TEAM NOSQL

CSE370 Sec: 03 Lab

Spring 2022

Team Members:

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Project Title: Billiard Billing System

Project Description:

Customers can purchase items from the billiard center. Items like chalk, gloves, cues, food etc will be available at the billiard center for purchase. Inventory will be managed by our system. It will keep track of stock. Employees will have the option to update the stock or add any new item to the inventory.

Customers have the option to import items from abroad via the billiard center. Customers can pay a partial amount at the pre-order stage and the rest will be paid upon delivery. Database will record all transactions. Customers can check their transaction history using the online portal.

Employees can see sales figures and the total of the center via the admin panel. Employees can update inventory and sell products to customers. Board in the center will be based on a prepaid system. Customers will pay for the board and can play for a certain period of time. If time runs out, the lights above the board will turn off automatically. Customers can pay again to continue playing. Employees can manage the boards (light control) and handle the payment for playing. Employees can see details of each customer, such as address, phone, membership payment status and member since.

Customers and employees can see details of the product, such as product brand, category, number of items in stock and price. Products under each category can be seen. Employees can also see details of suppliers of their products, such as supplier's contact, address and the products each supplier sells.

There is a search feature on multiple pages that can search various things. The searches don't need to be exact. For example, if an employee wants to see the sales of the Revo 12.5, he can search for "Revo" and the database will process this request. This also works for things like customer name, transaction date etc.

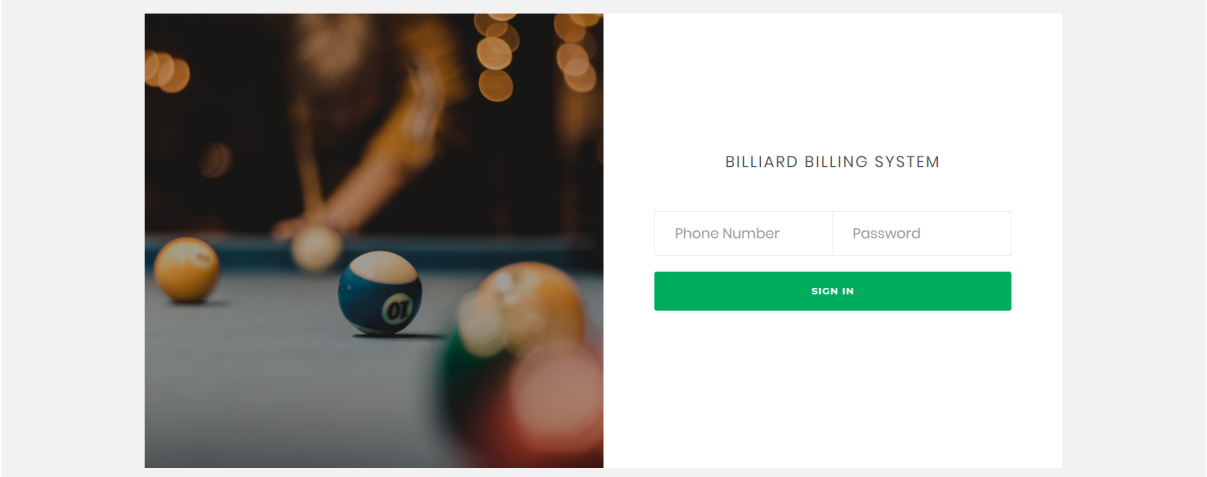
Our project implements multiple levels of security and verification checks. Passwords are hashed in the database, therefore it is virtually impossible to crack, even by a rogue employee. Since the password is hashed, an encryption key is not required, and thus cannot be hacked. Some pages like admin panel, supplier etc, have limited access (no access to customers) and the server will reject their requests and redirect them to another page. The project implements prepared SQL statements, thus making it resilient to SQL Injection Attacks. There are also stages of verification. For example, when buying a product, the database will check if there is enough product in stock. It will not sell the product if there is not enough product. The exact price (depending on quantity or in case of boards, hours used) will be shown.

While renting a board, there are checks to ensure the board is not being used. If the board is available, the database will send a request to the ESP module to turn on the board lights. If the time is over, the ESP will turn off the lights.

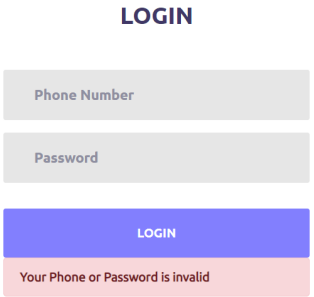
Screenshots:

Customer side:

