Assignment 1:

Databases

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COURSE TITLE:

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Section:

2

Title of Project:

Movie Ticket Reservation System

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Abstract

The collection of databases and database management system (DBMS) software altogether are known as a database system. A database system is often used by organizations to manage a massive number of information, one can also store, retrieve and access data with considerate reliability and security. Other than that, data can be stored in the database with ease, and there are no issues of data redundancy and data inconsistency by using it. The data can be drawn out from the database using DBMS software whenever required to do so.

We were given choices to choose from as topics to create our database system, so we decided to create a management system for reserving movie tickets. It should have all the features of what a movie ticket reservation system would look like and has all the functionalities of it. We made it as simplistic as we can in order to ease the user. We wanted to achieve a system that can be of convenience and available as fast as possible for users.

The tools we used were Microsoft Access to make the management system a reality.

1.0 Introduction

1.1 Introduction

The assignment was given for us to create a prototype of a database system from the knowledge that we have learned in class throughout the semester. The topic that we had chosen to create our database system was a “Movie Ticket Reservation System”, this system is supposedly created for the employees to have access to the movie reservation system.

The plans for the database system were discussed in a group voice call, the intitial design for our (ERD) were drawn on a piece of paper while we discussed. After the drafts were made, the design of the forms & reports were discussed and planned for implementation.

Moreover, this assignment was also educational for the group because it gave us an opportunity to hone our knowlodge and skill in creating a database system with relationships and management of the database. The assignment also helped improved all of our team interaction skills.

1.2 Problem Description

A database system has to be developed for movie ticket reservation. A normal checklist on the system would include the ability to add new movies, new screening time and date and most importantly adding reservations. Multiple seats are one of the main fucntion as a single reservation should be able to select up to multiple seatings. The database system should have multiple tables to store data as well as forms and reports to help manage the information inside the system.

1.3 Project Description

Developing a database system will require us find suitable tools to aid us in the prototype creation. It can be a collection of multiple tools available online or a standalone software that specializes in database system creation such as Microsoft Access.

1.4 Project Scope

1. Creating a prototype database system.

Based on the requirement of the assignemnt, we are required to find the right tools and use them so that it can help us create our database system. There are various tools online that creates database systems.

2. Find suitable tools to help develop the system

To develop our database system, software or specialized tool can be found online to cater the need for the assignment. The database system built using the tools and software are to be tested working on other computers.

3. Build a working prototype database system based on the topic chosen

The system built using the tools and software are to be tested working on other computers with basic requirements met.

1.5 Project Objective

The objective of this assignment was to develop a prototype database system that aims to help users manage through the movie ticket reservation system with ease. To develop the system, we were required to use our knowledge to connect the data within the database system correctly and design forms and report to help view and manage the data,.

1.6 Target User

Our target users are employee who will be using a database system for ticket reservation. The system should also include the ability to add in new movies and screenings.

1.7 Conclusion

As a summary of introduction to our assignment, we are required to create a database system themed on a topic we've choosen which is movie ticket reservation system. To be able to book a ticket, the system must first have movies, screening time and seating area to pick from. Hence specifying more in-depth system development.

