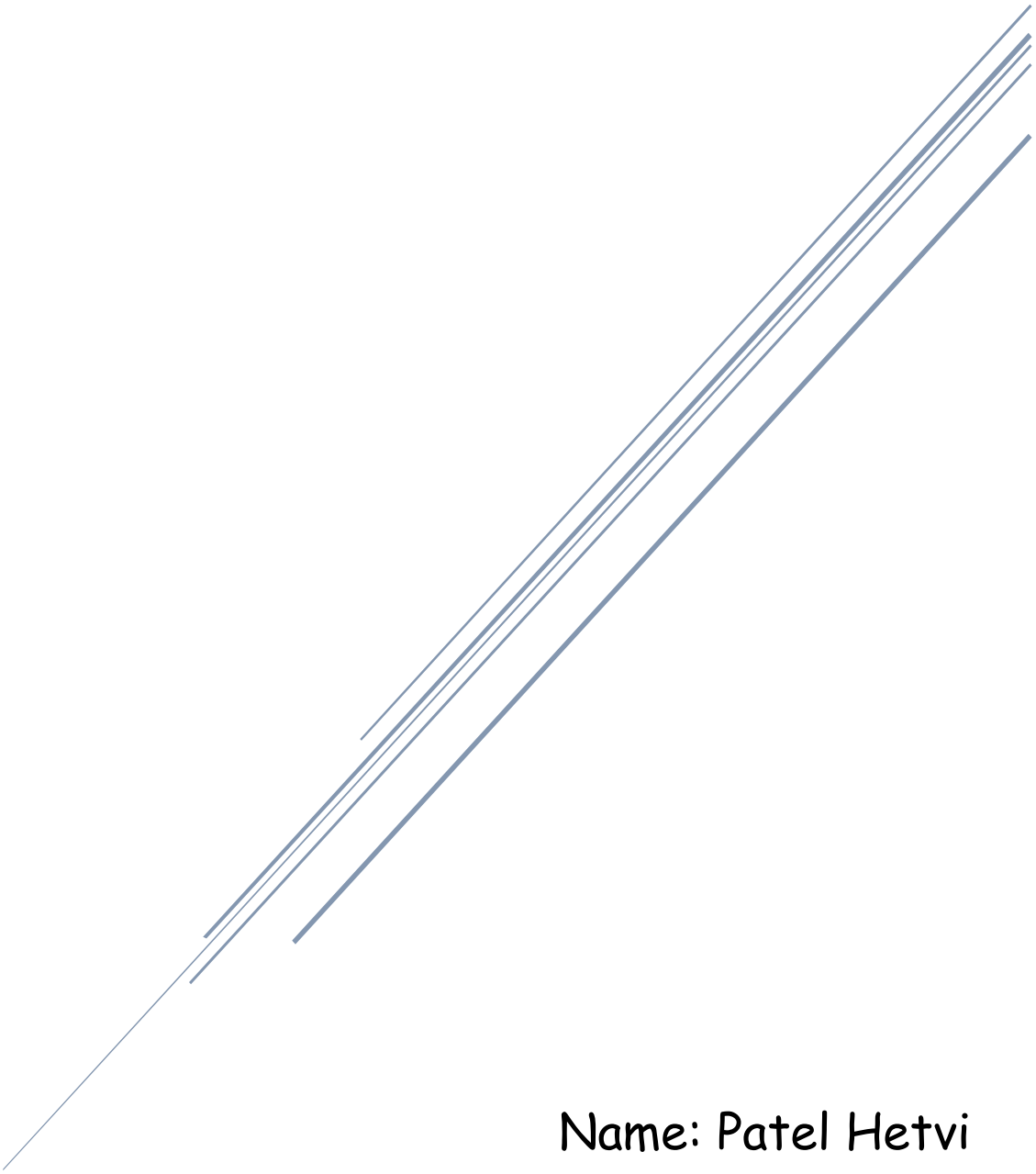
OPE

Library Management System



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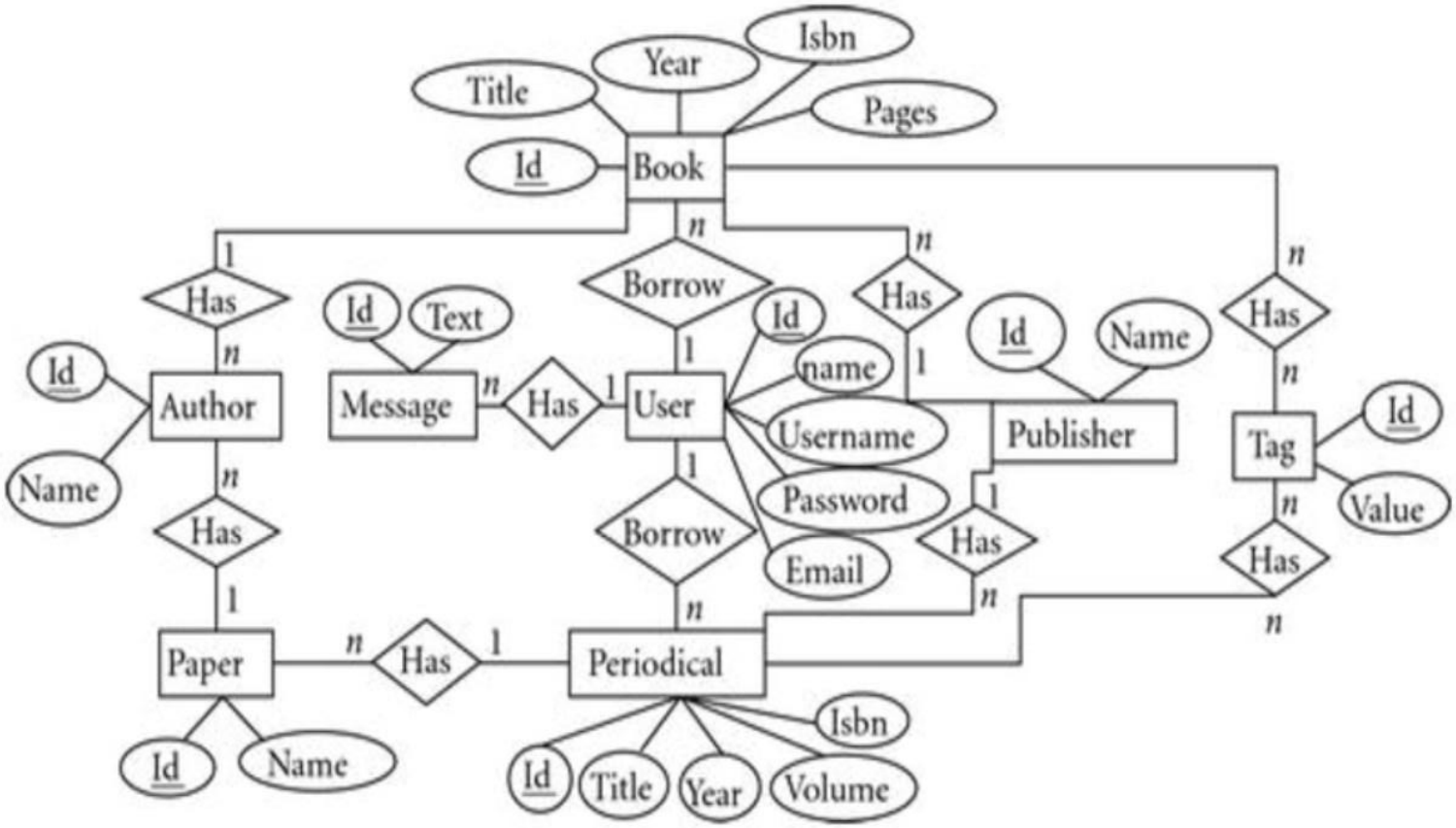
Introduction

The Database Library System is intendedto Automate the library activities such as creating a new borrower, giving books to the borrowers, maintaining the details of all the item that were available in the books .

This also helps the librarians by providing information such as total copies available each book, list of books that belong to a particular category (Short, Long Loan, Reference items, etc).


Isbn
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Tables

Book_Details:

This is the master table for all the books that are available in the Library. This table contains the complete list of books that are available in the library. Each Book id provided with a unique ISBN which serves as a primary key. The book details include the ISBN, Book Title, the year in which thatparticular book was published, the type of binding either soft cover or hard cover and the category.

Columns:

ISBN: This is unique ID given to every book. Sincethere may be a large no. of books with same TITLE,this ISBN no. will help us to distinguish between books of same title.

Book_Title: Provides the name of the book.

