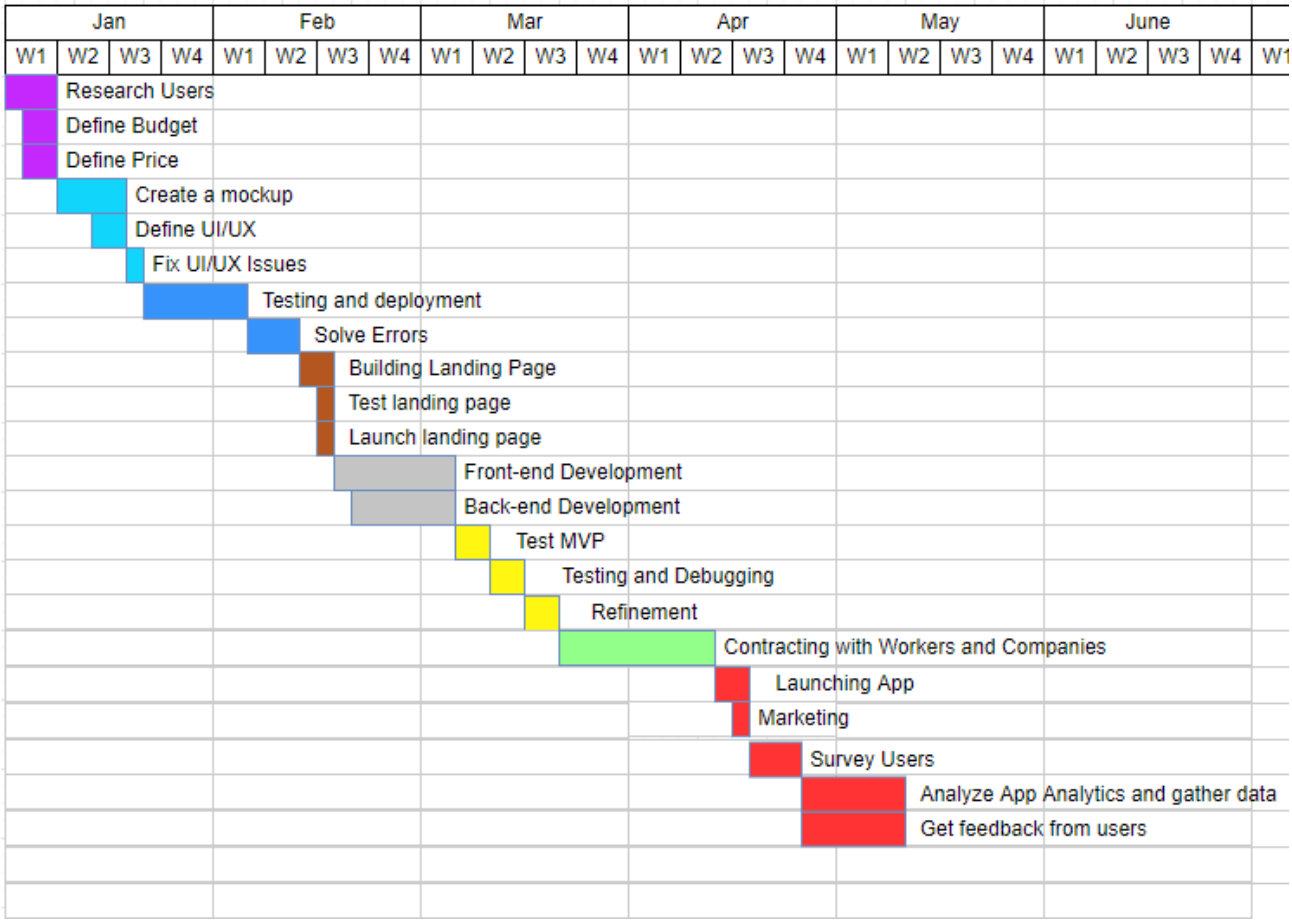
Economic Feasibility

- **Servers:** 2500$
- **Email service:** 75$/month
- **Web hosting:** 10$/month
- **Website Development:** 1200$
- **Computers for employees:** 15000$ (around 17 - 19 computers)
- **GPS Services:** 15$/month
- **Android hosting:** 25$
- **IOS hosting:** 100$/year
- **Cloud services:** 417$/year
- **Backup Storage:** 3400$

Schedule Feasibility

Task Number	Task	Start	End	Estimated	Pre
1	Research Users	0	7	7	N/A
2	Define Budget	0	7	3	N/A
3	Define Price	0	7	3	N/A
4	Create a Mockup	7	17	10	1,2,3
5	Define UI/UX	7	17	3	1,2,3
6	Fix UI/UX	17	18	1	5
7	Testing and deployment	18	32	14	6
8	Solve Errors	32	37	5	7
9	Building Landing page	37	39	2	8
10	Test Landing page	37	39	1	8
11	Launch Landing page	38	39	1	8
12	Front-End Development	39	67	28	11
13	Back-End Development	39	67	24	11
14	Test MVP	67	71	4	13
15	Testing and Debugging	71	75	4	14
16	Refinement	75	79	4	15
17	Contracting	79	100	21	16
18	Launching App	100	104	4	17
19	Marketing	100	104	1	17
20	Survey Users	104	108	4	19
21	Analyze App Analytics	108	122	14	20
22	Get Feedback from User	108	122	14	20

Gantt Chart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W1 W2 W3 W4 W1 W2 W3 W4 W1 W2 W3 W4 W1 W2 W3 W4 W1 W2 W3 W4 W1 W2 W3 W4 W1
Research Users
Define Budget
Define Price
Create a mockup
Define UI/UX
Fix UI/UX Issues
Testing and deployment
Solve Errors
Building Landing Page
Test landing page
Launch landing page
Front-end Development
Back-end Development
Test MVP
Testing and Debugging
Refinement
Contracting with Workers and Companies
Launching App
Marketing
Survey Users
Analyze App Analytics and gather data
Get feedback from users

