

Popcorn zone Report

Final Project for VB.Net Course



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- **Introduction**

- **About the project?**

This is the final project for the VB.NET course joined with Mysql.

We should create an application for Video Store.

The purpose of this specification

is to define the requirements and developments

of the video store application. This application will keep track of employees,

customers and movies in a video store. Your program will allow employees to add

customers to the database, to add movies, to change the status of a movie (from

available to rented), to search for a movie, etc.

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- **Analyse**

- **How you plan on realizing the project?**

The planning phase is the most critical phase in a project.

The first step is : Get an understanding of the subject matter

To know what exactly we need to know.

We should know What are the main tasks in such a project?

Then we should find out How do the tasks relate to each other? What

needs to be done first, second and so on?

And lastly What tasks are most difficult?

This project contains of 4 tables:

Employees

Clients

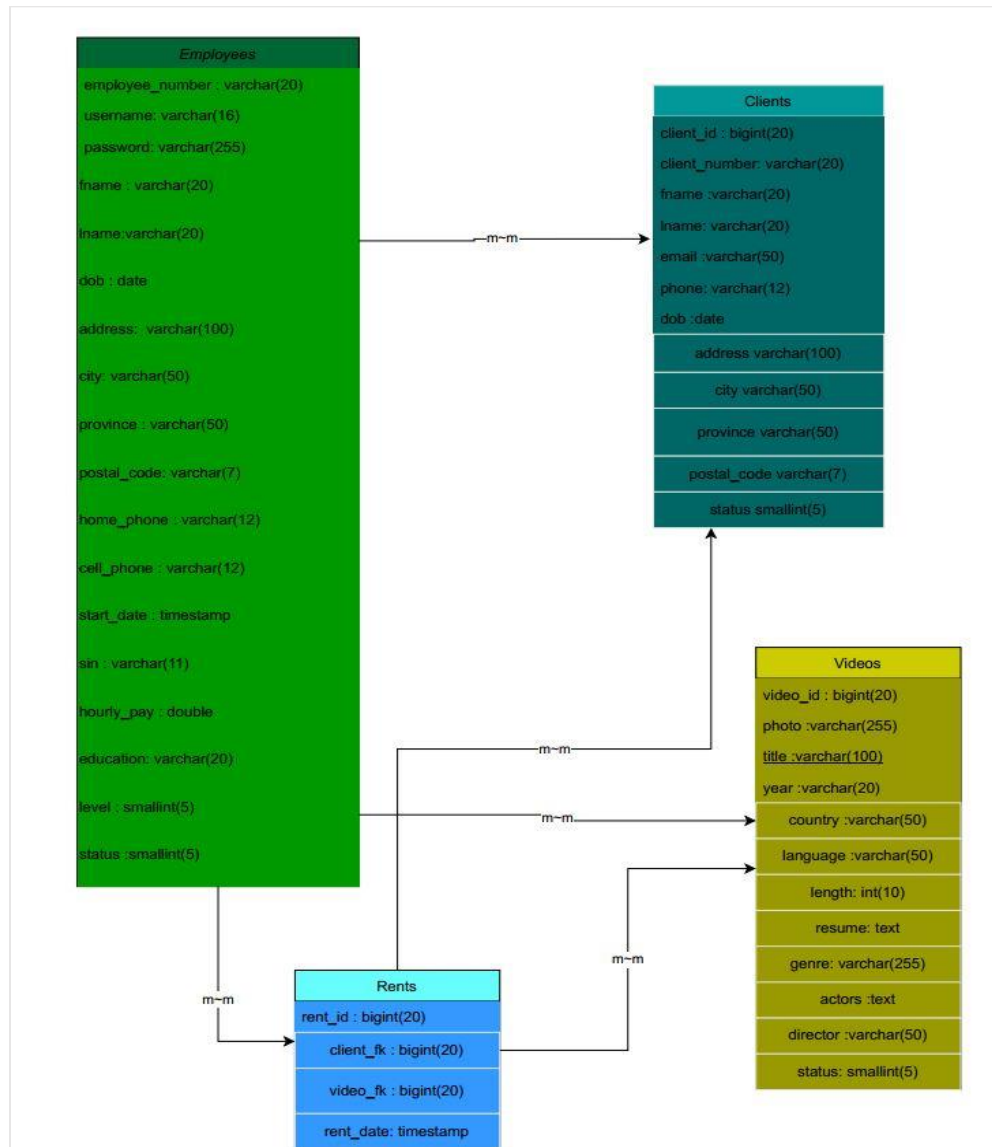
Videos

Rents

The tables diagram class is below:

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▪ Database Class Diagram



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The programming part of the project contains of : forms and classes

It contains of 6 classes:

Class addClient

Class addEmployee

Class addVideo

Class searchMovie

Class searchClient

Class searchEmployee

The tables diagram class is below:

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• Program Class Diagram



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- Implementation

- How did you manage to realize the project?

This project consists of **4 main pages**: login page, admin page, employee page and rent and return page.

Login page:



In this page employees will enter their user name which is unique for each employee and **password(case sensitive)** and login to either admin page based on their level access(admin level access is 4) or employee page.

If the employee's status is 2 , it means he is deactivated and could not log in.

This page also consist of the help part to introduce the application and exit to close the app.

