Name of Course Instructor: Monica Regmi

Course Code: CC204 Course Name: database design

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Assignment No: 2 Assignment Type: Group Assignment Title: Video Rental

Max. Marks: _____ Date of Allotment: _____ Date of Submission: 20th July, 2018

Declaration

We hereby declare that the assignment work submitted is original and completed by us and as per our knowledge and practices.

Name of the Student	ID number	Contact no.	E-mail	Signature
Abhishek Dangol	171102	9860082254	abhi171102@iimscollege.com.np	
Anish Maharjan	171105	9860333463	anis171105@iimscollege.com.np	
Ankit Baskota	171106	9843844099	anki171106@iimscollege.com.np	
Pratik Maharjan	171123	9841805543	prat171123@iimscollege.com.np	
Ragim Maskey	171125	9808818048	ragi171125@iimscollege.com.np	
Saman Maharjan	171133	9803042890	sama171133@iimscollege.com.np	
Sanjiv Maharjan	171136	9860265125	sanj171136@iimscollege.com.np	
Sohel Maharjan	171139	9803043809	sohe1711439@iimscollege.com.np	

Evaluation: _____ obtained out of _____

Evaluator's Comment: _____

Evaluator's Signature & Date _____

Executive summary

Here, a custom Video rental Company website was created for customers of a company to create their database. The video rental company has several branches throughout the USA. The data held on each branch is the branch address made up of street, city, state, and zip code, and the telephone number. Each branch is given a branch number, which is unique throughout the company. We are asked to do to a couple of things like to identify the main entity types of the video rental company, determine candidate and primary key attributes for each entity types etc.

So, we have created a website that helps to solve these problems. Our website helps to create a user account for the customers. The website runs on Open Source software, it is written in PHP and uses MySQL as the database manager.

DECLARATION

We hereby declare that the report entitled "Video Rental Company" submitted to "IIMS College", is my original work done in the form of partial fulfillment of the requirement of B.Sc. (Hons) Computing under direct supervision of Mr. Monica Regmi. The report in whole or in part is neither already submitted to any university for any academic award nor is published for any commercial purpose.

We will be ready to bear any charges or penalty if found any guilt or fraud regarding this report.

ACKNOWLEDGEMENT

This report is prepared in the partial fulfillment of the requirement for the degree of B.Sc.(Hons) Computing. The satisfaction and success of completion of this task would be incomplete without heartfelt thanks to people whose constant guidance, support and encouragement made this work successful. On doing this undergraduate project we have been fortunate to have help, support and encouragement from many people we would like to acknowledge them for their cooperation. Our first thanks goes to UCSI University for designing such a worthy syllabus and making us do this project.

With Regards,

Abhishek Dangol

Anish Maharjan

Ankit Baskota

Pratik Maharjan

Ragim Maskey

Saman Maharjan

Sanjeev Maharjan

Sohel Maharjan

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Introduction

This is a report for the Video Rental project. All the design information of the project's functionalities and implementation will be explained in detail. This document contains the ER-diagrams for the database developed for the project.

The application that we created automates the daily processes in a video store. It basically performs essential functions such as renting items for the users and stores the data in a device for future access. It will be displayed in a user friendly environment. A centralized database is used to store data such as customer and employee information. In our case the Oracle 11g server is be the storage device. We choose the Oracle 11g because it can provide a reliable and secure access to the stored data. The issue over whether using local file or a remote server will be debut in this document. The most desirable feature of our software is that it supports multiple stores. Our software can be used simultaneously within multiple store and access the store information at the same time. The design of this function will be explained in detail in this document.

Altogether, the application we created is a general-purpose Video Rental Company software that will make the shop more productive.

Background

According to the assignment, we understood the following case study. A video rental company has several branches in USA. The attributes of each branch are street, city, state, phone number. Every branch has unique branch number and staff including manager who manages that branch. The manager is responsible for all the task throughout the day. Each staff is identified by unique staff number. Each branch has stock videos which can be ordered by clients and each video has unique video ID. Only member can rent any videos available in stock and if a client has not registered he/she needs to register membership first.

In our web application, the clients search movies according to categories available. In home menu, there is feature for log in and sign up. After going to the selected videos or movies, all the stock videos are shown and can be ordered available movies. If the client has not registered or logged in from home menu, he/she has to log in or sign up. We can also insert movies detail to insert in the database. The add cart functions helps to rent / purchase the videos. We have also kept an about page tab to describe about us, a function of the report helps to view our report. People can also give their feedback through the comment page.

We faced many problems while using Oracle 11g as we have only basic understanding of oracle. We had intermediate knowledge for front end development so the backend part was difficult for us. So we struggled to connect our oracle database to our Php. So it was on hold for a certain amount of time. We researched about the problem from various articles on internet and view many videos on Youtube.

Altogether we have 8 members in a group and we merged our individual distributed work to complete our project. Our group members are Abhishek Dangol, Anish Maharjan, Ankit Baskota, Pratik Maharjan, Ragim Maskey, Saman Maharjan, Sanjiv Maharjan, Sohel Maharjan. We distributed the work as follows: Abhishek Dangol, Anish Maharjan, Ankit Baskota and Pratik Maharjan did the logical Designing part and prepared the report as well. Ragim Maskey, Saman Maharjan, Sanjiv Maharjan and Sohel Maharjan did the physical designing part.

Requirement Analysis

The requirement of every application varies with organizational structure and the audience to that application. We were provided with the case study to analyze and melt down the requirement of that organization.