Meeting No.	Date (Day)	Time: Start - End	Duration	Location	Attendance	Objective	Role of each member
1	05/11/2022 (Saturday)	8:00 – 8:30 pm	30 minutes	Zoom Platform	All members	Planning Phase 1	Planning for the whole project
2	07/11/2022 (Monday)	1:30 – 2:40 pm	1:10	PSUT Campus – IT Study Hall	All members	Requirements 1 & 2	Sara & Abdulrahman: Mission Statement Omar & Hamza: Objectives
3	08/11/2022 (Tuesday)	8:00 – 9:15 pm	1:15	Zoom Platform	All members	Requirements 3 & 4	Sara & Omar: SWOT Abdulrahman & Hamza: What is your business case?
4	17/11/2022 (Thursday)	5:30 – 6:45 pm	1:15	Zoom Platform	All members	Requirements 4 & 5(step 1)	Omar & Sara: SWOT Design Hamza & Abdulrahman: understand the problem and opportunity.
5	20/11/2022 (Sunday)	7:30 – 11:00 pm	3:30	Zoom Platform	All members	Requirements 5(step 2, 3 & 4) & 6	All members worked together at the same time

- **All the work was checked by all the team members (step by step)**

Survey

The survey that we conducted was filled out by 44 random people. The survey contained 19 questions (15 questions MCQ and 4 text questions). The survey started on 25/12/2022 and finished on 30/12/2022. The purpose of this survey is to measure the clients satisfaction. Access was given to Dr. Rania in the following email (r.alzubaidi@psut.edu.jo) to the survey, the link of the survey (Home Care App).

The questions that were asked are:

- What are the most important factors for you when selecting a home-care service provider?
- How often do you need home-care services and maintenance?
- How do you currently pay for home-care services and maintenance?
- What types of home-care services and maintenance do you typically need?
- What is your budget for home-care services and maintenance?
- Would you prefer to schedule home-care services through a mobile application, or do you prefer traditional methods?
- How important is it to you that the mobile application provides transparent pricing information?
- How comfortable are you with using technology to access home-care services and maintenance?
- How important is it to you that the mobile application is easy to use and navigate?
- What platform do you use?
- How important is it to you that the mobile application provides customer support or assistance?
- How likely are you to make a purchase through a mobile application if it is more convenient than traditional methods?
- How important is it to you that the mobile application provides secure payment options?
- How important is it to you that the mobile application provides information about the qualifications or experience of the service providers?
- How important is it to you that the mobile application provides options for customizing or personalizing the services offered?
- What are other features or capabilities would you like to see in the mobile application?

- Are there any specific challenges or issues that you have experienced with accessing home-care services and maintenance in the past?
- What is your primary motivation for using home-care services and maintenance?
- Is there anything else you would like to share about your experience with home-care services and maintenance, or any other feedback that you have about the mobile application project?

Research

House care applications have been created in several countries but each has a different usage for it. Some use it for health home service and others for multi-usage such as car wash, satellite fixing and gardening. In our project we chose home maintenance in all its fields like carpeting, plumbing, painting and more. The idea of embedding technology to the project is to make it as easy as possible for the customer to schedule an appointment for their needs. Most people prefer mobile apps more than websites because it's more convenient to use, the number of mobile users is more than that of desktop users which gives an edge for more downloads. One of the biggest parts of our application is scheduling and online booking. We totally understand that in order to draw the attention of our users we should be able to give them an easy and efficient way for scheduling. The research that has been conducted shows the importance of using scheduling software, 67% of users prefer online booking, 26% of online appointments are scheduled at the same day or the next day, 43% of users prefer to book appointments by applications on their phone that continues to rise yearly but 48% prefer to book appointments by phone. According to the business wire website the top three tasks that include maintenance are plumbing with a percentage of 15.1%, heating with a percentage of 13.2% and electricity with a percentage of 12.4%. All of the top maintenance that is required will be available in our application, as more detailed maintenance that aren't used often but are essential to users and are considered as a resource that brings in good money.

Functional and Nonfunctional Requirements

Functional Requirements

1. A user registration and login system to allow customers to create an account and securely access the app.
2. A search function that allows users to find home-care service providers in their area based on their specific needs (e.g. plumbery, electrician, carpentry).
3. A booking system that allows users to request and schedule services with providers at a specific date and time.
4. A payment system to allow users to pay for services through the app.
5. A messaging system to allow users to communicate with service providers before, during, and after the service has been completed.
6. A ratings and reviews system to allow users to provide feedback on the quality of the services they received.
7. A notification system to remind users of upcoming appointments and to alert them of any changes or updates to their service requests.
8. A budget tracking system to allow users to keep track of the cost of their home-care services and stay within their budget.
9. A customer service system to allow users to get help and support with any issues or questions they may have.

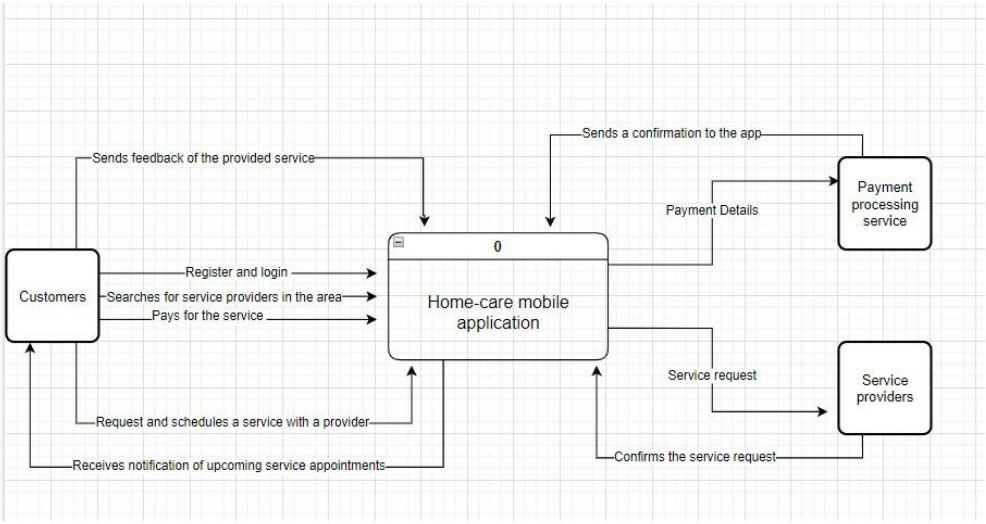
NonFunctional Requirements

1. Security: The app must ensure that customer data is protected from unauthorized access, and that all communication and transactions are encrypted to prevent data breaches.