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Admin page:



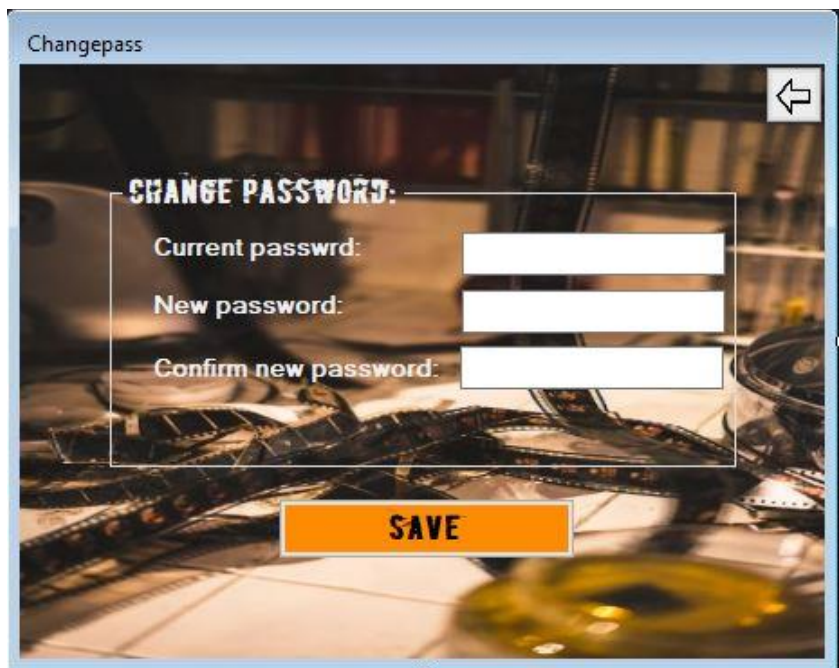
Admin page consists of 5 main parts:

- File.
- Employee
- Video
- Client
- Rent & return

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File:

- **Change the password:** in this section, employees can change the password and then they will be returned to the login page to enter again with the new password but if they do not change anything they will be returned to the admin page or employee page.

A screenshot of a web application window titled "Changepass". The background image shows a close-up of a film reel. Overlaid on this is a white rectangular form. At the top left of the form, the text "CHANGE PASSWORD:" is displayed in a bold, black, sans-serif font. Below this text are three input fields, each preceded by a label: "Current passwr:" (note the typo), "New password:", and "Confirm new password:". Each label is in a bold, black, sans-serif font. The input fields are white with thin black borders. At the bottom center of the form is an orange rectangular button with the word "SAVE" in white, bold, sans-serif capital letters. In the top right corner of the window, there is a small white square button with a black left-pointing arrow.

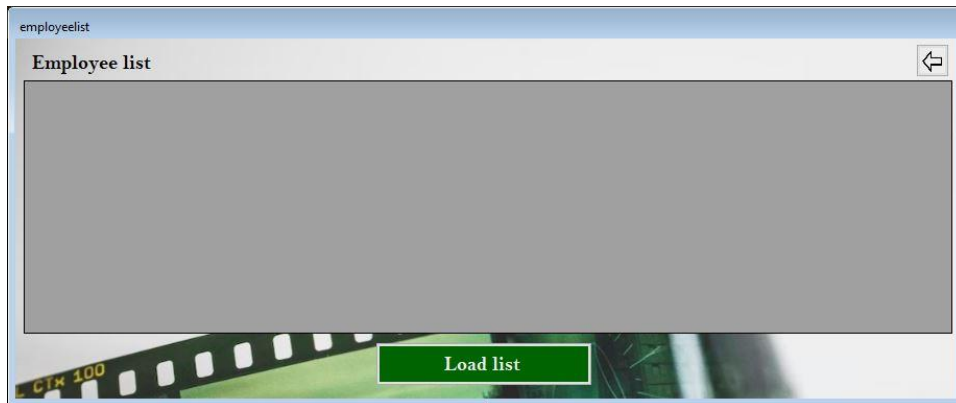
Employee:

- List
- Add new employee
- Update employee info
- Search by employee number
- Search by employee sin number
- Delete employee

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List:

In this section we could get the employee's list



Either active or deactivated employees will be shown here.

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Add new employee:

The screenshot shows a web form titled 'addingemployeeform' with a light blue header and a light yellow background. At the top right, there is a back arrow icon and a teal button labeled 'ADD NEW EMPLOYEE'. Below the header, the form is organized into sections. The 'EMPLOYEE INFO' section is highlighted with a green border and contains the following fields: *First name: (text input), *Last name: (text input), *Date of Birth: (date picker set to December 13, 2022), *Address: (text input), *City: (text input), *Province: (text input), *Postal Code: (text input with a note '* correct format is K2C 1E5'), *Home phone: (text input), *Cellphone: (text input), *Employee number: (text input with a note '* employee num should be unique.'), *Sin Number: (text input), *Hourly pay: (text input), *Start date: (date picker set to December 9, 2022), *Education: (dropdown menu with 'Choose...' selected), *Access level: (dropdown menu with 'Choose...' selected), *Status: (dropdown menu with 'Choose...' selected), *Username: (text input with a note '* username should be unique.'), and Password: (text input with a note '* Default password is "Herzing"'). A teal button labeled 'SAVE' is located at the bottom right of the form. At the bottom left, there is a note '* "Fill out All mandatory fields"'. The form is framed by a blue border.

In this section we can add new employee but there 3 conditions that should not be violated, the sin number, user name and employee number should be unique. Otherwise we could not add the new employee. And also there are some restrictions and validations for other fields, for example we could not enter number in fields like first name or last name but some specific characters are allowed.

Also for date of birth the employee could not be added if he is less than 18 years old.

Postal code has it's own format. And also phone numbers.

Sin number should be 9 digits based on the sin number 'pattern of Canada.

And start date should be from now on.

Password has default value which is "Herzing" .

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Update employee info:

updateemployeeform

Employee number: Search

*First name: *Employee number:

*Last name: *Sin Number:

*Date of Birth: December 13, 2022 *Hourly pay:

*Address: *Start date: December 9, 2022

*City: *Education: Choose...

*Province: *Access level: Choose...

*Postal Code: *Username:

*Home phone: *Password:

*Cellphone: *Status: Choose...

UPDATE

In this section based on the employee number we will find the employee which we want to update the information .

If we enter just part of the employee number and search it , the app will find all employees whose employee number consists of that number and will assign it to the datagridview.

We can click on the exact employee and his info will be assigned to the it's textbox.

Then the update button will be active and after the changes that we want to make, the entries will be validated based on the criteria that was explained in add employee part and

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if user name and employee number and sin number are unique, the information will be updated successfully otherwise we will get the error list to modify and try again.

