



[spProject'18]

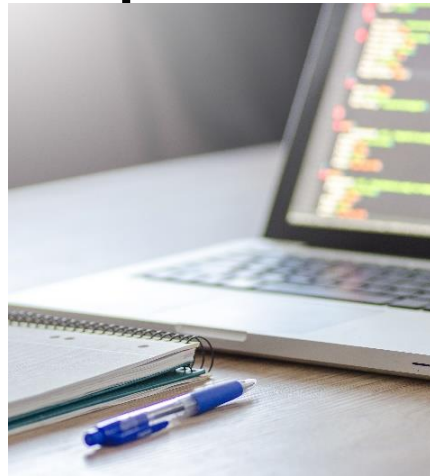


[spProject'18]

*Our
Chosen Project*

Movie store

management
software



“

**Everybody in this
country should learn
to program a
computer, because it
teaches you how to
think.”**

~Steve Jobs (Co-Founder
of Apple)

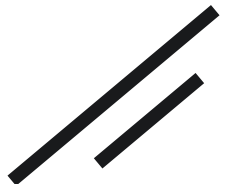


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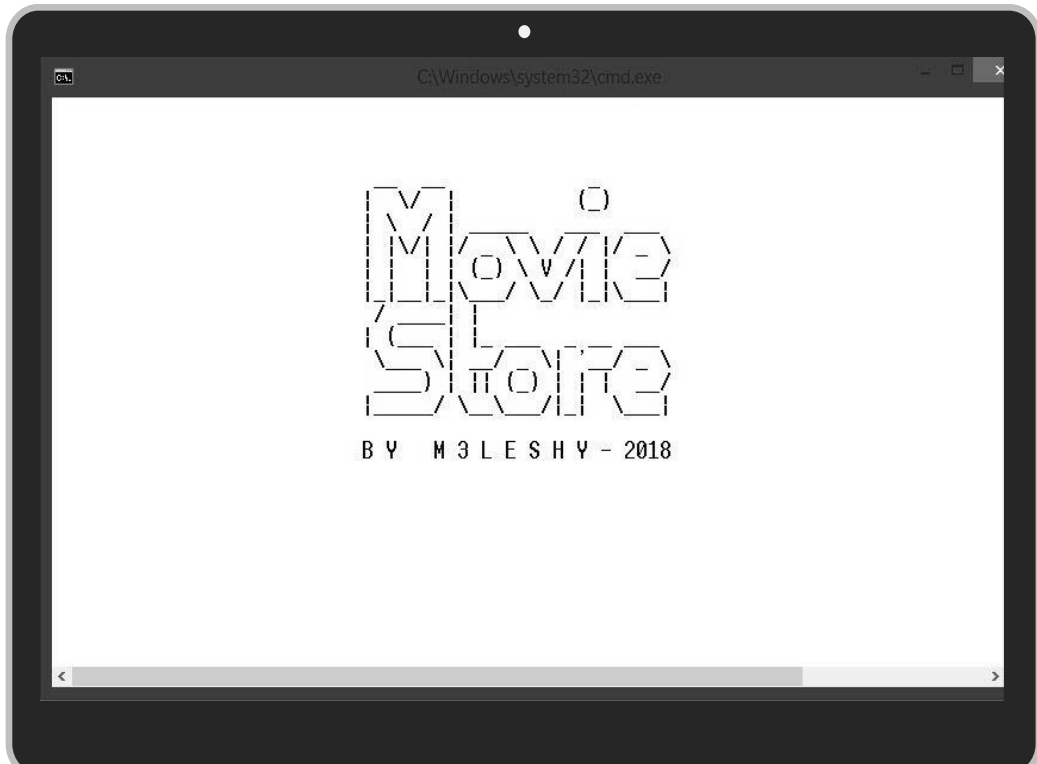
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Introduction

“

Our main aim is to make a C++ based software to help movie store owners to manage movie rentals and control when videos are checked out, due to return, overdue fees and many other options.”





