TicketChain

‘Blockchain-powered ticketing system’
Final Report 2021-22
Group 6

TÉCNICO LISBOA

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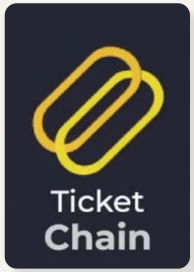
Executive Summary

Overview;
Problem;
Who it affects.



Overview

Our product, TicketChain, is the answer to an important problem - long queues when renewing a transportation card. Built on top of blockchain, TicketChain offers a decentralized system which grants integrity and authentication. With TicketChain, waiting in long queues and wasting paper with tickets is a thing of the past.

The problem

Paper ticket

Queues and waiting time

Ownership of the tickets

Paper tickets can be lost

Notifications and alerts

Overlapped numbers

Who it affects

Primary Users

Everyone who owns a transportation card, and renews it every month

Secondary Users

The workers in the transportation facilities:

- Overwhelming number of people;
- People are not usually super polite;
- People act as if it was the workers fault.

Stress

02

Background

Team;
Client / Target.

The Team

João Marques

89473

Project Manager

João was our Project Manager. He was able to be calm and assertive throughout the whole process. He made sure to always stay on the ball, and was a determinant asset to connect the whole team, usually being the bridge the team needed.

The Team

Henrique Fernandes
89458

UX Lead

Henrique was our UX Lead. He always made sure to place the User on the top of our concerns. Henrique excelled at this task since he is a very good listener. He loves learning how other people feel, and is able to create empathy with anyone he talks to.

The Team

Duarte Miranda

89440

Design Lead

Duarte was probably the most creative person on the team. He was always the one who would come up with the most out of the box ideas. And even more impressive, was the way he would communicate such ideas visually. He was always available to brainstorm and was in constant communication with our Front-end Developer.

The Team

João Soares

89475

Frontend Lead

João was an amazing Front-end Developer. His background and expertise in the development of other apps of his curriculum probably justify the way he so amazingly carried the front end development of our project. He is particularly a good listener and was always able to communicate with both Duarte and Tiago, allowing the team to continuously improve the app.

The Team

Tiago Fonseca

89542

Backend Lead

Tiago was the glue that put together our work. “A silent worker that gets things done”, as the team often liked to refer to him. His expertise on databases and web services was vital to assure the whole app behavior came to fruition. He was always available and worked spectacularly well with the team, especially João Soares.

Personas

Student

Worker

Elder

Student

Characteristics:

- Arbitrary Schedules
- Always busy since they have to study

Attitude:

- Try to predict “dead” hours

How they would benefit from TicketChain:

- Notification of the the most quiet hours

Worker

Characteristics:

- Very strict schedules

Attitude:

- Renew transportation ticket on free time

How they would benefit from TicketChain:

- Prediction of waiting time, to request ticket in advance

Elder

Characteristics:

- No restrictions regarding schedules

Attitude:

- Get up early and do things in the morning

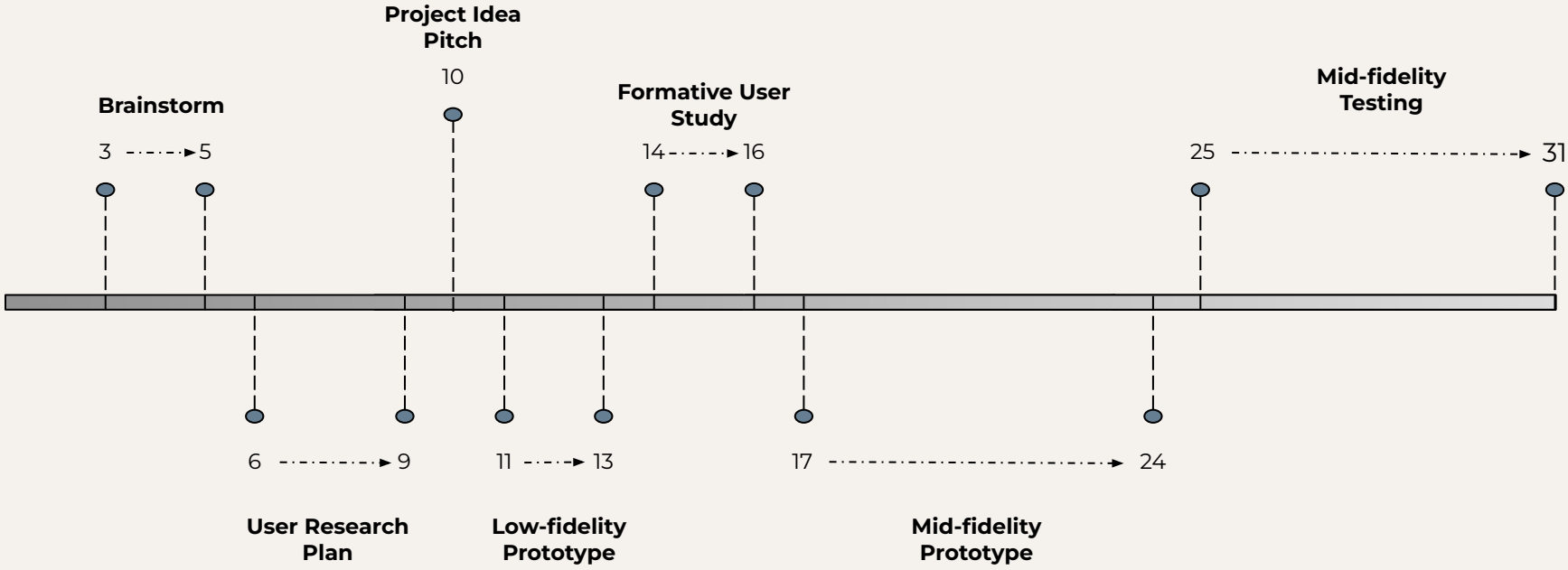
How they would benefit from TicketChain:

- Simple feature that would highlight most/least crowded hours

03

Schedule

December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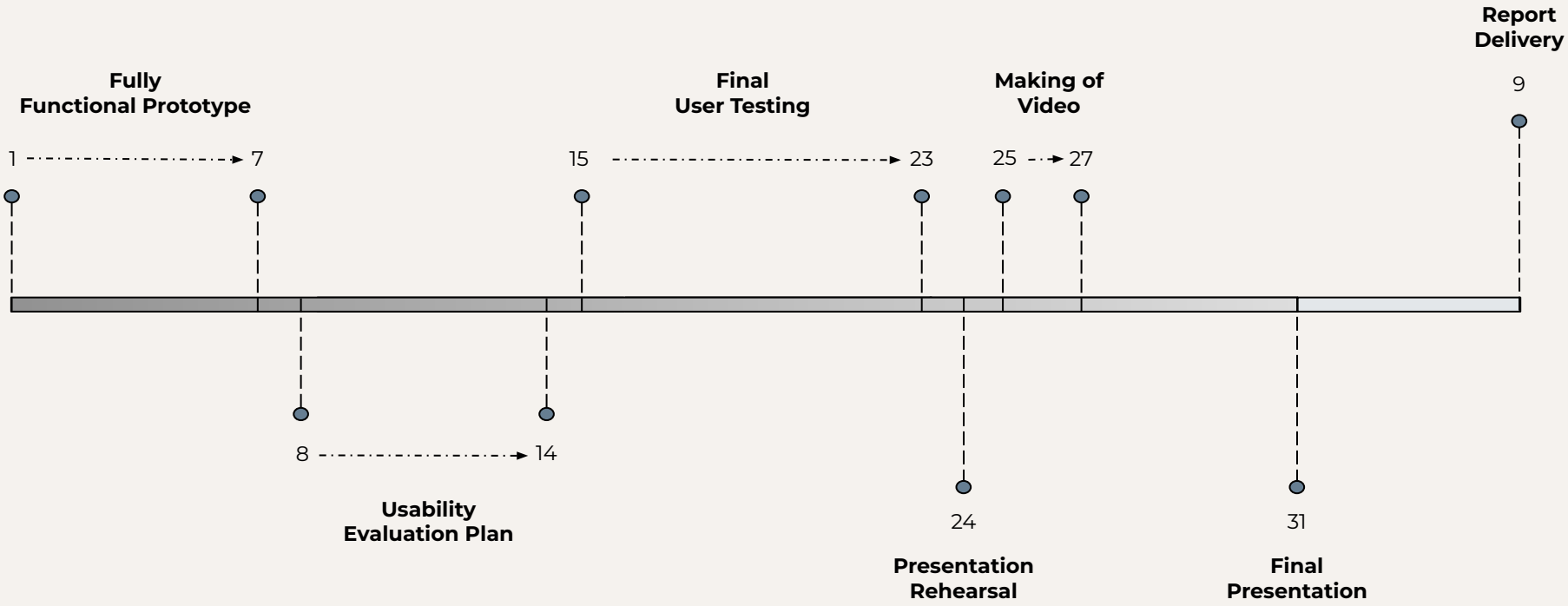
January/February



04

Overview

Concept;
System;
Service.

Inspiration

We found a common problem with most people's everyday life: waiting in line to do something, namely, for renewing their transportation card, which takes way more time than it should and than people are okay with.

Solution

We wanted to give more power to the people to control the flow of their day, and such power comes in the form of information. If one is aware of the state of a queue or when the queue is usually smaller, they can go about their day with less impact from having to wait standing, doing nothing.

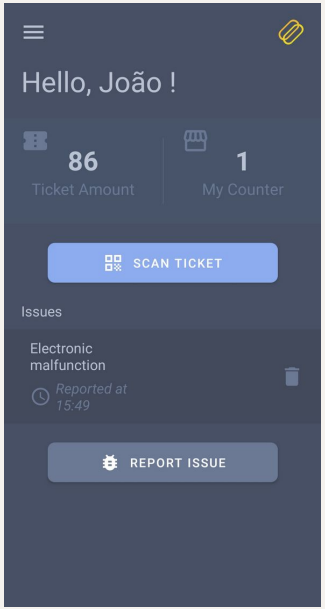
The App

We designed a mobile application that allows its users to interact with this problem in several ways: issue a ticket, check the current ticket number, check the average waiting time, and have a prediction about the times of the day when the queue will be shorter or longer.

User and Worker

Because we also need to take into account the workers that are offering the service to the people in line, we divide our app into two views, user and worker. User is for the people waiting in line and worker for those at the counters. Each view offers their unique features and is designed for the different workflows each type of user has.

User



Worker

Features

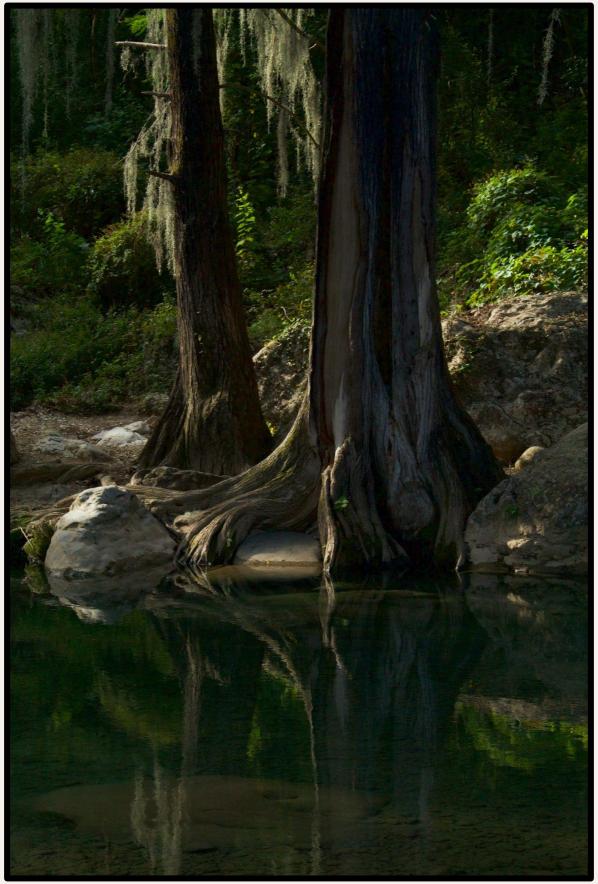
The user view has 3 main features: queue state prediction, notifications of the state of the queue, and estimation of waiting time. These fit the different personas we envisioned from our initial user research. For the worker view, we allow users to change their counter number and report any malfunctions that may cause higher delays in the queue. This way, not only we serve each type of user with their needs in mind, but we create a flow of exchange of information between each user that results in higher fidelity information in real time.