Search by employee number:



The screenshot shows a mobile application interface titled "searchemployeeform". It features a search bar with the placeholder text "Search by employee number:" and an adjacent "SEARCH" button. Below the search bar, there is a large, empty rectangular area, likely for displaying search results. The interface is designed with a light blue header and a light orange background for the search area.

If we choose search by employee number the sin number part will be invisible.

By entering part of the employee number , the app will find the employees which their employee number will start with that entered number.

Search by employee number:



This screenshot is identical to the one above, showing the "searchemployeeform" app interface. It displays the search bar with the placeholder text "Search by employee number:" and the "SEARCH" button. The large rectangular area below the search bar is empty, indicating that no search results have been displayed yet.


If we choose search by sin number the employee number part will be invisible.

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By entering part of the sin number , the app will find the employees which their sin number will start whit that entered number.

Delete employee:

deleteemployeeform

Employee number: 

*Employee ID:	<input type="text"/>	*Employee number:	<input type="text"/>
*First name:	<input type="text"/>	*Sin Number:	<input type="text"/>
*Last name:	<input type="text"/>	*Hourly pay:	<input type="text"/>
*Date of Birth:	<input type="text"/>	*Start date:	<input type="text"/>
*Address:	<input type="text"/>	*Education:	<input type="text"/>
*City:	<input type="text"/>	*Access level:	<input type="text"/>
*Province:	<input type="text"/>	*Username:	<input type="text"/>
*Postal Code:	<input type="text"/>	*Password:	<input type="text"/>
*Home phone:	<input type="text"/>	*Status:	<input type="text"/>
*Cellphone:	<input type="text"/>		

By entering just part of the employee number the app will find the employees whose employee number starts with entered number, then by click on the exact employee that we want to delete ,his information will be assigned to the labels. Then we can confirm the information and delete the employee permanently.

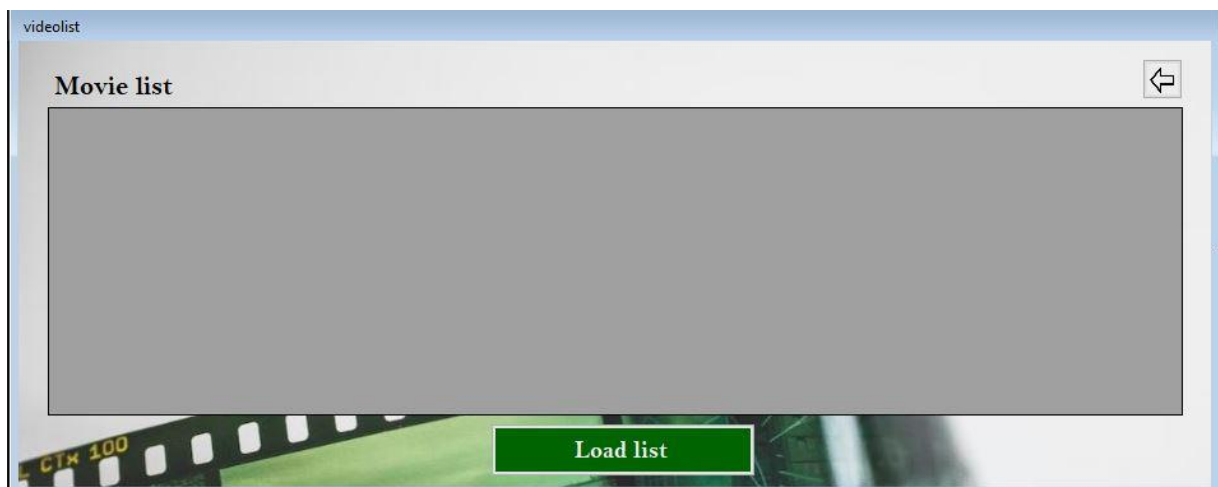
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If we press cancel all information will be disappeared and then we can search or choose different employee.

Video:

- List of the movies
- Add new movie
- Update movie info
- Quick search
- Advanced search
- Delete the movie

List of the movies:



You can see the list of the movies based on the last added ones.

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Add new movie:



The screenshot shows a web form titled 'addvideoform' with a light blue header. The form is divided into two main sections. On the left, under the heading 'MOVIE INFO:', there is a large rectangular area for a movie image, which currently displays a black VHS tape. On the right, there is a list of mandatory fields, each marked with an asterisk (*):

- *Title: A text input field.
- *Year: A dropdown menu currently showing '2022'.
- *Country: A text input field.
- *Language: A text input field.
- *Length(min): A dropdown menu currently showing '30'.
- *Genre: A text input field.
- *Actors: A text input field.
- *Director: A text input field.
- *Resume: A text area with up and down arrow controls.
- *Photo: A text input field.

Below these fields, there is a small text note: '* "Fill out All mandatory fields"'. At the bottom of the form, there are two red buttons: 'ADD NEW MOVIE' and 'SAVE'. A small back arrow icon is located in the top right corner of the form area.

Here in this section we can add new movie and sections have their own validations.

For example the photo should have its pattern or we could not enter number in genre part.

The movie will be added if it is new title but if not we will check the release date and if it is different from the other one which is already in DB , the movie will be added.

Otherwise we will get error and could not add the movie. Also All parts should be fill out

Otherwise the error will happen.

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Update movie info:

updatemovieform

Movie Title:

Year:

Search

*Title:

*Year:

*Country:

*Language:

*Length(min):

*Genre:

*Actors:

*Director:

*Photo:

*Resume:

UPDATE

Here in this section by entering part of the movie title and year, the app will find the movies and will assigned it to the table. By clicking on the exact movie, its information will be assigned to the text boxes to update.