In order to complete the project, we had to use various tools inclusive of Project planning tool, designing tool and development tool and frameworks which are listed in the table below:

Task	**Tool**
Designing	Microsoft Visio Professional 2016
Development	Oracle 11g (Database development), Sublime text 3 (Web Application),Visual Studio Code

To develop the Web application, we used PHP 7.2.7 as server-side scripting tool. We have also used html, css, js etc.

Entity types of the video rental company

The Entities are:

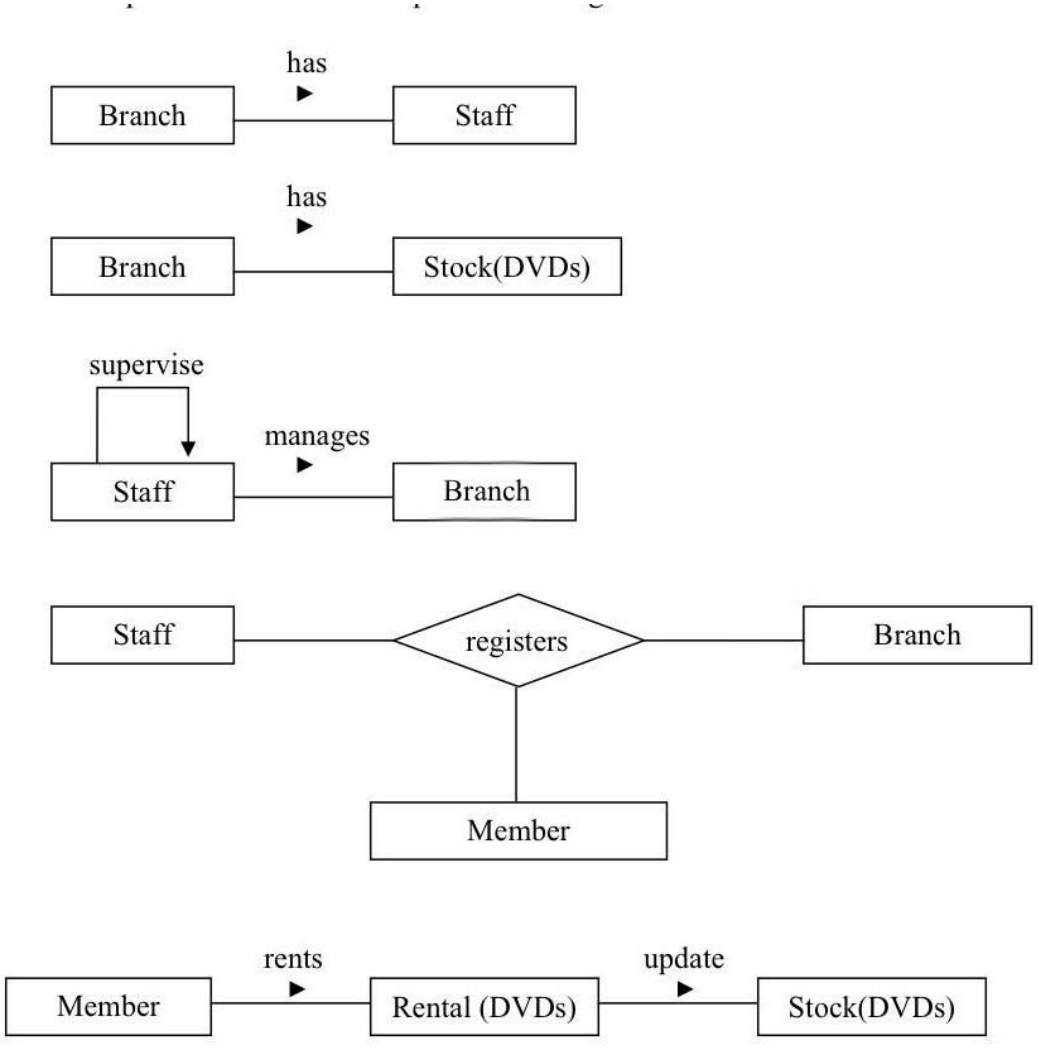
- VRC
- Staff
- Stock of Videos
- Customer

- The attributes of VRC entities are:
    - Branch name
    - address
    - street
    - city
    - state
    - zip code
    - telephone number
    - branch number
- The attributes of staff - manager entities are:
    - name
    - position
    - salary
    - staff number
- The attributes of stock of videos entities are:
    - catalog number
    - category (Action,Adult,Children,Drama,Horror Sci-fi)
    - daily rental
    - cost
    - status
    - names of actors
    - director
    - video number
    - number of copies
- The attributes of customer entities are:
    - register as member of a branch
    - first and last name
    - address
    - date of registration
    - member number
    - full name video number

- title
- daily rental
- Dates the video is rented out and returned.
- rental number

Relationship types

On the basis of above relation the entities in ERD of a video rental company is shown below:



Multiplicity constraints (for each relationship) data dictionary

Entities	**Entity Description**	**Attributes**	**Attribute description**	**Data Type**	**KEY**	**Nullable**	Format
Stock(DVDs)	DVD's in stock	category	Number of the categorized DVDs.	Integer	PK	Not null	120 1200
		DVDNo	Id of the DVDs.	Integer		Not null	120
		title	Title of the DVD	Varchar(25)		Not null	XXXXX
		category	Category of the video	Varchar(25)		Not null	XXXXX
		cost	Cost of the video being rented	Varchar(25)		Not null	20000
		status	Status of the video	Varchar(25)		Not null	XXXXX
		mainActor	Main actor in the video	Varchar(25)		Not null	XXXXXX
		director	Director of the video	Varchar(25)		Not null	XXXXX
Rental(DVDs)	The rental company is the company that provides video in rent.	rentalNo	No. of video rented id	Numeric(10)		Not null	Xxxx xxxx
		fullName	Name of the person who rented the video	Varchar(25)		Not null	Xxxx xxxx

		DVDNo	No. of the DVD rented	Numeric(10)	PK	Not null	01-109390
		title	Tiltle of the video	Varchar(25)		Not null	XXXXXX
		dailyRental	Rented video daily	Varchar(25)		Not null	10
		rentedOutDate	Date of an video rented	Date		Not null	mm-dd-yyyy
		returnedDate	Date of an video returned	Date		Not null	mm-dd-yyyy
Member	The member is someone who take video in rent from the company	firstName	First name of the member	Varchar(25)		Not null	Xxxx xxxx
		lastName	Last Name of the member	Varchar(25)		Not null	Xxxx xxxx
		memberNo	Member Id	Integer	PK	Not null	000110
		dateRegistered	Register date	Date		Not null	mm-dd-yyyy
		address	Address of the member	Varchar(25)		Can be null	Xxxx xxxx
Staff	Staff are the employee of the company's particular branch	name	Staff Name	Varchar(25)		Not null	Xxxx xxxx
		staffNo	Staff ID or number	Integer	PK	Not null	0032003

		position	Staff position in the company	Varchar(25)		Not null	Xxxx xxxx
		salary	Staff salary	Numeric		Not null	20000
Branch	Branch is the company sub division from where the video is provide in rent	branchNo	Company branch ID/ Number	Numeric	PK	Not null	001
		branchAddress	Branch Address	Varchar(25)		Not null	Xxxx xxxx
		telNo.	Branch Telephone Number	Numeric		Not null	01-******