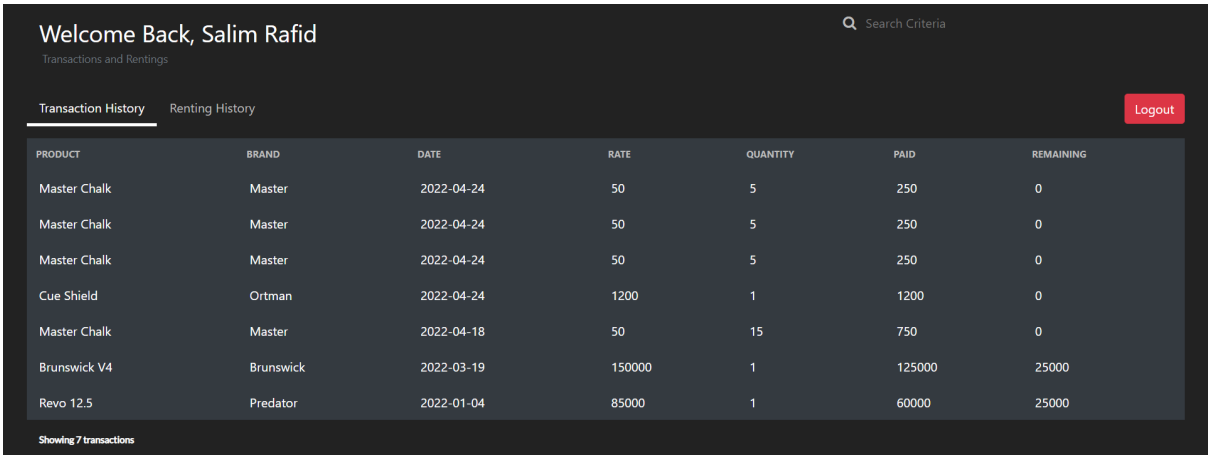
When the user tries to access the system, the following webpage will be displayed to the user.



If the user input details are wrong, the following will be shown to the user.



If the user inputs the correct password then the system will present the user with a dashboard with the transaction details of the user only.



PRODUCT	BRAND	DATE	RATE	QUANTITY	PAID	REMAINING
Master Chalk	Master	2022-04-24	50	5	250	0
Master Chalk	Master	2022-04-24	50	5	250	0
Master Chalk	Master	2022-04-24	50	5	250	0
Cue Shield	Ortman	2022-04-24	1200	1	1200	0
Master Chalk	Master	2022-04-18	50	15	750	0
Brunswick V4	Brunswick	2022-03-19	150000	1	125000	25000
Revo 12.5	Predator	2022-01-04	85000	1	60000	25000

From this dashboard, the user can choose between the product's transaction history and his renting history.

Welcome Back, Salim Rafid

Transactions and Rentings

Search Criteria

Transaction History | Renting History

Logout

DATE	START TIME	END TIME	DURATION	BOARD	HOURLY RATE	RENTING FEE
2022-04-25	06:59	07:02	0.05 hours	1	200	10
2022-04-25	06:59	07:03	0.066666666666667 hours	2	400	26.666666666667
2022-04-25	10:24	10:30	0.1 hours	3	300	30
2022-04-16	18:30	21:00	2.5 hours	3	300	750
2022-04-15	12:00	13:00	1 hours	3	300	300
2022-04-15	15:30	17:00	1.5 hours	3	300	450

Showing 6 rents

Users can also use the search field provided in the upper right corner to filter the results. For filtering it's not required for the user to input the full name of the product.

Welcome Back, Salim Rafid

Transactions and Rentings

Revo

Transaction History | Renting History

Logout

PRODUCT	BRAND	DATE	RATE	QUANTITY	PAID	REMAINING

Welcome Back, Salim Rafid

Transactions and Rentings

Search Criteria

Transaction History | Renting History

Logout

PRODUCT	BRAND	DATE	RATE	QUANTITY	PAID	REMAINING
Revo 12.5	Predator	2022-01-04	85000	1	60000	25000

Showing 1 transactions

The search field doesn't only work for name, it also works for date provided or brand. For example in the following case only 4th month's transactions are filtered.

Welcome Back, Salim Rafid

Transactions and Rentings

Search Criteria

Transaction History | Renting History

Logout

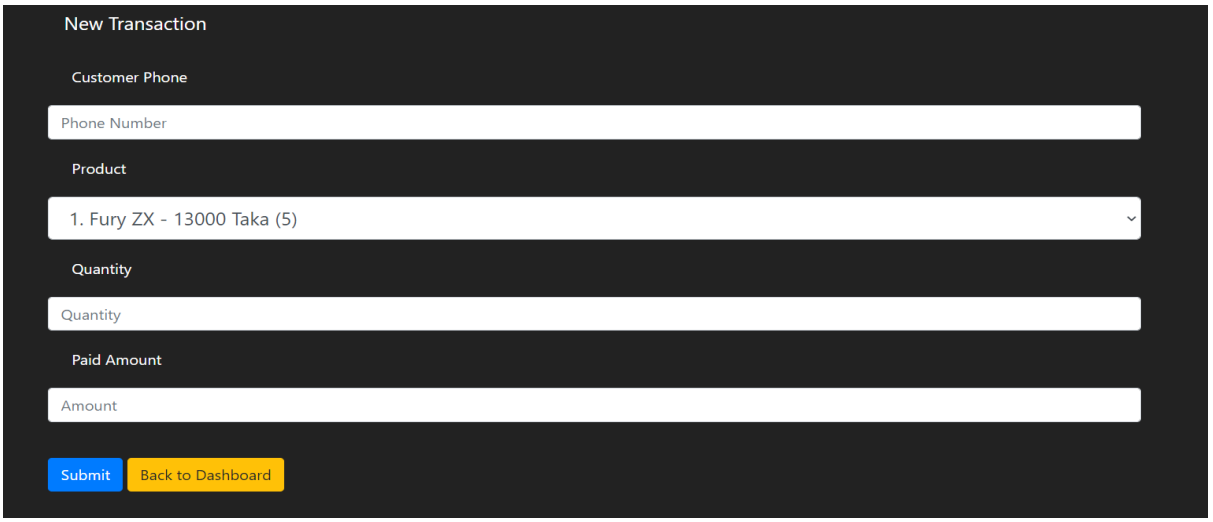
PRODUCT	BRAND	DATE	RATE	QUANTITY	PAID	REMAINING
Master Chalk	Master	2022-04-24	50	5	250	0
Master Chalk	Master	2022-04-24	50	5	250	0
Master Chalk	Master	2022-04-24	50	5	250	0
Cue Shield	Ortman	2022-04-24	1200	1	1200	0
Master Chalk	Master	2022-04-18	50	15	750	0