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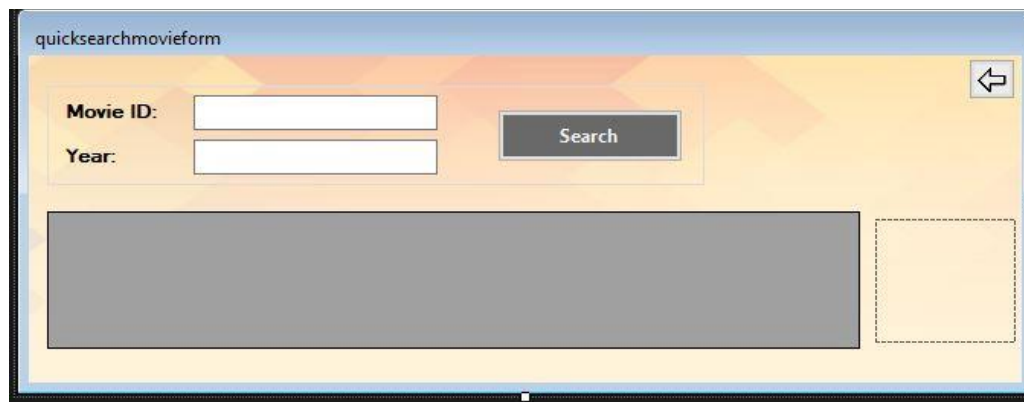
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All parts should be fill out but if not the app will not change anything.

The validations that we did in add movie part still are valid Herer and will be evaluated before any update.

After the update table will be disabled and if we search for new movie it will be enabled.

Quick search:

The screenshot shows a web form titled "quicksearchmovieform". It has a light blue header bar. Below the header, there is a search section with a light orange background. This section contains two input fields: "Movie ID:" and "Year:". To the right of these fields is a dark grey button labeled "Search". Above the "Search" button is a small icon of a left-pointing arrow inside a square. Below the search section is a large grey rectangular area, likely a placeholder for search results. To the right of this area is a smaller, empty rectangular box with a dashed border, likely a placeholder for a movie photo.

Here in quick search, by entering the part of the title and year, the app will find all movies whose title and year contains what we entered.

And by clicking on the exact movie that we want it's photo will show up in the picture box next to the table.

Advanced search:

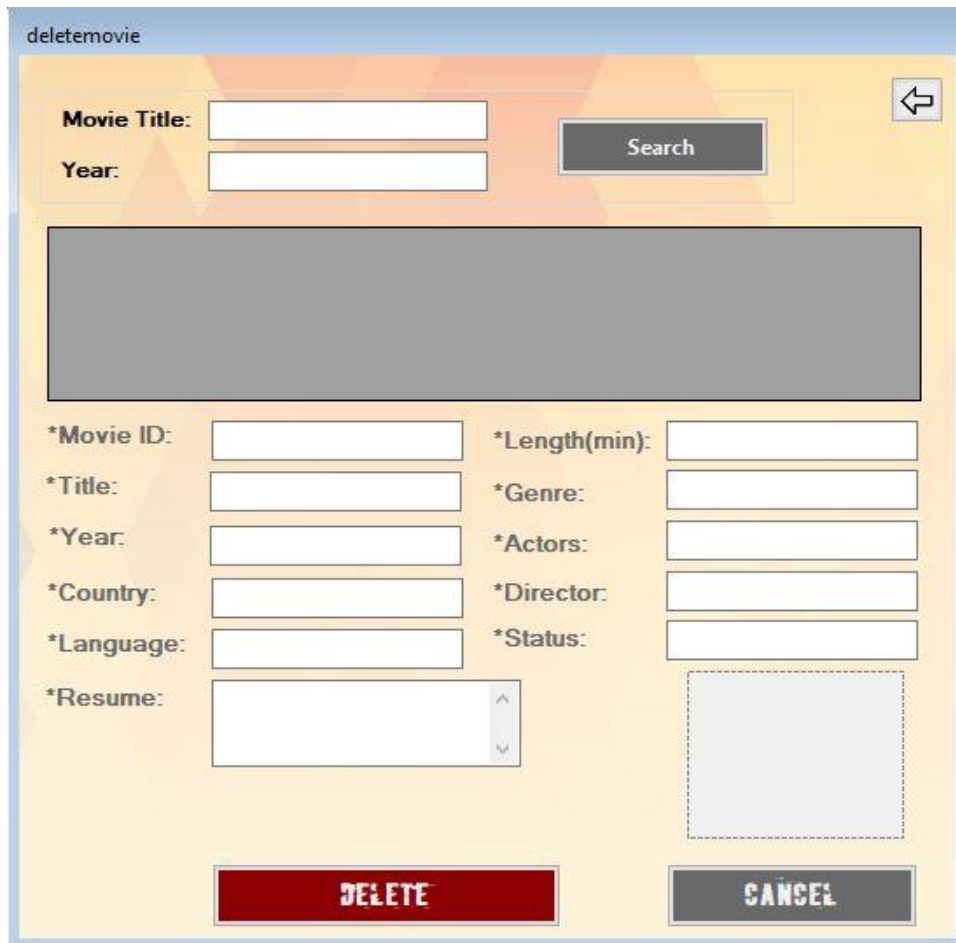
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The screenshot shows a web form titled "advancesearchform". It contains two columns of input fields. The left column includes fields for *Title, *Year, *Country, *Language, and *Length(min). The right column includes fields for *Genre, *Actors, *Director, and *Resume. A "SEARCH" button is positioned to the right of the *Director field. Below the search fields is a large, empty grey rectangular box, and to its right is a smaller, empty dashed rectangular box. A back arrow icon is located in the top right corner of the form area.

Here in this section to find the movie , we should fill out all mandatory fields to find the movie, but we can enter part of each field , and app will find all movies that their information consist of the entered information. And by clicking on the exact movie that we want it's photo will show up in the picture box next to the table.

Delete movie:

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deletemovie

Movie Title:

Year:

Search

*Movie ID: *Length(min):

*Title: *Genre:

*Year: *Actors:

*Country: *Director:

*Language: *Status:

*Resume:

Here in this section by entering part of the movie title and year , the app will find all movies with that information and then will assign it to the table.