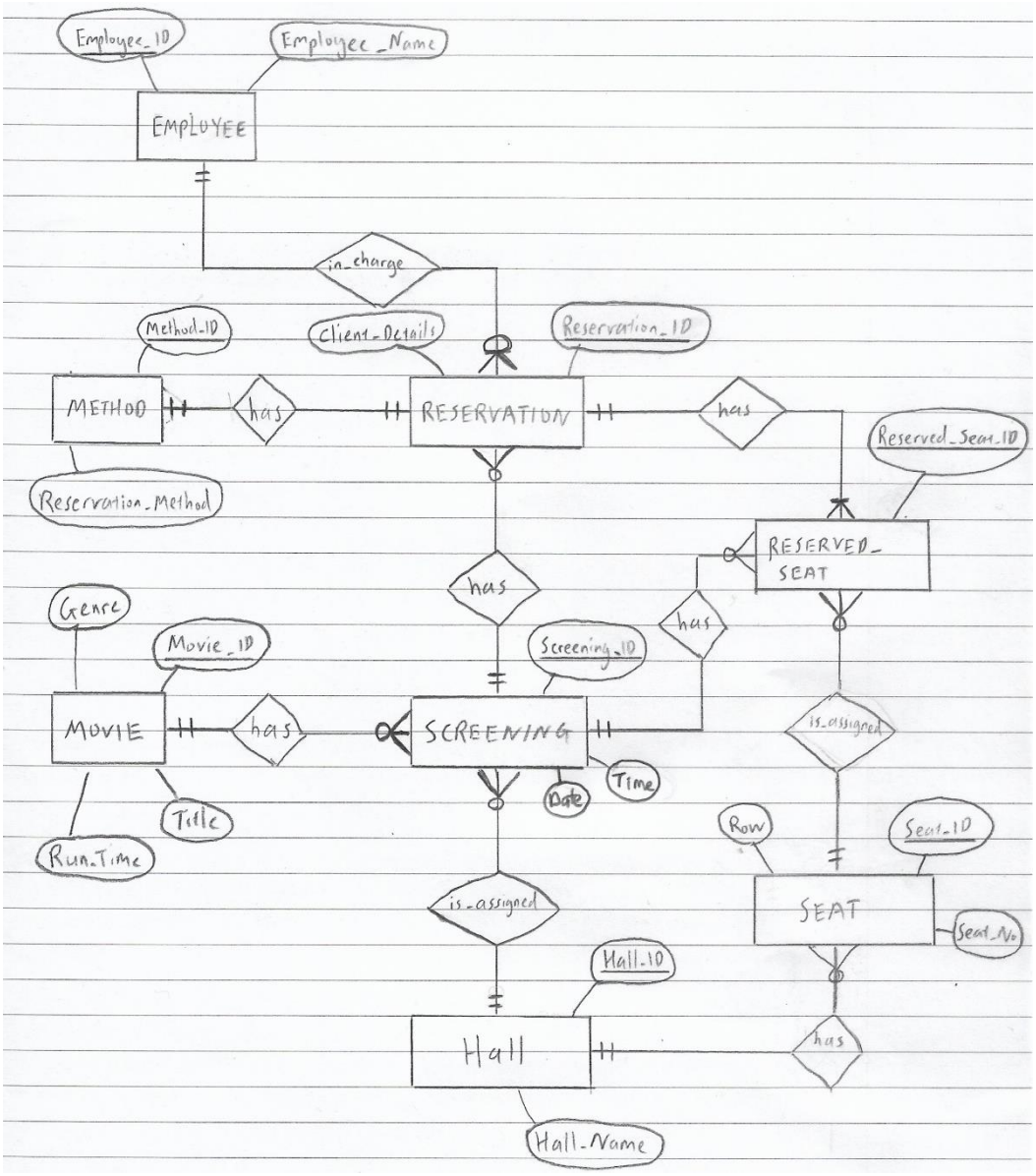
2.0 System Analysis and Design

2.1 Introduction

Based on the topic choosen for database system design, our theme befalls upon movie ticket reservation system. The database requirements are made to be based upon employee as the target user. The employee would be able to manage the system by adding new movie and screening time and date along with the designated hall for screening. As the physicial infrastructutre of the cinema is fixed, seats and hall for screening values are fixed. The employee should also have to ability to reserve tickets for clients up to multiple seats.

