CmpE 321 Introduction to Database Systems
2018 Spring
Assignment 3
Project Management System

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1 Introduction

In this assignment, we need to implement a project management system. It must have an web interface.

Administrators and project managers uses this system. Administrators updates (create, delete, modify) information about project managers, projects and employees. Project managers updates information about tasks. Admins create projects and assign them to project managers. Project managers creates tasks for their projects and assign them to employees.

A project can have multiple project managers. A project manager can manage multiple projects. A task belongs to one project and a project belongs to one task. A task can be assigned to multiple employees. A employee can do multiple tasks. However, an employee cannot be assigned to multiple tasks for the same day.

I used XAMPP for my project on a Windows machine. XAMPP is a PHP development environment. It installs Apache, PHP and MariaDB, which is a open source fork of MySQL. I did not use any frameworks.

2 Stored Procedures

2.1 Completed Projects

```
DELIMITER //
CREATE PROCEDURE completed ( projectManagerIDinput VARCHAR(30) )
BEGIN
IF projectManagerIDinput LIKE 'ALL' THEN
    SELECT *
    FROM   project
    WHERE  NOT EXISTS (SELECT *
                       FROM   task
                       WHERE  ADDDATE(StartDate, INTERVAL DayItTakes DAY) >= CURDATE()
                              AND project.ID = task.ProjectID)
           AND EXISTS (SELECT *
                       FROM   task
                       WHERE  project.ID = task.ProjectID);
ELSE
    SELECT *
    FROM   project
    WHERE  NOT EXISTS (SELECT *
                       FROM   task
                       WHERE  ADDDATE(StartDate, INTERVAL DayItTakes DAY) >= CURDATE()
                              AND project.ID = task.ProjectID)
           AND EXISTS (SELECT *
                       FROM   task
                       WHERE  project.ID = task.ProjectID)
           AND ID IN (SELECT ProjectID as ID
                      FROM   manageproject
                      WHERE  ProjectManagerID = CONVERT(projectManagerIDinput, INT));
END IF;
```

```
END//
DELIMITER ;
```

2.2 Incomplete Projects

```
DELIMITER //
CREATE PROCEDURE incomplete ( projectManagerIDinput VARCHAR(30) )
BEGIN
IF projectManagerIDinput LIKE 'ALL' THEN
SELECT *
FROM   project
WHERE  ID NOT IN(SELECT ID
                 FROM   project
                 WHERE  NOT EXISTS (SELECT *
                                    FROM   task
                                    WHERE  ADDDATE(StartDate, INTERVAL
                                           DayItTakes DAY)
                                           >=
                                           CURDATE(
                                           )
                                           AND project.ID =
                                               task.ProjectID)
                        AND EXISTS (SELECT *
                                    FROM   task
                                    WHERE  project.ID =
                                   task.ProjectID));
ELSE
SELECT *
FROM   project
WHERE  ID NOT IN
       (
              SELECT ID
              FROM   project
              WHERE  NOT EXISTS
                     (
                            SELECT *
                            FROM   task
                            WHERE  ADDDATE(StartDate, INTERVAL DayItTakes DAY)
                                   >= CURDATE()
                            AND    project.ID = task.ProjectID)
              AND    EXISTS
                     (
                            SELECT *
                            FROM   task
                            WHERE  project.ID = task.ProjectID)
              AND    ID IN
                     (
                            SELECT ProjectID AS ID
                            FROM   manageproject
                            WHERE  ProjectManagerID =
```

```
                                        CONVERT(projectManagerIDinput, INT)))
AND    ID IN
       (
              SELECT ProjectID AS ID
              FROM   manageproject
              WHERE  ProjectManagerID =
                     CONVERT(projectManagerIDinput, INT));

END IF;
END//
DELIMITER ;
```

3 Triggers

3.1 For Project

If a project is added, a project manager with the least project assignment on him/her should be automatically assigned to the newly added project.

```
CREATE TRIGGER addProMantoProject
AFTER INSERT
ON project
FOR EACH ROW
INSERT INTO manageproject(ProjectID, ProjectManagerID)
SELECT NEW.ID, result.ID
FROM (
  SELECT user.ID, 0 as ProjectCount
  FROM user
  WHERE user.AdminRole=0 AND
        NOT EXISTS (SELECT manageproject.*
                    FROM manageproject
                    WHERE user.ID = manageproject.ProjectManagerID)
  UNION
  SELECT ProjectManagerID as ID, COUNT(ProjectID) as ProjectCount
  FROM manageproject
  GROUP BY manageproject.ProjectManagerID
  ORDER BY ProjectCount
) as result
LIMIT 1;
```

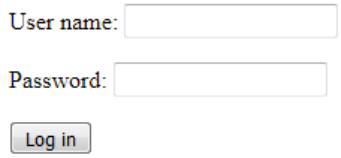
3.2 For Employee

If an employee gets deleted all the task assignments on him/her should also be deleted.

```
CREATE TRIGGER deleteEmployeeAssignments
AFTER DELETE
ON employee
FOR EACH ROW DELETE FROM dotask WHERE EmployeeID = OLD.ID;
```

4 Interface

4.1 Login



4.2 Admin Panel

4.3 Project Manager Panel

Welcome

Tasks

Task Assignments

Completed Projects

Incomplete Projects

Click here to log out.