Blockchain

Our smart application takes advantage of the latest technologies and, as such, we use blockchain as the base engine for our service. When a user issues a ticket, they are actually putting it on a shared ledger, the blockchain. As a result, their ticket is validated by any user and we grant ownership of the ticket in a clean, efficient manner. Because the worker is also a member with access to the blockchain, validating a ticket is as easy as scanning a QR code on the user's smartphone.

Eco-friendly

We developed our system with the environmental crisis we are experiencing in mind. Every user that uses our app is contributing to the less usage of paper from printing physical tickets. Having the ticket on a smartphone also prevents the loss of tickets or purposely littering with used tickets. We also use proof-of-stake instead of proof-of-work on our blockchain to prevent unnecessary computations and consequently wasting electrical resources.



05

Process

User research;
Prototypes;
Testing.

Process Synopsis

01 — Brainstorm & User Research

02 — Low-fidelity Prototype

03 — Wizard of Oz

04 — Mid-fidelity Prototype

05 — Fully functional Prototype

06 — User Testing

Brainstorm

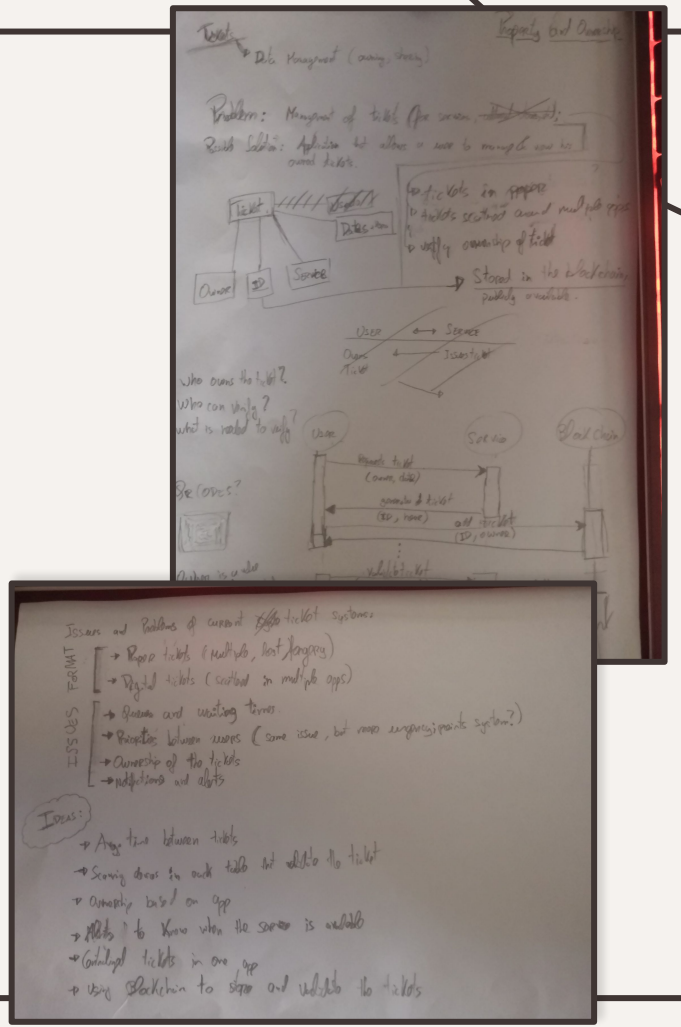
We started off our development process by defining two aspects:

- What problem we wished to tackle;
- How blockchain would prove useful.

Our first idea was to implement a ticketing system that avoided queues and could be shared between several services, using blockchain to grant ticket ownership to the users.

To simplify our concept for the context of this course, we explored a single ticketing scenario, renewal of transportation passes.

We then discussed about some problems for this specific scenario and possible solutions.



User Research

To understand who our users are and possible requests and complaints they might have regarding the renewal process, we conducted a user research at Carris' client service at Saldanha.

Our research process was composed of two approaches:

- Flash-interviews to some people in line;
- Observation of the overall pass renewal process.

User Research Results

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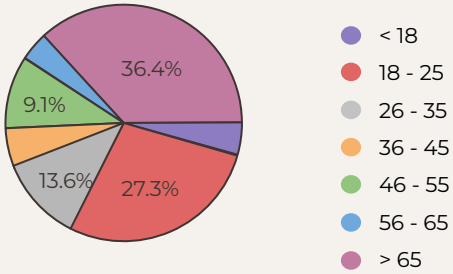
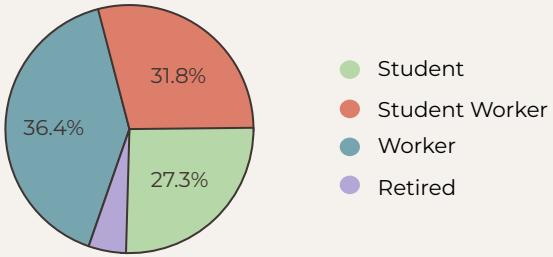
Interviewed Users

