

Library database management project

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Library system:

Library database that organizes and stores books' data and information like name, writing date, author and location

Also give access to group them depending on their author or location and give it an easy dealing with books' data

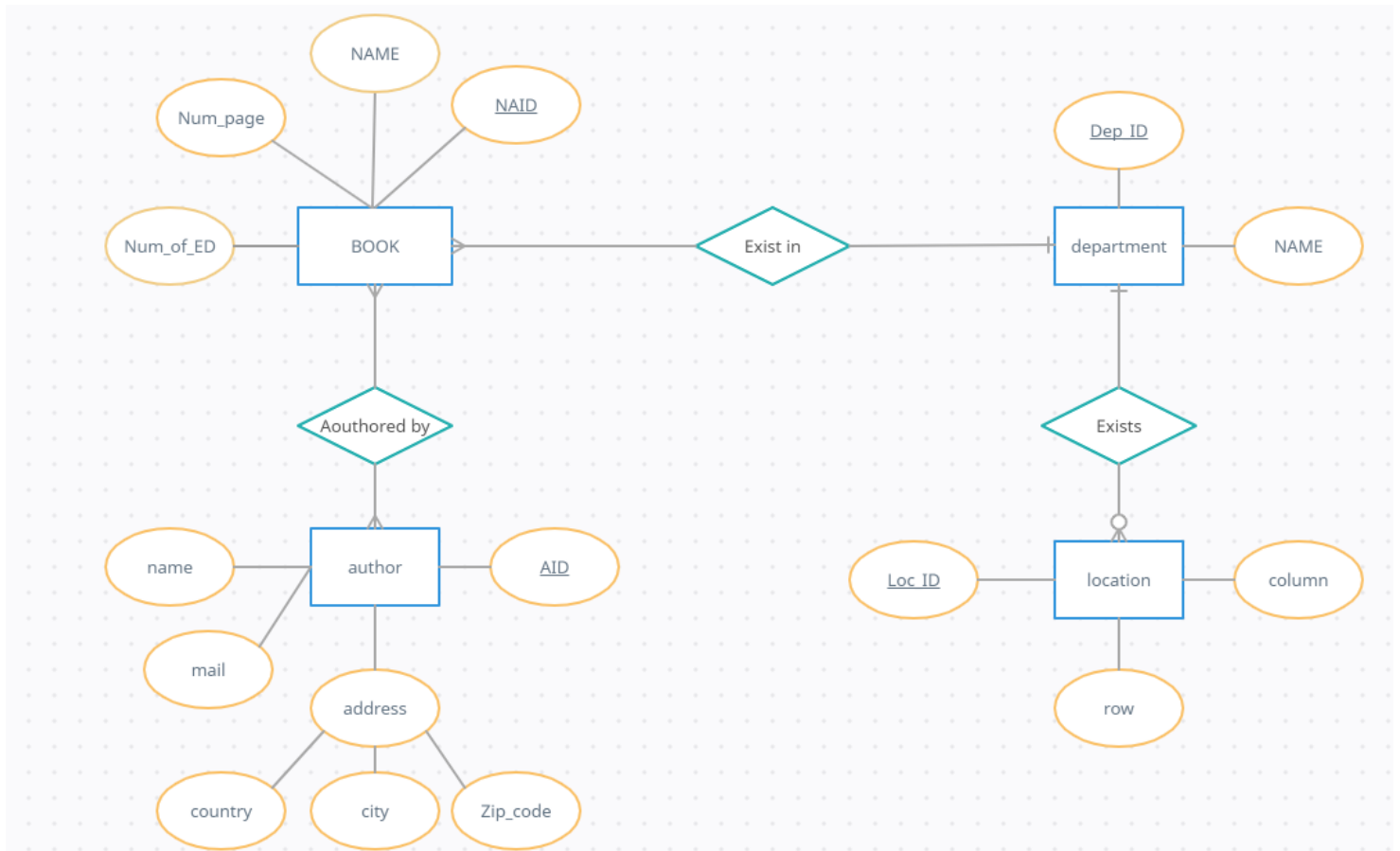
That database consists of 4 entities book, author, location, department