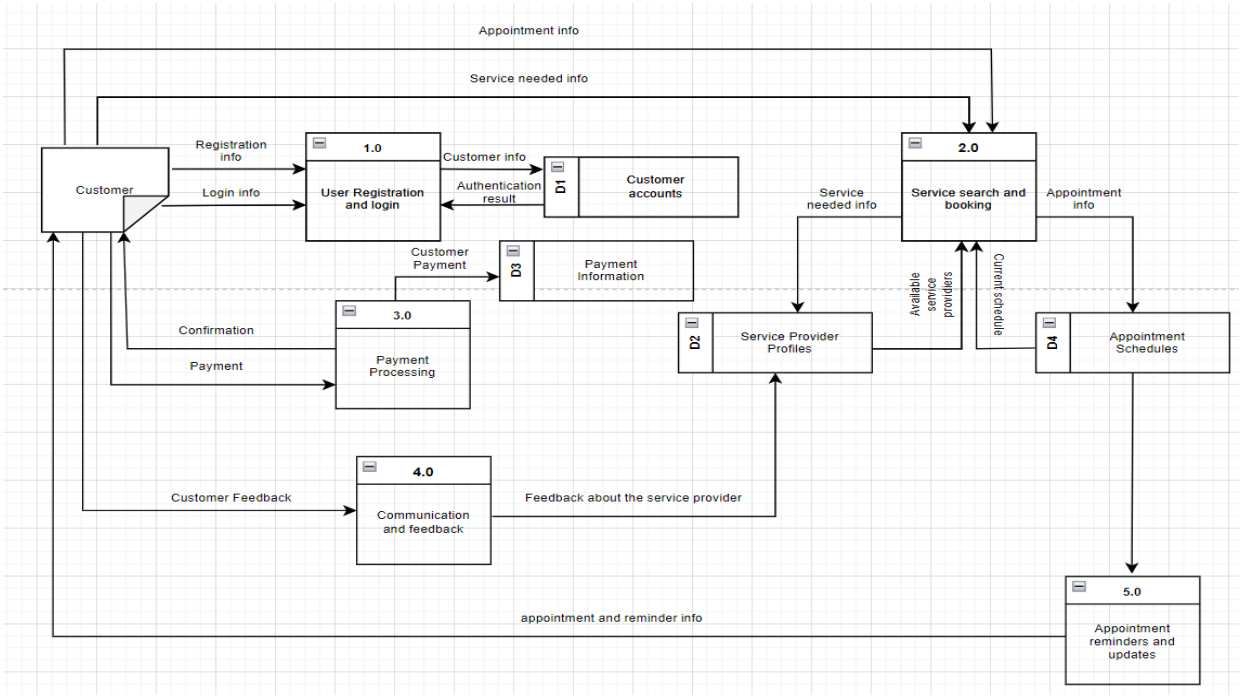
2. Performance: The app must be able to handle a high volume of user requests and transactions without experiencing any delays or downtime.
3. Scalability: The app must be able to adapt to future growth in user numbers and service offerings without experiencing any performance degradation.
4. Usability: The app must be easy to use and navigate, with a user-friendly interface and clear instructions for completing tasks.
5. Accessibility: The app must be accessible to users with disabilities, including those with visual, auditory, or mobility impairments.
6. Compatibility: The app must be compatible with a range of mobile devices and operating systems.
7. Maintenance: The app must be designed for easy maintenance and updates, with clear documentation and support resources for developers.
8. Internationalization: The app must be able to support users in multiple languages (Arabic, English).
9. Reliability: The app must be reliable and consistently available to users, with a high uptime and low error rate.
10. Compliance: The app must comply with relevant laws and regulations, including those related to privacy, data protection, and accessibility.

Data Flow Diagram

Context Diagram



Level-0 Diagram



Data Dictionary

Data Flow: Registration Info

Data Flow Name or Label: Registration Info

Description: This data flow represents the process of a customer creating a new account on the home-care mobile application.

Alternate Name(s): Account registration, new user sign-up

Origin: Customers

Destination: User Registration and Login

Volume and Frequency: This data flow may occur multiple times per day, depending on the number of new customers signing up for the app. The volume of data may vary depending on the number of fields in the registration form and the amount of information provided by the customer.

Process: Registration Info

Process Name or Label: User registration and login

Process Number: 1.0

Description: This process represents the actions involved in registering a new user account on the home-care mobile application, and logging in to an existing account.

Input Data Flows: Registration Info, Login Info

Output Data Flows: Customer Info, Authentication Result

Process Description: The process begins when a customer submits their registration information through the app. The app validates the registration

information to ensure that it is complete and accurate. If the registration information is valid, the app creates a new user account for the customer and stores the account information in the customer accounts data store. If the registration information is invalid, the app displays an error message and prompts the customer to try again. Once the customer has successfully registered an account, they can log in to the app using their login credentials.

Data Store: Customer Accounts

Data Store Name or Label: Customer accounts

Description: This data store stores information about the customer accounts that have been created on the home-care mobile application.

Alternate Name(s): User accounts

Attributes:

- Customer ID (unique identifier for each customer)
- Customer name
- Customer contact information (e.g. email address, phone number)
- Customer login credentials (e.g. username, password)
- Payment information (e.g. credit card details)

Volume and Frequency: This data store may contain a large number of records, depending on the number of customers that have registered for the app. The records in this data store may be updated frequently, as customers may update their contact information or payment information, or change their login credentials.

External Entity: Customer

Entity Name: Customer

Description: This entity represents the customers who use the home-care mobile application to request maintenance and home-care services.

