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User Requirements Specifications

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Synthesis Assignment

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## Non-Functional Requirements

NFR-01: Maintainable and extendable

* The application will be open to new functionalities to be added, or to easily update the existing functionalities without influencing the application’s behavior or flow and without time consuming.

NFR-02: Bug free system

* The application will handle potential users’ errors and unexpected behaviors.
* Unit testing will be implemented and kept up to date to the application’s development through time, to track and handle errors.
* The software will be equipped with a test plan to test every single performance of the desktop and web application.
* A test report will be made out of the test plan to fix any unexpected behavior after every testing.

NFR-03: Secure Application

* Application’s users (whether admins or clients) won’t be able to access saved passwords (hashing and salting will be implemented for passwords), and also different access levels will be implemented to keep application’s users’ sensitive data safe.

NFR-04: Environment and availability

* The desktop and web apps are going to be deployed on an online server so that it is available to users online 24/7

NFR-05: Usability

* User experience testing will be made and distributed over groups of people (unknown number for now) to test if the apps are behaving as expected and update any unexpected received results.
* The application is going to be user-friendly and easy to use without extra time for users to get acquainted with the system.

## Functional Requirements (Desktop App)

ID: FR A-01

Title: Employee can login

Description:

Employee should be able to login to the desktop application

Constraint: Employee must an admin

ID: FR A-02

Title: Employee can log out

Description:

Employee should be able to log out

Constraint: Employee must be logged in

ID: FR A-03

Title: Employee can go back

Description:

Employee should be able to go back to a previous page

Constraint: Employee must be logged in

ID: FR A-04

Title: Employee can access the inventory form

Description:

Employee should be able to access the inventory form

Constraint: Employee must be logged in

ID: FR A-05

Title: employee can add new boats

Description:

Employee should be able to add new boats to the company’s inventory

Constraint: Employee must be logged in

ID: FR A-06

Title: employee can add new items

Description:

Employee should be able to add new items to the company’s inventory

Constraint: Employee must be logged in

ID: FR A-07

Title: employee can update existing boats

Description:

Employee should be able to update the existing boats in the inventory

Constraint: Employee must be logged in

ID: FR A-08

Title: employee can update existing items

Description:

Employee should be able to update the existing items in the inventory

Constraint: Employee must be logged in

ID: FR A-09

Title: employee can delete an existing boat

Description:

Employee should be able to delete an existing boat from the inventory

Constraint: Employee must be logged in

ID: FR A-10

Title: employee can delete an existing item

Description:

Employee should be able to delete an existing item from the inventory

Constraint: Employee must be logged in

ID: FR A-11

Title: employee can deposit money

Description:

Employee should be able to submit a deposit amount from the customer

Constraint: Employee must be logged in

## Use Cases (Desktop App)

ID: FR A-01 – Employee can login

Pre-condition:

* The employee is an admin
* The employee is logged out

Post-condition:

* Employee is logged in

Actor: Employee

Main Success Scenario:

1. Employee opens the application
2. System displays a login form
3. Employee provides valid data for their username and password and presses login
4. System displays a dashboard form
5. End of use case

Extensions:

3a. text fields are empty

1. System displays a guiding message saying that username and password are required fields
2. Employee fills in the fields
3. Go back to use case 3

3b. username contains numbers

1. System displays a guiding message saying that username cannot contain numbers
2. Employee provides a username without numbers
3. Go back to use case 3

3c. Incorrect credentials

1. System displays a guiding message saying that username or password is incorrect
2. Employee provides valid credentials for username and password
3. Go back to use case 3

ID: FR A-02 – Employee can log out

Pre-condition:

* FR A-01 “Employee can login” is fulfilled

Post-condition:

* Employee is logged out

Actor: Employee

Main Success Scenario:

1. Employee is at any given form
2. Employee clicks on logout
3. System displays the login form
4. End of use case

ID: FR A-03 – Employee can go back

Pre-condition:

* FR A-01 “Employee can login” is fulfilled
* Employee is not at the login form

Post-condition:

* Employee is in the previous form

Actor: Employee

Main Success Scenario:

1. Employee is at any given form
2. Employee clicks on back
3. System displays the previous page
4. End of use case

ID: FR A-04 – Employee can access the inventory form

Pre-condition:

* UR FR A-01: “Employee can login” is fulfilled

Post-condition:

* Employee is in the inventory form

Actor: Employee

Main Success Scenario:

1. Employee is at the Dashboard form
2. Employee presses on inventory
3. System displays the inventory form
4. End of use case