By clicking on an specific movie , its information will be assigned to the designated labels.

And then we can delete that move if ad only if it is not rented, by renting the movie the status will change from 1 to 2 and here in delete procedure this condition will be checked before deleting.

Otherwise we will get a warning that this movie is rented and you could not delete it now.

And after deleting the table will be disable untill we search for the new movie or cancel everything.

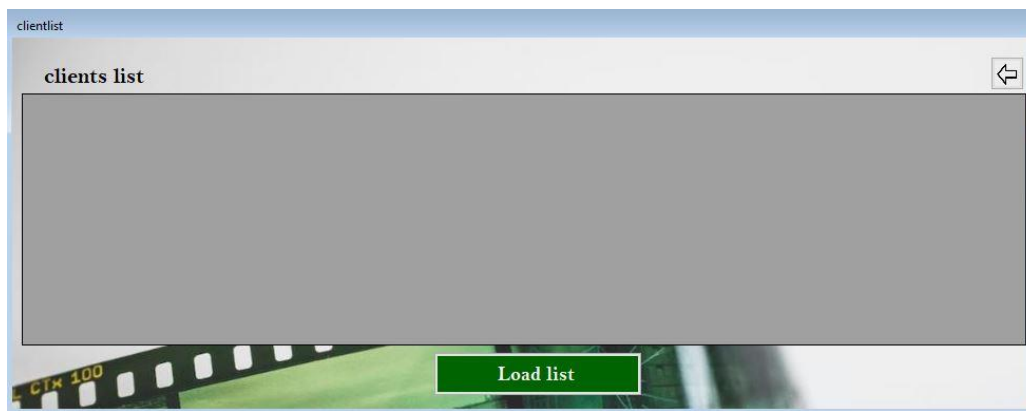
Client:

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- List clients
- Add new client
- Update client info
- Search client by client number
- Search client by email
- Delete

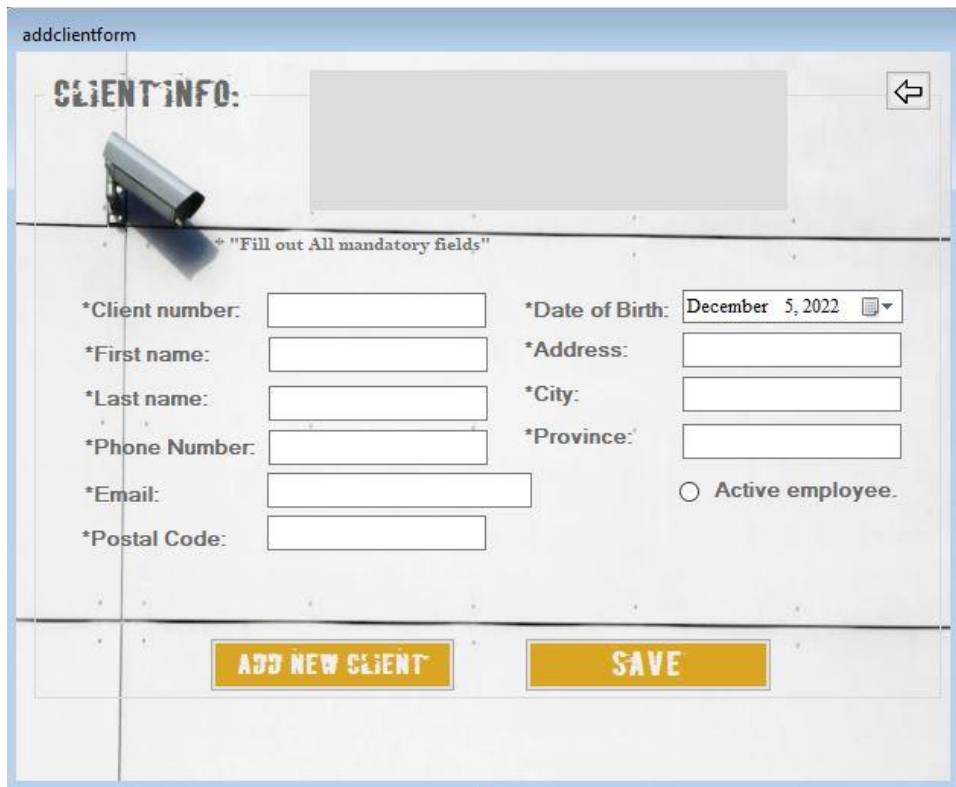
List :



In this section, we can see list of the clients from the last added ones.

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Add new client:



The screenshot shows a web form titled "addclientform" with a "CLIENT INFO:" section. A grey rectangular area is present next to the title. Below the title, a small icon of a movie camera is visible. A note states: "Fill out All mandatory fields". The form contains the following fields:

- *Client number: [text input]
- *Date of Birth: [dropdown menu showing "December 5, 2022"]
- *First name: [text input]
- *Address: [text input]
- *Last name: [text input]
- *City: [text input]
- *Phone Number: [text input]
- *Province: [text input]
- *Email: [text input]
- *Postal Code: [text input]

At the bottom right, there is a radio button labeled "Active employee." Below the form, there are two yellow buttons: "ADD NEW CLIENT" and "SAVE".

Here in this part we can add new client. The client number and email address should be unique otherwise we could not add that client.

All mandatory fields should be filled out and also they have their validations.

If we put the status of the client inactive, he could not rent movie.