Alternate Name(s): User, client

Output Data Flows: Registration Info, Login Info, Appointment Info, Services Needed Info, Payment, Customer feedback

Input Data Flows: Confirmation, Appointment and Reminder Info

Record: Service Request

Record or Data Structure Name: Service request

Definition or Description: This record is a data structure that contains a set of related data elements related to a maintenance or home-care service request made through the home-care mobile application.

Alternate Name(s): Work order

Attributes:

- Service request ID (unique identifier for each service request)
- Customer ID (identifies the customer who made the request)
- Service type (e.g. plumbing, electrical)
- Service location (e.g. address, apartment number)
- Service date and time
- Service price range (e.g. low, medium, high)
- Service provider (identifies the service provider who will fulfill the request)
- Payment method (e.g. credit card, cash)

Process Description Tools

Business Logic

the user should choose payment method (credit card, cash), if the payment method is credit card the user should choose between mastercard or visa after that, they have to enter the credit card number and pay, if the payment method is cash, the user should choose to pay on delivery or before delivery, if the user chose on delivery, they should enter their location, other than that they should enter a time to go pay in the listed places.

Structured English

```
IF payment method is credit card THEN
        IF visa THEN
                Enter visa card number
        ELSE
                Enter master card number
        ENDIF
ELSE IF payment method is cash THEN
        IF pay on delivery THEN
                Enter user location
        ELSE
                Enter time to pay in the listed locations
        ENDIF
ENDIF
```

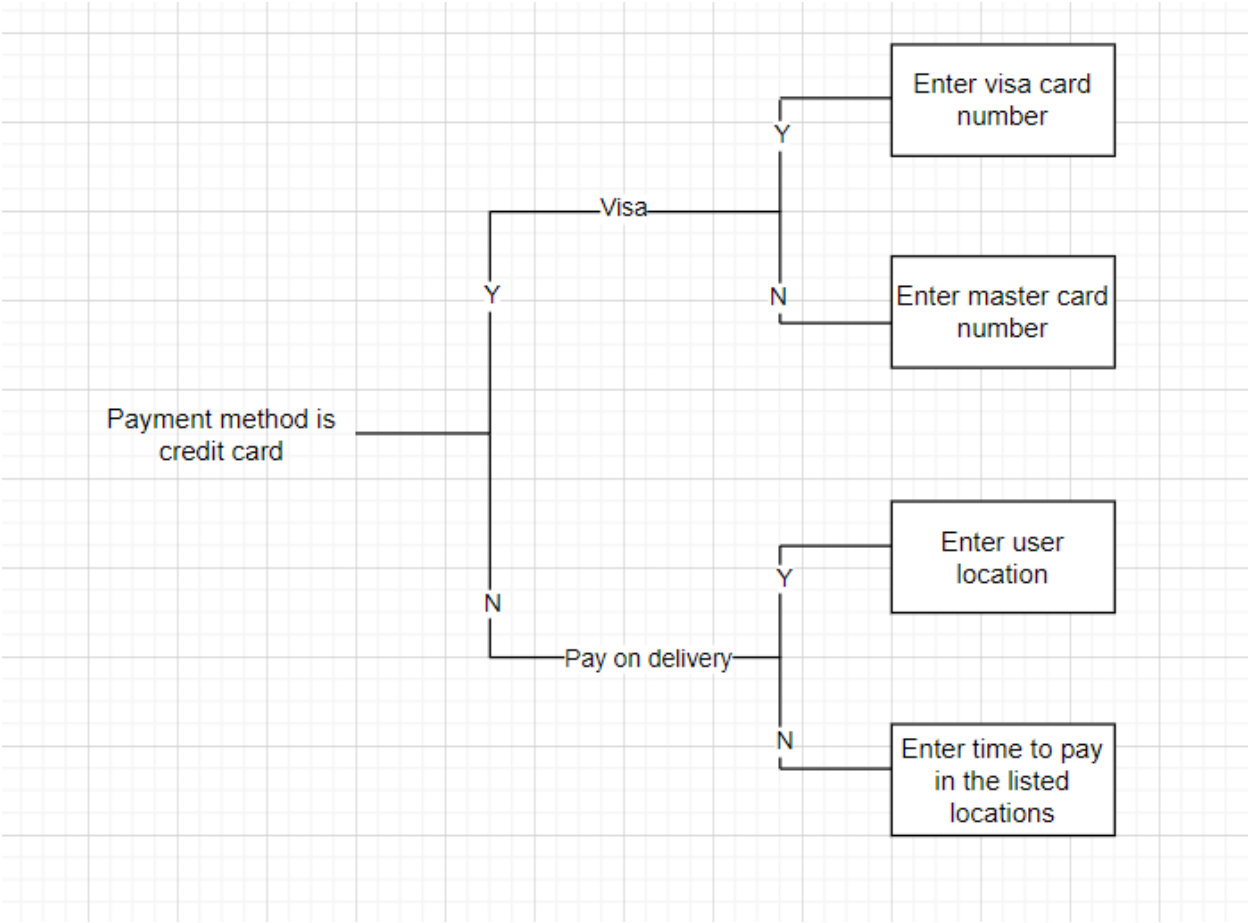
Decision Table

Visa	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
Master Card	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	N
Before Delivery	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N
After Delivery	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Enter Card Number	X	X	X	X	X	X	X	X	X	X	X	X				
Enter User Location															X	
Select Time to Pay													X	X		
N/A																X

Condensed Decision Table

Visa	Y	-	N	N	N
Master Card	-	Y	N	N	N
Before Delivery	-	-	Y	N	N
After Delivery	-	-	-	Y	N
Enter Card Number	X	X			
Enter User Location				X	
Select Time to Pay			X		
N/A					X