Showing 5 transactions

Employee side:

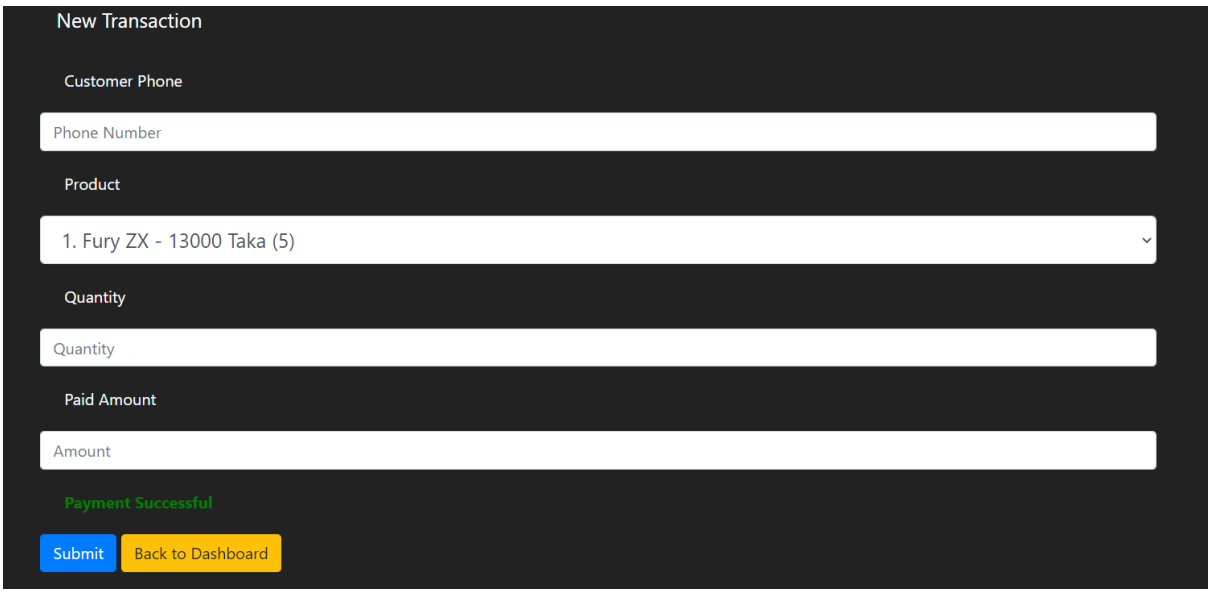
If the employee of the pool hall enters the correct password then they will be offered with the following UI.

If the employee clicks on the 'New Transaction' button then they will be redirected to the following page.



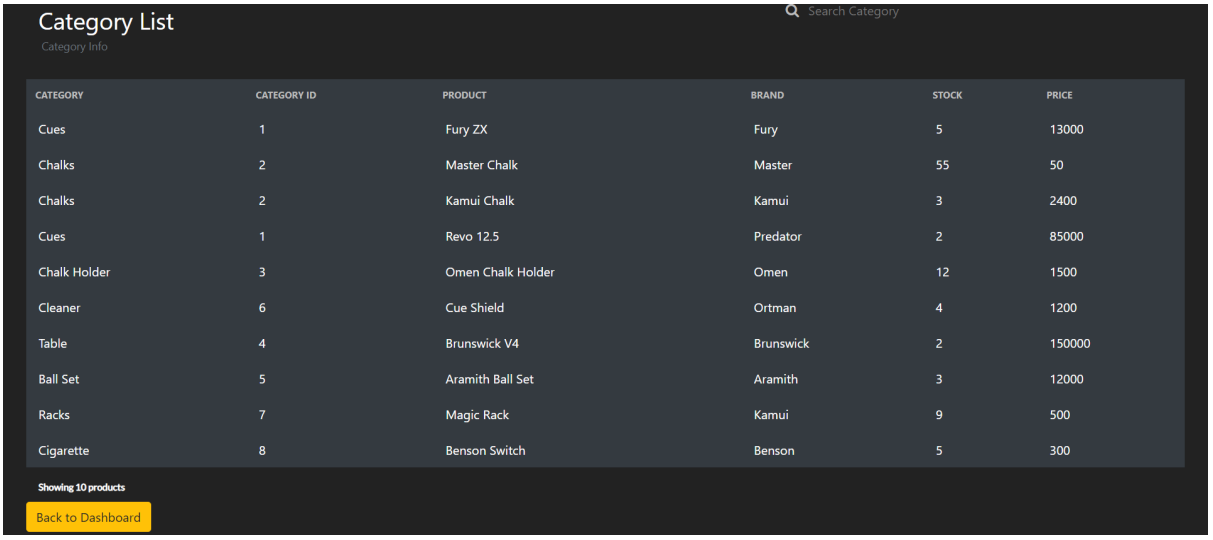
Here employees will need to complete the required data, but for product it will fetch data from database and offer the user a drop-down style UI like below,