Each entity has some attributes as shown

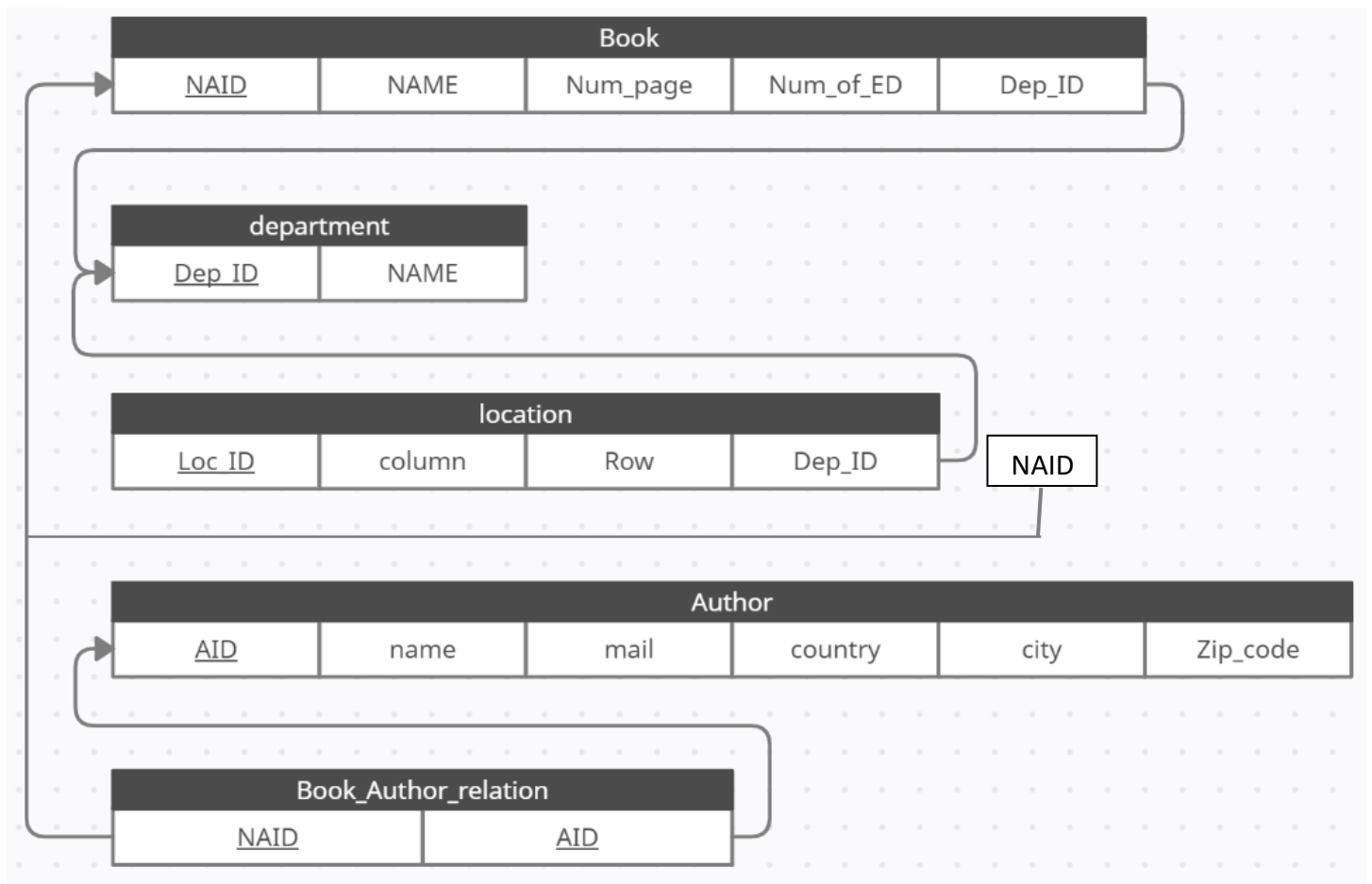
- 1- Each book consists of name, book national Id(unique), pages number, number of edition and writing date.

- 2- Each author consist of the author's name, birth date, author id (unique), address consist of city, zip code, country, and, mail or more .
- 3- The department consists of department name and department id(unique).
- 4-the Location consist of row and column(unique).
- 5-Each book authored by author or more.
- 6- Each book exists in a specific location.
- 7-Each location exists in the department.