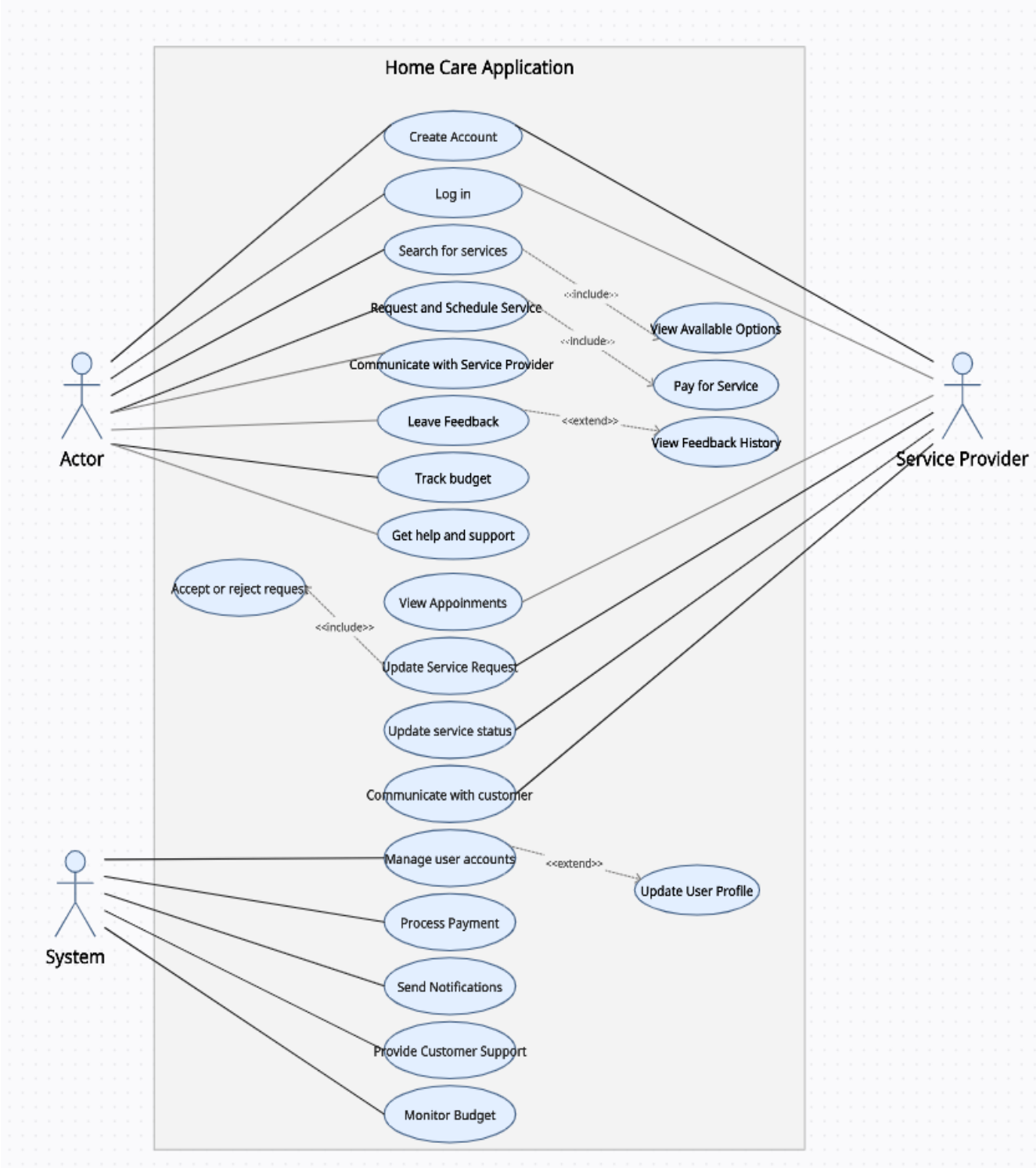
Decision Tree



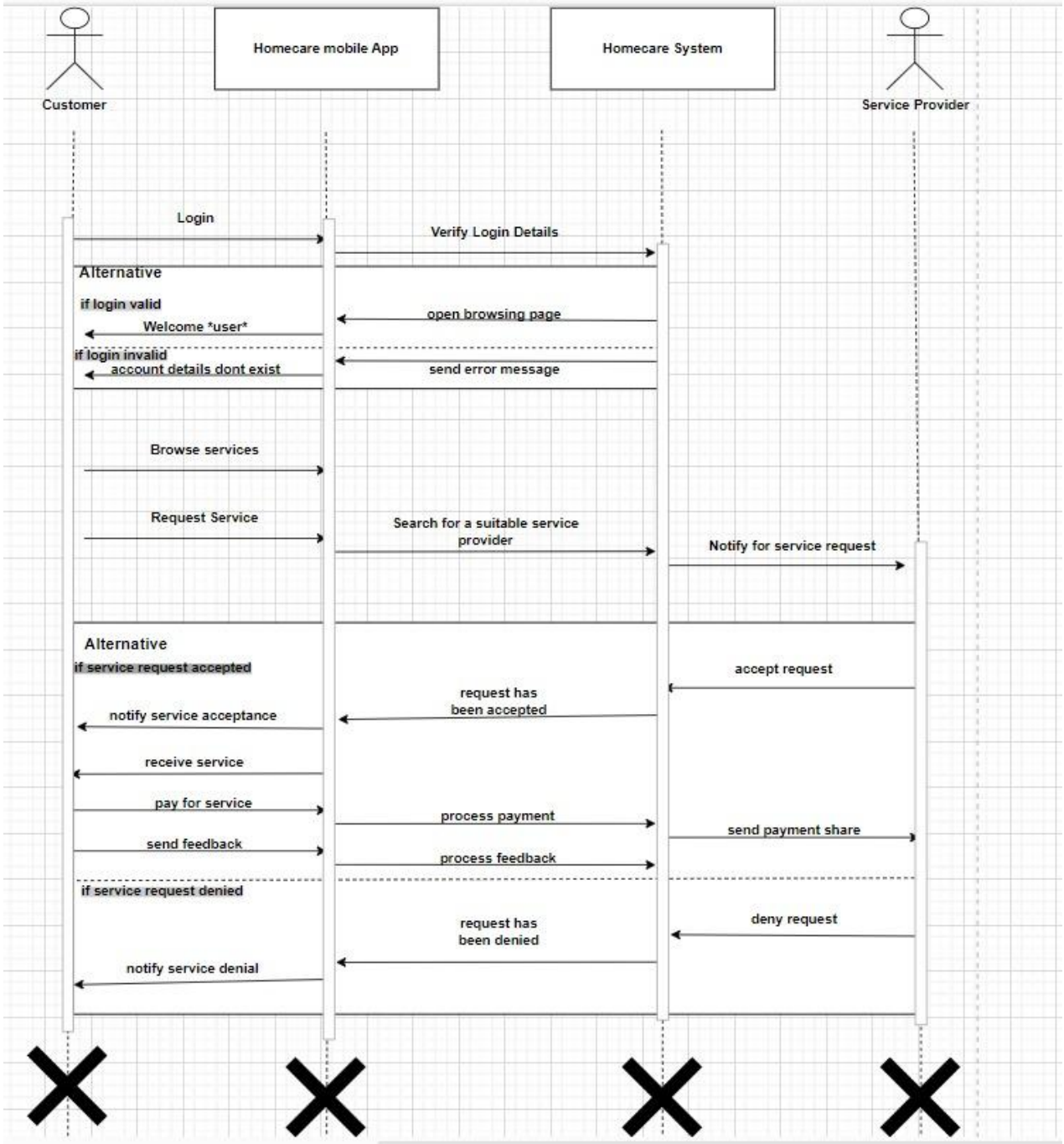
Meeting No.	Date (Day)	Time: Start - End	Duration	Location	Attendance	Objective	Role of each member
1	25/12/2022 (Sunday)	5:00 – 8:00 pm	3 hours	Almond coffee house	All members	Step 1, 2 and 3	Abdulrahman & Omar: Step -1. Sara & Hamza: Step -2. All team members: Step -3
2	27/12/2022 (Tuesday)	5:00 – 8:00 pm	3 hours	Gram's coffee house	All members	Step 4 & 5	Sara & Abdulrahman: Step -4. Hamza & Omar: Step -5
3	28/12/2022 (Wednesday)	4:00 – 6:00 pm	2 hours	Discord Server	All members	Step 6	All team members worked together
4	31/12/2022 (Saturday)	5:00 – 6:00 pm	1 hour	Discord Server	All members	Recheck Step 6 and the format of the project	All team members worked together