Age

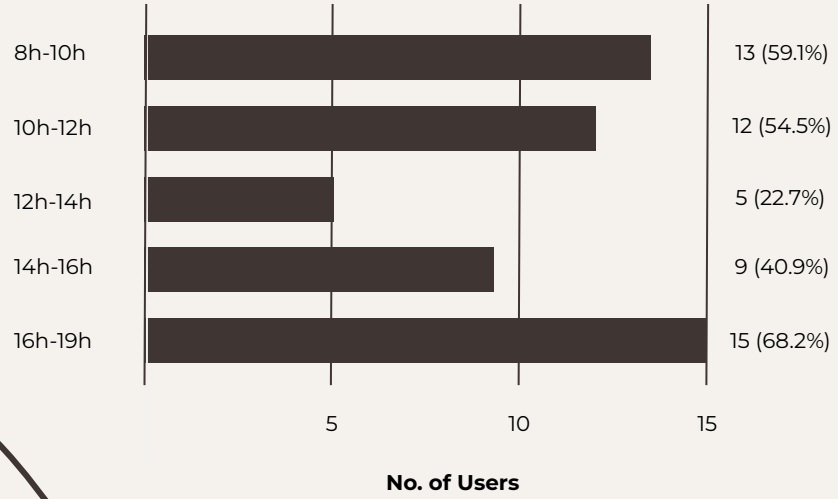


Occupation

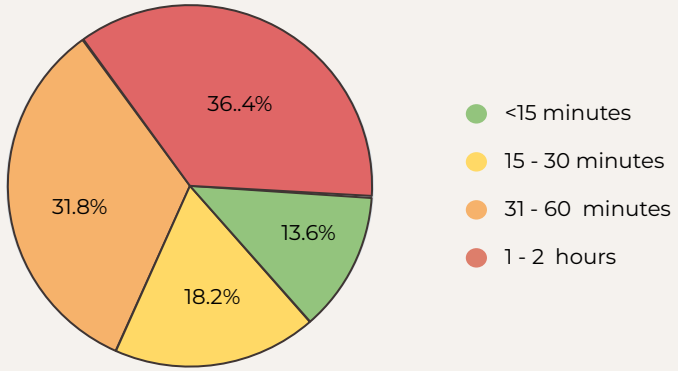


User Research Results

Renewal Time

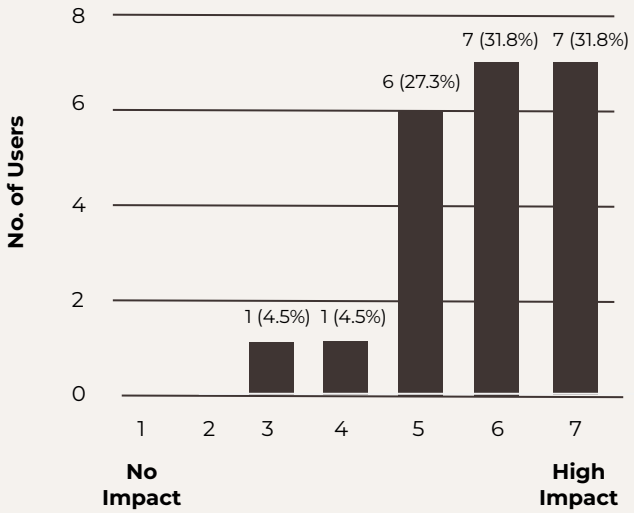


Waiting Time

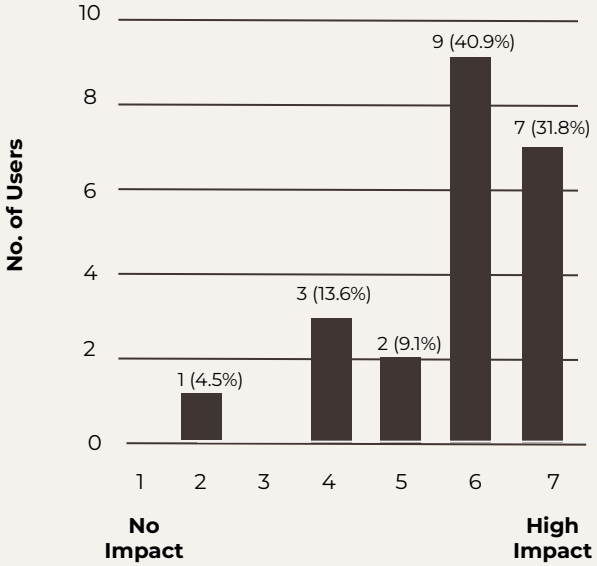


User Research Results

Renewal's impact on the day



Stress induced by renewal



User Research Results

Most Requested Features:

- Check current queue size (**72.7%**);
- Check current waiting time estimate (**86.4%**);
- Get notification when the queue is small (**68.2%**);
- Get prediction of most/least busy time slots (**72.7%**).

Personas:

With our research results we profiled our users into three **personas**, each with their own behaviour, problems and needs.

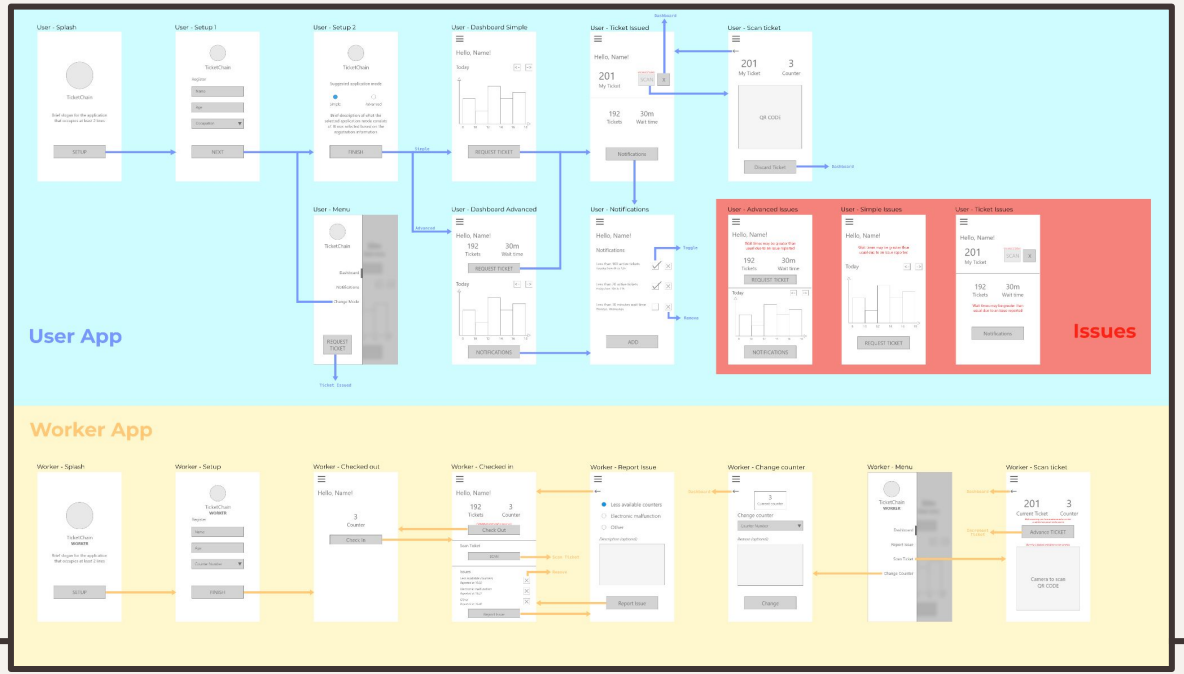
We tried to design our application in a customizable manner with options that best suited each persona.

