

Setup Document



ProP

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Fontys ICT

English stream

TABLE OF CONTENTS

Revision history.....	3
Agreements - made with the client.....	4
Processes	5
Use cases website	5
Use case diagram for the website	8
Use cases for applications.....	9
Use case diagrams for applications.....	15
Functional requirements	17
Website	17
Applications	17
Graphical user interface.....	19
Login application	19
Apps application	20
Admin application	21
Employee application	22
Entrance application:.....	23
Camping application:.....	25
Shop application:.....	26
Loan stand application	27
Exit application	28
Status application	29
Convert application.....	30
Website wireframe	31
Entity relationship diagram.....	38

Revision history

Version	Description
0.1	Added uses cases for applications
0.2	Added uses cases for website
0.3	Added functional requirements for website and applications, wireframes and GUIs for applications
0.4	Added ERD and new wireframes
0.5	Updated Uses cases for the website and applications. Also added more functional requirements for the website and applications
0.6	Add use case diagrams for the website and the applications, Update ERD
0.7	Updated the application GUIs, Added Agreements with client section

Agreements - made with the client

The team agreed to create a software solution to manage an event for the client. This solution must contain the following:

- A website that informs people about the event and allows the reservation of tickets and camping spots
- Applications that check visitors in and out of the event and camping
- Applications that support the shops (food/drinks/souvenirs) and the loan stands
- An application that allows the organization to get a clear status overview of the event
- A database supporting all the applications
- An application that changes the balance of the visitors based on the ATM log files

After showing the client our initial designs the client asked for the following extra features:

- Visitors can buy merchandise from the website when buying their ticket
- The applications should function with as minimum clicks as possible

Processes

Use cases website

Name: Create account

Brief Description: The user creates a account by opening the website and going to the register page then providing their name, surname, email, password and bank account number. The user is then sent a confirmation email. When the user confirms this email their account will be officially created.

Actors:

The user is the visitor of the website.

The system is a website.

Basic Flow:

1. User opens website
2. User goes to the register page
3. System asks for name, surname, email, password and bank account number
4. The user provides their name, surname, email, password and bank account number
5. System requires confirmation
6. User provides confirmation
7. The system verifies that the user's email, password, and bank account number are valid
8. The system sends a confirmation email to the user's email
9. The user confirms the email
10. The system creates the user's account

Exceptions:

7.a One or more of the following items that the user provide is not valid: email password and bank account. The use case end.

10.a User doesn't confirm email. The account is not created. The use case ends

Name: Log in

Brief Description: A user with an account logs in to their account on the website by providing their password and email these are verified by the website. If the password and email are valid the user gains access to their account

Actors:

The user is an account owner.

The system is a website.

Preconditions: User Created an account or has a temporary account

Basic Flow:

1. User Opens the system
2. User goes to login page
3. The system asks for the password and email
4. The user provides their email and password
5. System requires confirmation
6. User provides confirmation
7. The system verifies that the user's email and password is valid

8. The system gives the user access to their account

Exceptions:

7.a The email and or password that the user provided is not valid. The use case ends.

Name: Log out

Brief Description: Logs the user out of the system

Actors:

The user is an account owner.

The system is a website.

Preconditions: User is logged in

Basic Flow:

1. The user selects Log out or closes the system
2. The system logs out of the account
3. The system shows the Home page

Name: Buy a ticket

Brief Description: The user purchases a ticket on the website by logging into their account and selecting buy ticket. The user receives an email with the ticket and its information.

Actors:

The user is the visitor of the website.

The system is a website.

Preconditions: User is logged in

Basic Flow:

1. User goes to the buy ticket page
2. The user selects buy ticket
3. System requires confirmation
4. User provides confirmation
5. System complete the transaction
6. The system sends an email to the user's email with the ticket

Exceptions:

5.a There was not enough funds to complete the transaction. The use case ends.

Name: Add credits to account

Brief Description: User logs in to account and adds credits to their account by providing the number of credits wanted. The system collects the selected amount from the user's bank account. The credits are then added to the user's account.

Actors:

The user is an account owner.

The system is a website.

Preconditions: User is logged in and User bought a ticket for an upcoming event

Basic Flow:

1. User goes to the profile page
2. The user selects add credits
3. System ask for an amount
4. The user provides an amount
5. The system waits to receive the correct amount from the user's bank account
6. The system adds credits to the user's account

Exceptions:

6.a There was not enough funds to complete the transaction. The use case ends.

Name: Reserve camping

Brief Description: User logs in to account and reserves a camping spot by selecting the spot and specifying the other participants. The user has the option to pay immediately or later.

Actors:

The user is an account owner.

The system is a website.

Preconditions: User is logged in, the user's account is not temporary and User bought a ticket for the upcoming event

Basic Flow:

1. User goes to the profile page
2. The user selects reserve camping spot
3. The system asks the user to select a camping spot and amount of participants
4. The user selects a camping spot and provides the number of participants
5. The system provides the options to pay now or later
6. User selects pay now
7. The system waits to receive the correct amount from the user's bank account
8. System reserves camping spot

Exceptions:

7.a There was not enough funds to complete the transaction. The use case ends.

Alternate flow:

6.a User selects pay later

Name: Leave a review

Brief Description: User logs in to account and leaves a review of the event.

Actors:

The user is an account owner.

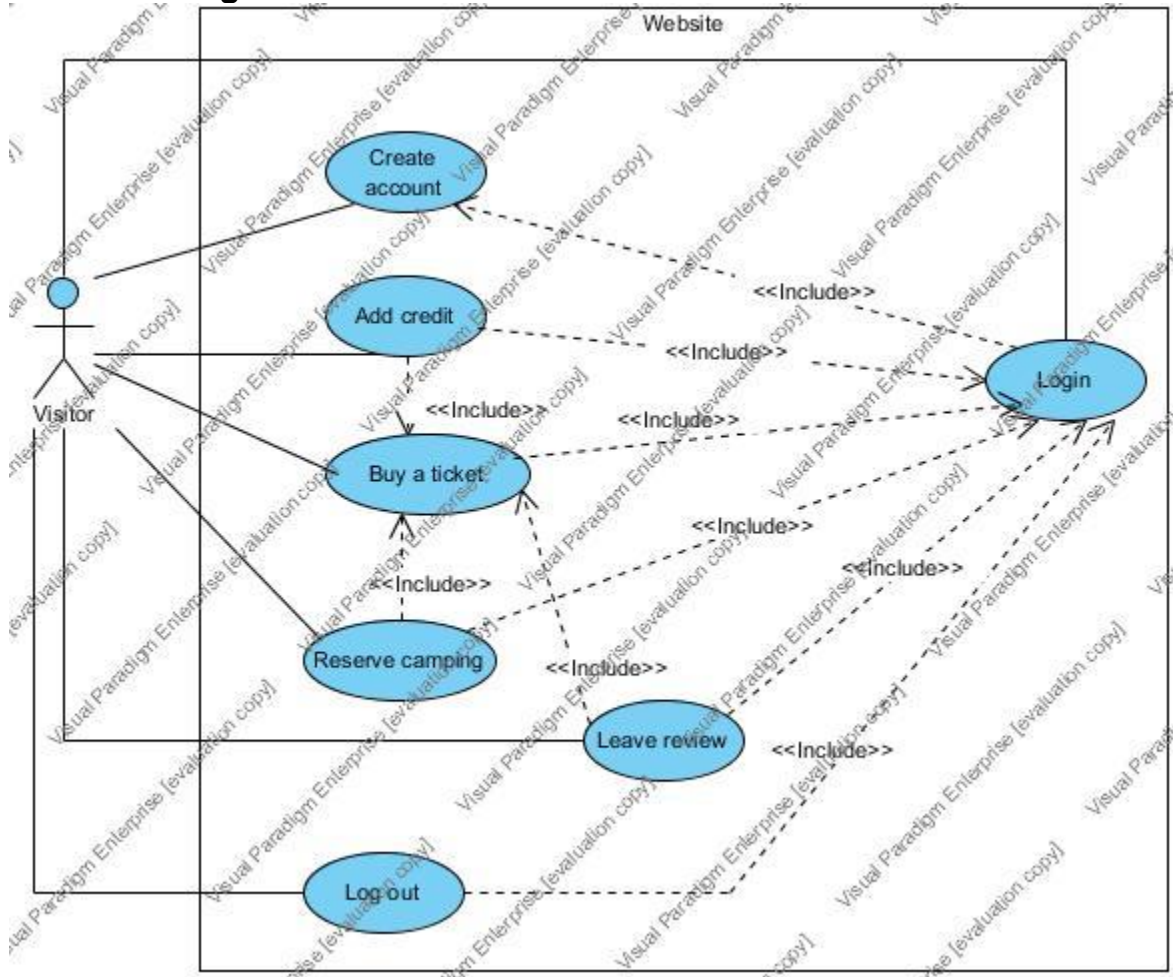
The system is a website.

Preconditions: User is logged in and User bought a ticket for the upcoming event

Basic Flow:

1. User goes to review page
2. The user selects to add a review
3. System ask for the review
4. The user provides their review
5. System submits the user's review

Use case diagram for the website



Use cases for applications

Log in application

Name: Log into the application

Brief Description: Logs the user into their employee account

Actors:

The user is an event worker that works at the event

The system is the Login the application.

Basic Flow:

1. The system waits for an employee number and password
2. The user provides employee number and password
3. The system verifies the employee number and password
4. The system displays the different applications that the user can choose from
5. The user chooses the application

Exceptions:

3.a The employee number or password that the user provided is not valid. The system displays that they are not valid. The use case ends

For all other use cases for applications, the user must Log into the application

Name: Log out of employee account

Brief Description: Logs the user out of the system

Actors:

The user is an event worker that works at the event

The system entire application.