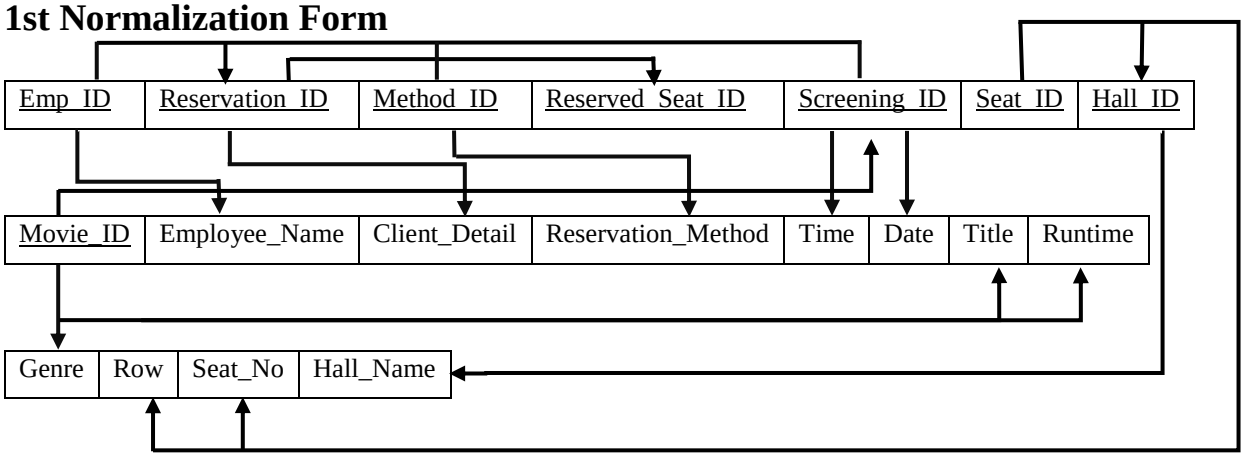
2.2 Conceptual Model (ERD)

Our ERD were drawn on a paper.