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Update client info:

updateclientform

Client number:

*Client number: *Date of Birth: December 5, 2022

*First name: *Address:

*Last name: *City:

*Phone Number: *Province:

*Email: ☐ Active Client

*Postal Code:

Here in this section we can update the clients information, by searching the client number

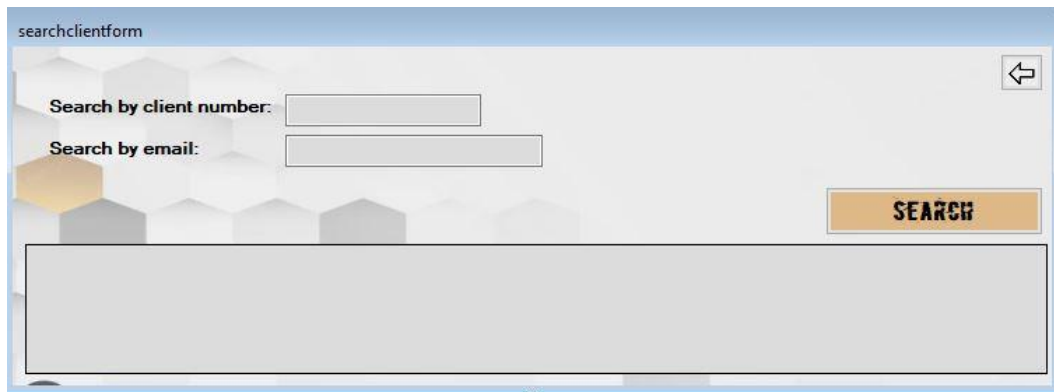
App will assign all clients by that number to the table and we can choose our client and by clicking on his name his information will be assigned to the text boxes.

All validations that we have for adding the client are still in place.

And before adding clients those criteria will be checked.

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Search client by client number:

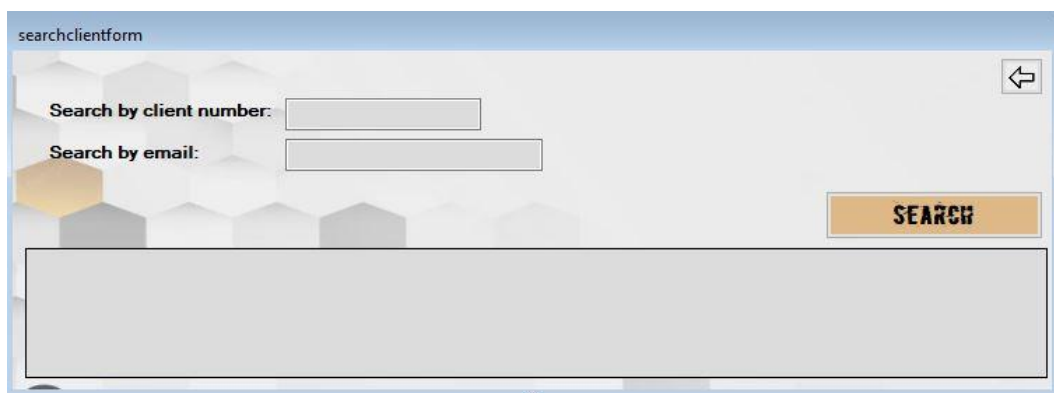


The screenshot shows a web application window titled "searchclientform". It features a search interface with two input fields: "Search by client number:" and "Search by email:". The "Search by client number:" field is currently selected. To the right of these fields is a "SEARCH" button. Below the input fields is a large, empty rectangular area, likely intended for displaying search results. The background of the application window has a decorative pattern of hexagons.

If we choose searching by client number, it will appear and by entering part of the client number, app will find all clients whose number has that part and will assign them to the table.

Search client by email:

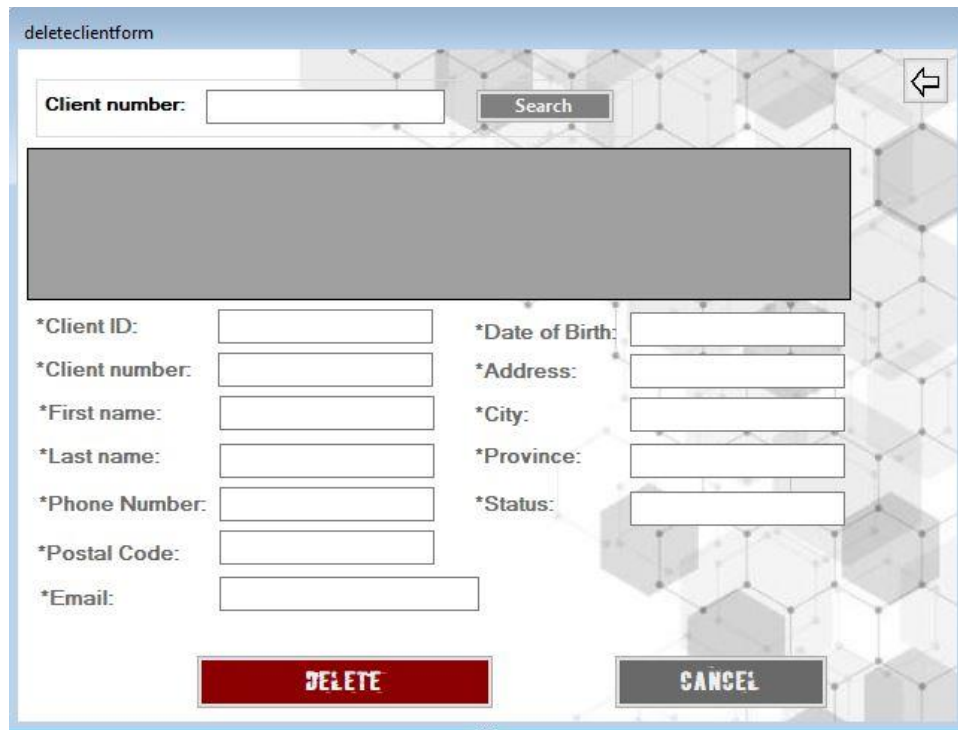
Here we can find the client by their email address.



This screenshot is identical to the one above, showing the "searchclientform" window. In this instance, the "Search by email:" input field is selected instead of the client number field. The "SEARCH" button and the empty results area remain visible.