Basic Flow:

4. The user selects Log out or closes the system
5. The system logs out of the account

Administration application

Name: Add employee account

Brief Description: Creates a new employee account with the position, first name and last name of the employee provided by the user

Actors:

The user is an event worker that has an administrative account

The system is the Administration application.

Basic Flow:

1. The user selects add employee
2. The system waits for the user to provide the position, first name and last name
3. The user provides the position, first name and last name of the employee
4. The system creates the account

Name: Remove employee account

Brief Description: Deletes the selected employee account

Actors:

The user is an event worker that has an administrative account

The system is the Administration application.

Basic Flow:

1. The user selects remove employee account
2. The system waits for the user to provide the employee number of the employee
3. The user provides employee number
4. The system verifies that the employee number belongs to an employee and displays the employee's information
5. The system asks for confirmation to remove the account
6. The user gives confirmation

Exceptions:

4.a The provided employee number doesn't belong to an employee account. The use case ends

Alternate flow:

6.a The user does not give confirmation. The use case ends

Name: Edit employee account

Brief Description: Allows the user to select an employee account and change its settings

Actors:

The user is an event worker that has an administrative account

The system is the Administration application.

Basic Flow:

1. The user selects edit employee account
2. The system waits for the user to provide the employee number of the employee
3. The user provides employee number
4. The system verifies that the employee number belongs to an employee and displays the employee's information
5. The system displays the employee's current settings
6. The user edits the settings
7. The system saves the changes to the settings

Exceptions:

4.a The provided employee number doesn't belong to an employee account. The use case ends

Entrance application

Name: Scan ticket

Brief Description: The user scans the QR code and the system determines if the QR code is valid. The system displays whether the QR code is valid or not

Actors:

The user is an event worker that works at the entrance of the event

The system is the entrance application.

Basic Flow:

1. The system waits for a QR code to be scanned
2. The user scans QR code

3. The system verifies that the QR code belongs to a valid ticket that has not already scanned
4. System displays that the ticket is valid

Exceptions:

3.a The QR code does not belong to a valid ticket or the ticket has already been scanned. The System displays that the ticket is not valid. The use case ends.

Name: Sell a ticket

Brief Description: User provides email to the system. The system then generates a secure password and sends the password to the provided email. This is a temporary account it expires a couple of days after the event.

Actors:

The user is an event worker that works at the entrance of the event

The system is the entrance application.

Basic Flow:

1. The user provides the email of the person buying a ticket
2. The system verifies that the provided email is valid
3. The system generates a secure password and sends the password
4. The system provides confirmation that purchasing the ticket was a success

Exceptions:

2.a The email that was provided by the user was not a valid email address. The use case ends.

Name: Link RFID chip

Brief Description: The system links the unique value of the RFID chip to the account of the selected ticket number

Actors:

The user is an event worker that works at the entrance of the event

The system is the entrance application.

Preconditions: A ticket has been scanned or a ticket was just bought

Basic Flow:

1. The user selects link chip
2. The system links the unique value of the RFID chip to the account of the ticket that was scanned or bought
3. The system gives confirmation that the chip was programmed successfully

Alternate flow:

3.a The system says that the chip programming was unsuccessful.

Entrance at camping application

Name: Check if group paid

Brief Description: The user provides the account by scanning the RFID chip. The system then checks if the camping spot still needs to be paid for and if so calculate and display the to be paid amount.

Actors:

The user is an event worker that works at the entrance of the camping spots

The system is the camping application.

Basic Flow:

1. The user provides the visitors RFID chip
2. The system reads the provided RFID chip
3. The system verifies that the provided account has reserved a camping spot
4. The system verifies that the camping spot still needs to be paid for
5. The system calculates the amount needed to be paid
6. The system displays the amount that needs to be paid

Alternate flow:

4.a The camping spot has already been paid for. The system displays that it has already been paid for. The use case ends.

Shop application

Name: Sell an item

Brief Description: The user selects item(s) the system then calculates the total price. The user then provides an account by scanning the RFID chip. The system then checks if there is enough funds to purchase the selected items and if so lower the credits by that amount.

Actors:

The user is an event worker that works the shops at the event

The system is the shop application.

Basic Flow:

1. The user selects the item(s) that the visitor requested
2. The system calculates and displays the total price of the item(s)
3. The user provides the visitors RFID chip
4. The system reads the provided RFID chip
5. The system verifies that the provided account has enough event credits to purchase the item(s)
6. The system lowers the credits of the provided account by the total price of the items
7. The system generates and provides a receipt

Exceptions:

5.a The provided account does not have enough credits to pay for items. The system displays that there are not enough funds to complete the transaction. The use case ends.

Loan stand application

Name: Loan items

Brief Description: The user selects an item(s) the system then calculates the total price. The user then provides an account by scanning the RFID chip. The system then checks if there are enough funds to loan the selected items and if so lower the credits by that amount and put the loaned items on the provided account.

Actors:

The user is an event worker that works at the loan stand at the event

The system is the loan stand application.

Basic Flow:

1. The user selects the item(s) that the visitor requested

2. The system calculates and displays the total price of the item(s)
3. The user provides the visitors RFID chip
4. The system reads the provided RFID chip
5. The system verifies that the provided account has enough event credits to loan item(s)
6. The system lowers the credits of the provided account by the total price of the loaned item(s)
7. The system adds loaned items to provided account
8. The system generates and provides a receipt

Exceptions:

5.a The provided account does not have enough credits to pay for items. The system displays that there are not enough funds to complete the transaction. The use case ends.

Name: Return loaned items

Brief Description: The user provides an account by scanning the RFID chip. The system then checks if there are any loaned items on the account and if so displays the items

Actors:

The user is an event worker that works at the loan stand at the event

The system is the loan stand application.

Preconditions: Visitor has loaned items

Basic Flow:

1. The user provides the visitors RFID chip
2. The system reads the provided RFID chip
3. The system displays all of the items loaned by the provided account
4. User collects items
5. The system marks the items on the provided account as returned

Exiting application

Name: Check out

Brief Description: The user provides an account by scanning the RFID chip. The system then checks if there are any loaned items on the account if there are it displays the items. It also checks there is still credits on the account and if there are it displays the amount that needs to be returned. The provided account is then marked invalid.

Actors:

The user is an event worker that works at the exit of the event

The system is the exit application.

Preconditions: Visitor has entered the event

Basic Flow:

1. The user provides the visitors RFID chip
2. The system reads the provided RFID chip
3. The system checks the balance of the provided account
4. The system displays the amount to be returned
5. The system verifies that there are no loaned items on the provided account
6. The system marks the provided account as invalid

Alternate flow:

5.a There are loaned items on the provided account. The system displays the loaned items.

Status application

Name: Update status

Brief Description: The user request to update the status of the application. The system then retrieves the data from the database and displays the updated status.

Actors:

The user is an event worker

The system is the status application.

Basic Flow:

1. The user selects show info
2. The system displays the update data it retrieves from the database

Convert transaction-log-file application

Name: Convert

Brief Description: The user provides a transaction-log-file. The system then extracts the information from the file and updates the database.

Actors:

The user is an event worker

The system is the transaction-log-file converter application.

Preconditions: Visitor has entered the event

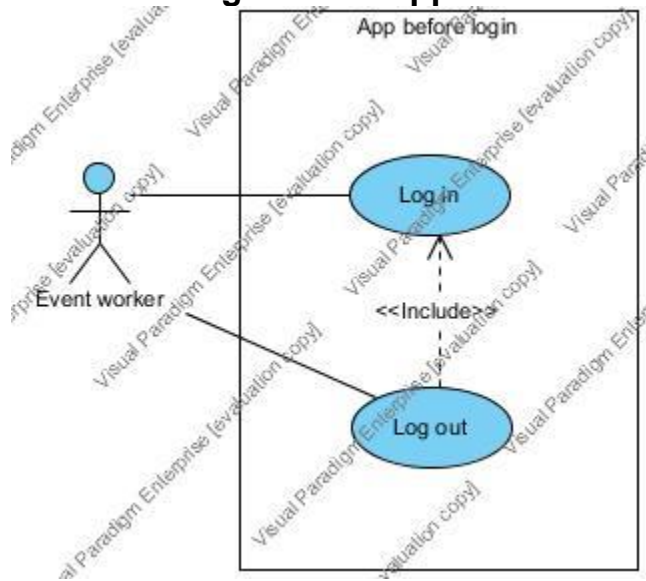
Basic Flow:

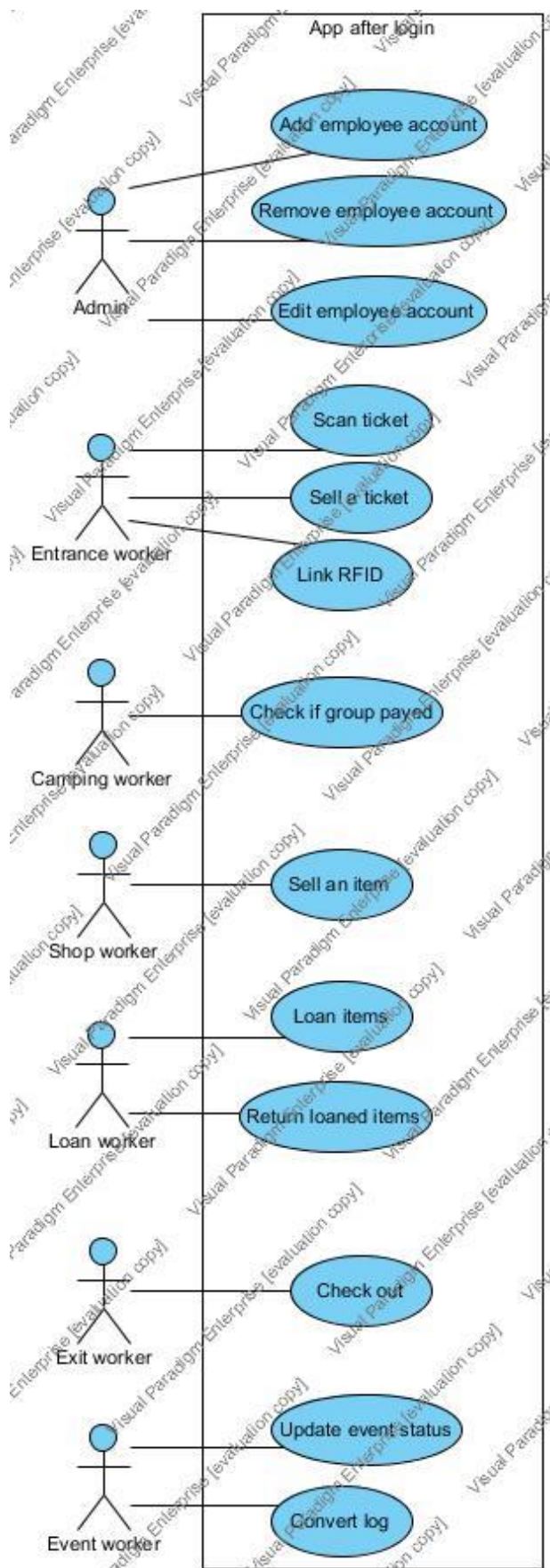
1. User provides transaction-log-file
2. The system verifies the provided file is valid
3. The user chooses out of the options upload all, upload selected and upload everything that is not selected
4. The system uploads certain lines of the file (based on the selected option) to the database
5. System displays that the information was transferred successfully