2.3 Normalization

1st Normalization Form



Emp_ID, Method_ID, Screening_ID ➔ Reservation_ID

Reservation_ID ➔ Reserved_Seat_ID

Movie_ID ➔ Screening_ID

Method_ID ➔ Reservation_Method

Screening_ID ➔ Time,Date

Seat_ID ➔ Row, Seat_No

Hall_ID ➔ Hall_Name

Movie_ID ➔ Title, Runtime, Genre

3rd Normalization Form

EMPLOYEE

Emp_ID	Employee_Name

RESERVATION

Reservation_ID	Client_Details	Emp_ID	Method_ID	Screening_ID	Hall_ID

METHOD

Method_ID	Reservation_Method

RESERVED_SEAT

Reserved_Seat_ID	Screening_ID	Reservation_ID	Seat_ID

SCREENING

Screening_ID	Hall_ID	Movie_ID

SEAT

Seat_ID	Row	Seat_No	Hall_ID

HALL

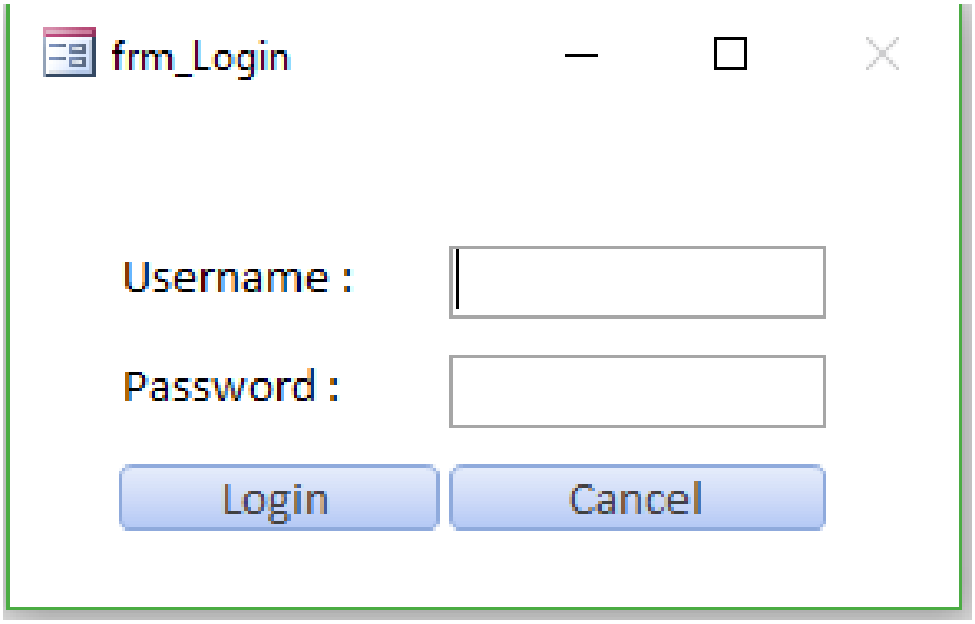
Hall_ID	Hall_Name

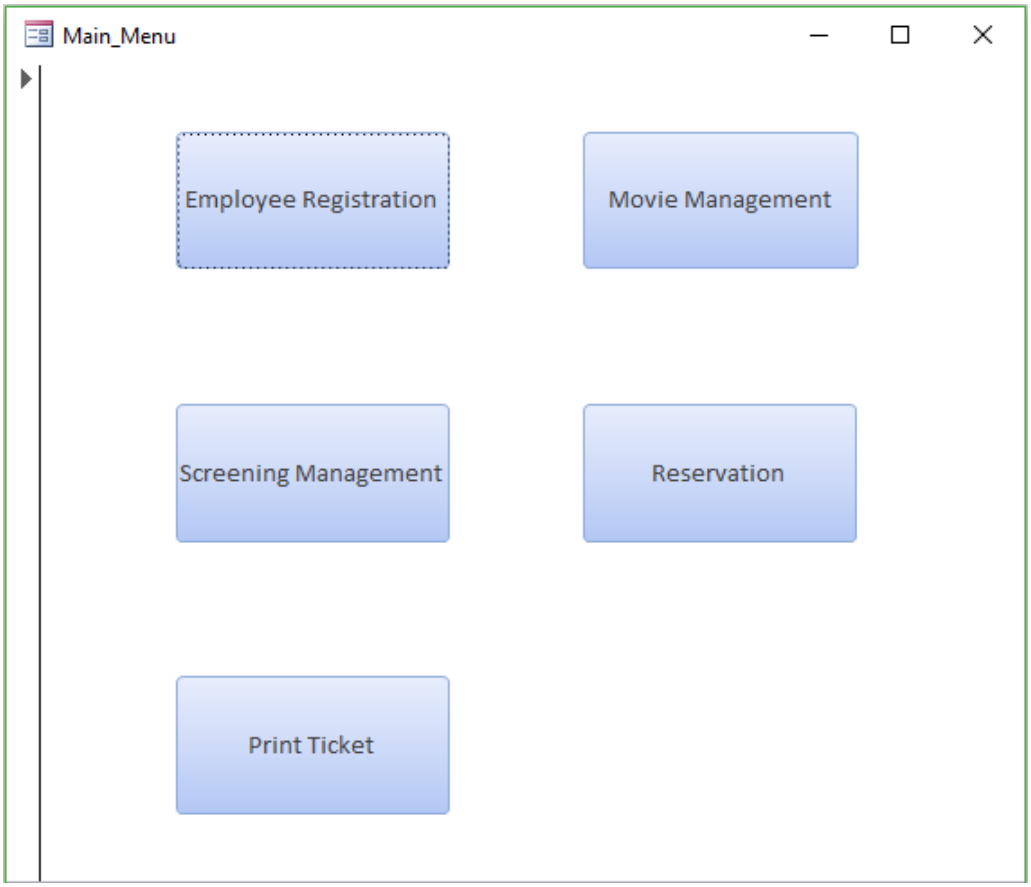