- **All the work was checked by all the team members (step-by-step)**

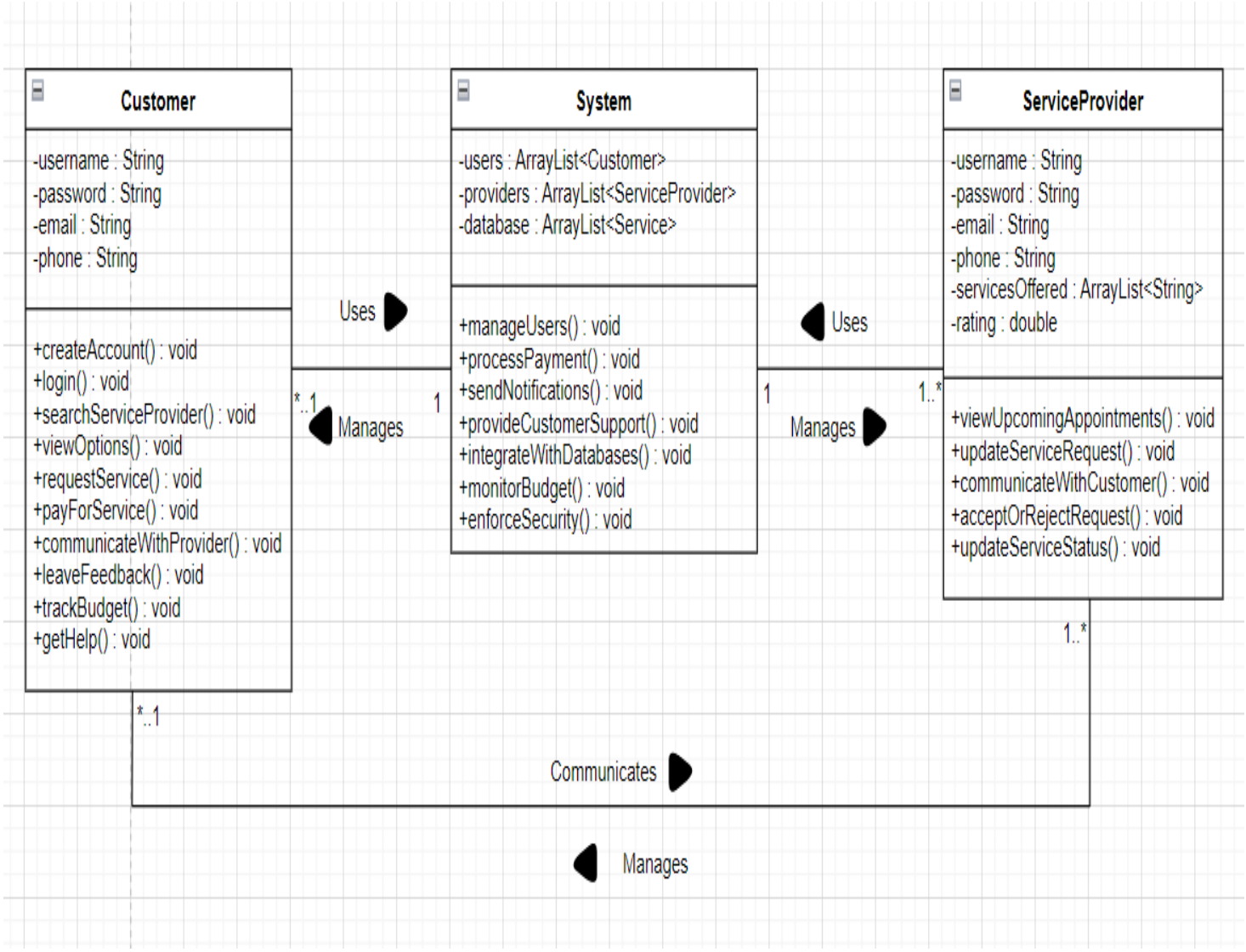
Use Case Diagram



Sequence Diagram



Class Diagram



Meeting No.	Date (Day)	Time: Start - End	Duration	Location	Attendance	Objective	Role of each member
1	13/01/2023 (Friday)	7:00 – 10:00 pm	3 hours	Discord Server	All members	Step 1 and 2	Sara & Omar: Step -1. Abdulrahman & Hamza: Step -2.
2	14/01/2023 (Saturday)	4:00 – 7:00 pm	3 hours	Roasters Coffee House	All members	Step 2 (Re-check) and step 3	All team members worked together
3	15/01/2023 (Sunday)	12:15 - 1:15 am	1 hour	Discord Server	All members	Step 4 (Prepare for presentation)	All team members worked together

- **All the work was checked by all the team members (step-by-step)**

Appendix

What are the most important factors for you when selecting a home-care service provider?