Alternate flow:

- 4.a The system displays that the information transfer was unsuccessful

Use case diagrams for applications





Functional requirements

Website

Must:

- Allow a person to buy a ticket to the event
- Allow account owners to reserve camping
- Allow account owners to add credits to their account
- Display information about the event
- Allow account owners to log in and out of their account

Should:

- Display contact information
- Allow a person to buy multiple tickets

Could:

- Display the answers to frequently asked questions
- Allow account owners to leave a review of the event
- Display the events review
- Purchase items on the website
- Support mobile devices

Applications

Must:

- Show if the scanned ticket is a valid ticket
- Create a new temporary account with the provided email
- Program RFID chip
- Read RFID chip
- Lower the credits of the provided account by the total price of the items
- Check if an account has reserved a camping spot and if it's paid for
- Calculate the to be paid amount for the camping spot
- Lower the credits of the provided account by the total price of the loaned items and adds loaned items to account
- Mark the item(s) on the provided account as returned
- Check that there are no loaned items on the provided account
- Show the amount of money that needs to be returned when exiting event
- Mark the provided account as invalid when exiting event
- Show status of the event

- Convert the information in transaction-log-file to database
- Generate receipt

Should:

- Allow employees to log in to get access to the applications they have access to
- Allow an administrator to add, edit or remove employee accounts
- Send receipt to the email
- Have a nice overview of items in shops and loan stands

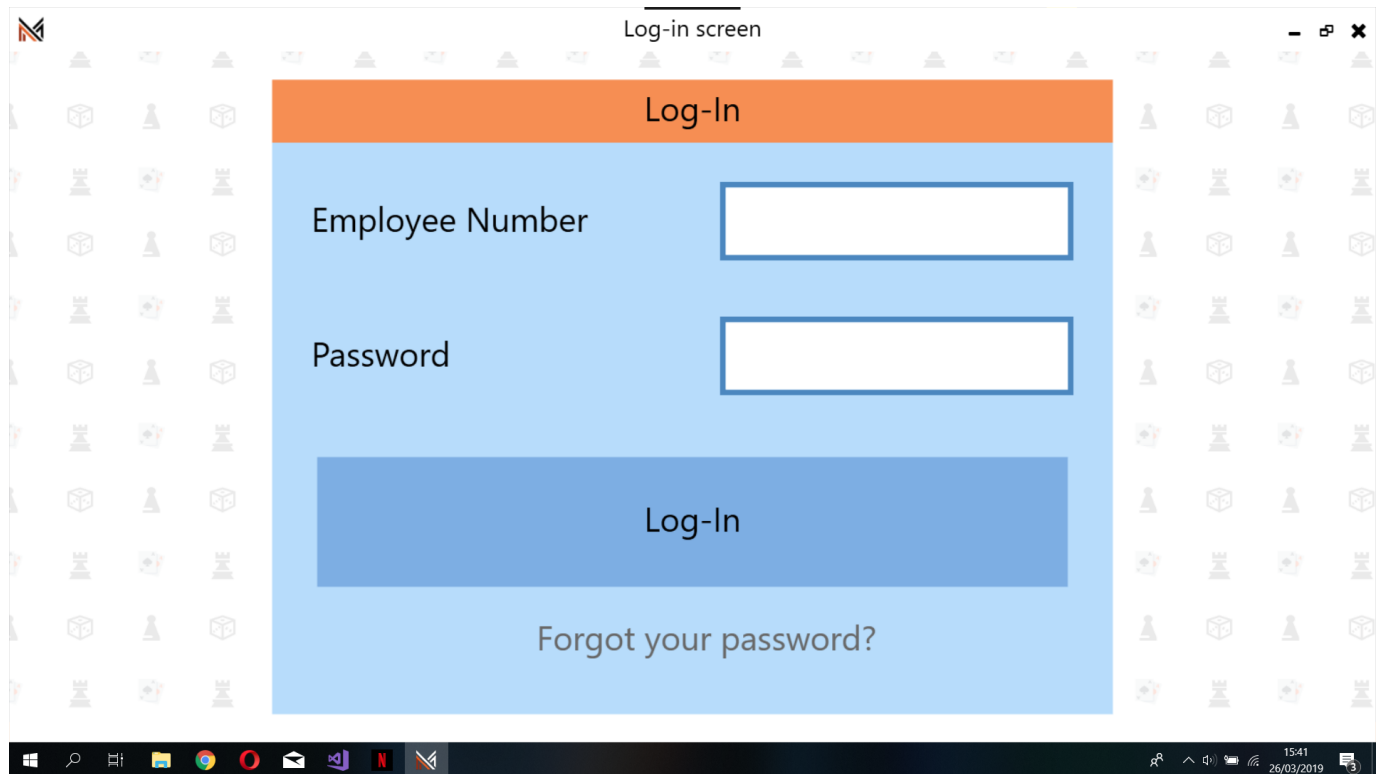
Could:

- Support touch screen
- Allow administrator to view the activity of a particular employee
- Allow shop workers to see the stock of items
- Be able to refund items bought at the shops
- Calculate how much money should be returned when buying a ticket at the entrance
- Be able to add notes to food or beverages such as “no pickles on the hamburger”
- Have user interactive map in camping application

Graphical user interface

The grey text boxes are read-only.
The white text boxes are read and type.

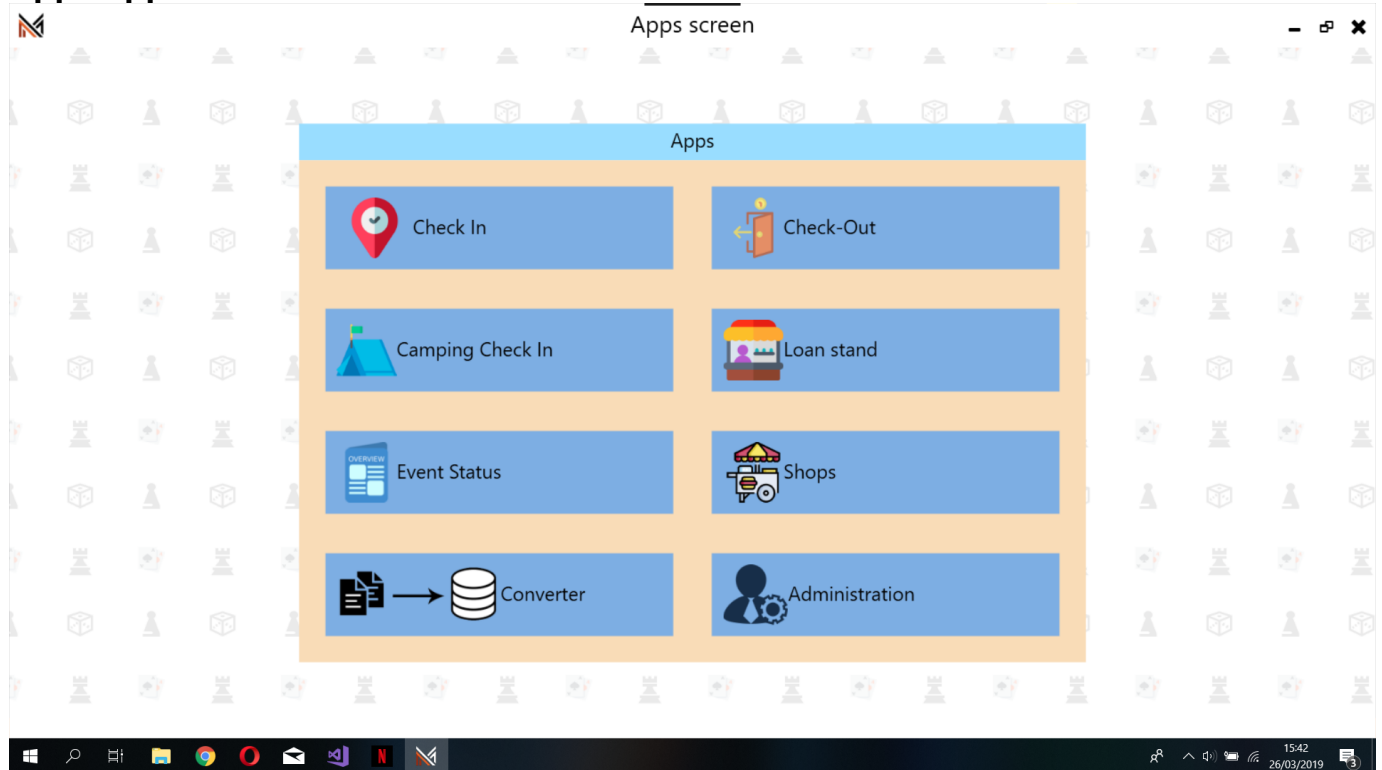
Login application



The screenshot shows a desktop environment with a taskbar at the bottom. The taskbar contains icons for Windows, Search, File Explorer, Google Chrome, Microsoft Edge, Mail, and several other applications. The system tray on the right shows the time as 15:41 on 26/03/2019. The main window is titled "Log-in screen" and has a standard Windows window control bar (minimize, maximize, close). The login screen itself has a light blue background. At the top, there is an orange header bar with the text "Log-In" in white. Below this, there are two white text input boxes with blue borders. The first box is labeled "Employee Number" and the second is labeled "Password". Below these boxes is a large blue button with the text "Log-In" in white. At the bottom of the login screen, there is a link that says "Forgot your password?". The background of the desktop is a grid of small, light grey icons representing various applications.