Publication_year: Contains the year of publicationin ‘YY’ format (eg:2009à09)

Language: Contains the language in which thisbook was published.

Category_Type:

This column contains the Category ID whose detailscan be fetched form the category_master table. Thecategory ID is a Unique number given to each category.

Binding _Id:

This column contains the Binding ID whose detailscan be fetched form the Binding_Detailstable.The Binding ID is a Unique number given to each type Binding.

No_Of_Copies_Actual: This column contains the total no. of copies of each book that were initiallypresent.

No_Of_Copies_Current: This column contains the total no. of copies of each book that were currentlyavailable .

Binding_Details:

This table is the Master table for the binding types.This includes the binding ID and BindingName. The Binding ID serves as a primary key.

Columns:

Binding_ID: This column contains the Unique number that was given to each type of binding.

Binding_Name: This column give the names ofdifferent types of binding.

Category_Details:

This includes the Category ID and Category Name.The Category ID servers as a primary key.

Columns:
Category _ID: This column contains the Unique number that was given to each type of Category.
Category _Name: This column give the names ofdifferent types of categories.

Borrower_Details:

This table contains the details of all the persons who lent a book from the library. Each Student willbe given a Unique borrower ID. All the library related activity for a particular person will be captured based on the Borrower ID. This table willbe used to track the borrowing records. The borrower ID will serve as a primary key here.

Columns:

Borrower_ID: Unique ID given to each Student.
Book_ID: This column contains the book ID whichwas give to the borrower.

Borrowed_From_Date: The date on which thebook was given a particular borrower.
Borrowed_To_Date: The date on which that bookwas supposed to be returned back or should be renewed.
Actual_Return_date: The date on which theborrower returned the book to the library.
Issued_by: The ID of the Librarian who issued bookto the borrower.

Student_Details:

This table contains the details of all the students they are eligible for availing Library facilities. Each student will be provided with a unique Student ID and Borrower ID. The student ID will be Primary Key,whereas Borrower_ID and Phone_no will be Unique.

Columns:

Student_id: Unique ID given to Each Student.
Student_Name: The Name of the Student.
Sex: Gender of the Student either Male or Female.
Date_Of_Birth: The Date of Birth of the student.

Borrower_ID: The borrower ID assigned to each student.
Department: This is contains student department.
Contact_Number: Contact number of the student.

Creating table “Book_Details”:

```
CREATE TABLE Book_Details
1.(
2. ISBN_Codeint PRIMARY KEY,
3. Book_Titlevarchar(100),
4. Language varchar(10),
5. Binding_Idint,
6. No_Copies_Actualint,
7. No_Copies_Currentint,
8. Category_idint,
9. Publication_yearint
10.)
```

Inserting Some Data in “Book_Details” :

```
INSERT INTO Book_details
    1.VALUES('0006','Programming
    Concept','English',2,20,15,2,2006);
```

Creating table “Binding_Details”:

```
CREATE TABLE Binding_details
    1.(
    2.Binding_idint PRIMARY KEY,
    3.Binding_Namevarchar(50)
    4.)
```

Inserting Some data in Binding Table:

```
INSERT INTO Binding_DetailsVALUES(1,'McGraw Hill);
    1.INSERT INTO Binding_DetailsVALUES(2,'BPB Publication');
```

All Data of Binding Table:

```
select  *from  binding_Details;
```

BINDING_ID	BINDING_NAME
1	McGraw Hill
2	BPB Publication

CREATING RELATIONSHIP BETWEEN BOOK AND BINDING TABLE:

```
ALTER TABLE BOOK_DETAILS
    1.ADD CONSTRAINT BINDING_ID_FK FOREIGN KEY(BINDING_ID)
    REFERENCES BINDING_DETAILS(BINDING_ID);
```

CHECKING RELATIONSHIP:

```
SELECTB.BOOK_TITLE, E.BINDING_NAME
    1.FROMBOOK_DETAILSB, BINDING_DETAILS E
    2.WHEREB.BINDING_ID = E.BINDING_ID;
```

BOOK_TITLE	BINDING_NAME
Introduction to database	McGraw Hill
Programming Concept	BPB Publication

CREATING CATEGORY TABLE:

```
CREATE TABLE CATEGORY_DETAILS
    1.(
    2.CATEGORY_IDINT PRIMARY KEY,
    3.CATEGORY_NAMEVARCHAR(50)
    4.)
```