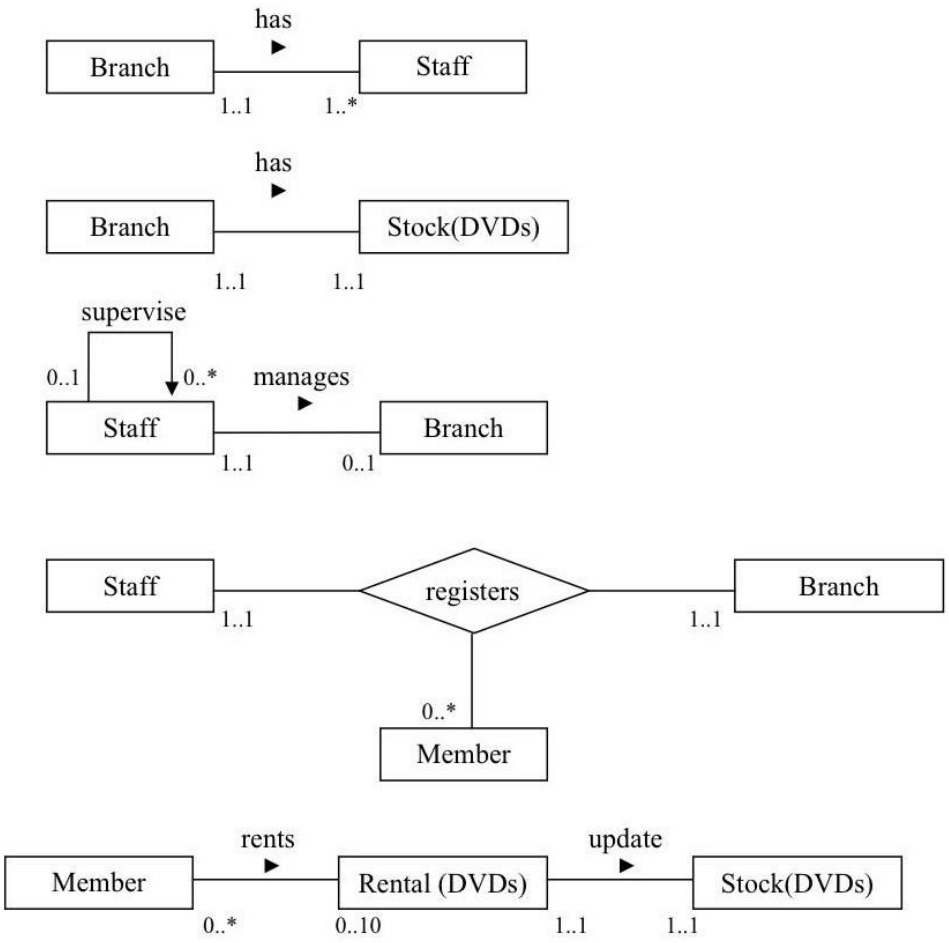
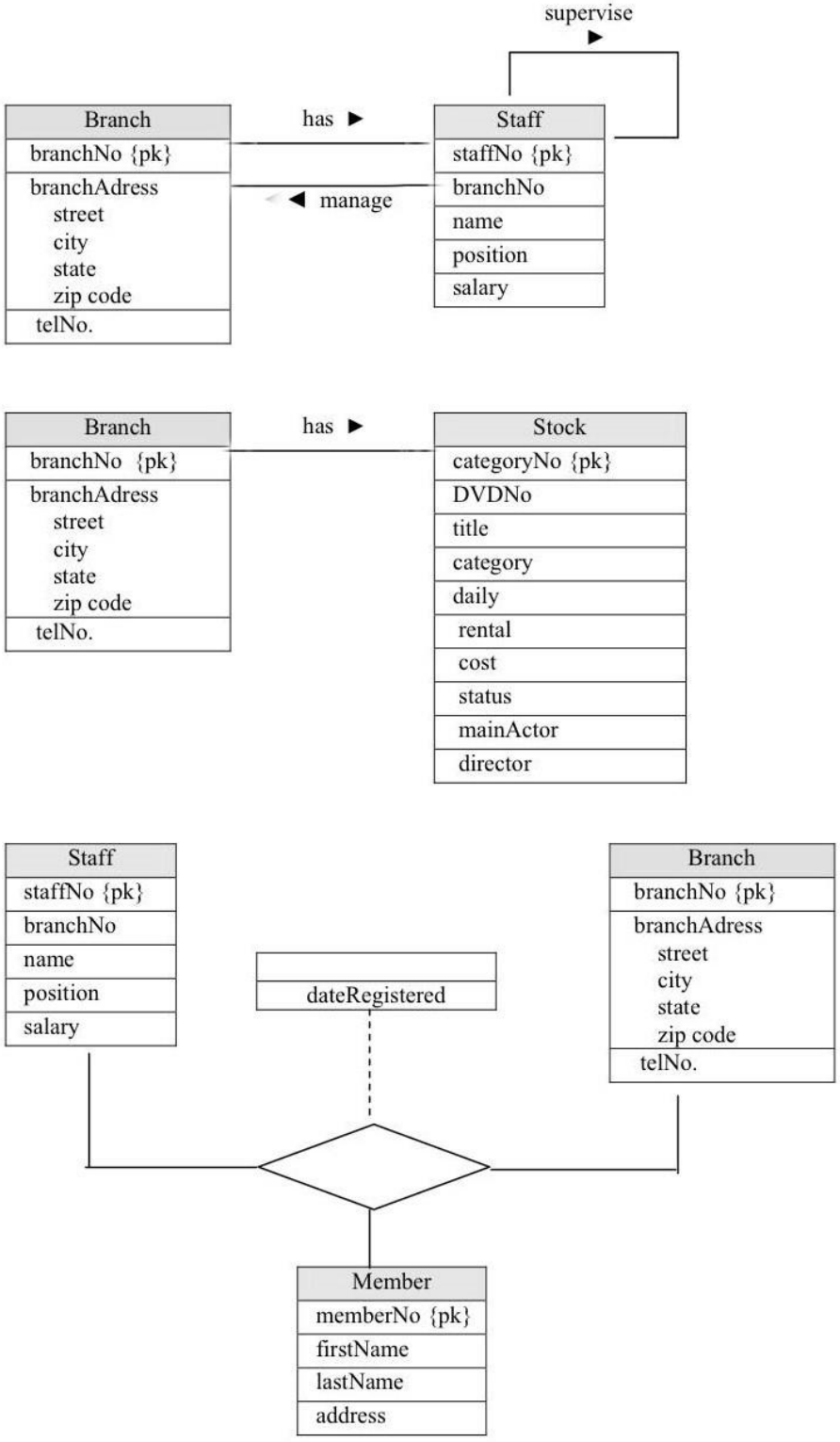


Fig: ER diagram of Multiplicity constraint

List of attributes (ER diagram)



Candidate and primary key attributes

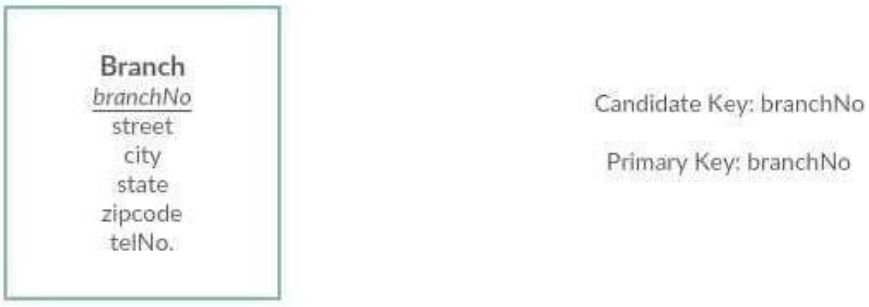


Fig: this is the entity of branch showing the primary key and candidate key.