ER Diagram:



Relational mapping:



SQL

Creating database and tables

```
CREATE DATABASE library;
```

```
CREATE TABLE book (ID int(4) PRIMARY KEY , Name varchar(10), Num_page int(4), Num_ed int (4), Dep_ID int (4) REFERENCES department);
```

```
CREATE TABLE department (Dep_ID INT(4) PRIMARY KEY , Name varchar(10));
```

```
CREATE TABLE location (Loc_ID INT(4) PRIMARY KEY , cloumn int(4), Row_ int(4), Dep_ID int(4) REFERENCES department, ID int(4) REFEREMCES book);
```

```
CREATE TABLE author (AID int (4) PRIMARY KEY , name varchar(10) , mail varchar(10), country varchar(10), city varchar(10), zipcode int (4) );
```

```
CREATE TABLE book_author(ID int (4) REFERENCES book , AID INT(4) REFERENCES author , PRIMARY KEY(ID,AID));
```

Search(select column by name)

```
SELECT book.ID,book.Name,book.Num_page,book.Num_ed,department.Name as dn , location.cloumn,location.Row_,author.name
FROM book,location,author,department,book_author WHERE book.Dep_ID = department.Dep_ID and
location.Dep_ID = department.Dep_ID and book_author.AID = author.AID and book_author.ID= book.ID AND book.name = 'NAME';
```

ADDING DATA

Frist , WEB has been chosen to fill the database

And to add data first a php connection must be done

So a file named connect.php created then that code applies the connection between the web and the database

```
<?php
$servername = "localhost";
$username = 'root';
```

```

$password = '';
$database = 'library';

// Create connection
$conn = new mysqli($servername, $username, $password, $database);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
?>

```

Adding data with HTML form by php that takes values from the web and fill the database tables with that code

```

<?php
include("connect.php");
if(isset($_POST['add'])){
    $ID = $_POST['ID'];
    $Name = $_POST['Name'];
    $Num_page = $_POST['Num_page'];
    $Num_ed = $_POST['Num_ed'];
    $Dep_ID = $_POST['Dep_ID'];
    $name1 = $_POST['name1'];
    $Loc_ID = $_POST['Loc_ID'];
    $cloumn = $_POST['cloumn'];
    $Row_ = $_POST['Row_'];
    $AID = $_POST['AID'];
    $name2 = $_POST['name2'];
    $mail = $_POST['mail'];
    $country = $_POST['country'];
    $city = $_POST['city'];
    $zipcode = $_POST['zipcode'];
    $query1="INSERT into book
VALUES('$ID','$Name','$Num_page','$Num_ed','$Dep_ID')";
    $query2="INSERT into department VALUES('$Dep_ID','$name1')";
    $query3="INSERT into location
VALUES('$Loc_ID','$cloumn','$Row_','$Dep_ID')";
    $query4="INSERT into author
VALUES('$AID','$name2','$mail','$country','$city','$zipcode')";
    $query5="INSERT into book_author VALUES('$ID','$AID')";
    mysqli_query($conn,$query1);
    mysqli_query($conn,$query2);
    mysqli_query($conn,$query3);
    mysqli_query($conn,$query4);
    mysqli_query($conn,$query5);
}

```

?>

HTML form code

```
<!DOCTYPE html>
<html lang="en">
<head>
  <link rel="stylesheet" href="./style.css">
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>Document</title>
</head>
<body>
  <div class="heading">
    <h1>Add Book</h1>
    <br>
  </div>
  <div class="form">
    <form action="add.php" method="post">
      <div>
        <label for="ID">book ID</label>
        <input type="text" id="ID" name="ID"> <br><br>
        <label for="Name">book name</label>
        <input type="text" id="Name" name="Name"><br><br>
        <label for="Num_page">number of pages</label>
        <input type="text" id="Num_page"
name="Num_page"><br><br>
        <label for="Num_ed">edetion number</label>
        <input type="text" id="Num_ed" name="Num_ed"><br><br>
      </div>
      <div>
        <label for="Dep_ID"> departmint id</label>
        <input type="text" id="Dep_ID" name="Dep_ID"><br><br>
        <Label for="name1">departmint name : </Label>
        <input type="text" id="name1" name="name1"> <br><br>
      </div>
      <div>
        <Label for="Loc_ID">location ID : </Label>
        <input type="text" id="Loc_ID" name="Loc_ID">
        <Label for="cloumn">column : </Label>
        <input type="text" id="cloumn" name="cloumn">
        <Label for="Row_">Row : </Label>
        <input type="text" id="Row_" name="Row_"><br><br>
      </div>
    </form>
  </div>
</body>
</html>
```

```

<div class ="author">

    <Label for="AID">Author ID : </Label>
    <input type="text" id="AID" name="AID"><br><br>
    <Label for="name2">Author Name : </Label>
    <input type="text" id="name2" name="name2"><br><br>
    <Label for="mail">Author mail : </Label>
    <input type="text" id="mail" name="mail"><br><br>
    <Label for="country">country : </Label>
    <input type="text" id="country" name="country">
    <Label for="city">city : </Label>
    <input type="text" id="city" name="city">
    <Label for="zipcode">Zip_code : </Label>
    <input type="text" id="zipcode" name="zipcode">
    <input type="submit" name ="add">

    </div>
</form>
</div>
</body>
</html>