When the application is started this window is opened. There are two text boxes for the user to fill in their employee number and password. After filling the text boxes the user presses the “Log-in” button to log into their account. If the user only has access to one app they are sent to that app, but if the user has access to two or more applications they are sent to the Apps window.

Apps application



There are buttons for each window. When pressed the user is sent to that window. The employee will only be able to see the applications that they have access to.

Admin application

The screenshot displays a web application window titled "Admin screen". It contains two main panels side-by-side. The left panel, titled "Add Employee", has a light blue header and an orange body. It contains three text input fields labeled "First Name", "Last Name", and "JobID". Below these fields is a blue button labeled "Add Employee". The right panel, titled "Inspect Employee", also has a light blue header and an orange body. It contains one text input field labeled "Employee Number". Below this field is a blue button labeled "Inspect". The window has a standard Windows taskbar at the bottom with various application icons and a system tray showing the date and time as 20:18 on 28/03/2019.

Only a user with admin access can use this window. The user can create a new employee account by filling the first name, last name and JobID of the employee into the corresponding text boxes and pressing the “Add Employee” button in the “Add Employee” group box. The user can also inspect an employee by filling their employee number into the text box in the “Inspect employee” group box and pressing the Inspect button. The user is then sent to the Employee window.

Employee application

Employee screen

Employee Information

First Name

Last Name

JobID

Password

Employee Number

Remove

Remove

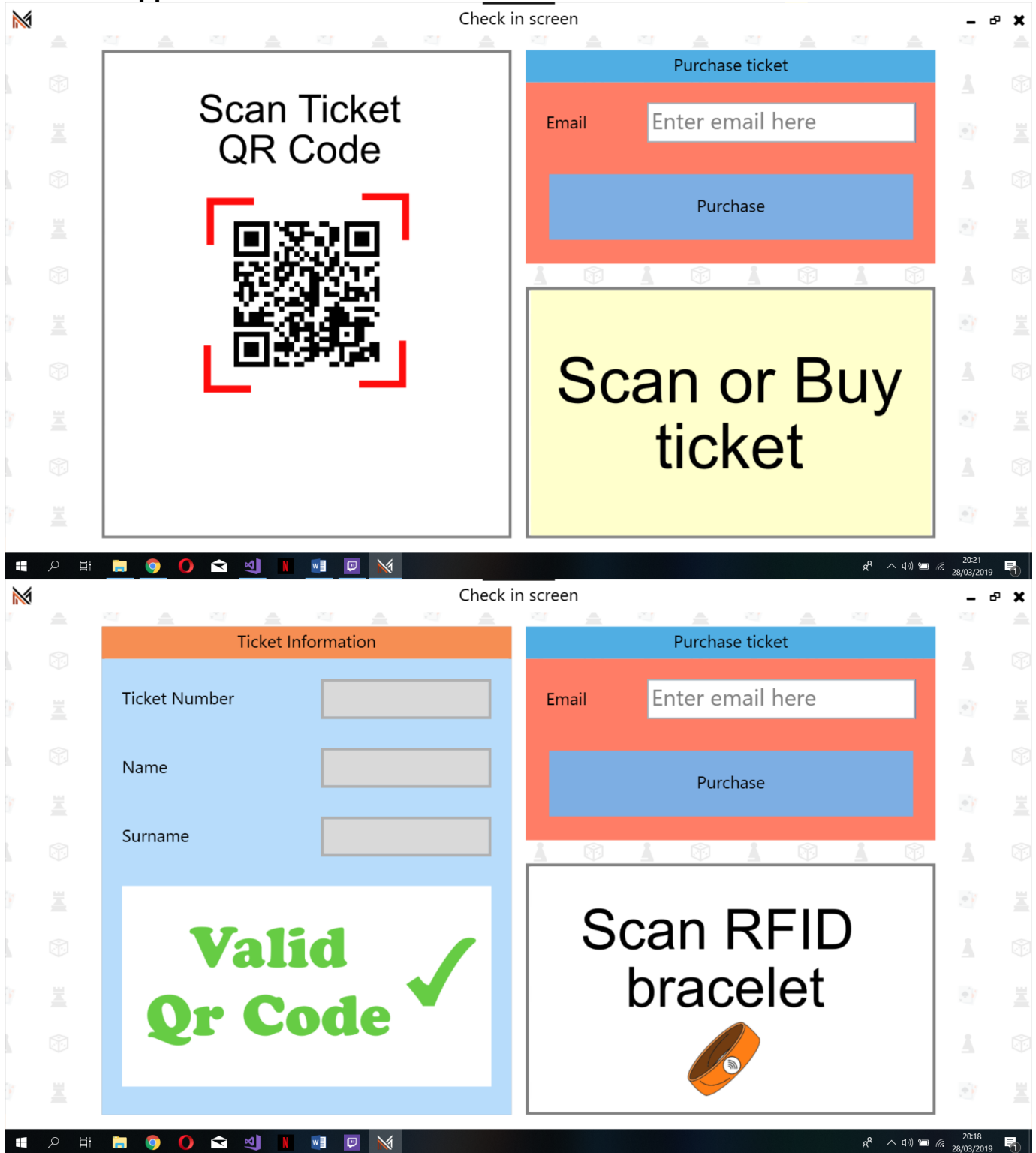
Change JOBID

JobID

Change

Only a user with admin access can use this window. The selected employees first name, last name, JobID, password, and employee number will be shown in the text boxes in the “Employee information” group box. When the remove button is pressed the selected employee account will be deleted after the user gives confirmation. In the change JobID group Box, the user can provide a certain JobID and when the Change button is pressed the selected employee’s account’s JobID will be updated.

Entrance application:



The "Ticket Information" group box will be hidden and have an image in its place that instructs the user to scan a tickets QR code. Once a QR code has been scanned the Ticket Information

group box will become visible and the image will be hidden. The group box will then show the ticket number, name and surname that belong to that ticket in text boxes along with an image that displays whether the QR code was valid.

In the “Purchase ticket” group box, the user inputs an email address and presses the Purchase button to buy a ticket.

In the bottom right corner, there is an image that instructs the user. If a ticket has not been scanned or bought yet it says to do so. When a ticket has been scanned or bought it tells the user to scan the RFID bracelet to link it the account. It then displays if the chip was successfully linked to the account. After a couple of seconds, everything resets so the next ticket can be scanned and linked to the account.

Camping application:

Camping screen

Camping group information

Group Leader

Reserved Camping spot

Amount of participants

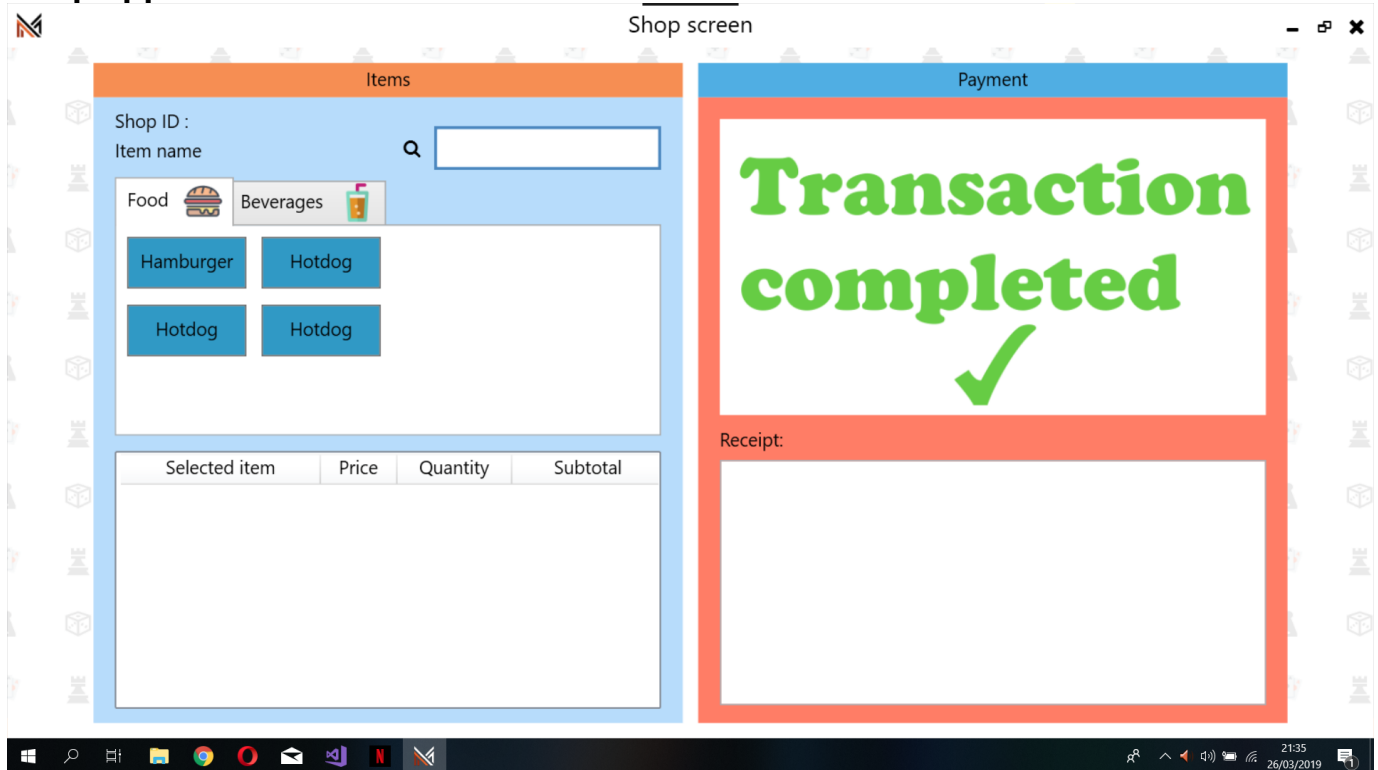
Payment Status

Amount to be paid .