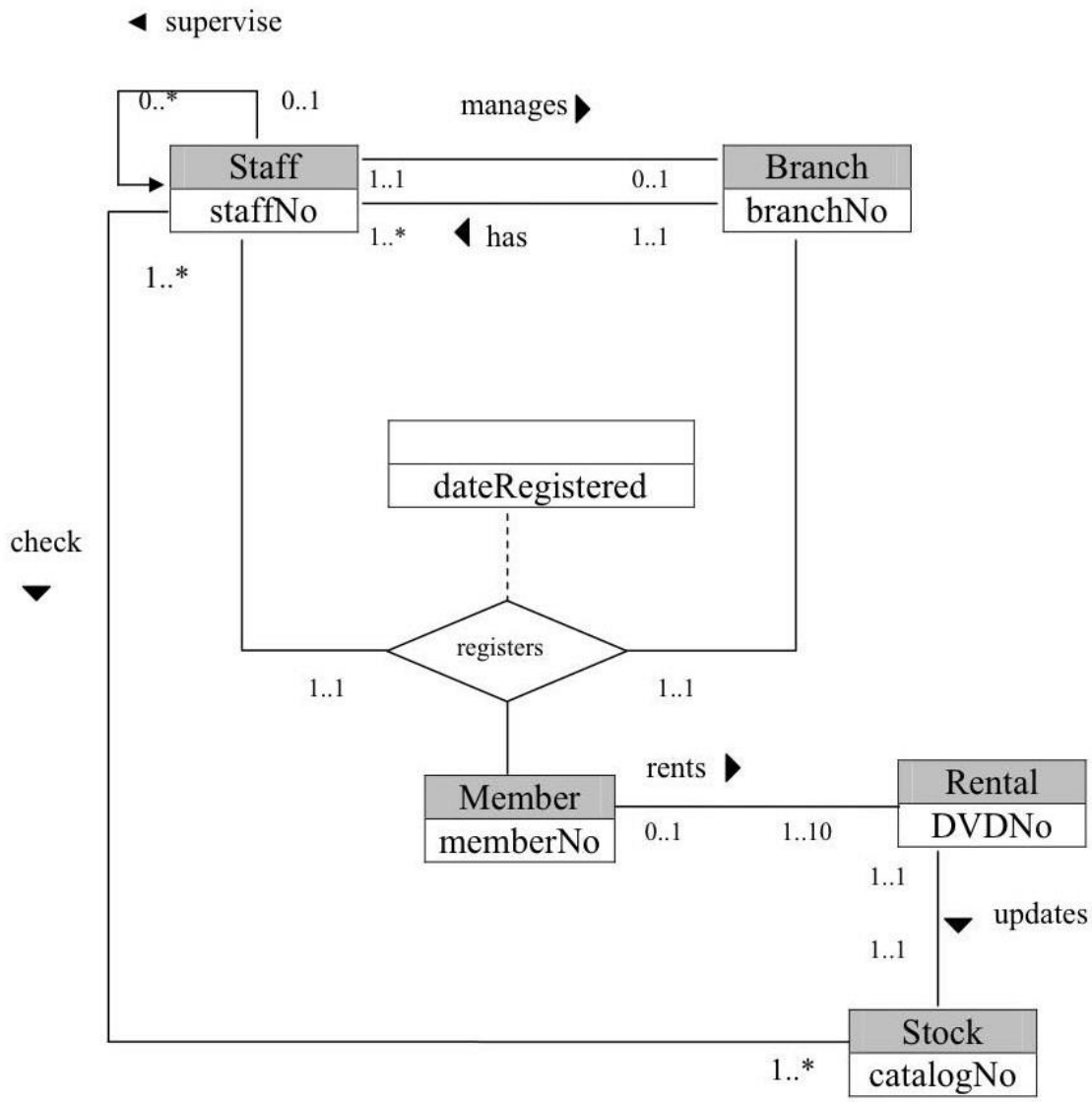
Fig: this is the entity of Staff showing the primary key and candidate key.

Fig: this is the entity of Member showing the primary key and candidate key.

Fig: this is the entity of Stock(DVDs) showing the primary key and candidate key .

Fig: this is the entity of Rental(DVDs) showing the primary key and candidate key.

ER diagram for video rental company



Here, Staffs are supervised by a supervisor. If there are no staff then there won't be a need for a supervisor also. A staff member can be assigned to either a single branch or no branch at all. And a branch needs to have either one or more staff.

A staff and members are registered to a branch and the registered members can be viewed by the staffs. The registered members are eligible to rent one or more videos. The rented videos are updated in the stock's catalog number. Both the staff and registered members can check the video stock.