After the receiving of payment the employee can submit it and the employee will be displayed a message of successful completion of the process.



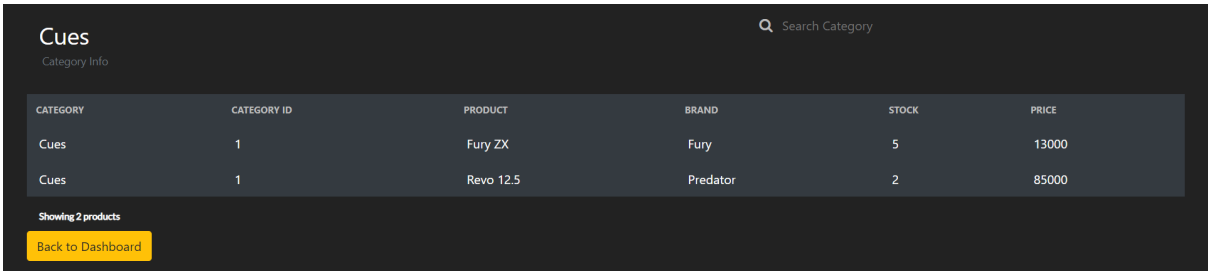
Employees can add new categories to the database.

From the browse category option, the employee will be able to see the categories and products available in the specific category.



CATEGORY	CATEGORY ID	PRODUCT	BRAND	STOCK	PRICE
Cues	1	Fury ZX	Fury	5	13000
Chalks	2	Master Chalk	Master	55	50
Chalks	2	Kamui Chalk	Kamui	3	2400
Cues	1	Revo 12.5	Predator	2	85000
Chalk Holder	3	Omen Chalk Holder	Omen	12	1500
Cleaner	6	Cue Shield	Ortman	4	1200
Table	4	Brunswick V4	Brunswick	2	150000
Ball Set	5	Aramith Ball Set	Aramith	3	12000
Racks	7	Magic Rack	Kamui	9	500
Cigarette	8	Benson Switch	Benson	5	300

Here, using the search field like previously the results can be filtered based on category name.



Cues

Category Info

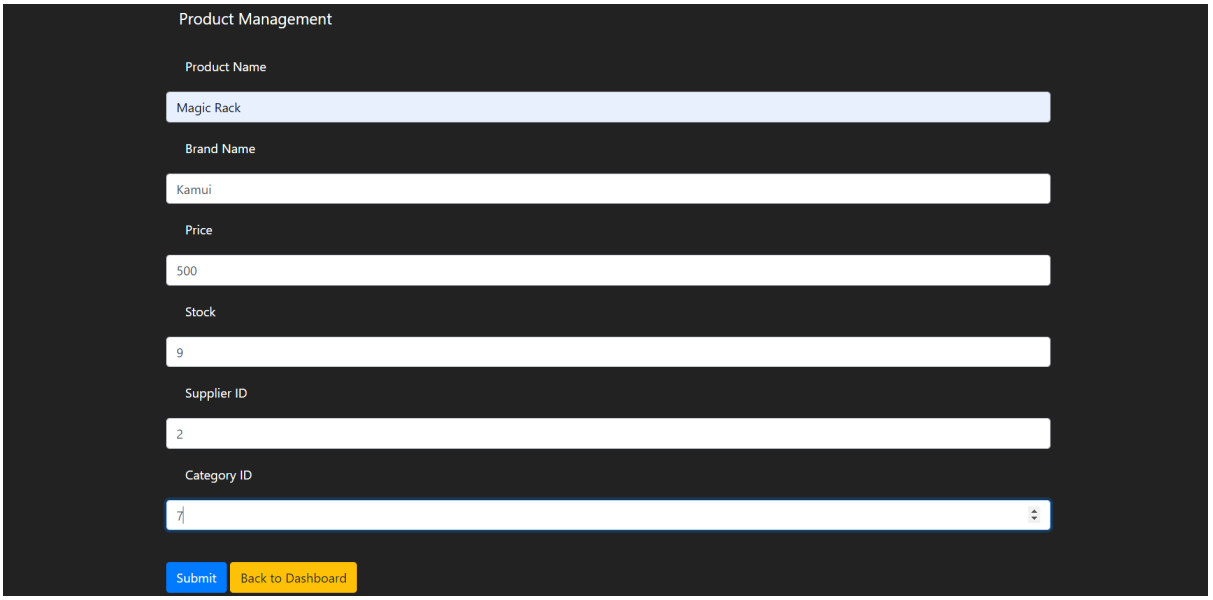
Search Category

CATEGORY	CATEGORY ID	PRODUCT	BRAND	STOCK	PRICE
Cues	1	Fury ZX	Fury	5	13000
Cues	1	Revo 12.5	Predator	2	85000

Showing 2 products

Back to Dashboard

Using the 'Add product' page various products can be added to the database like the following. After successful submission a success message will appear.