Pay for camping spot

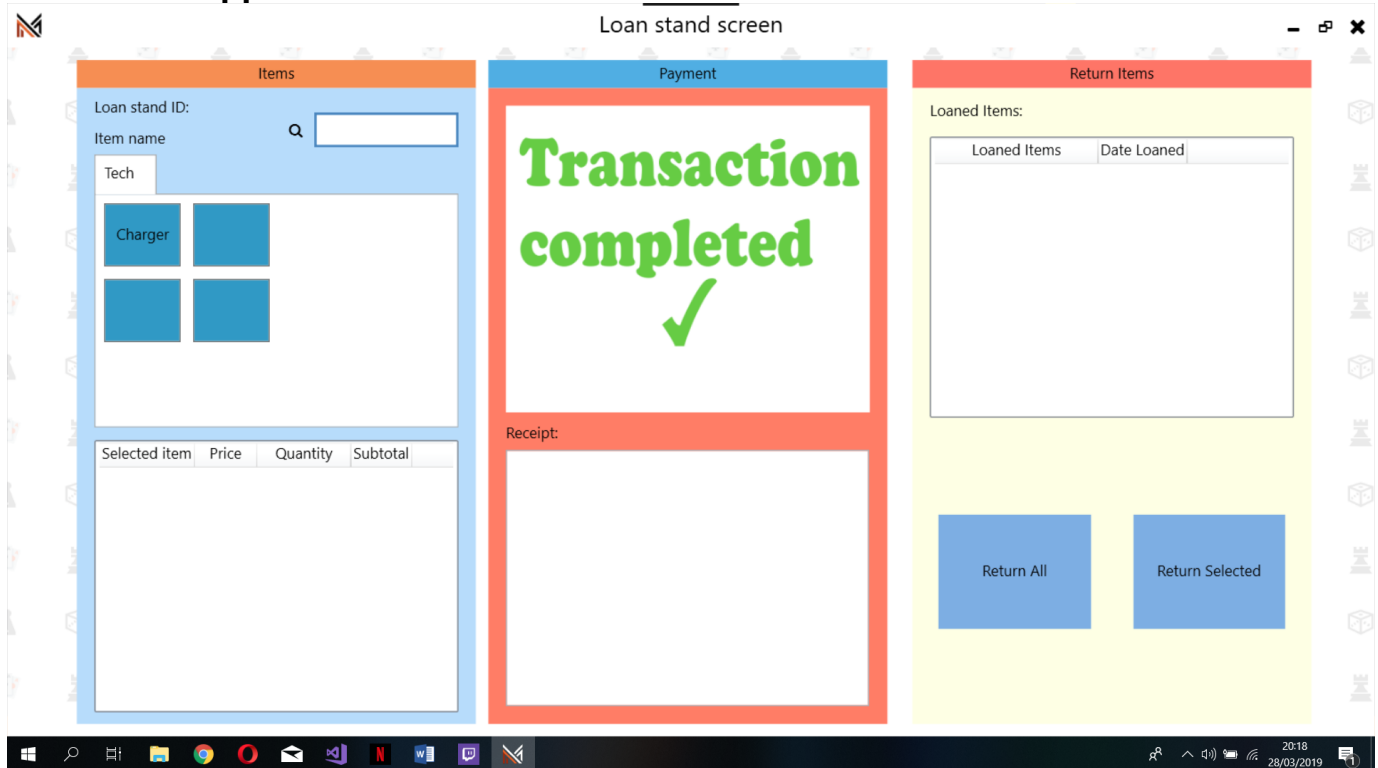
The window starts with an image saying to scan an RFID bracelet. After an RFID chip is scanned if the account doesn't have a reservation an image will be displayed to let the user know that the visitor doesn't have a reservation. If the account has a reservation but hasn't paid for it yet the "Camping group information" box will be shown. With the group's general information in textboxes and the amount that the visitor needs to pay for the reservation shown in an image. To pay for the reservation the user presses the Pay for camping spot button. After paying it will be shown that they were checked in or that the payment was unsuccessful. If the account has a reservation and already paid for it their information is shown in the group box and an image displays that they were successfully checked in.

Shop application:



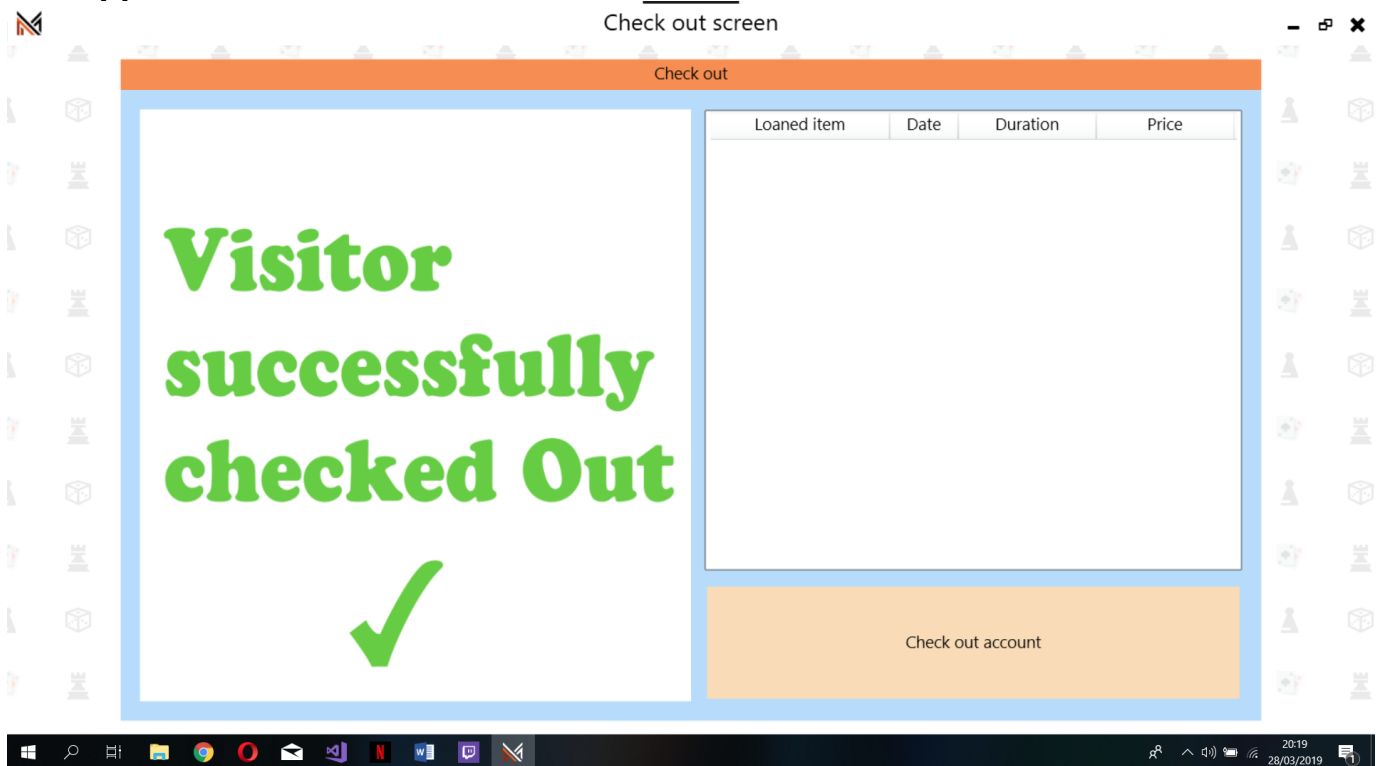
The user's Shop ID is retrieved from the database. In the “Items” group box the user can select multiple items by pressing the button of the item. If the user wants to quickly find a certain item they can search for it by putting the item’s name in the text box. When the user selects an item it is then shown in the list view. When at least one item is selected, the image in the “Payment group box” tells the user to scan the RFID bracelet. Once the user scans the bracelet the image shows whether the payment was a success or not. If it was a success the receipt is shown in the list box.

Loan stand application



The user's Loan stand ID is retrieved from the database. In the “Items” group box the user can select multiple items by pressing the button of the item. If the user wants to quickly find a certain item they can search for it by putting the item’s name in the text box. When the user selects an item it is then shown in the list view. When at least one item is selected, the image in the “Payment group box” tells the user to scan the RFID bracelet. Once the user scans the bracelet the image shows whether the payment was a success or not. If it was a success the receipt is shown in the list box. When the RFID chip is scanned any unreturned loaned items for the visitor will be shown in the list view in the “Return Items” group box. The user can return all the items by pressing the “Return All” button or select certain lines and only return does by pressing the “Return selected” button.

Exit application



The image in the group box will tell the user to scan an RFID bracelet. After the user scans a bracelet the image will show if the visitor was checked out successfully. If the visitor doesn't have any unreturned loaned items, only the image that shows that they have been checked out will be shown. If the visitor still has unreturned loaned items a list view with the unreturned items will be shown along with a button to check out the account.