Low-fidelity Prototype

In our low fidelity prototype, we planned the general look of each view of our application.

We designed a first iteration of each of the screens along with the flows between them.

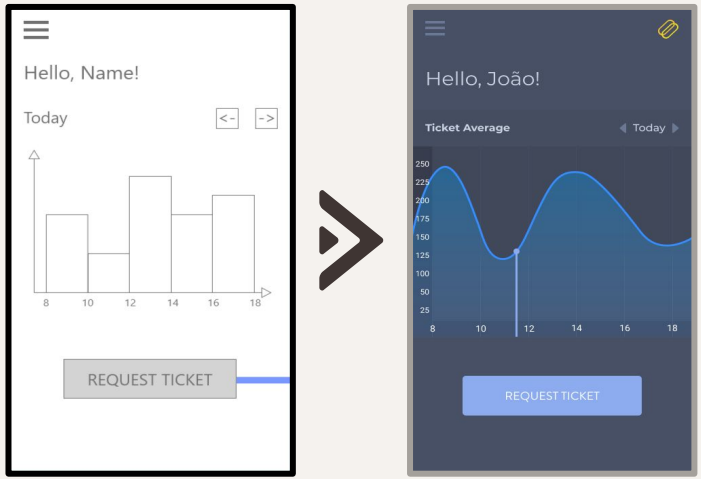
Both a User and Worker app were designed. The user's app was slightly more complex since it included customization options with **Simple** and **Advanced** views.



Mid-fidelity Prototype

Before properly testing our low-fidelity testing, we fine-tuned it into our mid-fidelity prototype using Adobe XD. Due to the pandemic situation, it was easier and safer for us to perform user testing with a prototype that allowed us to perform remote sessions.

In our mid-fidelity prototype we focused on refining aesthetic aspects with the addition of colour schemes, icons and clearer descriptions and a cleaner graph design.



Wizard of Oz Testing

We tested our mid-fidelity prototype through Wizard of Oz testing.

By simulating the app's interaction behaviour, we asked a few users to perform basic usage scenarios to detect possible flaws in our initial design.

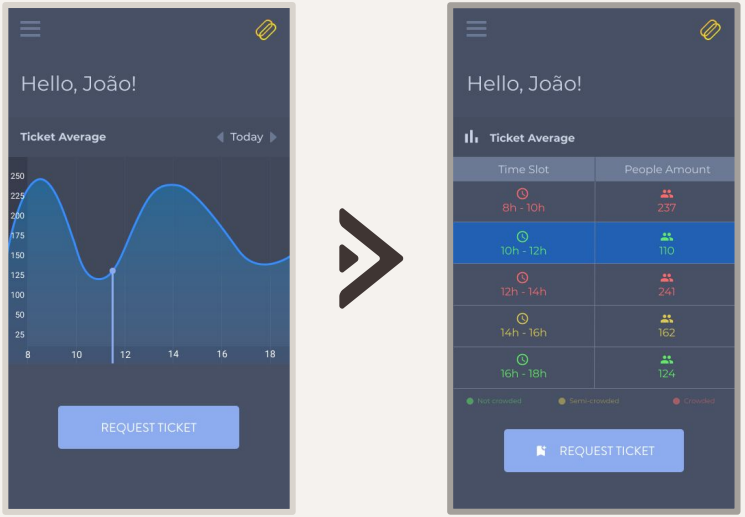
Complaints:

User:

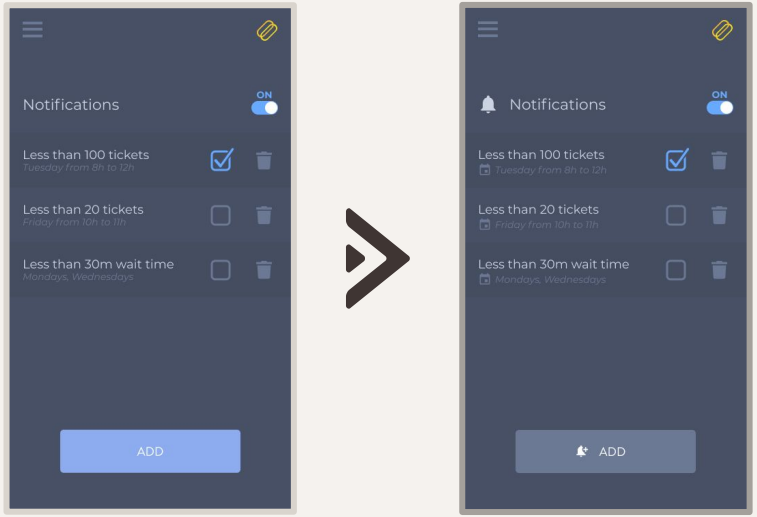
- The graph in Simple view was too complex and should be replaced by a simpler visualization;
- The button nomenclature was ambiguous and should be improved;
- The Lack of icons and labels in graph in Advanced view made it hard to interpret;
- The process of selecting notification settings was non-intuitive.

Worker:

- The "Show Scan" option was unnecessary and should its removal would simplify the design.



We changed the graph to a easier to read table.



We added clarity to the notifications view with icons and graying the add button.

Fully functional Prototype

Before building the final prototype, we first discussed how to improve upon the previous iteration.

Given the received feedback, we decided to remove the Simple and Advanced views, as they were redundant. Instead, the user would be able to customize the dashboard with widgets through a settings menu.

The default mode would be selected based on the user's identity details (age, occupation, etc) with further customization options present in the settings.

With the new changes, we implemented the interface of both the User and Worker app for Android using Jetpack Compose. The backend services were developed in parallel. The server kept the state of the application in a database for persistence. The blockchain module was implemented to store the tickets but unfortunately, due to errors, we had to simulate its functionality. Fixing these errors was left as a future improvement.