Product Management

Product Name

Magic Rack

Brand Name

Kamui

Price

500

Stock

9

Supplier ID

2

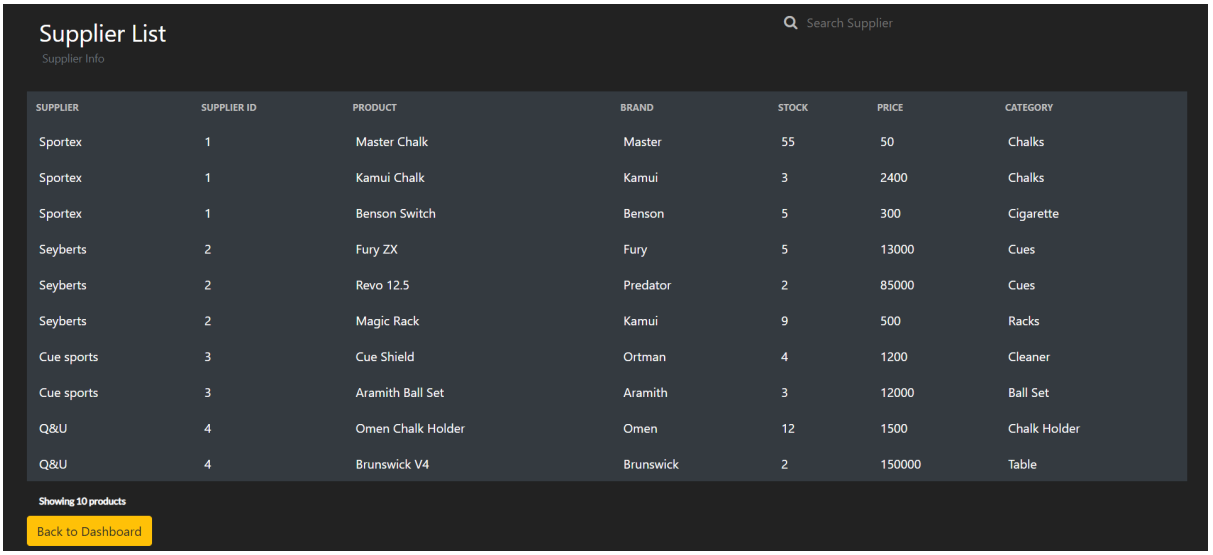
Category ID

7

Submit

Back to Dashboard

Using the browse supplier option, the user can see all the suppliers with their respective products. Also they can use the search field to filter out the results from there.



Supplier List

Supplier Info

Search Supplier

SUPPLIER	SUPPLIER ID	PRODUCT	BRAND	STOCK	PRICE	CATEGORY
Sportex	1	Master Chalk	Master	55	50	Chalks
Sportex	1	Kamui Chalk	Kamui	3	2400	Chalks
Sportex	1	Benson Switch	Benson	5	300	Cigarette
Seyberts	2	Fury ZX	Fury	5	13000	Cues
Seyberts	2	Revo 12.5	Predator	2	85000	Cues
Seyberts	2	Magic Rack	Kamui	9	500	Racks
Cue sports	3	Cue Shield	Ortman	4	1200	Cleaner
Cue sports	3	Aramith Ball Set	Aramith	3	12000	Ball Set
Q&U	4	Omen Chalk Holder	Omen	12	1500	Chalk Holder
Q&U	4	Brunswick V4	Brunswick	2	150000	Table