Status application

Status screen

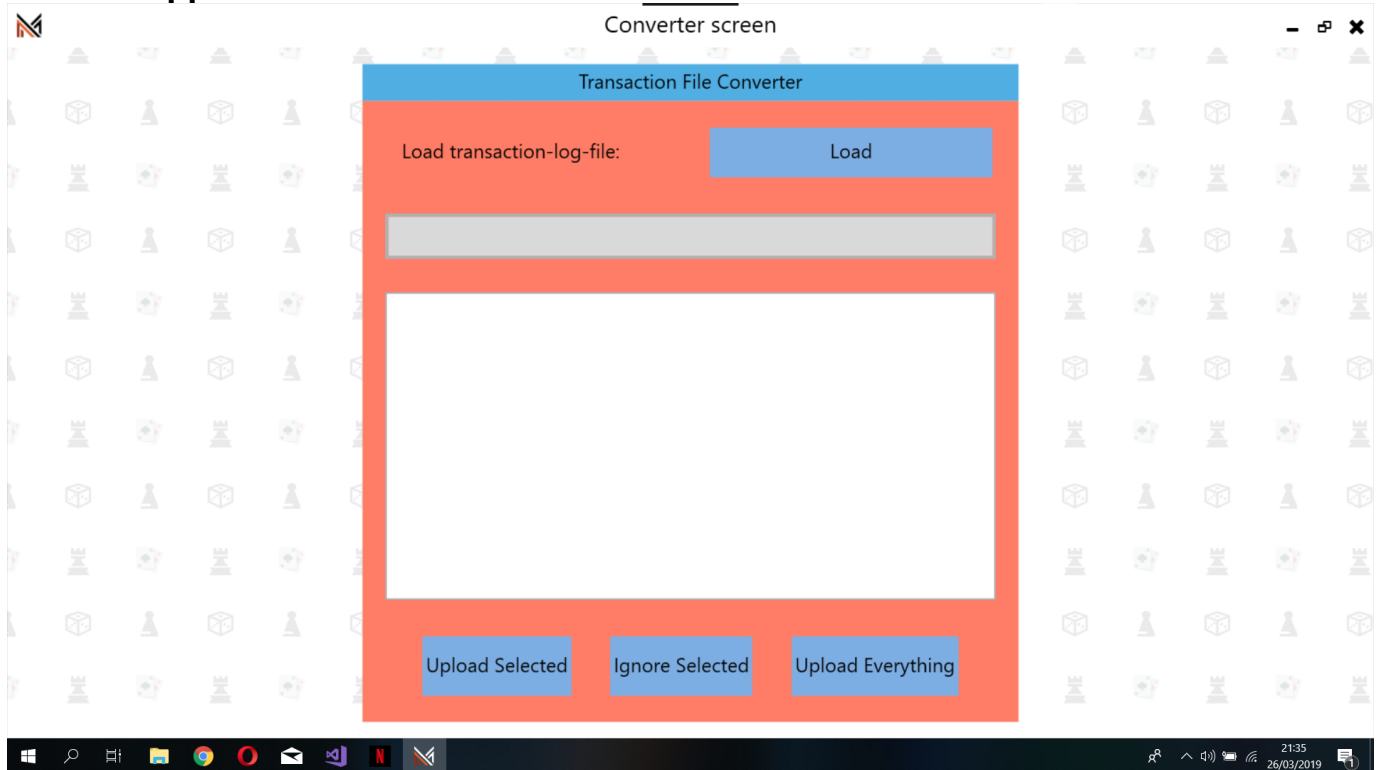
General info	Camping
Total Visitors: <input type="text"/>	Amount of booked camping spots: <input type="text"/>
Total balance of all visitors: <input type="text"/>	Amount of free camping spots: <input type="text"/>
Total money spent: <input type="text"/>	

Visitor Information	Amount earned per shop
Ticket number: <input type="text"/>	Shop ID: <input type="text"/>
<input type="button" value="Find Visitor"/>	Amount Earned: <input type="text"/>
Visitor status: <input type="text"/>	<input type="button" value="Find Shop"/>
Visitor History: <div><div></div></div>	

Amount earned per product
Product ID: <input type="text"/>
Amount Earned: <input type="text"/>
<input type="button" value="Find Product"/>

The application retrieves the data from the database and fills in the text boxes and list boxes. For the specific information such as the amount earned per product, an ID is filled into the text boxes and when the button is pressed it finds the data and displays it in a list box or text box.

