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| Module Code: ISAD253SL | Module Name: Databases | |
| Coursework Title: | | |
| Deadline Date:  04/01/2021 | | Member of staff responsible for coursework: Naji Saravanabavan |
| Programme: | | |
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# Section 01

## Basic Introduction

In our Library Service System there is one main library which contains four different branches based on the popularity of the books available; they are Academic Library, Public Library, School Library and Special Library. In the main library it is allowed to register any member but in the branch libraries registration is done according to the age limit and the occupation of the members.

Members are under five categories named Pre-school children, students, undergraduate, postgraduate and others.

There are mainly nine positions in our Library Service System who employees; they are Librarian, Director, Medical Librarian, Media Specialist, Clerk, Assistant, Library Aide and Archivist. For Employee entity there is a multi-valued attribute named qualification. We record the publisher details as well for each book.

Whenever a member borrows a book, we record the issue-date, due-date and the return-date.

## EER diagram

Diagram

Description automatically generated

Figure 1

Assumptions:

* This library service system has generalized into four branch libraries named as Academic, Public, School and Special.
* ISBN\_no in the copy entity is the Foreign Key of the copy entity.
* Pub\_ID in the book entity is the Foreign Key of the book entity.
* Qualification attribute under employee entity is a multi-valued attribute. Employees have been generalized into nine positions.
* Location attribute under Library entity is a multi-valued attribute.
* Members have been generalized into four categories named as student, undergraduate, postgraduate and others. As a library service system this is very easy for us to provide what each member needs.

## **Relational Mapping**

Diagram

Description automatically generated

Figure 2

## Normalization

Figure 3

**Data Dictionary**

Library

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P/F | Field Name | Description | Data Type | Field Size |
| P | L\_no | Each library has a unique number  E.g. Main Library = 01 | Integer | 2 |
|  | Name | Name of each library | Text | 15 |
|  | Location | Location of each library and it is multi-valued attribute | Text | 20 |

Copy

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P/F | Field Name | Description | Data Type | Field Size |
| P | C\_no | Each copy has a unique number | Integer | 5 |
| F | ISBN\_no | Each book has a unique number | Integer | 5 |
|  | C\_price | Price of each copy | Varchar |  |
|  | C\_location | Location of each copy | Text | 20 |

Book

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P/F | Field Name | Description | Data Type | Field Size |
| P | ISBN\_no | Each book has a unique number | Integer | 5 |
| F | Pub\_ID | Each publisher has a unique ID | Integer | 3 |
|  | B\_name | Name of each book | Text | 20 |
|  | Author | Author of each book | Text | 15 |
|  | B\_price | Price of each book |  |  |
|  | Title | Title of each book | Text | 15 |
|  | Availability | Whether the book is available or not | Text | 10 |

Member

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P/F | Field Name | Description | Data Type | Field Size |
| P | ID code | Unique number for each member | Auto number | 05 |
|  | M\_name | Name of each member | Text | 20 |
|  | M\_age | Age of each member | Integer | 02 |
|  | M\_gender | Gender of each member (Male/Female) | Text | 05 |
|  | M\_contactno | Contact number of each member | Integer | 10 |
|  | M\_address | Address of each member | Varchar | 20 |
|  | Memb\_date | Start date of membership |  |  |
|  | Exp\_date | Expiry date of membership |  |  |
|  | NIC | National Identity Card number of each member | Integer | 10 |

Employee

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| P/F | Field Name | Description | Data Type | Field Size |
| P | E\_ID | Unique ID number for each Employee | Auto Number | 05 |
|  | E\_Name | Name of each Employee | Text | 20 |
|  | E\_age | Age of each Employee | Integer | 02 |
|  | E\_address | Address of each Employee | Varchar | 20 |
|  | E\_gender | Gender of each Employee (Male/Female) | Text | 05 |
|  | E\_Contactno | Contact number of each Employee | Integer | 10 |
|  | Salary | Salary of each Employee | Float | 07 |
|  | Qualification | Qualifications of each Employee, this can be multi-valued | Text | 30 |

# Section 02

## Creating Table

## Database Diagram

Diagram

Description automatically generated

## Screenshots showing all the tables

# Section 03

## Trigger

## Function

## View

## Procedure

# Section 04

## Worthy features

## Together with any shortcomings

## How they might be resolved

## Screenshots of everything remaining