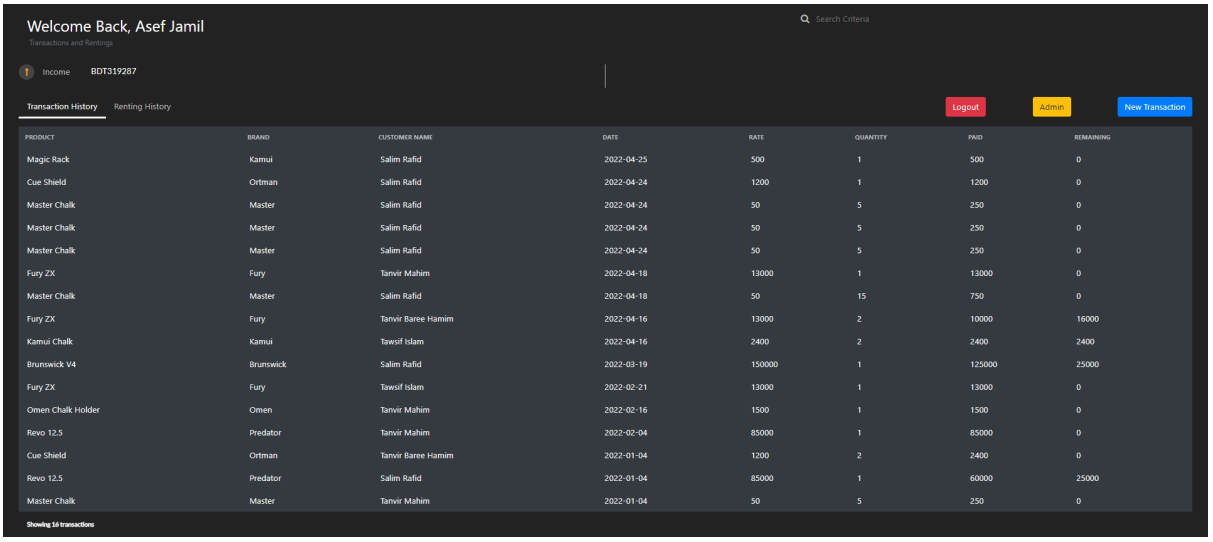
Showing 10 products

Back to Dashboard

Using the add stock functionality the user can increase the available stocks of the product like below.

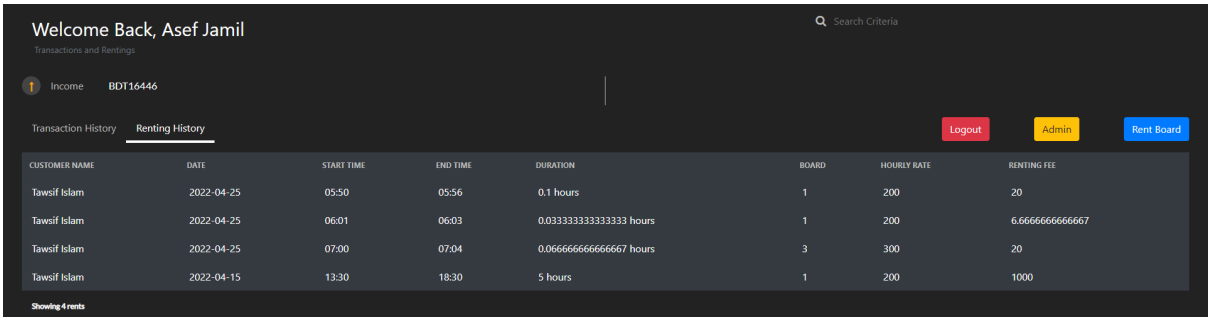
A confirmation message will be displayed to the user and stock will also get updated. For example in the following screenshots, once it's updated the chalk holder's stock increases.

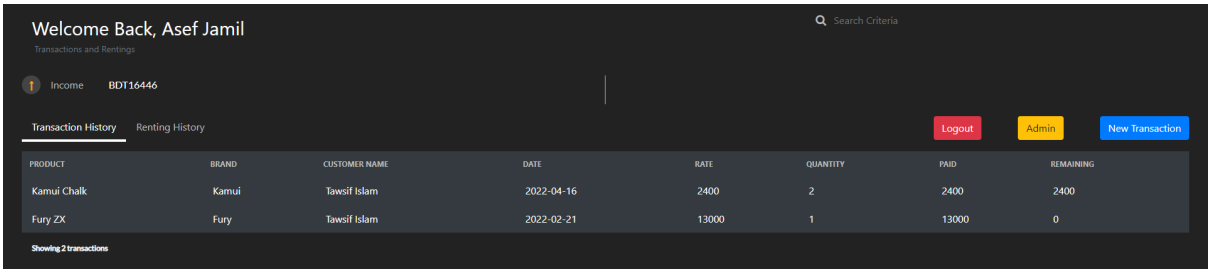
From the admin's dashboard all the transaction history can be seen. In income the total sales is displayed.



PRODUCT	BRAND	CUSTOMER NAME	DATE	RATE	QUANTITY	PAID	REMAINING
Magic Rack	Kamui	Salim Rafid	2022-04-25	500	1	500	0
Cue Shield	Ortman	Salim Rafid	2022-04-24	1200	1	1200	0
Master Chalk	Master	Salim Rafid	2022-04-24	50	5	250	0
Master Chalk	Master	Salim Rafid	2022-04-24	50	5	250	0
Master Chalk	Master	Salim Rafid	2022-04-24	50	5	250	0
Fury ZX	Fury	Tanvir Mahim	2022-04-18	13000	1	13000	0
Master Chalk	Master	Salim Rafid	2022-04-18	50	15	750	0
Fury ZX	Fury	Tanvir Baree Hamim	2022-04-16	13000	2	10000	16000
Kamui Chalk	Kamui	Tawsif Islam	2022-04-16	2400	2	2400	2400
Brunswick V4	Brunswick	Salim Rafid	2022-03-19	150000	1	125000	25000
Fury ZX	Fury	Tawsif Islam	2022-02-21	13000	1	13000	0
Omen Chalk Holder	Omen	Tanvir Mahim	2022-02-16	1500	1	1500	0
Revo 12.5	Predator	Tanvir Mahim	2022-02-04	85000	1	85000	0
Cue Shield	Ortman	Tanvir Baree Hamim	2022-01-04	1200	2	2400	0
Revo 12.5	Predator	Salim Rafid	2022-01-04	85000	1	60000	25000
Master Chalk	Master	Tanvir Mahim	2022-01-04	50	5	250	0