MOVIE

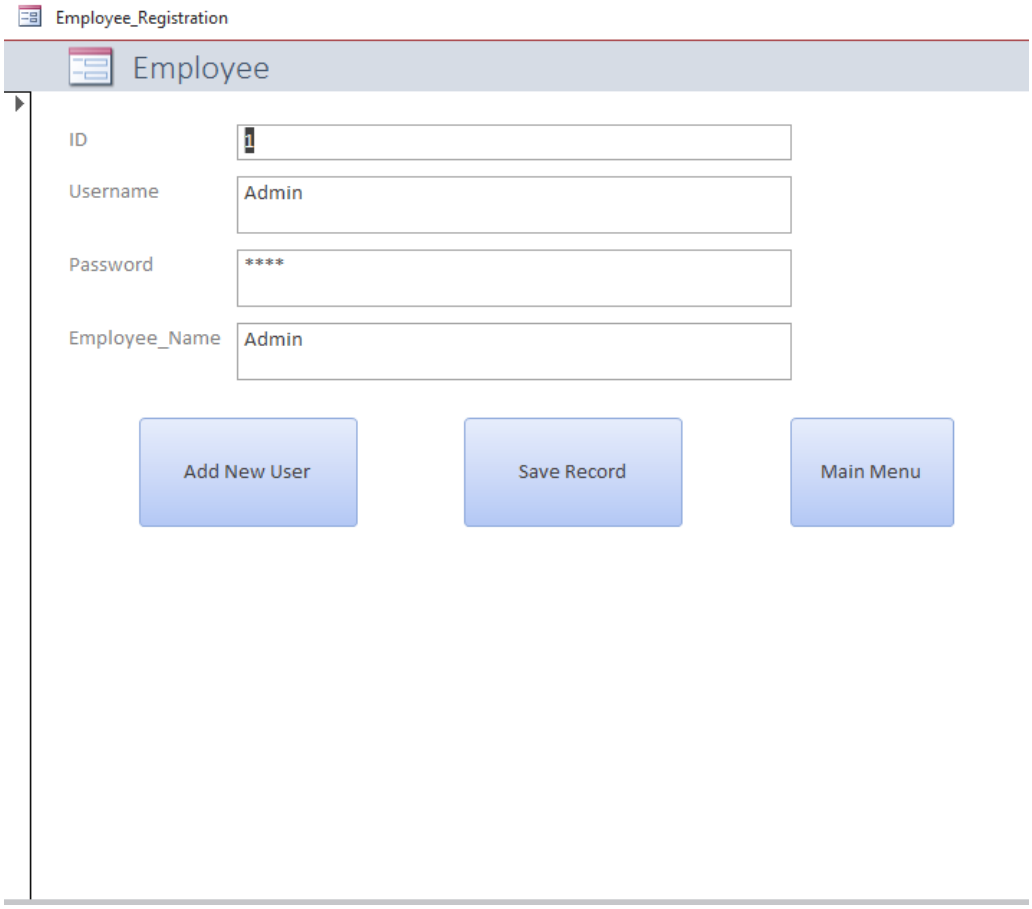
Movie_ID	Title	Runtime	Genre

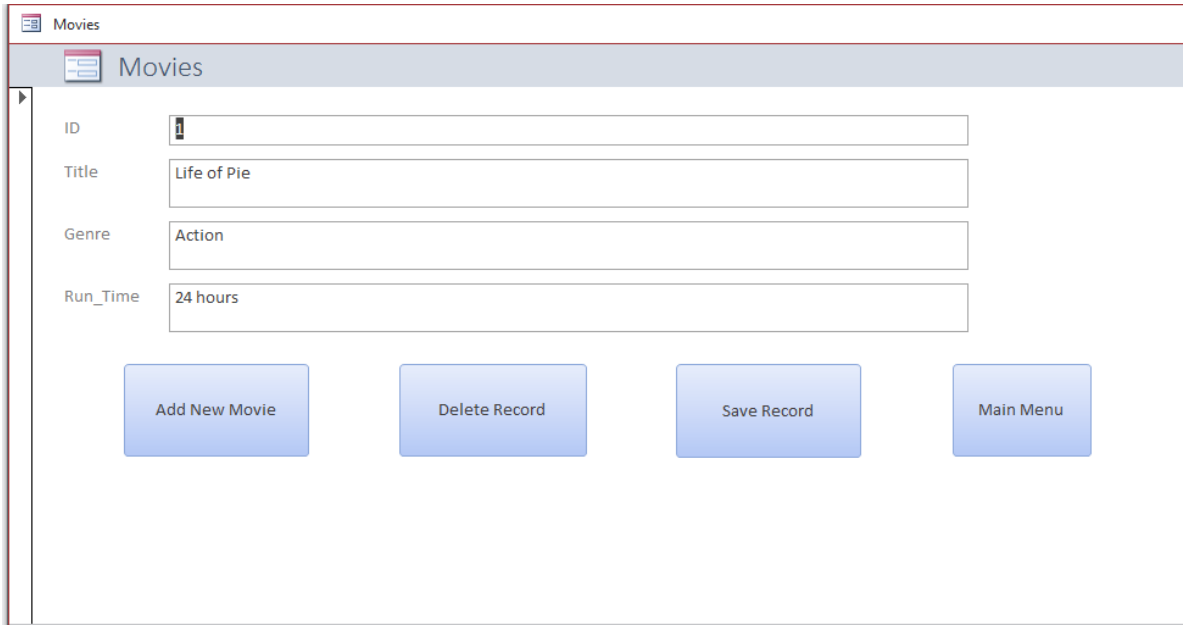
2.4 Form and Reports Design

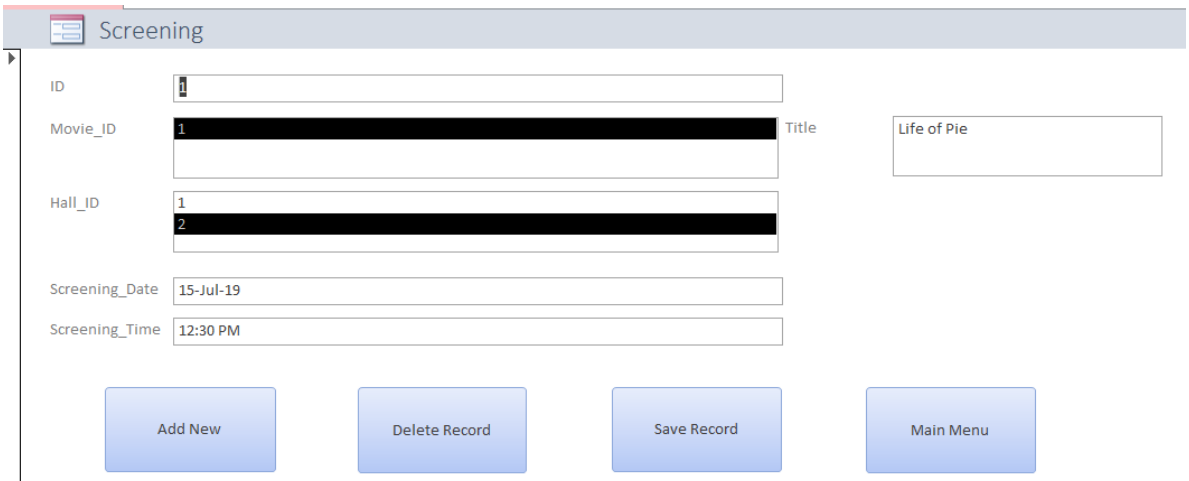
Listed below are forms for employee login, main menu. Registration, Movie Management, Screening Management, Reservation and the report for printing Tickets