Specification

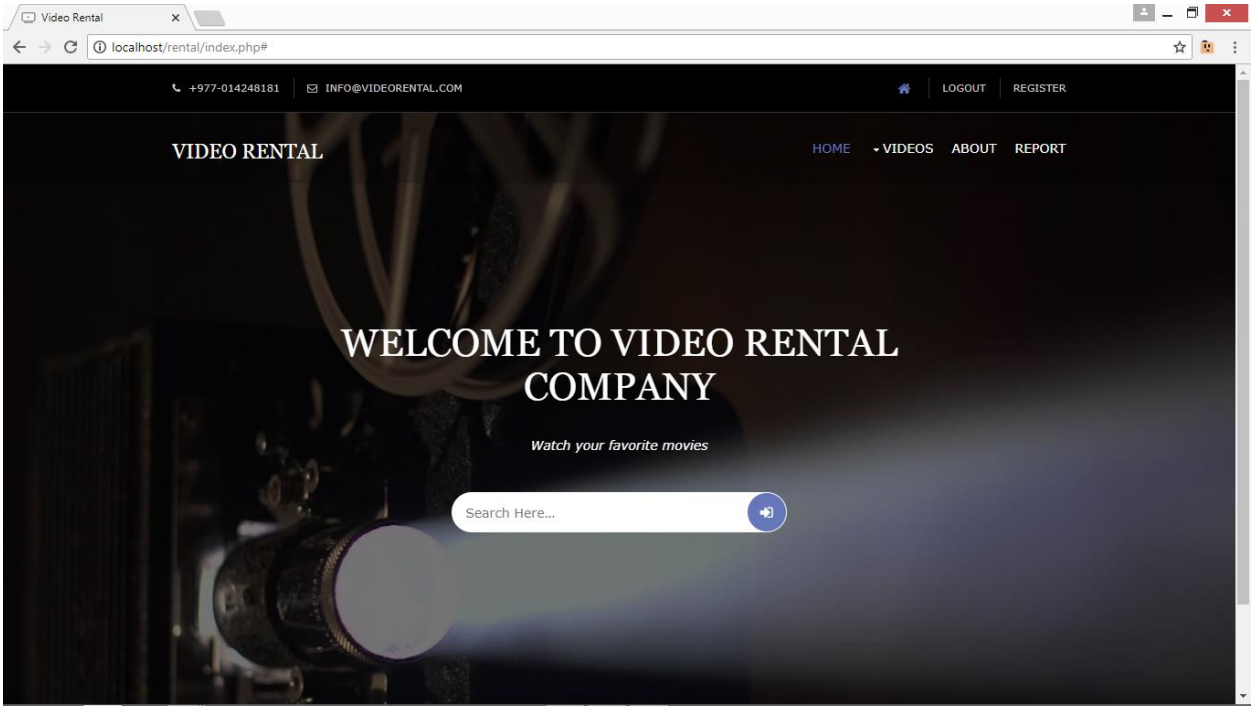


Fig: Home page

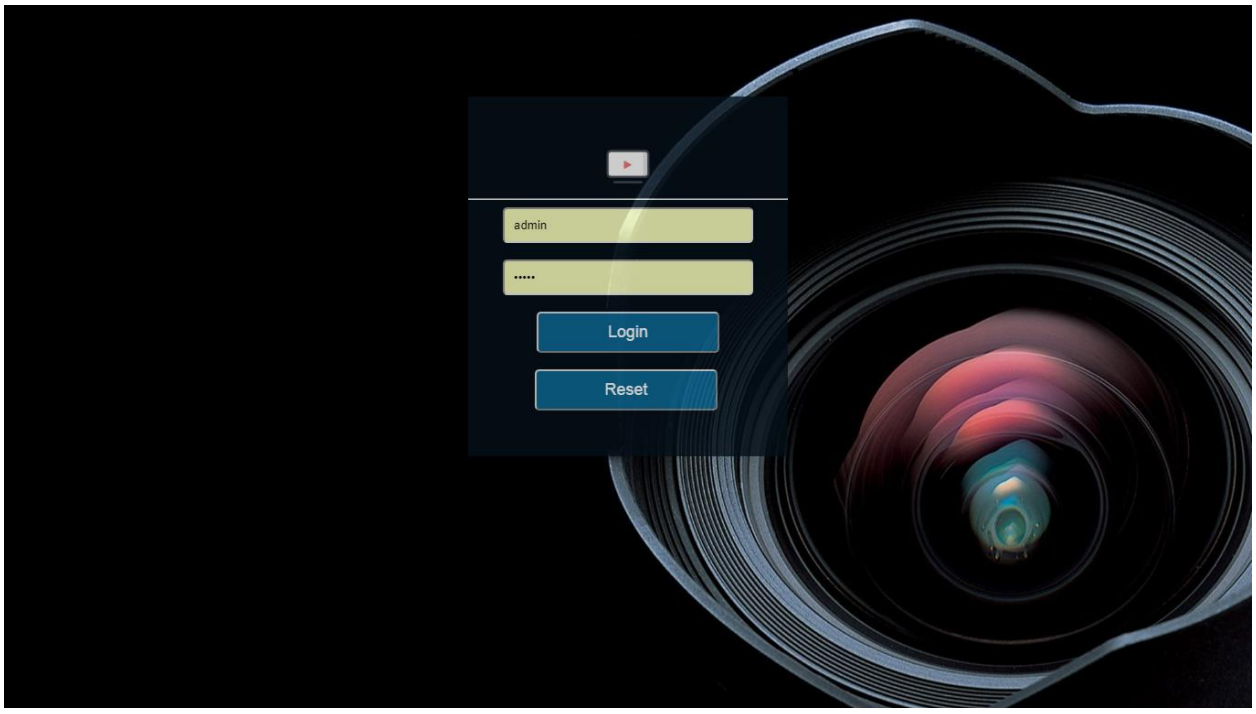


Fig: Login Screen

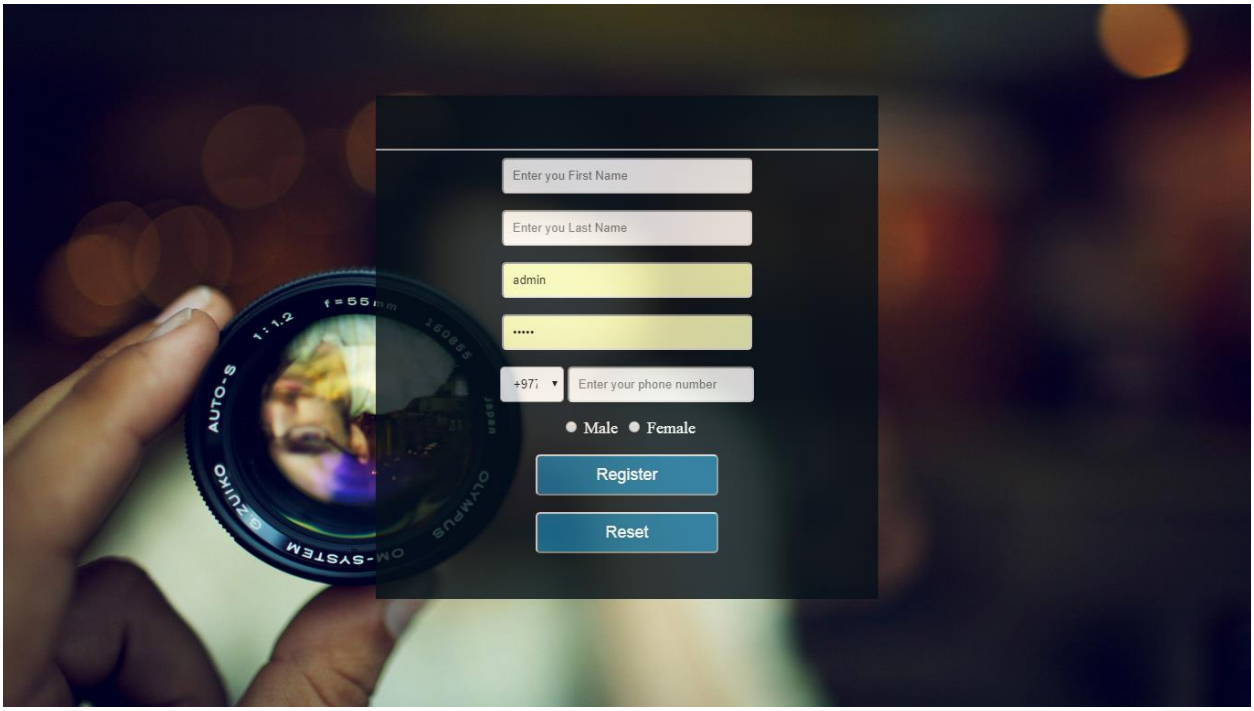


Fig: Register Screen

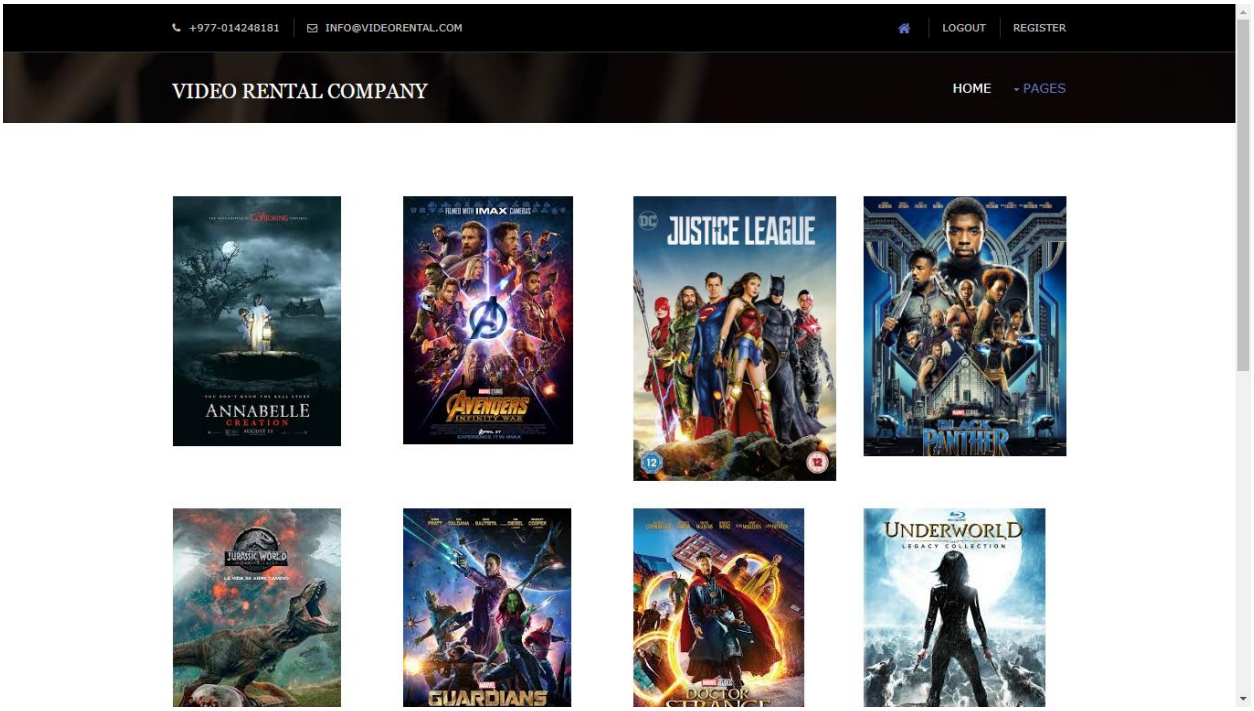


Fig: Movie List