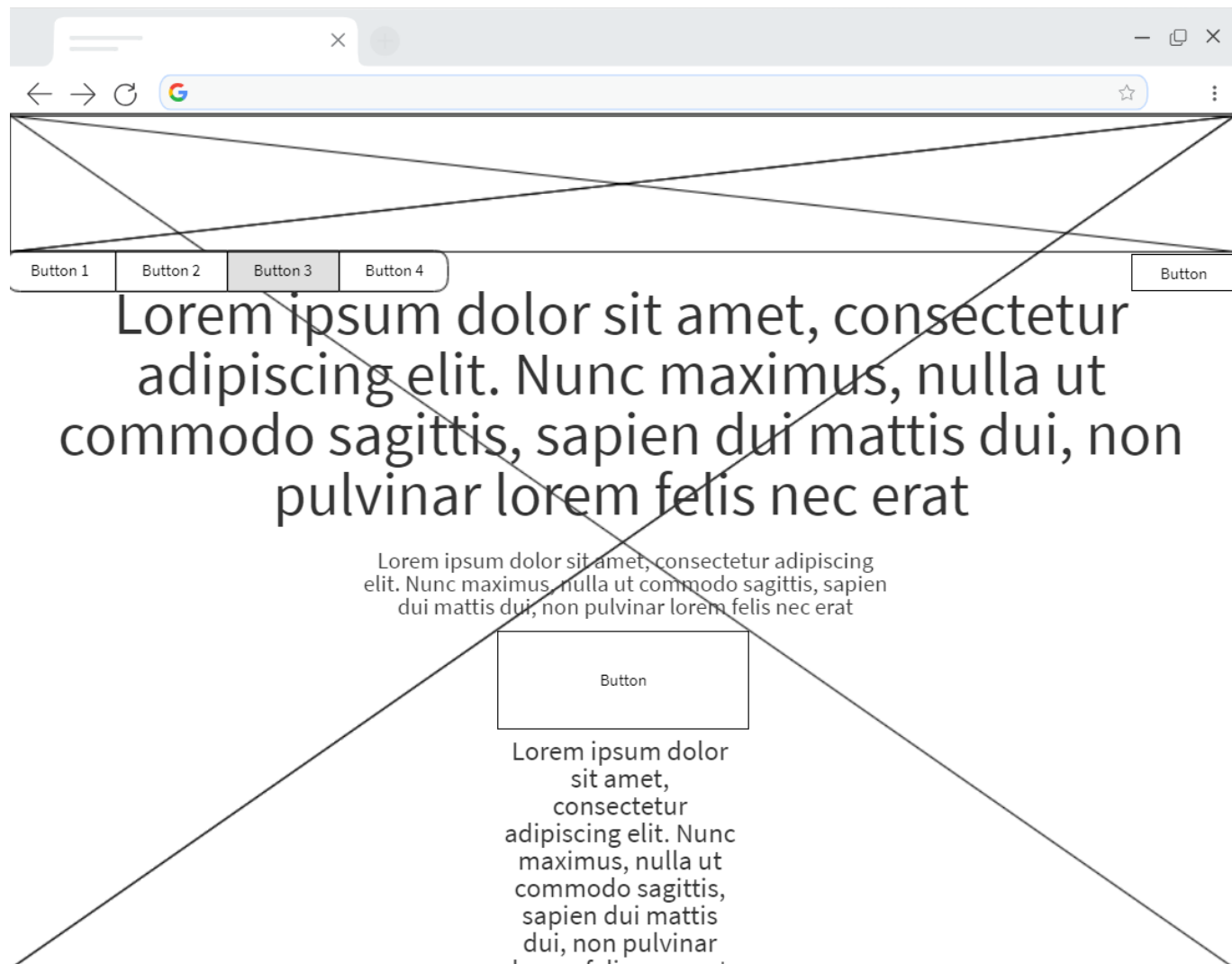
Convert application



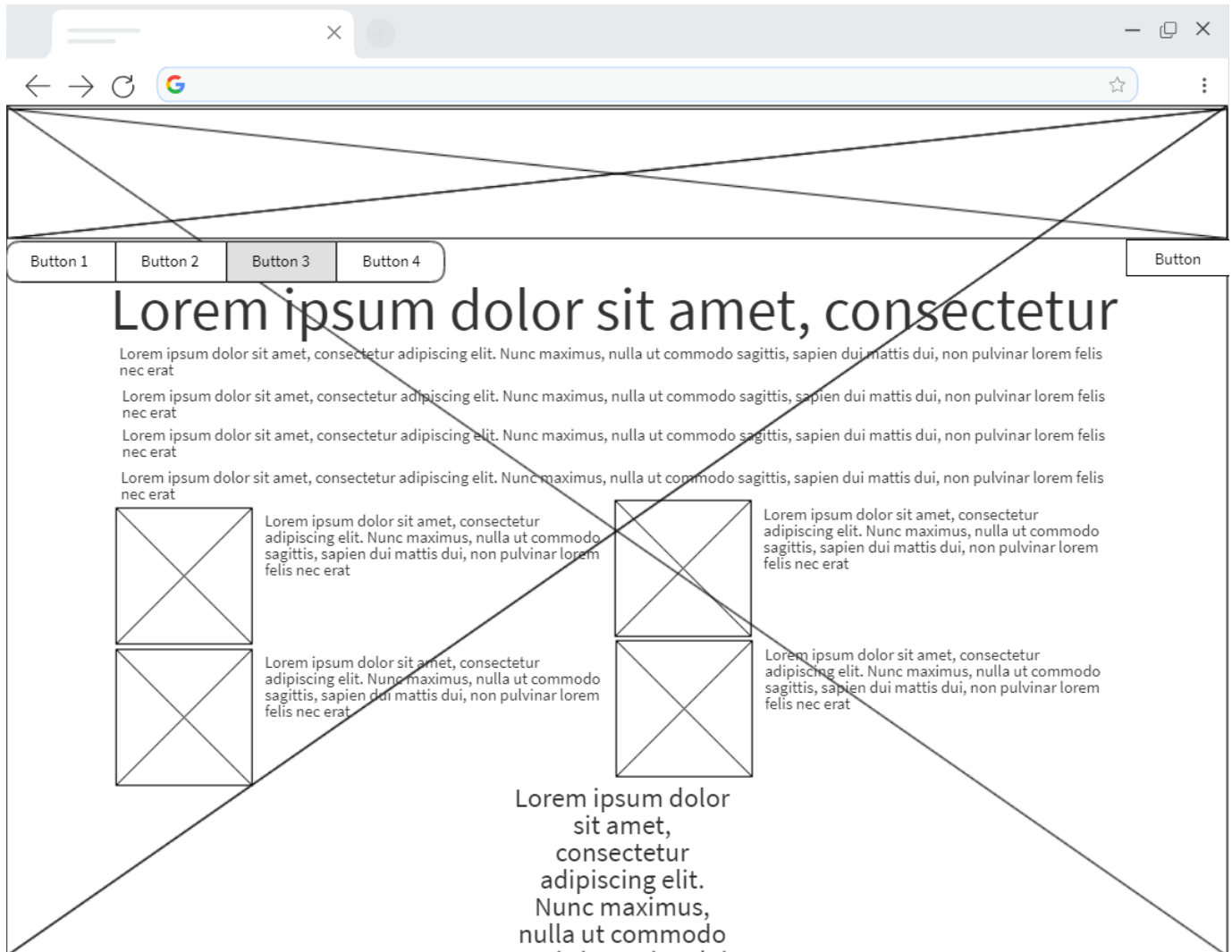
The user loads in a transaction log file by pressing the load button and selecting the file. The file's content will be shown in the list box. If there are any errors the line will be highlighted. The user can upload the entire file to the database by pressing the "Upload Everything" button. The user can also select lines in the list box and can upload only the selected lines by pressing the "Upload Selected" button or upload all the lines that are not selected by pressing the "Ignore Selected" button.

Website wireframe

Home page



About us page



Buy a ticket page

Button 1 Button 2 Button 3 Button 4 Button

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Buy a Ticket

First Name

Last Name

Email

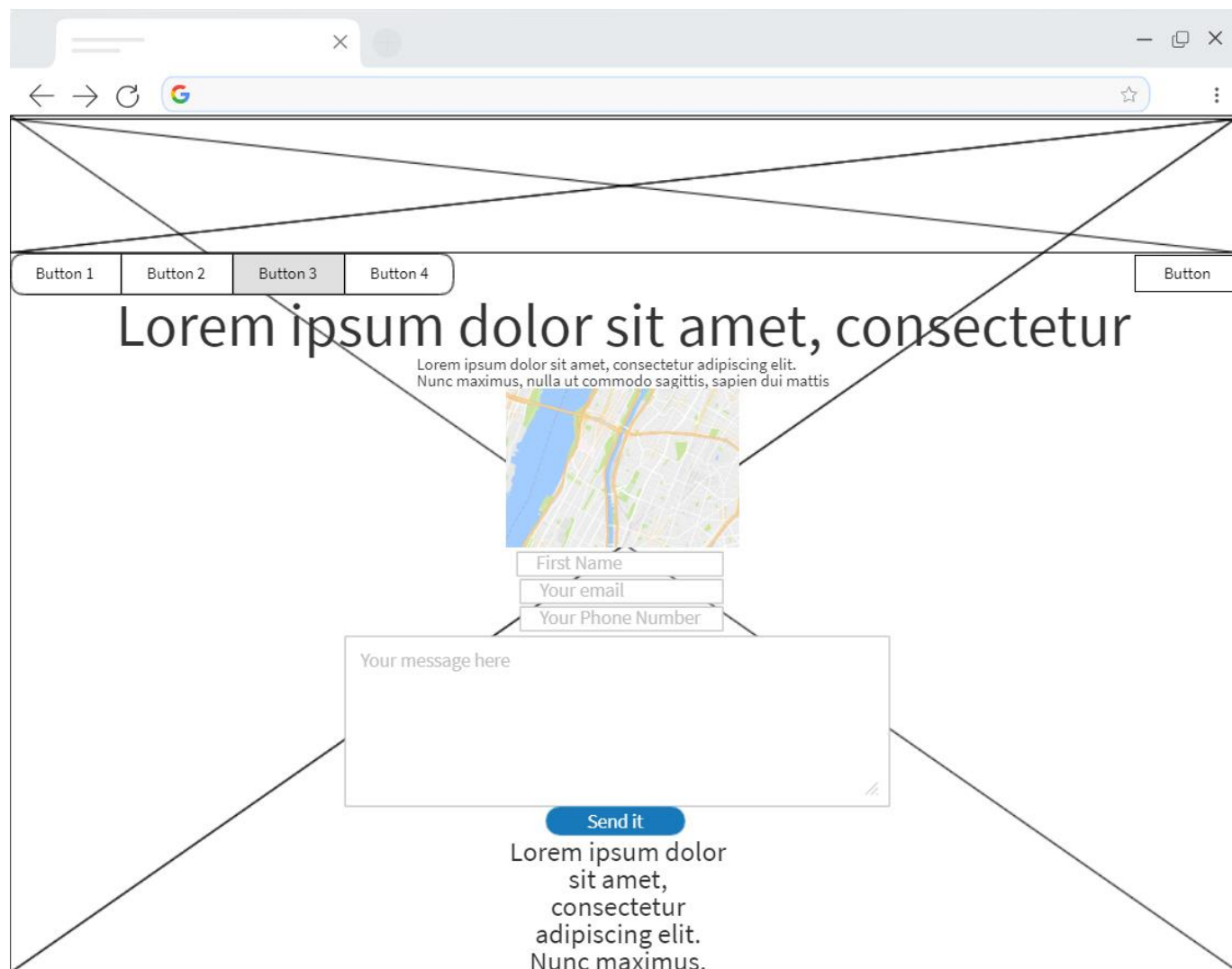
Password

IBAN

Confirm

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Contact us wireframe page

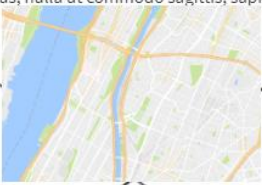


A wireframe of a contact us page. The page is enclosed in a browser window with a search bar and navigation icons. The main content area features a header with four buttons labeled 'Button 1', 'Button 2', 'Button 3', and 'Button 4'. Below the buttons is a large heading 'Lorem ipsum dolor sit amet, consectetur' followed by a paragraph of Lorem Ipsum text. A map image is positioned below the text. Below the map are three input fields labeled 'First Name', 'Your email', and 'Your Phone Number'. A large text area labeled 'Your message here' is below the input fields. A blue 'Send it' button is positioned below the message area. The page concludes with a paragraph of Lorem Ipsum text.

Button 1 Button 2 Button 3 Button 4 Button

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First Name
Your email
Your Phone Number

Your message here

Send it

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Login page

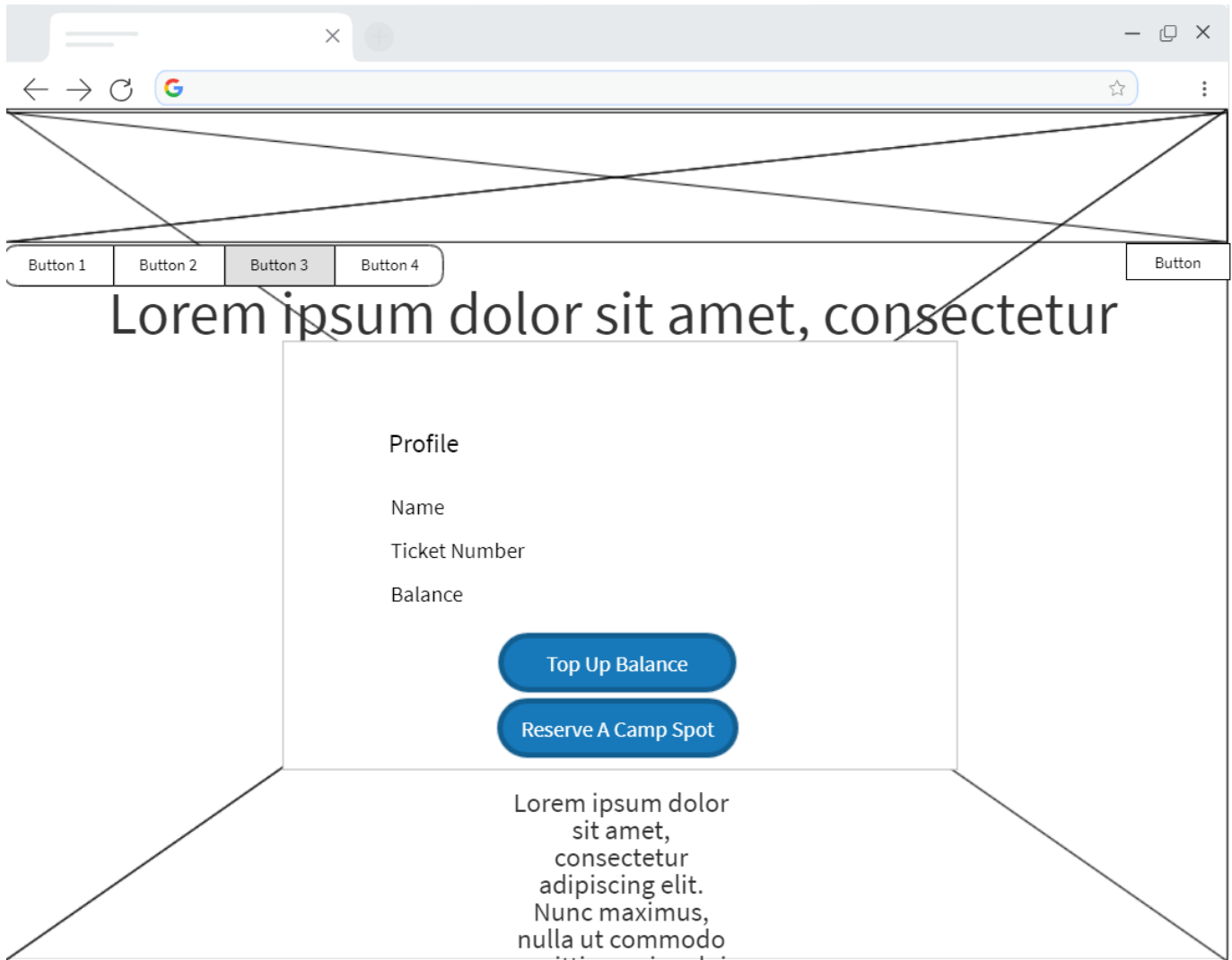
Button 1 Button 2 Button 3 Button 4 Button