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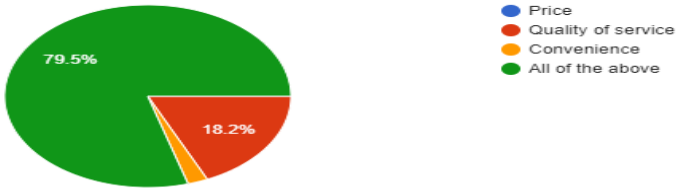
44 responses



How often do you need home-care services and maintenance?

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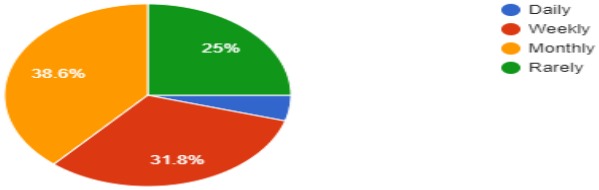
44 responses



How do you currently pay for home-care services and maintenance?

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44 responses

What types of home-care services and maintenance do you typically need?

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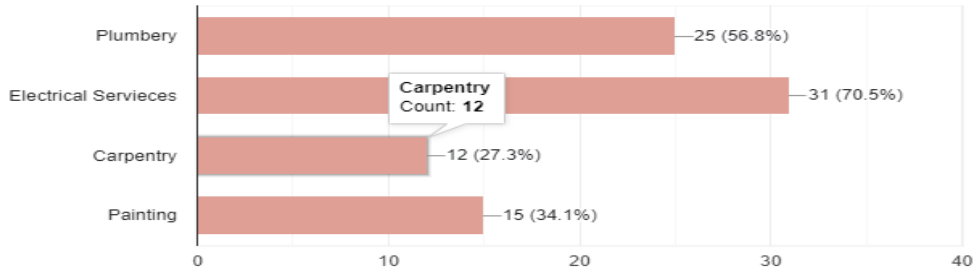
44 responses



What is your budget for home-care services and maintenance?

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44 responses

Would you prefer to schedule for home-care services through a mobile application, or do you prefer traditional methods?

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44 responses

How important is it to you that the mobile application provides transparent pricing information?

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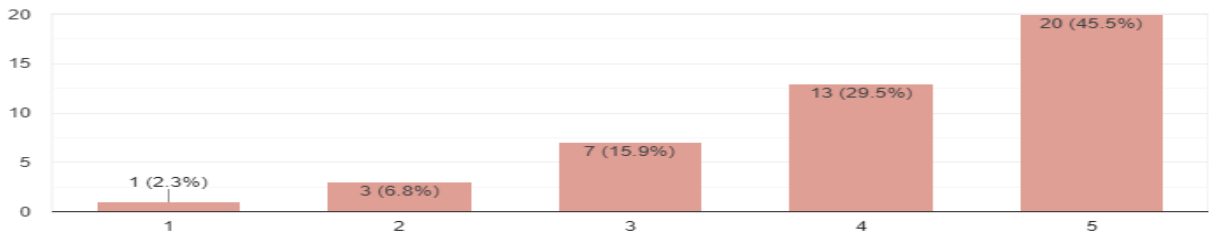
44 responses



How comfortable are you with using technology to access home-care services and maintenance?

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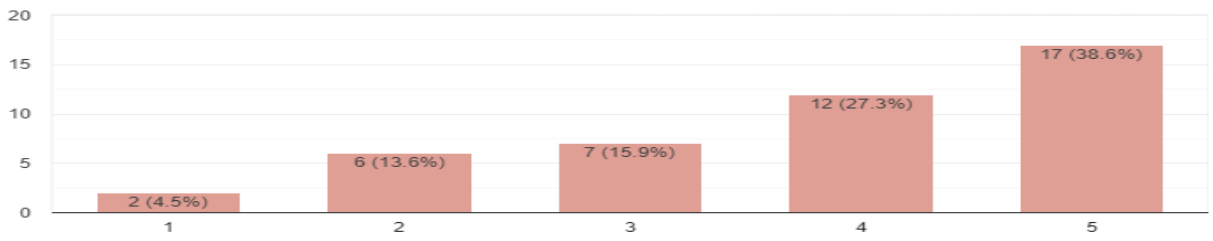
44 responses



How important is it to you that the mobile application is easy to use and navigate?

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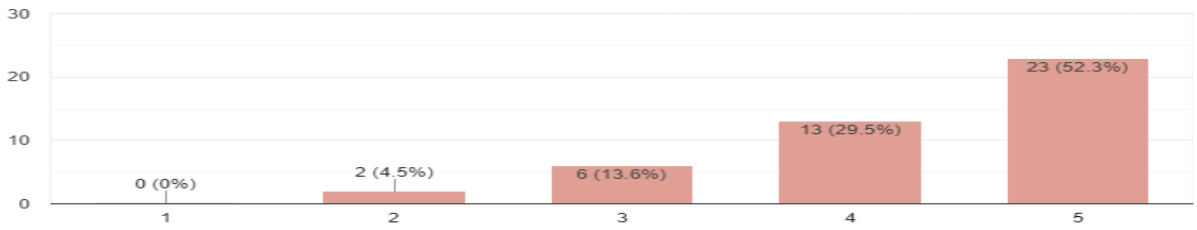
44 responses



What platform do you use?

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44 responses

How important is it to you that the mobile application provides customer support or assistance?