Final User Testing

We carefully prepared a plan for the user testing of our final prototype, divided into several steps.

1. Introduction and Informed Consent

We started each session by introducing ourselves and our project. We then properly informed our user of the purpose of our data collection finishing with the signing of an Informed Consent Agreement.

2. Pre-Testing Questionnaire

Before starting the test process itself, we asked the users to fill a short questionnaire for profiling and identifying their experience with pass renewal.

3. Testing and Observation

The users are asked to perform several tasks with no previous training to simulate a real application usage scenario. As the user interacts with the application we carefully observed any mistakes or possible struggles they might have to identify problems with the interface.

4. Debrief

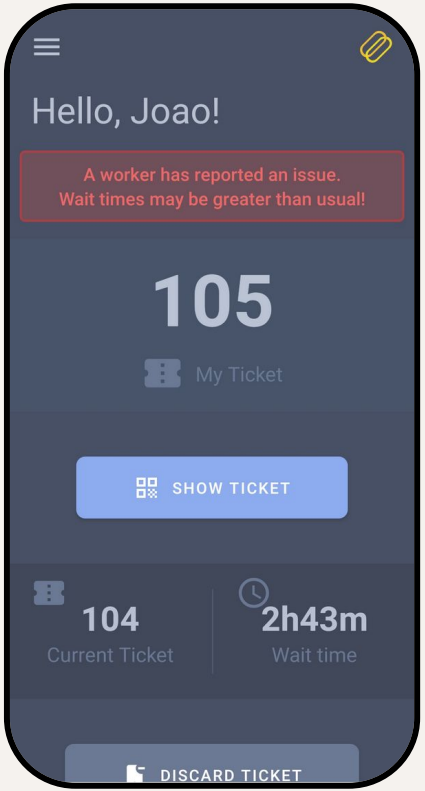
We finished each session by asking the users for their opinions on the application, namely if they found it easy to conclude each task and were ever overwhelmed by the information on screen. As a finishing note we asked users to provide any further improvements or features they would like to see added to the application.

Final User Testing Results

After conducting our final testing sessions, the results were mostly satisfactory, with every user being able to complete each task, most without any mistakes along the way.

Most users found their way around the application with ease, consistently completing the tasks in a short time period.

The observed mistakes were mostly simple drag and drop mistakes when placing widgets that some users mistakenly thought were needed to accomplish a requested task. Overall, these mistakes posed very little impact on the user experience. No significant increases in task completion time were registered when they occurred nor were the users especially upset.



06

Conclusion

Final Insight;
Future Work.

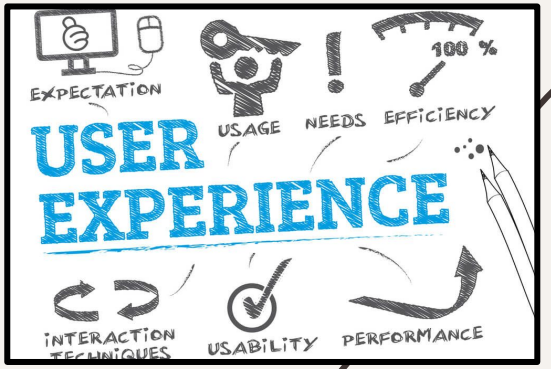
Insight

Participating in this project really was a great experience. As Tecnico students, we are used to group projects. But nothing compares with what this course has to offer. Throughout this process, we learnt to adapt and think outside of the box. We gained skills that we thought impossible to reach, and learnt one of the most important lessons of our area of expertise: working as a team.

The Experience

We also learned to make the most of one another's strengths to the best of our advantage. The team became very close, and we were always supportive and comprehensive whenever one was not having a great day.

We acknowledge to put the user on the very top of our concerns. We understood the importance of user research, and how listening to the users' really was the impacting factor that made TicketChain become TicketChain.



Extensibility

Although we present TicketChain as a solution for renewing a transportation card, we can actually extend this idea to any other service that requires users to wait in a queue. Ideally we could group as many services as we want on the same app and give power to the users to control any kind of tickets through the same app. This way, any user would have their day made easier, for a plethora of different activities: buying meat, cutting their hair, renewing their id, picking up packages at the post office, and many more.

Carbon Footprint

To further motivate our users to use this app, we could implement a system that lets them know how much paper they have saved compared to using tradicional physical paper ticketing systems. If we convert an average number of tickets to a piece of A4 paper which is more easily relatable, we could let our users know that they have saved a quantity of pieces of paper just by using our app.

Priority Queues

It would be interesting to explore the idea of priority queues. Adding the possibility of skipping the line to an elderly person with mobility difficulties or a pregnant lady. This would build a more empathetic environment, contrasting to the stress queues are usually associated to.

A block is worth a thousand tickets

Annex

Mid-Fidelity Adobe XD [Before]

User View
https://xd.adobe.com/view/ec7705ab-1817-4d8d-8f49-38b91d303509-b924/?fullscreen&hints=off

Worker View
https://xd.adobe.com/view/4d187e8f-d9b8-4f08-ab7d-d3c01e2db35a-184b/?fullscreen&hints=off

Mid-Fidelity Adobe XD [After]

User View
https://xd.adobe.com/view/aa84f860-736b-474e-9062-c999512d71ab-ffd7/?fullscreen&hints=off

Worker View
https://xd.adobe.com/view/b7066733-d117-4cdb-894c-f3963cafd511-e255/?fullscreen&hints=off

TicketChain User Test

Welcome to TicketChain's user test.

We are students from Instituto Superior Técnico (Alameda) performing this user research for the course User Centered Design.

TicketChain is a decentralized mobile application which uses blockchain to solve issues related with ticketing systems.

The questionnaire consists of 2 different Use Cases, each with 5 questions and should take around 20-30 minutes to complete.

All given information is anonymous serving only to improve our application's design.
No personal data will be disclosed.

We thank for your participation in this test in advance.
- TheTicketChain Team

*Obrigatório

Profiling

Since our application takes use profiling into account, namely age, occupation, this section will be focused on retrieving that information.