Lorem ipsum dolor sit amet, consectetur

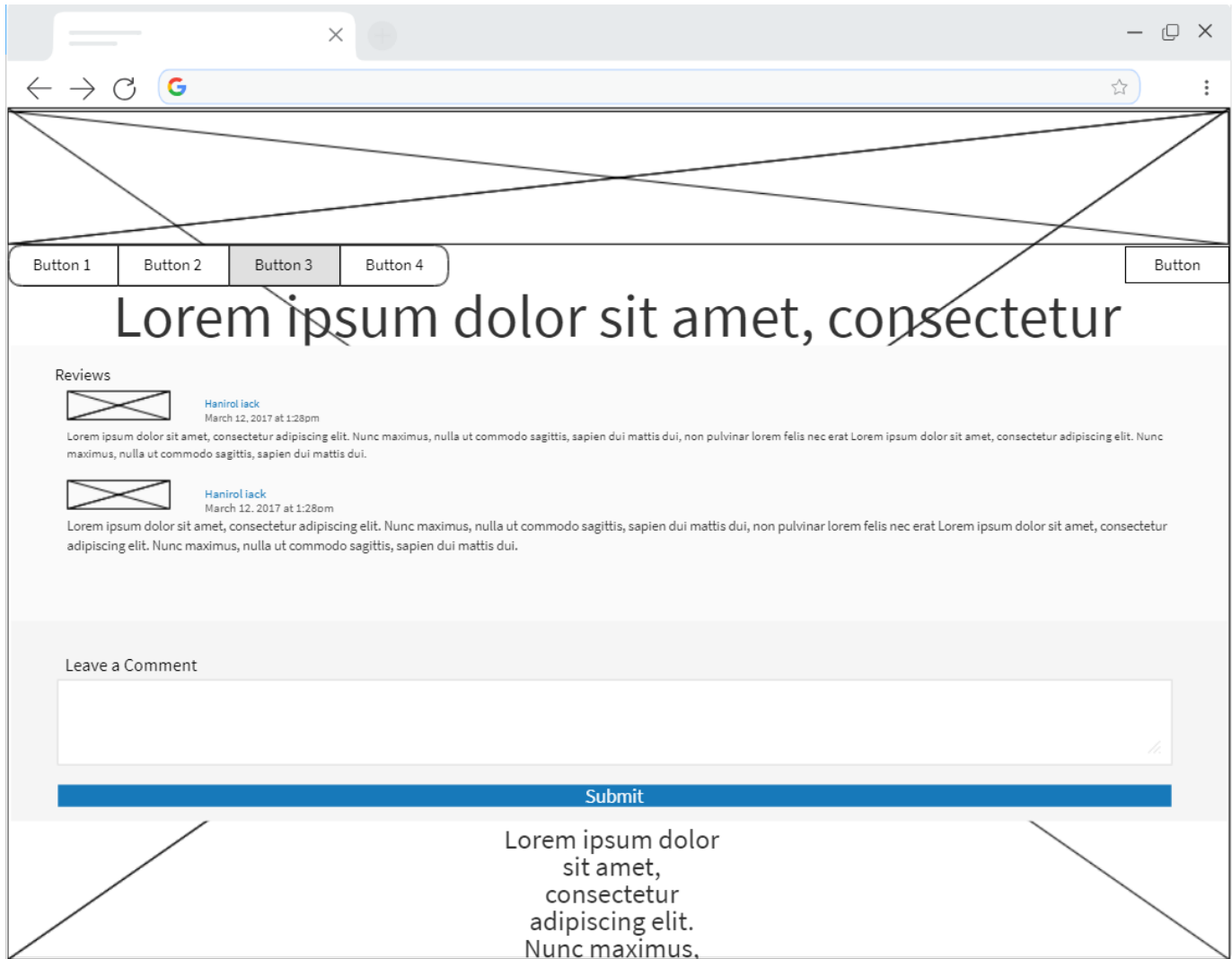
Log In

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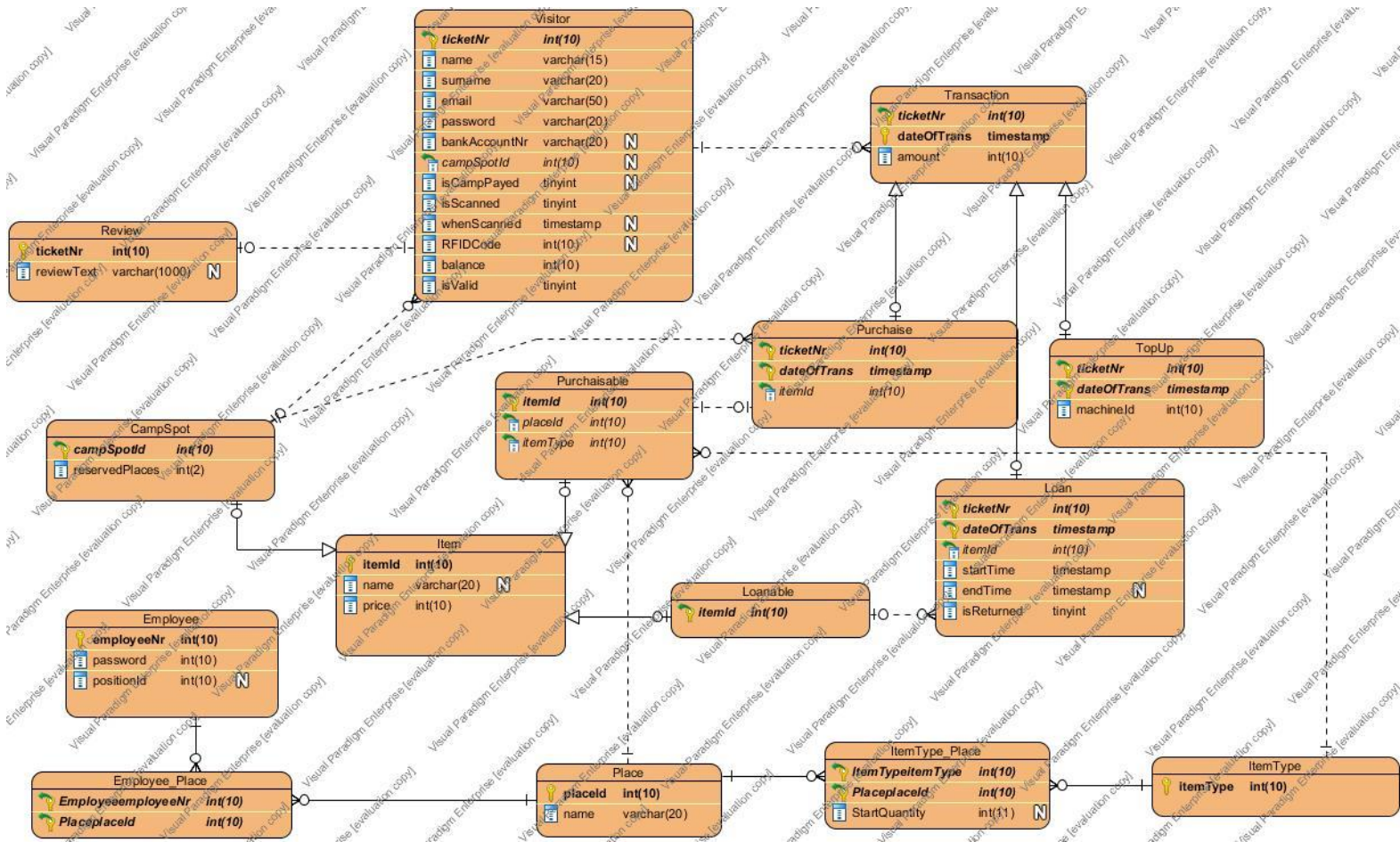
Profile page



Review page



Entity relationship diagram



Entity relationship diagram can currently seem complicated, but all the necessary connections and new tables were added to minimize null values in existing tables. In future while implementing the application there can be changes in ERD due to more information based on necessary queries and the way that we will be implementing designed applications. Especially the “Item” table logic with division on different types of purchasable items (we assume that everything for what visitor pays is an item with different subtypes) and transactions (same logic of dividing it into different subtypes) can be changed in future due to changes in planned implementation.

DDL for current database is can be found by the following link: https://git.fhict.nl/I400678/project-p-phase_group17/commit/34d3acfa2a332c2812e2bafb39f8a9d7e59692e8