ID: FR A-05 – employee can add new boats

Pre-condition:

* FR A-04 – “Employee can access the inventory form” is fulfilled

Post-condition:

* New boat is added to the inventory

Actor: Employee

Main Success Scenario:

1. Employee is in the inventory form
2. Employees presses on “add new”
3. System displays a dashboard with options
4. Employee presses on “BOAT”
5. System displays “Add boat” form
6. Employee fills in all the required fields with valid data and confirms
7. System displays a message that item is successfully added to the inventory
8. End of use case

Extensions:

6c. Employee doesn’t fill in all the required fields

1. System displays a request message to fill in all the required fields
2. Employee fills in all the required fields with valid data
3. Go back to use case 6

6d. employee provides a letter instead of a valid number in cost, deposit, or quantity

1. System displays a guiding message that cost, deposit, or quantity can’t contain a letter
2. Employee provides a valid number in cost, deposit, or quantity fields
3. Go back to use case 6

ID: FR A-06 – employee can add new items

Pre-condition:

* FR A-04 – “Employee can access the inventory form” is fulfilled

Post-condition:

* New item is added to the inventory

Actor: Employee

Main Success Scenario:

1. Employee is in the inventory form
2. Employees presses on “add new”
3. System displays a dashboard with options
4. Employee presses on “ITEM”
5. System displays “Add item” form
6. Employee fills in all the required fields with valid data and confirms
7. System displays a message that item is successfully added to the inventory
8. End of use case

Extensions:

6c. Employee doesn’t fill in all the required fields

1. System displays a request message to fill in all the required fields
2. Employee fills in all the required fields with valid data
3. Go back to use case 6

6d. employee provides a letter instead of a valid number in cost, deposit, or quantity

1. System displays a guiding message that cost, deposit, or quantity can’t contain a letter
2. Employee provides a valid number in cost, deposit, or quantity fields
3. Go back to use case 6

ID: FR A-07 – Employee can update existing boats

Pre-condition:

* FR A-04 – “Employee can access the inventory form” is fulfilled

Post-condition:

* New boat is updated in the inventory

Actor: Employee

Main Success Scenario:

1. Employee is in the inventory form
2. Employees selects row from the boats’ table and presses on “update selected row”
3. System displays “add/update boat” form
4. Employee fill in all the required fields with valid data and presses “update boat”
5. System displays that item is successfully added to the inventory
6. End of use case

Extensions:

4c. employee doesn’t fill in all the required fields

1. System displays a request message to fill in all the required fields
2. Employee fills in all the required fields with valid data
3. Go back to use case 4

6d. employee provides a letter instead of a valid number in cost, deposit, or quantity

1. System displays a guiding message that cost, deposit, or quantity can’t contain a letter
2. Employee provides a valid number in cost, deposit, or quantity fields
3. Go back to use case 4

ID: FR A-08 – Employee can update existing items

Pre-condition:

* FR A-04 – “Employee can access the inventory form” is fulfilled

Post-condition:

* New item is updated in the inventory

Actor: Employee

Main Success Scenario:

1. Employee is in the inventory form
2. Employees selects row from the items’ table and presses on “update selected row”
3. System displays “add/update items” form
4. Employee fill in all the required fields with valid data and presses “update item”
5. System displays that item is successfully added to the inventory
6. End of use case

Extensions:

4c. Employee doesn’t fill in all the required fields

1. System displays a request message to fill in all the required fields
2. Employee fills in all the required fields with valid data
3. Go back to use case 4

6d. employee provides a letter instead of a valid number in cost, deposit, or quantity

1. System displays a guiding message that cost, deposit, or quantity can’t contain a letter
2. Employee provides a valid number in cost, deposit, or quantity fields
3. Go back to use case 4

ID: FR A-09 – Employee can delete an existing boat

Pre-condition:

* FR A-04 – “Employee can access the inventory form” is fulfilled

Post-condition:

* Boat is deleted from the inventory

Actor: Employee

Main Success Scenario:

1. Employee is in the inventory form
2. Employees selects row from the boats’ table and presses on “delete selected row”
3. System displays “Warning” form
4. Employee presses on confirm
5. System displays that item was successfully deleted from the inventory
6. End of use case

Extensions:

4a. Employee cancels

1. End of use case

ID: FR A-10 – Employee can delete an existing item

Pre-condition:

* FR A-04 – “Employee can access the inventory form” is fulfilled

Post-condition:

* Item is deleted from the inventory

Actor: Employee

Main Success Scenario:

1. Employee is in the inventory form
2. Employees selects row from the items’ table and presses on “delete selected row”
3. System displays “Warning” form
4. Employee presses on confirm
5. System displays that item was successfully deleted from the inventory
6. End of use case

Extensions:

4a. Employee cancels

1. End of use case

ID: FR A-11 – Employee can deposit money

Pre-condition:

* The employee is an admin
* The employee is logged out

Post-condition:

* Deposit is registered

Actor: Employee

Main Success Scenario:

1. Employee opens the application
2. System displays a login form
3. Employee provides valid data for their username and password and presses login
4. System displays a dashboard form
5. Employee presses on Administration
6. Search for client form displays and employee fills in valid data and presses Search
7. Form with customer details display
8. Employee provided the expected deposit and confirms
9. System displays a message of successful deposit and the returned amount to the customer
10. End of use case

Extensions:

3a. text fields are empty

1. System displays a guiding message saying that username and password are required fields
2. Employee fills in the fields
3. Go back to use case 3

3b. username contains numbers

1. System displays a guiding message saying that username cannot contain numbers
2. Employee provides a username without numbers
3. Go back to use case 3

3c. Incorrect credentials

1. System displays a guiding message saying that username or password is incorrect
2. Employee provides valid credentials for username and password
3. Go back to use case 3

6.a text fields are empty

1. System displays a guiding message saying that fields are required
2. Employee fills in the fields
3. Go back to use case 6

6.b Last name contains numbers

1. System displays a guiding message saying that last name cannot contain numbers
2. Employee fills in a valid last name
3. Go back to use case 6

6.c Reservation not found

1. System displays a guiding message saying that reservation is not found
2. Employee provides last name and reference number for an existing reservation
3. Go back to use case 6

8.a text field is empty

1. System displays a guiding message saying that deposit field is required
2. Employee fills in the field
3. Go back to use case 8

8.a deposit input contain letters

1. System displays a guiding message saying that deposit cannot contain letters
2. Employee fills valid input for deposit field
3. Go back to use case 8

8.a deposit is lower than the expected amount

1. System displays a guiding message saying that deposit is insufficient
2. Employee provides sufficient deposit
3. Go back to use case 8

ID: FR A-12 – Employee can make payment

Pre-condition:

* The employee is an admin
* The employee is logged out

Post-condition:

* Payment is made

Actor: Employee

Main Success Scenario:

1. Employee opens the application
2. System displays a login form
3. Employee provides valid data for their username and password and presses login
4. System displays a dashboard form
5. Employee presses on Administration
6. Search for client form displays and employee fills in valid data and presses Search
7. Form with customer details display
8. Employee provided the expected payment and confirms
9. System displays a message of successful payment and the returned amount to the customer
10. End of use case

Extensions:

3a. text fields are empty

1. System displays a guiding message saying that username and password are required fields
2. Employee fills in the fields
3. Go back to use case 3

3b. username contains numbers

1. System displays a guiding message saying that username cannot contain numbers
2. Employee provides a username without numbers
3. Go back to use case 3

3c. Incorrect credentials

1. System displays a guiding message saying that username or password is incorrect
2. Employee provides valid credentials for username and password
3. Go back to use case 3

6.a text fields are empty

1. System displays a guiding message saying that fields are required
2. Employee fills in the fields
3. Go back to use case 6

6.b Last name contains numbers

1. System displays a guiding message saying that last name cannot contain numbers
2. Employee fills in a valid last name
3. Go back to use case 6

6.c Reservation not found

1. System displays a guiding message saying that reservation is not found
2. Employee provides last name and reference number for an existing reservation
3. Go back to use case 6

8.a text field is empty

1. System displays a guiding message saying that deposit field is required
2. Employee fills in the field
3. Go back to use case 8

8.a payment input contain letters

1. System displays a guiding message saying that payment cannot contain letters
2. Employee fills valid input for payment field
3. Go back to use case 8

8.a payment is lower than the expected amount

1. System displays a guiding message saying that payment is insufficient
2. Employee provides sufficient payment
3. Go back to use case 8

## Functional Requirements (Web App)

ID: FR B-01

Title: Customer can place a reservation

Description:

Customer should be able to place a reservation

ID: FR B-02

Title: Customer can update a reservation

Description:

Customer should be able to update their reservation

Constraint: Reservation exists

ID: FR B-03

Title: Customer can cancel a reservation

Description:

Customer should be able to cancel their reservation

Constraint: Reservation exists

## Use Cases (Web App)

ID: FR B-01 – Customer can place a reservation

Pre-condition:

* None

Post-condition:

* Reservation is made

Actor: Customer

Main Success Scenario:

1. Customer is in the Homepage
2. Customer clicks on Book Now
3. Book Page displays
4. Customer selects their preference and presses on Add My Selections
5. Customer details page displays
6. Customer provide valid data for their details and presses on Add Contact Details
7. Reservation page displays containing all the details of the customer selections
8. Customer checks their reservation and ticks a checkbox of signature confirmation and presses on confirm booking
9. System displays a confirmation page of the reservation reference number
10. End of use case

Extensions:

4a. text fields are empty

1. System displays a guiding message saying that the required empty fields are mandatory
2. Customer fills in the fields
3. Go back to use case 4

4b. Invalid data for quantity fields

1. System displays a guiding message for the user to enter a number
2. Customer provides a number
3. Go back to use case 4

4c. Selected dates are in the past

1. System displays a guiding message the dates are invalid
2. Customer provides valid date
3. Go back to use case 4

4d. Selected dates are less than 2hrs or longer than 2 weeks

1. System displays a guiding message the dates are invalid
2. Customer provides valid date
3. Go back to use case 4

6a. text fields are empty

1. System displays a guiding message saying that the required empty fields are mandatory
2. Customer fills in the fields
3. Go back to use case 6

6b. text fields contain numbers

1. System displays a guiding message saying that the fields cannot contain a number
2. Customer fills in valid data for to fields
3. Go back to use case 6

8a. check box is not ticked

1. System displays a guiding message inviting the customer to tick the check box
2. Customer ticks the checkbox and presses on Confirm Booking
3. Go back to use case 8

ID: FR B-02 – Customer can update their reservation

Pre-condition:

* Rental day is in more than a week

Post-condition:

* Reservation is updated

Actor: Customer

Main Success Scenario:

1. Customer is in the reservations page
2. Customer provides their last name and reference number and presses on Find My Reservation
3. System displays the customer reservation with their details
4. Customer presses on update Reservation
5. System displays the “Book Now” page with the customer’s current selected details
6. Customer selects their new preference and presses on Add My Selections
7. Customer details page displays
8. Customer provide valid data for their new details and presses on Add Contact Details (add extension for this)
9. Reservation page displays containing all the new details of the customer selections
10. Customer checks their reservation and ticks a checkbox of signature confirmation and presses on confirm update
11. System displays a confirmation page of the reservation reference number
12. End of use case

Extensions:

2a. Empty fields

1. System displays a guiding message saying that the required empty fields are mandatory
2. Customer fills in the fields
3. Go back to use case 2

2b. Invalid data for last name

1. System displays a guiding message for the user to enter a valid last name
2. Customer provides a valid last name and reference number
3. Go back to use case 2

2c. Reservation not found

1. System displays a guiding message that the reservation was not found
2. Go back to use case 2

6a. text fields are empty

1. System displays a guiding message saying that the required empty fields are mandatory
2. Customer fills in the fields
3. Go back to use case 6

6b. Invalid data for quantity fields

1. System displays a guiding message for the user to enter a number
2. Customer provides a number
3. Go back to use case 6

6c. Selected dates are in the past

1. System displays a guiding message the dates are invalid
2. Customer provides valid date
3. Go back to use case 6

6d. Selected dates are less than 2hrs or longer than 2 weeks

1. System displays a guiding message the dates are invalid
2. Customer provides valid date
3. Go back to use case 6

8a. text fields are empty

1. System displays a guiding message saying that the required empty fields are mandatory
2. Customer fills in the fields
3. Go back to use case 8

8b. text fields contain numbers

1. System displays a guiding message saying that the fields cannot contain a number
2. Customer fills in valid data for to fields
3. Go back to use case 8

10a. check box is not ticked

1. System displays a guiding message inviting the customer to tick the check box
2. Customer ticks the checkbox and presses on Confirm Booking
3. Go back to use case 10

ID: FR B-03 – Customer can cancel a reservation

Pre-condition:

* Rental is in more than a week

Post-condition:

* Reservation is made

Actor: Customer

Main Success Scenario:

1. Customer is in reservation page
2. Customer provides the quote (reservation) ID
3. System displays the quote with all the reservation and contact information
4. Customer presses on delete quote
5. System requests client’s confirmation
6. Customer confirms
7. System displays the quote deletion confirmation

Extensions:

2.

1. Rental day is in less than 7 days
2. End of use case

5.

1. Customer cancels
2. End of use case