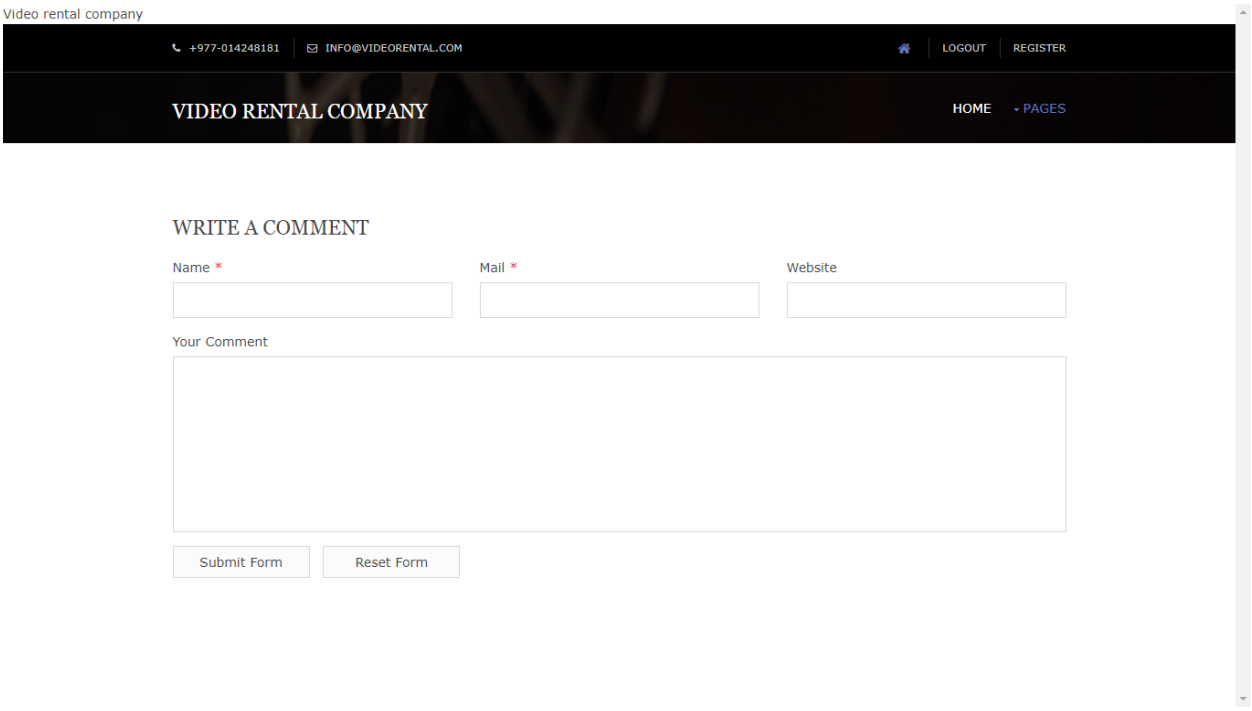


Fig: Feedback Form

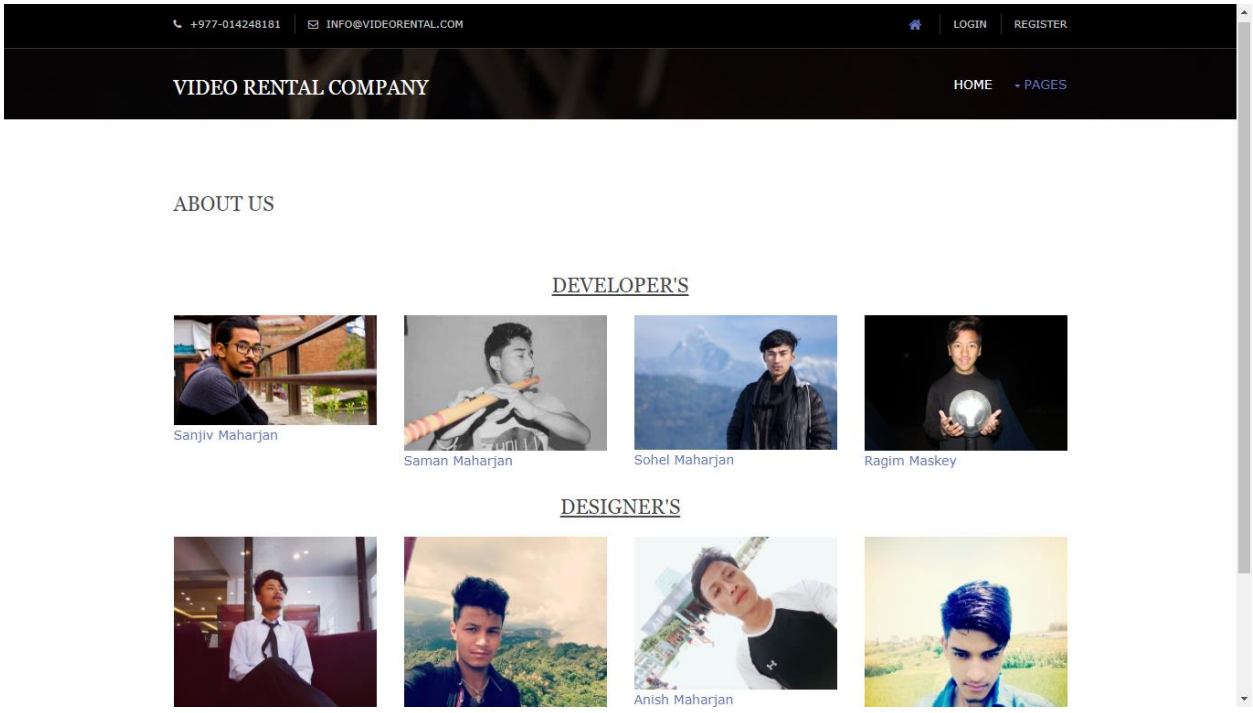


Fig: About us

Conclusion

We created a database application with a web interface for a video rental company. We worked step by step to create the database application as we solved all the problems regarding the creation of the application. This report is a step by step process of creating a database from the requirements provided to us. We worked as a team for the completion of this project by dividing roles and later combining it.