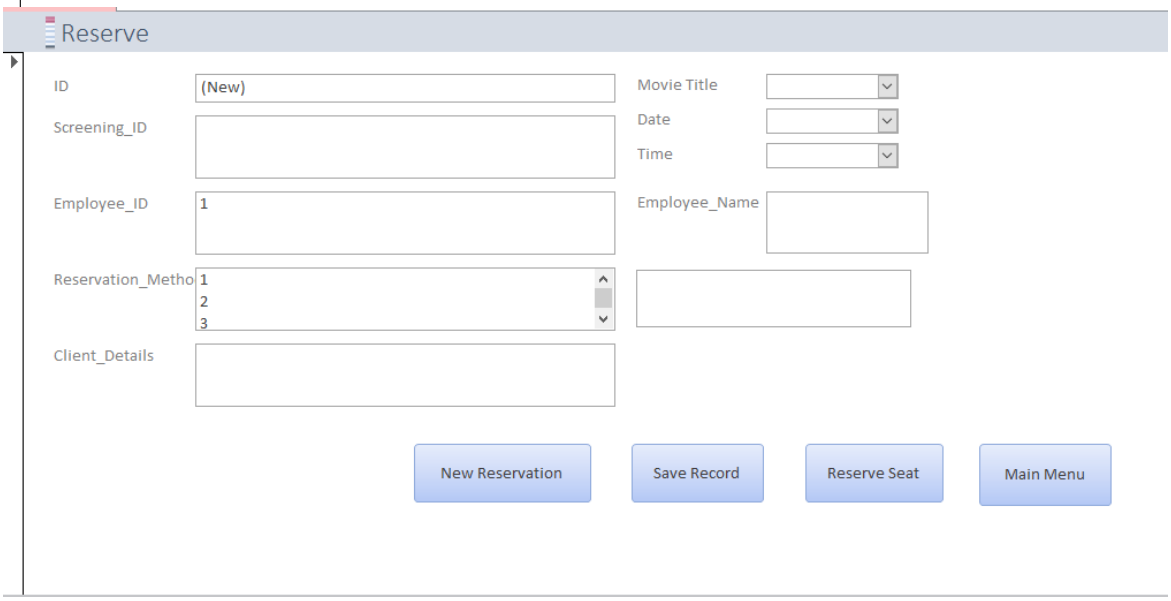




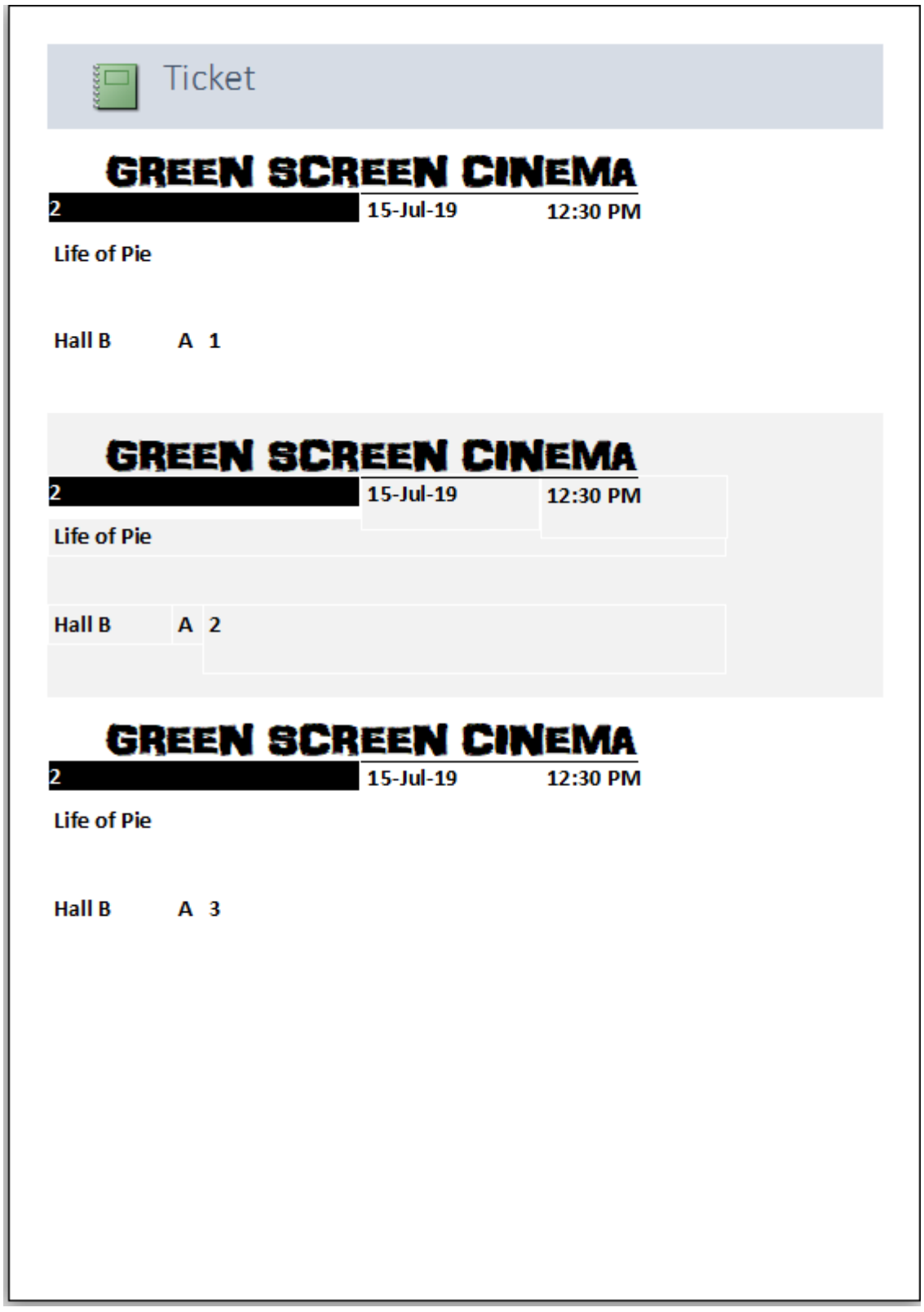

Employee_Registration
Employee
ID
1
Username
Admin
Password
****
Employee_Name
Admin
Add New User
Save Record
Main Menu


Movies
Movies
ID
1
Title
Life of Pie
Genre
Action
Run_Time
24 hours
Add New Movie
Delete Record
Save Record
Main Menu


Screening
ID
1
Movie_ID
1
Title
Life of Pie
Hall_ID
1
2
Screening_Date
15-Jul-19
Screening_Time
12:30 PM
Add New
Delete Record
Save Record
Main Menu


Reserve
ID
(New)
Movie Title
Screening_ID
Date
Time
Employee_ID
1
Employee_Name
Reservation_Metho
1
2
3
Client_Details
New Reservation
Save Record
Reserve Seat
Main Menu

Report:


Ticket
GREEN SCREEN CINEMA
2 [redacted] 15-Jul-19 12:30 PM
Life of Pie
Hall B A 1
GREEN SCREEN CINEMA
2 [redacted] 15-Jul-19 12:30 PM
Life of Pie
Hall B A 2
GREEN SCREEN CINEMA
2 [redacted] 15-Jul-19 12:30 PM
Life of Pie
Hall B A 3

2.5 Conclusion

System functions and design initially drafted may not tally to the end product of the database system due to improvision made and limitations of tools used. Report generated are movie tickets reserved for clients or customer. The ER diagram and normalization forms are used to outline the basic information needed to build the system and linking the data within. Some additional data may appear in the system for adjustment purposes.

Some of the information placed in the system are not modifiable through an interface due to the information being a tangible structure such as hall and seats number. Altough the name can be adjusted, the overhaul of the hall or seating system would definitely lead to re-adjustment of the database system manually.

3.0 System Implementation

3.1 Introduction