4.4 Project Table

Create a new record

Operations	ID	Name	Start Date
	1	First Project	2018-05-07
	2	Second	2018-05-15
	3	newpro	2018-05-21
	4	asf	2018-05-22
	5	asfssf	2018-05-18

Go back

4.5 Adding Project

Name:

Start Date: e.g. 2018-05-27

Create Record

4.6 Editing Project

ID: 1

Project name: First Project

Start Date: 2018-05-07

Save Changes

4.7 Deleting Project

Are you sure you want to delete the following record?

ID: 1

Project name: First Project

Start Date: 2018-05-07

Delete Record

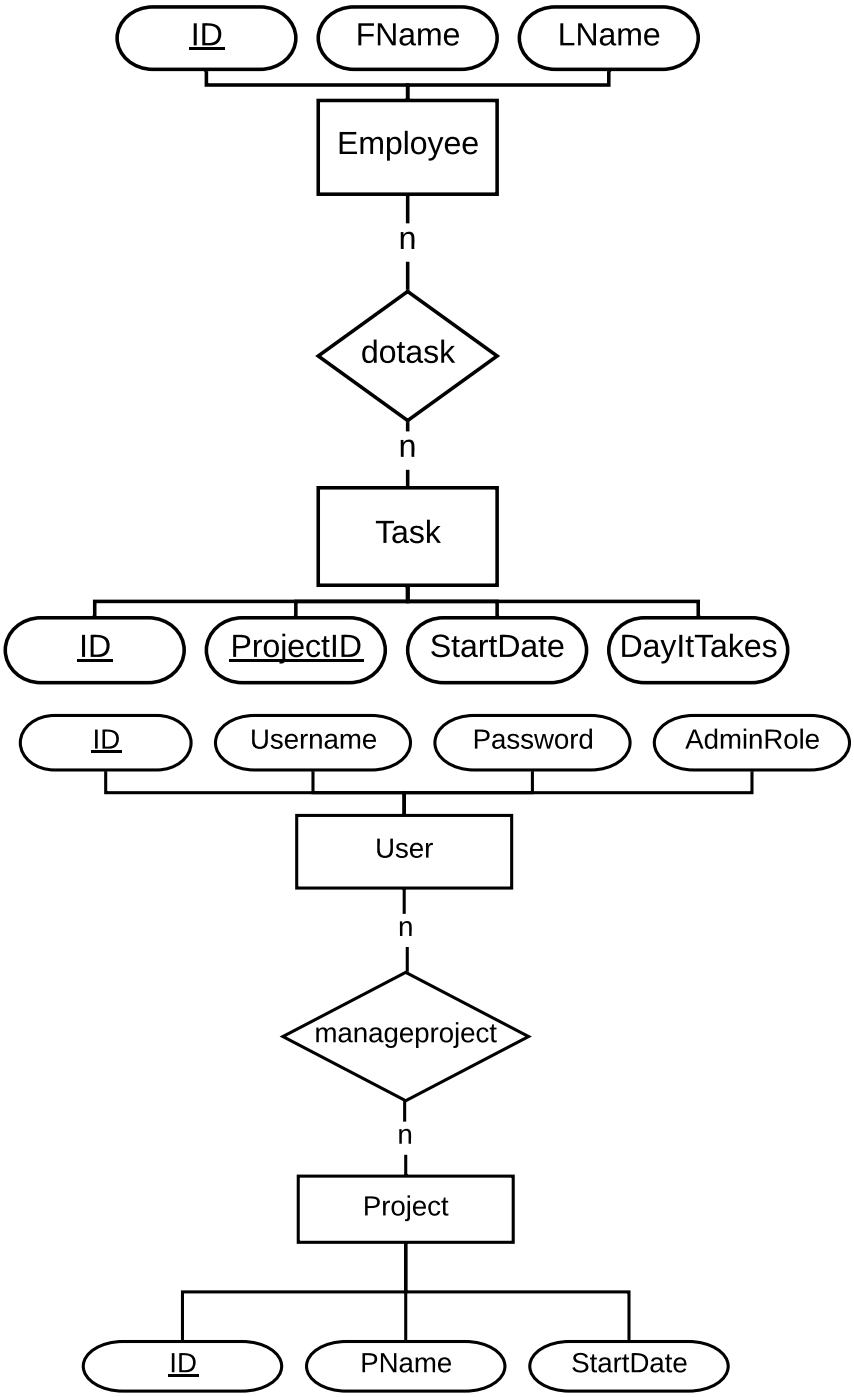
4.8 Stored Procedure for Completed Projects

Project Manager ID: 3

See completed projects

Go back

5 Database


ID
FName
LName
Employee
n
dotask
n
Task
ID
ProjectID
StartDate
DayItTakes
ID
Username
Password
AdminRole
User
n
manageproject
n
Project
ID
PName
StartDate

6 Conclusion

In this assignment, I learned using raw SQL and PHP. I created a basic project management system. It is almost complete. The only thing that is not complete is when deleting a entity, I need to also delete the information related to it in the junction table.