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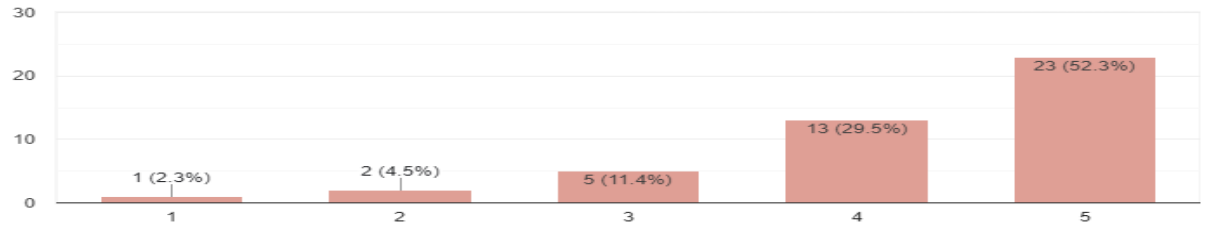
44 responses



How likely are you to make a purchase through a mobile application if it is more convenient than traditional methods?

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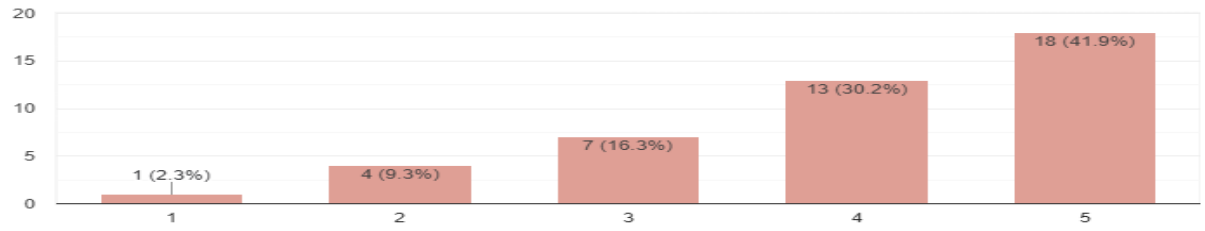
43 responses



How important is it to you that the mobile application provides secure payment options?

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44 responses

How important is it to you that the mobile application provides information about the qualifications or experience of the service providers?

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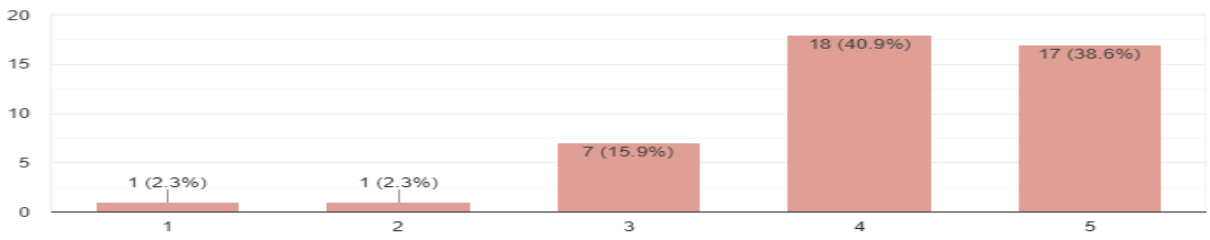
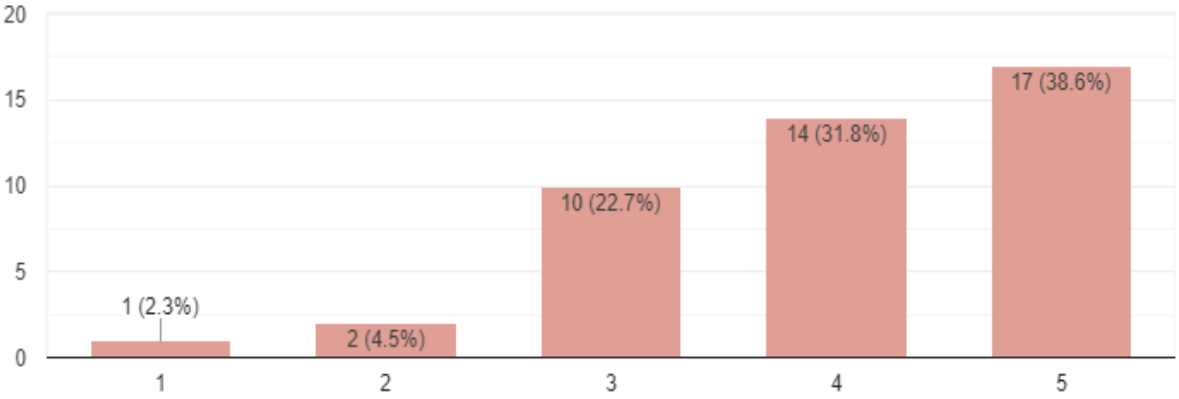
44 responses



How important is it to you that the mobile application provides options for customizing or personalizing the services offered?

Copy

44 responses



What are other features or capabilities would you like to see in the mobile application?

21 responses

- Good design
- None for now
- Nothing
- Scheduling, expertise of workers
- Quick calling the nearest home-care worker if you need something to be fixed as soon as possible but it got to be convenient to the both ends
- Electricity bill at anytime
- All good
- simple interface , complaints section
- tiling services

Are there any specific challenges or issues that you have experienced with accessing home-care services and maintenance in the past?

21 responses

- No
- no
- Very hard to access back then
- Hard to reach somth
- All good
- No, Not that much
- No
- None
- مدري

What is your primary motivation for using home-care services and maintenance?

17 responses

- it's very important
- Laziness
- Nothing
- To keep my house safe and clean
- Just makes me comfort
- All good
- getting experienced people to do the job
- To get a professional services , to save time & money
- convenience

Is there anything else you would like to share about your experience with home-care services and maintenance, or any other feedback that you have about the mobile application project?

21 responses

- No
- No
- No thanks
- no
- It will revolutionize home take service
  Amazing idea 💡
- No, I think this form is informative enough
- <3
- All good

Resources for Research:

Medium.com

Business Wire