Once our ERD, form and report designs were confirmed, we were off to implement our plan into reality, and so we needed to create our prototype database management system. We found 3 software that can be used to develop our system, the 3 software are, Visual Basic, PHP and Microsoft Access. After long discussion, and tallying between advantages and disadvantages, we finally settled on using Microsoft Access and since we already have Microsoft's license, we won't have any restrictions or blockages while developing our database system.

3.2 Tools used to Develop the System

The tools that we used to develop our prototype system as stated in the paragraph above, is Microsoft Access. It is a Database Management System from Microsft that merges the relational Microsoft Jet Database Engine with a GUI (Graphical User Interface) and software development tools. We chose to use MS Access because it is quick and easy to create database systems making it an excellent tool for saving the development time. MS Access also produces versatile and adaptable database systems, so it is easier for us to modify the things that needed to be modified.

3.3 Hardware and Software Requirements

Operating System: Windows 7 or later with (32 bit) / (64 bit)

Processor Speed: 1 GHz

Min RAM Size: 1 GB, 2 GB

Min Hard Drive Space: 3 GB

Software Required: Microsoft Access

3.4 Conclusion

In conclusion, the implementation of our database system might not be exact as planned on the design phase due to unforeseen limitations and possible improvement spaces while under developement. After the implementation, the database systems are tested on few other computers to ensure functionality across different machines of varying specifications with basic requirements met. The final prototype of the system can still be improved in the future to enhance the user experience as well as strengthening the integrity of the database system.