```

The screenshot shows a web browser window with the URL `localhost/test/add.php`. The page has a teal header with the title "Add Book". Below the header is a form with the following fields:

- Book ID
- Book Name
- Number of Pages
- Edition Number
- Department ID
- Department Name :
- Location ID :

The form is displayed on a light gray background. The browser's taskbar at the bottom shows various application icons and the system clock indicating 16:00 on 5/5/2023.

✓ Showing rows 0 - 1 (2 total, Query took 0.0002 seconds.)

```
SELECT book.ID,book.Name,book.Num_page,book.Num_ed,department.Dep_ID,department.Name as departmentName , location.cloumn,location.Row_,author.AID,author.name,author.mail,author.country,au
book,location,author,department,book_author WHERE book.Dep_ID = department.Dep_ID and location.Dep_ID = department.Dep_ID and book_author.AID = author.AID and book_author.ID= book.ID;
```

☐ Profiling [\[Edit inline \]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

☐ Show all | Number of rows: 25 ▾ | Filter rows:

Extra options

ID	Name	Num_page	Num_ed	Dep_ID	departmentName	cloumn	Row_	AID	name	mail	country	city	zipcode
1	atlas	190	1	2	elahram	10	20	3	khaled taw	khaled.all	Egypt	alexandria	21648
2	math	200	2	5	aast	9	8	6	mohamed	mohamed@gm	Egypt	alexandria	21648

☐ Show all | Number of rows: 25 ▾ | Filter rows:

Searching php code

```
<?php
include("connect.php");
if(isset($_POST['search'])){
    $seach = $_POST['search1'];
    $query="SELECT
book.ID,book.Name,book.Num_page,book.Num_ed,department.Name as dn ,
location.cloumn,location.Row_,author.name
FROM book,location,author,department,book_author WHERE book.Dep_ID
= department.Dep_ID and
location.Dep_ID = department.Dep_ID and book_author.AID =
author.AID and book_author.ID= book.ID AND book.name = '$seach'";
    $sqldata = mysqli_query($conn,$query);
    if ($sqldata->num_rows > 0) {
        // output data of each row
        while($row = $sqldata->fetch_assoc()) {
            echo "id: " . $row["ID"]. " || - Name: " . $row["Name"].
" || - Numper of pages: " . $row["Num_page"]." || - edetion number:
" . $row["Num_ed"] .
" || - department: " . $row["dn"]." || - cloumn: " .
$row["cloumn"]." || - Row: " . $row["Row_"]." || - author name: "
. $row["name"] . "<br>";
        }
    } else {
        echo "0 results";
    }
}
?>
```

Searching html code

```
<!DOCTYPE html>
<html lang="en">
<head>
<link href="https://use.fontawesome.com/releases/v5.6.1/css/all.css"
rel="stylesheet">
  <link
href="https://fonts.googleapis.com/css2?family=Lato&display=swap"
rel="stylesheet">
  <link rel="stylesheet" href="./style.css">
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-
scale=1.0">
  <title>search</title>

</head>
<body>
  <form action="search.php" method = "post">
    <div class="wrap">
      <div class="search">

        <input type="text" id="search1" name="search1"
class="searchTerm" placeholder="Search...">
        <button type="submit" name ="search"
class="searchButton">
          <i class="fa fa-search"></i>
        </button>

      </div>
    </div>
  </form>
</body>
</html>
```