1. What is your age? *

Marcar apenas uma oval.

- < 18
- 18 - 25
- 26 - 35
- 36 - 45
- 46 - 55
- 56 - 65
- > 65

2. What is your academic qualification? *

Marcar apenas uma oval.

- Can Read and Write
- Elementary School
- High School
- Bachelor's Degree
- Master's Degree
- Doctorate's Degree

3. What is your current occupation? *

Marcar apenas uma oval.

- Student
- Student-Worker
- Worker
- Unemployed
- Retired

Client Use Cases

Please open the application prototype linked here: https://tinyurl.com/TicketChain-Client-Test

Please don't leave the home view on the prototype or proceed to the next form section before being explicitly told by the interviewers to do so.

Client Use Cases Feedback

Now that you finished the use case, please answer the following questions :)

4. I completed the test case with ease *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree								Strongly Agree

5. The interface elements were clear and easy to comprehend *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

6. The interface is too cluttered *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

7. The interface is too scattered *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

8. The interface elements were visually appealing *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

9. Do you have any specific feedback regarding the app interface? If so, please comment below

Worker Use Cases

Please open the application prototype linked here: https://tinyurl.com/TicketChain-Worker-Test

Please don't leave the home view on the prototype or proceed to the next form section before being explicitly told by the interviewers to do so.

Worker Use Cases Feedback

Now that you finished the use case, please answer the following questions :)

10. I completed the test case with ease *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

11. The interface elements were clear and easy to comprehend *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

12. The interface is too cluttered *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

13. The interface is too scattered *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

14. The interface elements were visually appealing *

Marcar apenas uma oval.

	1	2	3	4	5	6	7	
Strongly Disagree	◯	◯	◯	◯	◯	◯	◯	Strongly Agree

15. Do you have any specific feedback regarding the app interface? If so, please comment below

Thank you for participating!

:)

Preparing the room

What we need:

- Laptop
    - To run the server
    - To collect user data
- Smartphone running app

User introduction

First and foremost, we would like to thank you for participating in this study. We developed a product called TicketChain, under the course of CCU.
The motivation behind this product are the incredibly long and boring queues that we all have to face, for instance, when renewing our transportation card. We aim to create an application that simplifies the whole process.
We are testing the product, and not you. We want you to feel comfortable along the whole process, so let us know if we can do anything for you at any moment.
Before we go any further, do you have any questions?

Informed consent

Throughout the questionnaire, personal information like age, academic qualification and current professional occupation will be requested.
This information collection is completely anonymous, no personal identification will be requested. All data will only be used for academic purposes to develop our project delivery in the context of the CCU curricular unit and discarded once the latter is finished.
Your participation is voluntary and you can always withdraw at any given moment without any penalization or consequence.
By signing below you consent to the aforementioned conditions regarding data use.
Signature: _____

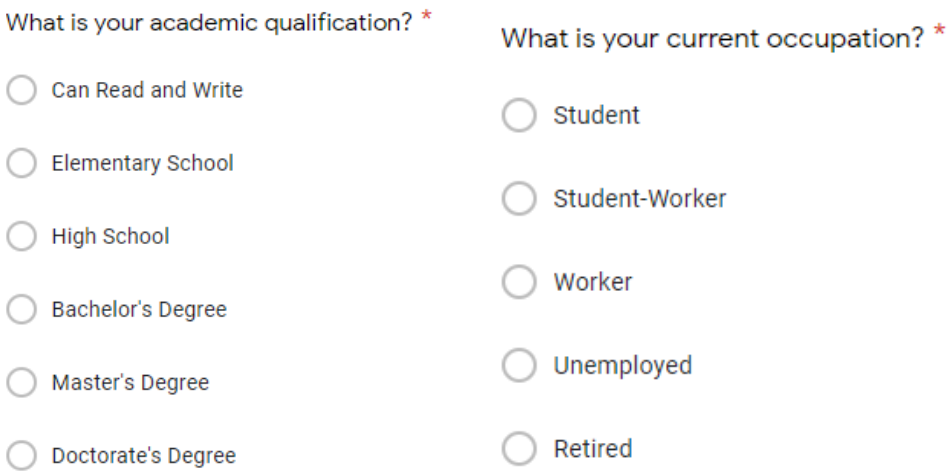
Pre-Questionnaire

Demographics

What is your age? *

- < 18
- 18 - 25
- 26 - 35
- 36 - 45
- 46 - 55
- 56 - 65
- > 65

Experience



User Training

No previous training;

Tasks described afterwards

Help will preferably not be given to participants. If they ask us to, or to make them feel more comfortable, we will definitely help at that point.

Test Tasks

1. Client View Tests
    - Request a Ticket: “Your task is to use the application to issue a ticket and say out loud what the number of the ticket is.”
    - Average Waiting Time: “You should now find out what the average waiting time is and indicate it out loud.”
    - Show Ticket for Scan: “Suppose the queue reaches your number, you should present your ticket to be scanned and indicate what counter will serve you.”
    - Custom Notification: “There is a notifications menu. You should access it and change any setting you want.”

2. Worker View Tests
    - Check-In: “Your first task is to check-in into the app and be able to tell which counter was attributed to you.”
    - Scan a Ticket: “Imagine you are calling a ticket for which I have the QR code here on my phone, your task is to scan my ticket and be able to tell which number my ticket is.”
    - Change Counter: “Suppose that for some reason you are asked to change the counter you are working at. Your task is to change counters in the app so users know where to go when their ticket is called.”
    - Report an Issue: “Imagine there is an issue with your device’s camera that does not allow you to scan tickets. You are tasked with reporting this issue in the app and writing a description. You can write anything in the description just for testing purposes.”

Data Collection Sheet

https://docs.google.com/spreadsheets/d/1GRUtN9a-QYorFAY4ZCJQoTYMrahVipIm2bsH5L4Bdz4/edit?usp=sharing

Observer Briefing

Since we will act as observers, there will not be a need to brief anyone

Debrief

After we conclude the tests, we will ask the users about their opinions on the usability of the system. For each test, we will ask if it was easy to perform in their opinion. Finally, we will ask for things the user feels like could be improved in the interface.