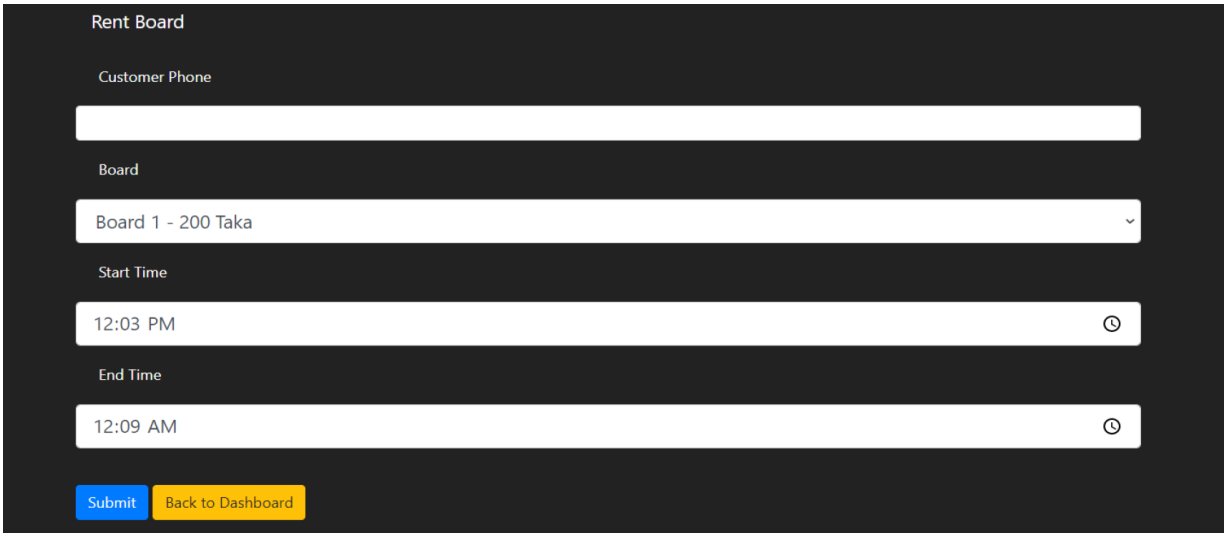
Here using search criteria we can get a specific customer's all transactions.





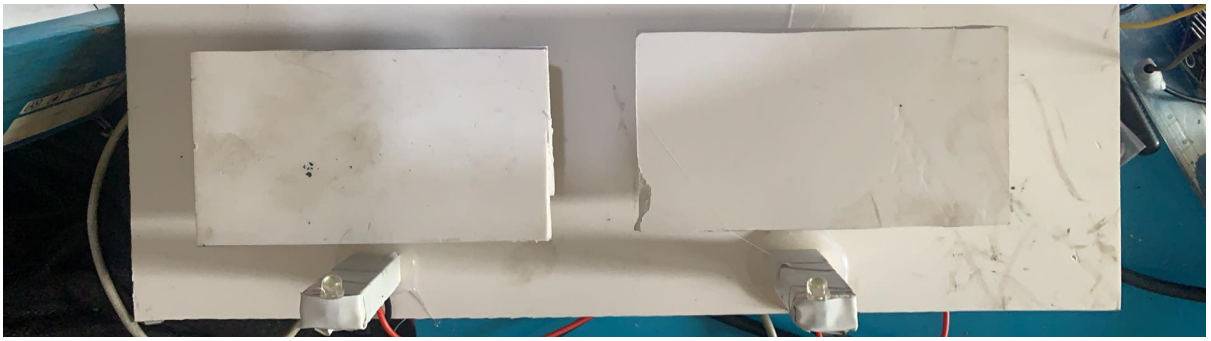
In this case the income that is displayed is the income that we got from the transactions of the specific customer.

The employee can rent a board to a customer. For that they can use the following menu.