Meet the team

MonicaAdel **Section: 19**

MonicaAtef **Section: 19**

MichelineMedhat **Section: 19**

MinaOssama **Section: 19**

YoussefRafaat **Section: 22**

MichaelSafwat **Section: 13**

Challenges

1- Dealing with files:

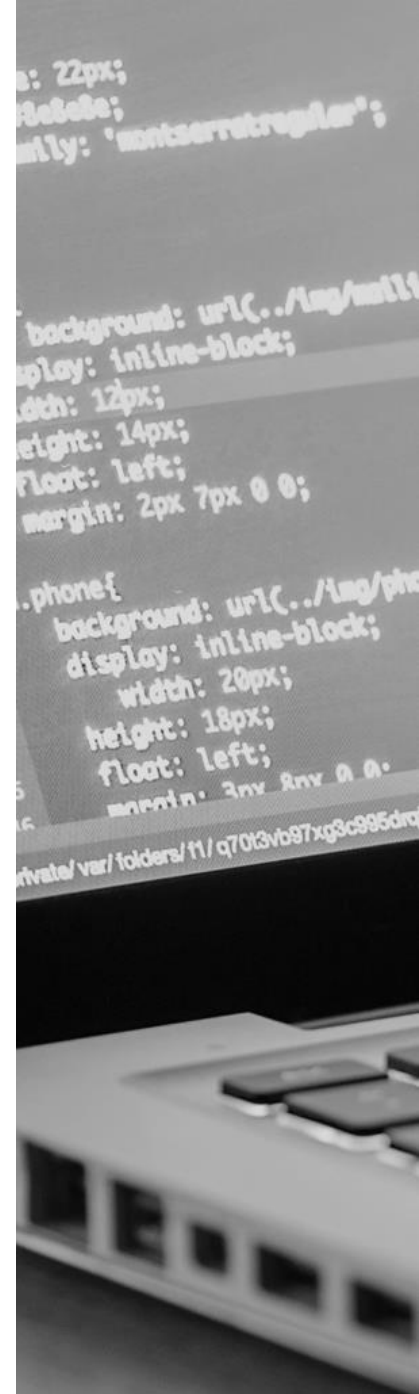
- A- Arranging user data into files
- B- Loading data from files and processing it
- C- Delete specific data
- D- Hide password file
- E- Opening files' interface
- F- Linking between two or more files

2- Handling user's input

3- Linking software to system date

4- Password encryption

```
while (!succeed)
    tryOnceMore ();
```



🔍 Close-ups

1- Dealing with files:

A. Arranging user data into files

B. Loading data from files and processing/modifying it

Ex.: while renting/receiving the movie's status is switched in the movies' file.

C. Delete specific data

Ex.: while receiving a movie, the movie is omitted from the renting file.

D. Search for specific data in a file

E. Sorting data in the file (Top rated movies, Most rented movies)

Load the file you want into a large sized array of specific struct of this file then check the matching of the entered data (i.e. movie's name) to the corresponding object from that array then do the process you want then replace the new modified array with the old file.

F. Opening files' interface

Handled with changing files extension from (.txt) to (.csv) so we separated file contents with commas.(Comma-separated values)

G. Hide password file (will be discussed lately in the password encryption close-up)

H. Linking between two or more files

Data in a specific folder is accessed and processed when needed in any section of the program.

Ex.: while renting a movie, the user only enters the movie name and customer's phone number then this movie's/customer's data (i.e. fees/status/Customer's name) is accessed from movie's/customer's files then this data is processed to complete the renting process.

As well as the receiving process.

```
e: 22px;  
font-size:  
family: 'montserratregular';  
  
background: url(../img/mil  
display: inline-block;  
width: 12px;  
height: 14px;  
float: left;  
margin: 2px 7px 0 0;  
  
.phone{  
background: url(../img/ph  
display: inline-block;  
width: 20px;  
height: 18px;  
float: left;  
margin: 2px 7px 0 0;  
  
private/var/folders/t1/q7013yb97xg8c995dnd
```


2- Handling user's input:

1. user can't enter more than 11 digits or any invalid character as customer's phone number.
2. Customer can't be duplicated by restricting the input of his phone number only once in customer's file.
3. Any input string is capitalized before saving in any file. (i.e. "movie store" is saved as "Movie Store").
4. Any string input with any number of spaces before or after, these spaces are eliminated before saving in file.
5. movie's production year must be 4 digits only and must be before or equal to the current year of entry.
6. Movie fees/Overdue fees must be numbers or a floating point only.
7. Sorting most rented movies function only displays rented movies with renting number > 0.
8. Sorting top rated movies function only displays rated movies with a rating > 0.
9. User can rate movies with only range of numbers or floating numbers from 0 to 10 only.
10. In any loop sentinel control only valid characters are allowed.
11. In all menus only valid choices are allowed.
12. while renting a movie, if the customer is not existing the program asks the user to enter his name and save it to its file then continue renting process without losing any entered data.
13. while renting a movie, if the movie is rented or not found the renting process terminates.

```
e: 22px;  
font-size: 14px;  
font-family: 'montserratregular';  
  
background: url(../img/mnt11  
display: inline-block;  
width: 12px;  
height: 14px;  
float: left;  
margin: 2px 7px 0 0;  
  
.phone{  
background: url(../img/pho  
display: inline-block;  
width: 20px;  
height: 18px;  
float: left;  
margin: 2px 7px 0 0;  
}
```


3- Linking software to system date:

- A. We get system date while entering the production year of a newly added movie, and don't let the user to enter a year after the current year.
- B. While renting a movie, the user enters the number of due days then we get the system date then calculate the due date automatically and save it to the renting file.
- C. While receiving a movie, the we get the current system date and compare it to the due date saved in the renting file to check if the customer is overdue. (this feature is ignored for testing issues)

4- Password encryption:

*While opening the software for the first time, the software asks the user to **set** a new password (it checks the password file and if it's empty asks the user to do so) otherwise, the software asks the user to **enter** his password.*

Setting the password:

*Any entered password is displayed as **asterisks** on the screen.*

We handled the user's input if it included a backspace.

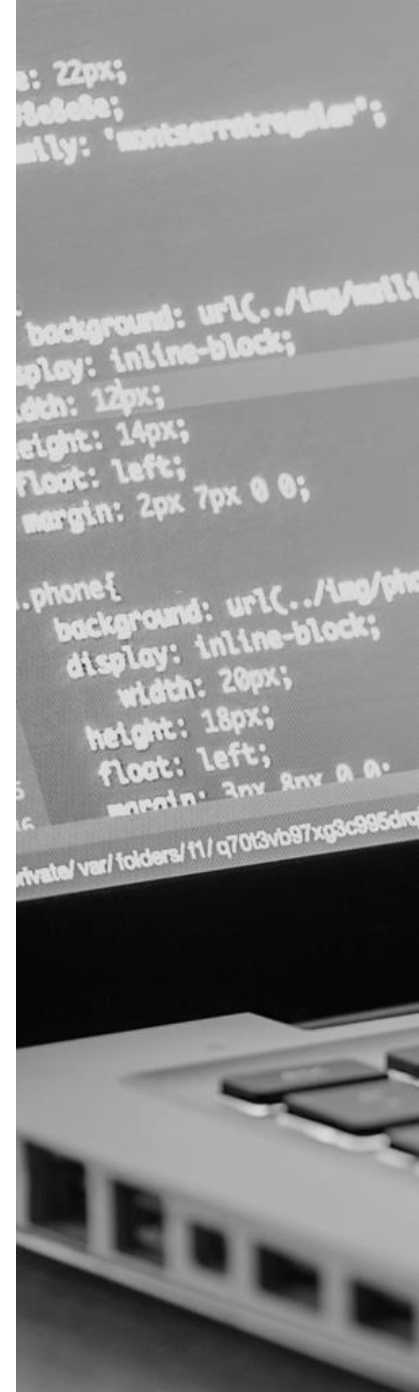
Then the entered password is encrypted as follows:

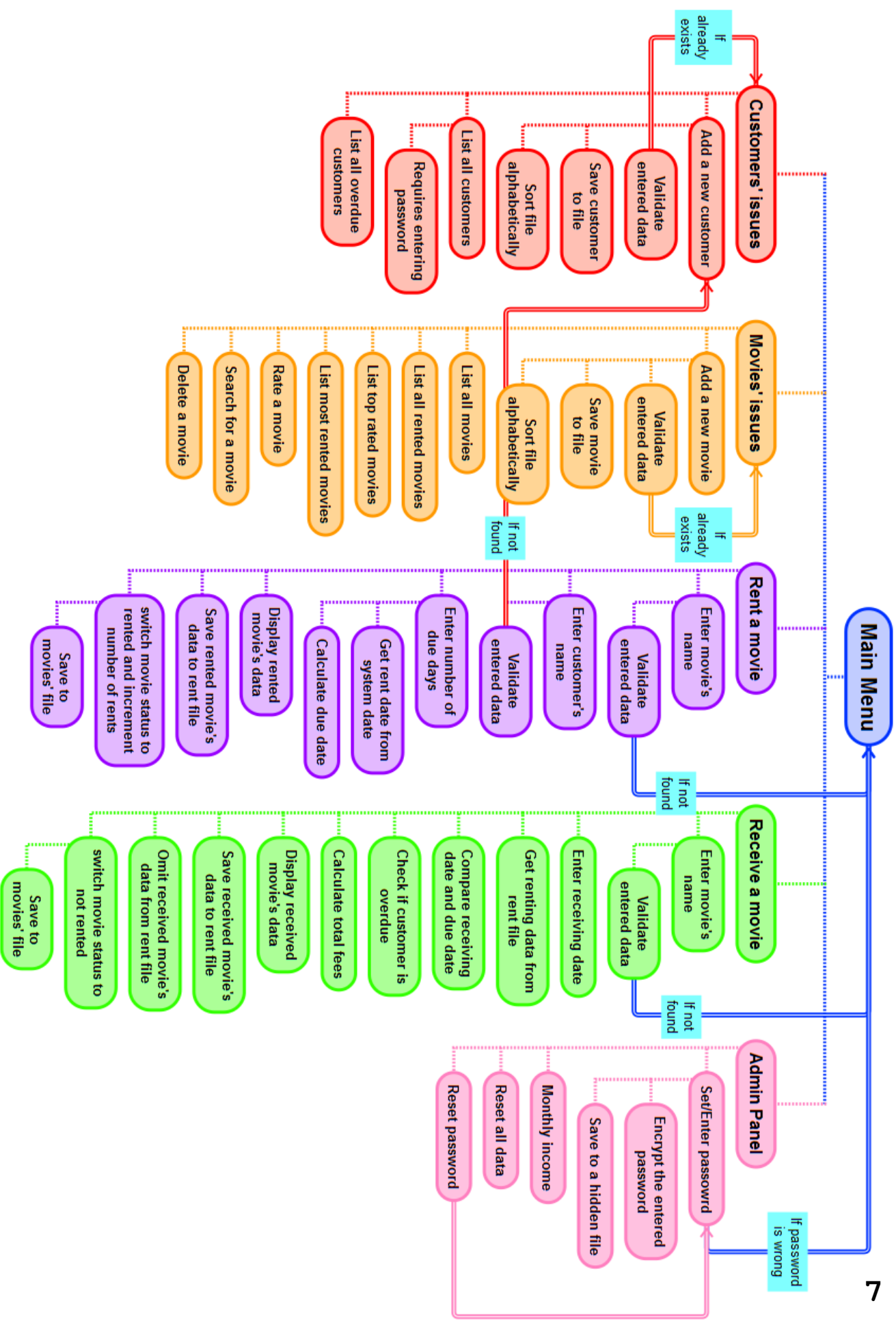
*any entered character is converted to its **ASCII code** then a large number is added to it to make it more complex, then convert the result to **hexadecimal numbering system**, after repeating this process on all password's characters,*

it's saved to a hidden file:

*We had to force hide this file including encrypted password because if it was **deleted** the program will reset password and ask the user to **set** a new password.*

The user have the feature of resetting his password anytime





✧ Functionalities

1- Main Requirements:

1. The User can add new customer.
2. The user can add new movie, each movie has different fees and overdue fees.
3. List all customers in the system.
4. List all Movies in the system.
5. List all rented movies in the system.
6. Allow user to rent movie and specify the due date and the rental fees and overdue fees.
7. Allow user to return movie and calculate the customer fees.
8. Create a summary of those accounts which are overdue for contact.
9. Display the most rented movies
10. All of these data should be saved in files.

2- Extra functionalities:

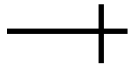
1. Customer can rent more than one movie.
2. Compare due dates to current system date to get overdue customers automatically and display their data.
3. Protecting customer's data with password.
4. **User can rate a specific movie** (*Movie's rating is automatically calculated based on the average of user's input.*)
5. Customers' and movies' files are sorted alphabetically in the file in every new object addition.
6. Restrict user's input in movie's data entering to be valid inputs only (***i.e. production year 4 digits only, fees/overdue fees must be integers or floating point numbers only***).
7. User can search for specific movie and display it's data.
8. User can delete a movie from movie's list stored in its file.
9. User can display **top rated / most rented** movies depending on saved data collected when movie is rated or rented.
10. User can display store's income **for a specific month of a year protected with password**.
11. Animated ASCII art splash screen.
12. Warning messages displayed with **beep sounds**.
13. Console screen is always clean.