INSERTING SOME DATA IN CATEGORY TABLE:

```
INSERT INTO CATEGORY_DETAILS VALUES(1,'DATABASE');
    1.INSERT INTO CATEGORY_DETAILS VALUES(2,'PROGRAMMING
    LANGUAGE');
```

BUILDING RELATIONSHIP BETWEEN BOOK & CATEGORY TABLE:

```
ALTER TABLE BOOK_DETAILS
    1.ADD CONSTRAINT CATEGORY_ID_FK FOREIGN KEY(CATEGORY_ID)
    REFERENCES CATEGORY_DETAILS(CATEGORY_ID);
```

CHECKING RELATIONSHIP:

```
SELECT B.BOOK_TITLE,E.CATEGORY_NAME
FROM BOOK DETAILS B,CATEGORY DETAILS E WHEREB.BINDING ID =
E.CATEGORY_ID;
```

BOOK_TITLE	CATEGORY_NAME
Introduction to database	Database
Programming Concept	Programming Language

CREATING BORROWER TABLE:

```
CREATE TABLE BORROWER_DETAILS
1.(
2.BORROWER_IDINT PRIMARY KEY,
3.BOOK_IDINT,
4.BORROWED_FROM DATE,
5.BORROWED_TO DATE,
6.ACTUAL_RETURN_DATE DATE,
7.ISSUED_BYINT
8.)
```

INSERTING SOME DATA IN CATEGORY TABLE:

```
INSERT INTO BORROWER_DETAILS VALUES(1,0004,'01-AUG-2014','7-AUG-2014','7-AUG-2014',1);
Insert into BORROWER_DETAILS VALUES(2,6,'02-Aug-2014','8-Aug-2014',NULL,1);
```

Building Relation Between Book & Borrower Table:

```
ALTER TABLE Borrower_details ADD CONSTRAINT Book_Id_FK FOREIGN KEY(Book_Id) REFERENCES Book_Details(ISBN_Code);
```

Checking Relationship:

```
selectBorrower_Details.Borrower_id,Book_Details.Book_title
fromBorrower_Details,Book_Details where Borrower_Details.book_id=Book_Details.ISBN_Code
```

BORROWER_ID	BOOK_TITLE
1	Introduction to database
2	Programming Concept

Creating Student Table:

```
Create TABLE Student_Details
    1.(
    2.Student_Idvarchar(10) PRIMARY KEY,
    3.Student_Namevarchar(50),
    4.Sex Varchar(20),
    5.Date_Of_Birth date,
    6.Borrower_Idint,
    7.Department varchar(10),
    8.contact_Numbervarchar(11)
    9.)
```

Inserting Some Data in Student Table:

```
Insert into STUDENT_DETAILS values ('13-23059-
1','Ahmed,Ali','Male','05-Oct-1995',1,'CSSE','01681849871');
```

```
    1.Insert into STUDENT_DETAILS values ('13-23301-1','Morol
    MD.Kishor','Male','03-Jan-1994',2,'CSE','01723476554');
```

All Data of Student Table:

```
select *from student_details
```

STUDENT_ID	STUDENT_NAME	SEX	DATE_OF_BIRTH	BORROWER_ID	DEPARTMENT	CONTACT_NUMBER
13-23059-1	Ahmed,Ali	Male	05-OCT-95	1	CSSE	01681849871
13-23301-1	MOrol MD.Kishor	Male	03-JAN-94	2	CSE	01723476554

Building Relationship between student and Borrower table:

```
ALTER TABLE student_details
```

```
    1.ADD CONSTRAINT borrower_id_FK FOREIGN KEY(Borrower_Id)
    REFERENCES Borrower_Details(Borrower_Id);
```

Checking Full Relationship:

```
select student.student_id, student.student_name, book.Book_Title,
staff.staff_name, b.Borrowed_To

fromstudent_Detailsstudent, Staff_Detailsstaff,Borrower_Detailsb,
book_details book wherestudent.Borrower_id = b.Borrower_id and
book.ISBN_Code= b.book_id and b.Issued_by = staff.Staff_id;
```

STUDENT_ID	STUDENT_NAME	BOOK_TITLE	STAFF_NAME	BORROWED_TO
13-23059-1	Ahmed,Ali	Introduction to database	Tarek Hossain	07-AUG-14
13-23301-1	MOrol MD.Kishor	Programming Concept	Tarek Hossain	08-AUG-14