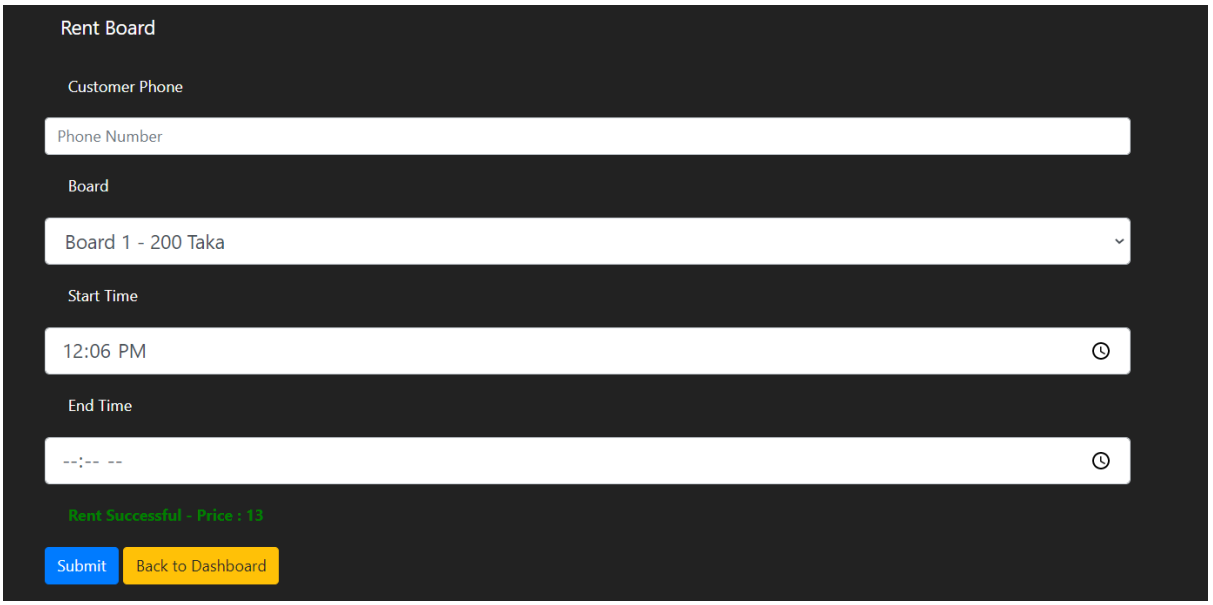


Once the renting is successful the physical light will turn on automatically.

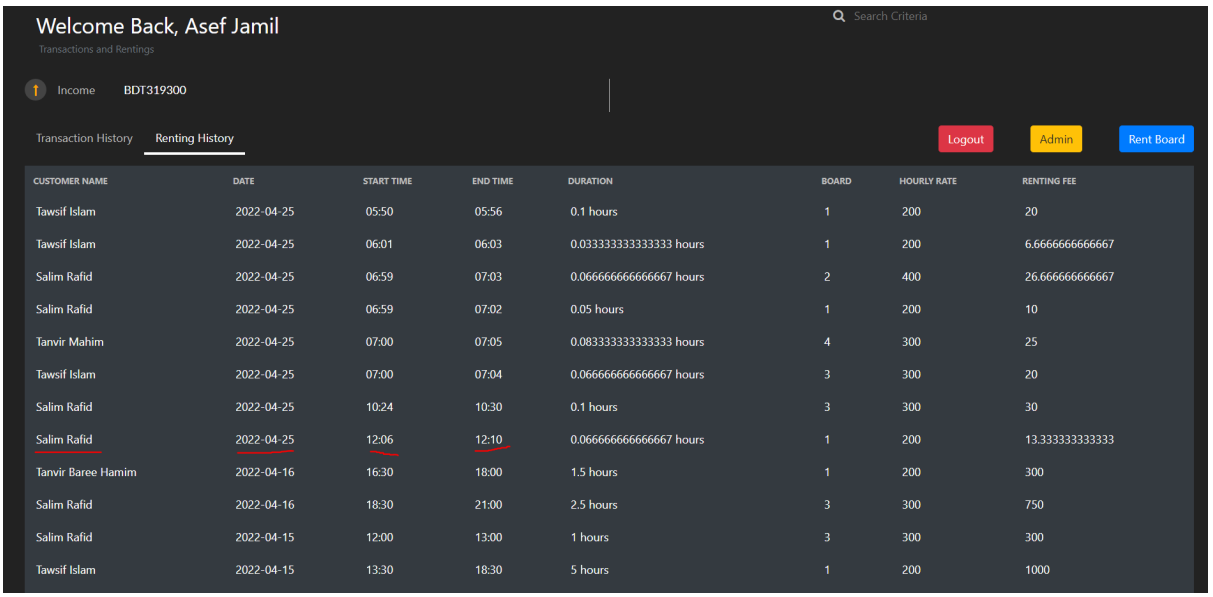
Once the renting period is over the light will turn off automatically.



The bill of the rent will also be displayed.



In Renting history the data also gets updated.



CUSTOMER NAME	DATE	START TIME	END TIME	DURATION	BOARD	HOURLY RATE	RENTING FEE
Tawsif Islam	2022-04-25	05:50	05:56	0.1 hours	1	200	20
Tawsif Islam	2022-04-25	06:01	06:03	0.033333333333333 hours	1	200	6.6666666666667
Salim Rafid	2022-04-25	06:59	07:03	0.066666666666667 hours	2	400	26.666666666667
Salim Rafid	2022-04-25	06:59	07:02	0.05 hours	1	200	10
Tanvir Mahim	2022-04-25	07:00	07:05	0.083333333333333 hours	4	300	25
Tawsif Islam	2022-04-25	07:00	07:04	0.066666666666667 hours	3	300	20
Salim Rafid	2022-04-25	10:24	10:30	0.1 hours	3	300	30
Salim Rafid	2022-04-25	12:06	12:10	0.066666666666667 hours	1	200	13.333333333333
Tanvir Baree Hamim	2022-04-16	16:30	18:00	1.5 hours	1	200	300
Salim Rafid	2022-04-16	18:30	21:00	2.5 hours	3	300	750
Salim Rafid	2022-04-15	12:00	13:00	1 hours	3	300	300
Tawsif Islam	2022-04-15	13:30	18:30	5 hours	1	200	1000

The system makes sure the input time is valid and the booked slot is not booked again.