For both the client and worker apps (image below)
Finalize saying thank you to the user! We may even offer chocolate ;)

We expect the introduction and explanation of the testing process to take around 5-7 minutes. The testing itself could take 10-20 minutes depending on how easily the user accomplishes the given tasks. The final debriefing should take approximately the same time as the introduction but can fluctuate a bit depending on the tester’s feedback.

I completed the test case with ease *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The interface elements were clear and easy to comprehend *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The interface is too cluttered *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The interface is too scattered *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

The interface elements were visually appealing *

	1	2	3	4	5	6	7	
Strongly Disagree	○	○	○	○	○	○	○	Strongly Agree

TicketChain High Fidelity Evaluation

First and foremost, we would like to thank you for participating in this study.

We developed a product called TicketChain, under the course of CCU.

The motivation behind this product are the incredibly long and boring queues that we all have to face, for instance, when renewing our transportation card. We aim to create an application that simplifies the whole process.

We are testing the product, and not you. We want you to feel comfortable along the whole process, so let us know if we can do anything for you at any moment.

Before we go any further, do you have any questions?

*Obrigatório

Informed Consent

1. Throughout the questionnaire, personal information like age, academic qualification and current professional occupation will be requested. This information collection is completely anonymous, no personal identification will be requested. All data will only be used for academic purposes to develop our project delivery in the context of the CCU curricular unit and discarded once the latter is finished. Your participation is voluntary and you can always withdraw at any given moment without any penalization or consequence.By signing below you consent to the aforementioned conditions regarding data use. *

   Marcar apenas uma oval.

   ◯ Agree with aforementioned conditions

Pre-Questionaire

2. What is your age? *

Marcar apenas uma oval.

- ◯ < 18
- ◯ 18 - 25
- ◯ 26 - 35
- ◯ 36 - 45
- ◯ 46 - 55
- ◯ 56 - 65
- ◯ > 65

3. What is your academic qualification? *

Marcar apenas uma oval.

- ◯ Can read and write
- ◯ Elementary School
- ◯ High School
- ◯ Bachelor's Degree
- ◯ Master's Degree
- ◯ Doctorate's Degre

4. What is your current ocupation? *

Marcar apenas uma oval.

- ◯ Student
- ◯ Student-Worker
- ◯ Worker
- ◯ Unemployed
- ◯ Retired

Google Formulários

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	24,79	-	Intuitive, request ticket button is easy to find!	Student
Tester #2	Yes	0	32,33	-	Simple and effective!	Retired
Tester #3	Yes	0	27,39	-	-	Worker
Tester #4	Yes	0	22,32	-	Easy enough!	Student Worker
Tester #5	Yes	0	31,62	-	-	Retired
Tester #6	Yes	0	28,25	-	-	Worker
Tester #7	Yes	0	21,72	-	Looks so smooth!	Student
			26,92			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	1	48,1	Drag and drop mistake	-	Student
Tester #2	Yes	3	91,43	2 drag and drop mistakes. Deleted widget when he shouldnt	Hard to find info. Little bit confusing!	Retired. Needed help completing task
Tester #3	Yes	0	20,12	-	-	Worker
Tester #4	Yes	0	18,13	-	Really easy!	Student Worker
Tester #5	Yes	2	85,72	Drag and drop mistakes	-	Retired
Tester #6	Yes	0	23,56	-	-	Worker
Tester #7	Yes	0	43.98	-	-	Student
			47,84333333			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	15,36	-	Too easy!	Student
Tester #2	Yes	0	22,47	-	So intuitive!	Retired
Tester #3	Yes	0	18,37	-	-	Worker
Tester #4	Yes	0	16,41	-	-	Student Worker
Tester #5	Yes	0	21,49	-	-	Retired
Tester #6	Yes	0	19,24	-	Easy enough!	Worker
Tester #7	Yes	0	16,39	-	-	Student
			18,53285714			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	33,78	-	Notifications could have starting time only	Student
Tester #2	Yes	0	56,83	-	-	Retired
Tester #3	Yes	0	40,23	-	-	Worker
Tester #4	Yes	0	35,69	-	-	Student Worker
Tester #5	Yes	0	56,83	-	-	Retired
Tester #6	Yes	0	40,12	-	-	Worker
Tester #7	Yes	0	37,54	-	-	Student
			43,00285714			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	32,58	-	-	Student
Tester #2	Yes	1	52,73	-	-	Retired
Tester #3	Yes	1	42,97	Menu Drawer click	Sign in could be more clear	Worker
Tester #4	Yes	1	37,28	Menu Drawer click	Easy enough!	Student Worker
Tester #5	Yes	1	57,33	Menu Drawer click	-	Retired
Tester #6	Yes	0	45,55	-	-	Worker
Tester #7	Yes	0	34,28	-	-	Student
			43,24571429			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	19,21	-	Super simple	Student
Tester #2	Yes	0	26,74	-	-	Retired
Tester #3	Yes	0	23,53	-	-	Worker
Tester #4	Yes	0	22,59	-	Very intuitive	Student Worker
Tester #5	Yes	0	27,32	-	-	Retired
Tester #6	Yes	0	21,53	-	You cannot miss it!	Worker
Tester #7	Yes	0	16,72	-	-	Student
			22,52			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	23,53	-	-	Student
Tester #2	Yes	0	30,15	-	Confirmation button should be added	Retired
Tester #3	Yes	1	27,61	Entered in report issue	Confirmation button should be added	Worker
Tester #4	Yes	0	21,19	-	-	Student Worker
Tester #5	Yes	1	30,29	Entered in report issue	-	Retired
Tester #6	Yes	0	26,63	-	-	Worker
Tester #7	Yes	0	24,22	-	-	Student
			26,23142857			

	Task Completed?	#Errors	Time (seconds)	Error Descriptions	Tester Comments	Additional Observations
Tester #1	Yes	0	31,52	-	Very intuitive!	Student
Tester #2	Yes	0	40,67	-	-	Retired
Tester #3	Yes	0	33,24	-	So easy!	Worker
Tester #4	Yes	0	28,41	-	-	Student Worker
Tester #5	Yes	0	39,23	-	Very intuitive!	Retired
Tester #6	Yes	0	32,22	-	-	Worker
Tester #7	Yes	0	27,99	-	-	Student
			33,32571429			