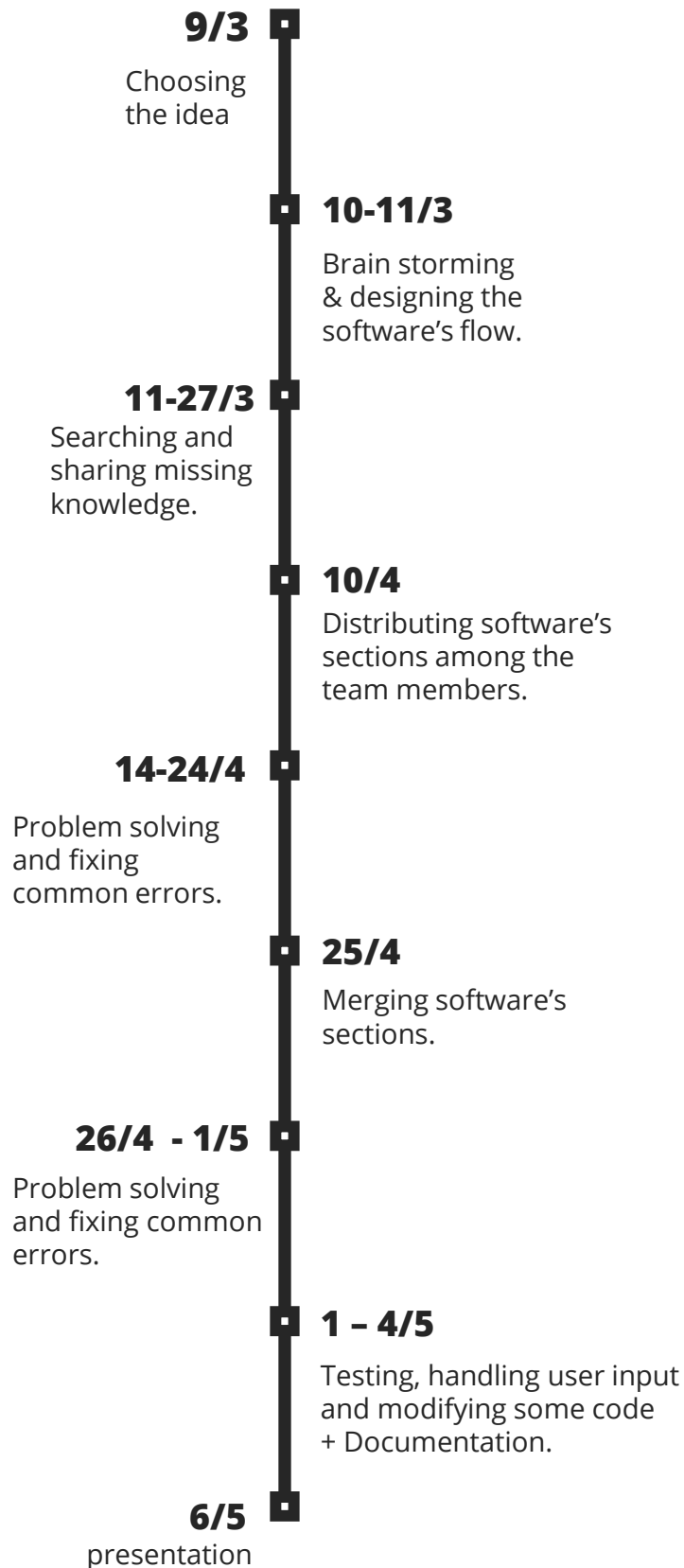
Future



Scope



- GUI
- More than one copy of a movie
- Multiple user accounts and administrator with passwords including user account who rented/received a movie in rent/receive file.
- Categories of movies can be included.





THANK YOU FOR READING
WE'LL BE TAKING QUESTIONS NOW

**Thanks Dr. Sally,
our mentor T.A\Marwa
And all our beloved T.A.s**

**Thank you for your efforts,
passion, and support.**

It was really a great journey.