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Delete:



The screenshot shows a software window titled "deleteclientform". At the top, there is a "Client number:" label followed by a text input field and a "Search" button. To the right of the search area is a back arrow icon. Below the search bar is a large, empty rectangular box. Underneath this box, there are two columns of form fields. The left column contains: "*Client ID:", "*Client number:", "*First name:", "*Last name:", "*Phone Number:", "*Postal Code:", and "*Email:". The right column contains: "*Date of Birth:", "*Address:", "*City:", "*Province:", and "*Status:". At the bottom of the window, there are two buttons: a red "DELETE" button and a grey "CANCEL" button.

By entering part of the client number , app will find all clients whose number has that part and will assign it to the table.

By clicking on the clients info, his information will be assigned to the labels.

By pressing delete , we will delete that clients information permanently.

But we should know that if the client has rented a movie we could not delete it unless he returned the movies.

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Employee page:



This page will give access to the employees other than admins, the employees have 3 level of the access which is decided when we want to add the new employee but of course their level of access can be updated.

Low – View, Create

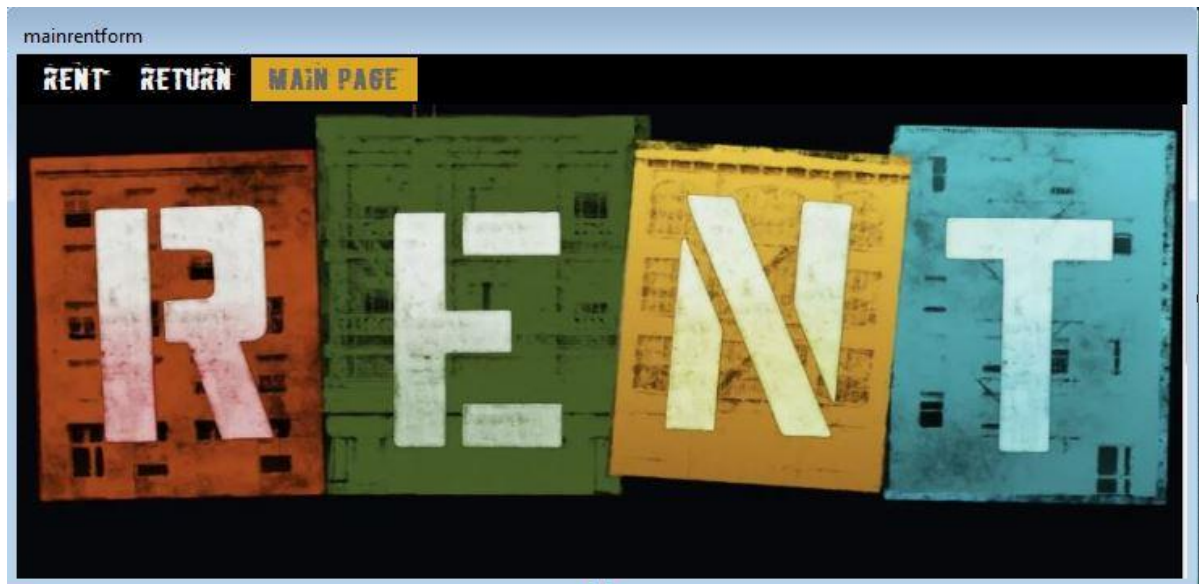
Mid – View, Create, Edit

High – View, Create, Edit, Delete

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Rent & return:

- Rent movie
- Return movie



Here in this part we can rent the movie to the clients and they can return the movies.

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Rent:



The screenshot shows a web application window titled "rentmovieform". It features two search sections at the top. The left section is for "Client number" with a text input field and a "Search" button. Below it is a large empty rectangular box. The right section is for "Movie ID" with a text input field and a "Search" button. Below it is another large empty rectangular box. In the center, there are two columns of labels with corresponding input fields: "*First name:", "*Last name:", and "*Phone Number:" on the left; and "*Title:", "*Language:", "*Director:", and "*Resume:" on the right. At the bottom left, there are two buttons: "CANCEL" and "RENT". The background of the form has a decorative orange and yellow wavy pattern.

By entering part of the client's number app will find the clients with that number and by clicking on that specific client that we want , app will get his information and will assign it to the labels.

And then we can find the movies that we want to rent by its movie id, but we should consider that we can rent the movie which is not rented yet , for when we rent the movie its status will change to 2 and if we choose it for rent , app will give us warning that we could not rent it again.

But a client can rent several movies.

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Return:



























































The screenshot shows a software window titled "returnform". It features a search bar with the label "Movie ID:" and a "Search" button. Below the search bar is a large, empty rectangular box. Further down, there are four input fields labeled "Client first name:", "Client last name:", "Client number:", and "Rent date:". To the right of these fields is a dashed rectangular box. At the bottom center of the window is a prominent "RETURN" button. The window has a blue title bar and a yellow-orange gradient background with a wavy pattern.










Here in this section ,by entering the movie id ,app will find the movie with that id and also will check its status to see if it is rented and if yes will assign it to the labels to return otherwise will give us warning.

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Database:

Employees table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	employee_id 	bigint(20)	UNSIGNED	No	None		AUTO_INCREMENT	 Change  Drop  More
<input type="checkbox"/>	2	employee_number	varchar(20) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	3	username	varchar(16) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	4	password	varchar(255) latin1_general_cs		No	Herzing			 Change  Drop  More
<input type="checkbox"/>	5	fname	varchar(20) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	6	lname	varchar(20) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	7	dob	date		No	None			 Change  Drop  More
<input type="checkbox"/>	8	address	varchar(100) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	9	city	varchar(50) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	10	province	varchar(50) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	11	postal_code	varchar(7) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	12	home_phone	varchar(12) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	13	cell_phone	varchar(12) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	14	start_date	timestamp		No	CURRENT_TIMESTAMP			 Change  Drop  More
<input type="checkbox"/>	15	sin	varchar(11) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	16	hourly_pay	double	UNSIGNED	No	None			 Change  Drop  More
<input type="checkbox"/>	17	education	varchar(20) latin1_swedish_ci		No	None			 Change  Drop  More
<input type="checkbox"/>	18	level	smallint(5)	UNSIGNED	No	None			 Change  Drop  More
<input type="checkbox"/>	19	status	smallint(5)	UNSIGNED	No	None			 Change  Drop  More

 ☐ Check all *With selected:*  Browse  Change  Drop  Primary  Unique  Index  Spatial  Fulltext

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Clients table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	client_id	bigint(20)	UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2	client_number	varchar(20) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	3	fname	varchar(20) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	4	lname	varchar(20) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	5	email	varchar(50) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	6	phone	varchar(12) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	7	dob	date		No	None			Change Drop More
<input type="checkbox"/>	8	address	varchar(100) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	9	city	varchar(50) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	10	province	varchar(50) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	11	postal_code	varchar(7) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	12	status	smallint(5)	UNSIGNED	No	None			Change Drop More

☐ Check all With selected: Browse Change Drop Primary Unique Index Spatial Fulltext

Videos table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1	video_id	bigint(20)	UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2	photo	varchar(255) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	3	title	varchar(100) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	4	year	varchar(20) latin1_swedish_ci		Yes	NULL			Change Drop More
<input type="checkbox"/>	5	country	varchar(50) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	6	language	varchar(50) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	7	length	int(10)	UNSIGNED	No	None			Change Drop More
<input type="checkbox"/>	8	resume	text latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	9	genre	varchar(255) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	10	actors	text latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	11	director	varchar(50) latin1_swedish_ci		No	None			Change Drop More
<input type="checkbox"/>	12	status	smallint(5)	UNSIGNED	No	1			Change Drop More

☐ Check all With selected: Browse Change Drop Primary Unique Index Spatial Fulltext

December 2022

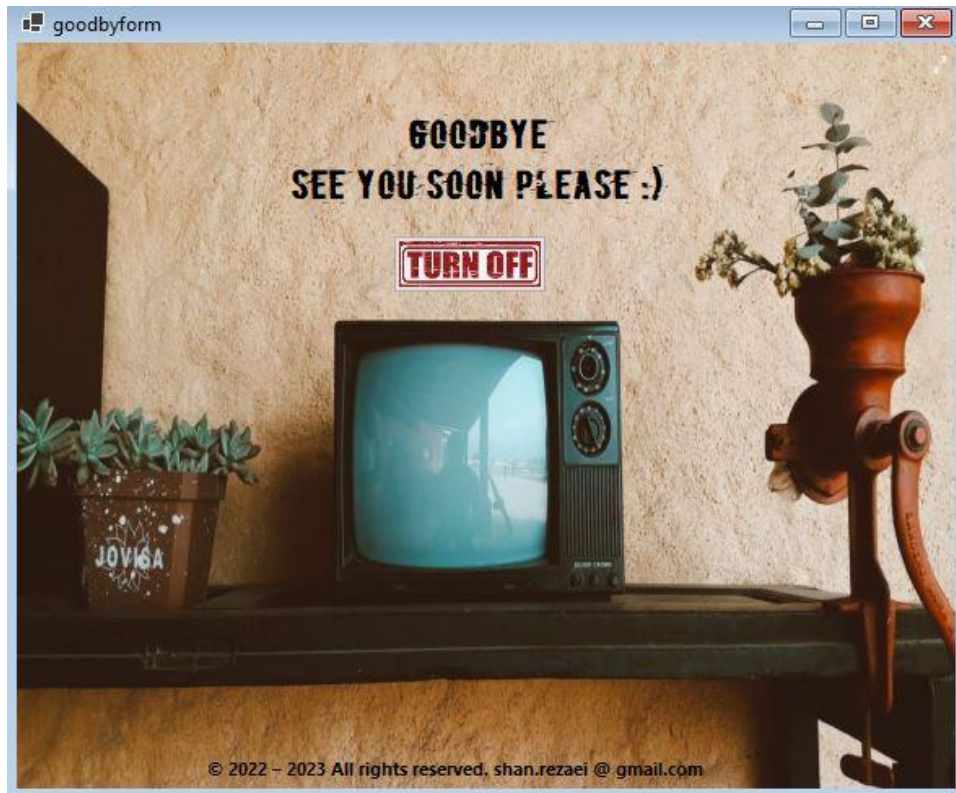
Popcorn zone Report

Rents table:

#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
<input type="checkbox"/>	1 rent_id	bigint(20)		UNSIGNED	No	None		AUTO_INCREMENT	Change Drop More
<input type="checkbox"/>	2 client_fk	bigint(20)		UNSIGNED	No	None			Change Drop More
<input type="checkbox"/>	3 video_fk	bigint(20)		UNSIGNED	No	None			Change Drop More
<input type="checkbox"/>	4 rent_date	timestamp			No	CURRENT_TIMESTAMP			Change Drop More
	<input type="checkbox"/> Check all	With selected:	Browse	Change	Drop	Primary	Unique	Index	Spatial Fulltext

Popcorn zone Report

Goodbye page:



We can exit and close the app.

December 2022

Popcorn zone Report

- **Discussion**

- **What happen throughout the project?**

Through the project, I programmed part of it but then realized that it is better to plan how to do the project and different parts of it, for it has several parts which have overl ap with to gather and to avoid redoing , we should plane how to program the project.

- **Problem encounter, solution?**

During the coding and more during the testing I faced different problems and bugs .one of the most important one was validating different sections in adding or updating different parts, for sometimes the exact validation for one part did not work for the other part.

And also the other problem that I faced was during creating database and connecting it with VB.NET.

I should say I mostly overcame the problems by searching on the websites and trying different approaches.

- **Did you manage to finish the project?**

Yes I spent 2 days to find out how many sections it should have and estimation of how long each part will get and finally how much time I can spend to test it and also writing the report.

- **What you would have done differently?**

I believe I would spend more time on planning to section the app to proper parts for coding. And also spending more time on testing rather than trying to code it completely. And also I would defiantly start writing the report from the first day of planning to do the project.