Task Manager- Project Management Tool

Design and build the application to manage projects online.

The TaskManager application should support the following features:

1. Application should manage the user creation and role management.
2. There will be four user roles like site admin, project manager, developer and QA.
3. Site Admin can create new Project and assign project manager.
4. Project manager can assign developers and QAs to the project.
5. Project manager can create a Task. Task can be a Bug or New Feature.
6. Task can be assigned to a Developer.
7. Task can be in different status like: Open, Development, QA and closed.
8. Manager can list all the Tasks and manage the tasks.
9. Developer can view his own Tasks and add comments and assign to QA.
10. QA can test the Bug/Feature and close or add his comments and reopen the same.

**Entities**

1. User:

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Attribute Name | Category | Test Data / Info |
| 1 | UserId | Single Valued |  |
| 2 | UserName | Single Valued |  |
| 3 | Role | Multi Valued | Admin, PM, Dev or QA |
| 4 | Phone | Single Valued |  |
| 5 | Email | Single Valued |  |
| 6 | Password | Single Valued |  |

2. Project

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Attribute Name | Category | Test Data / Info |
| 1 | ProjId | Single Valued |  |
| 2 | Title | Single Valued |  |
| 2 | Description | Single Valued |  |
| 3 | Start Date | Single Valued |  |
| 4 | End Date | Single Valued |  |
| 5 | PM | Single Valued |  |
| 6 | Assigned to | Multi valued |  |

3. Task

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Attribute Name | Category | Test Data / Info |
| 1 | TaskId | SingleValued |  |
| 2 | Task Title | Single Valued |  |
| 3 | Description | Single Valued |  |
| 4 | Task Status | Single Valued | OPEN, INPROGRESS, RESOLVED, CLOSED |
| 5 | Assigndto | SingleValued |  |
| 6 | Task Type | Single Valued | Bug/Feature |
| 7 | Start date | Single Valued |  |
| 8 | End Date | Single Valued |  |

4. Comment

|  |  |  |  |
| --- | --- | --- | --- |
| S.No | Attribute Name | Category | Test Data / Info |
| 1 | Comment Id | Single Valued |  |
| 2 | Title | Single Valued |  |
| 3 | Description | Single Valued |  |
| 4 | CommentDate | Single Valued |  |
| 5 | CommentBy | Single Valued |  |
| 6 | ParentTaskId | Single Valued |  |

Relations

1. User 🡪 Role : 1 to 1
2. User 🡪 Project : M to N
3. User 🡪 Task : 1 to M
4. Task 🡪 Comment : 1 to M

**Tables**

1. Roles

|  |  |  |
| --- | --- | --- |
| RoleId | PK, NOT NULL, AUTO INCREMENT |  |
| RoleName | NOT NULL, UNIQUE, CHECK |  |

1. UserInfo

|  |  |  |
| --- | --- | --- |
| User Id | PK, NOT NULL, AUTO INCREMENT |  |
| User Name | NOT NULL |  |
| Role | FK with Role table |  |
| Email | NOT NULL, Unique |  |
| Password | NOT NULL, MAX LENGTH 10 |  |
| Phone | NOT NULL |  |

1. Project

|  |  |  |
| --- | --- | --- |
| ProjId | PK, NOT NULL, AUTO INCREMENT |  |
| Title | NOT NULL, UNIQUE |  |
| Description | NULL |  |
| Start Date | NOT NULL |  |
| End Date | NULL |  |

1. ProjectMember [Bridge Table]

|  |  |  |
| --- | --- | --- |
| MemberId | PK, NOT NULL, AUTO INCREMENT | 1 2 |
| UserId | NOT NULL, FK with User | Combination is UNIQUE |
| ProjId | NOT NULL FK with Project |

*TaskTypeMaster:*

|  |  |  |
| --- | --- | --- |
| TaskTypeId | PK, NOT NULL, AUTO INCREMENT |  |
| TaskTypeName | NOT NULL | OPEN, INPROGRESS, RESOLVED, CLOSED |

Task:

|  |  |  |
| --- | --- | --- |
| TaskId | PK, NOT NULL, AUTO INCREMENT |  |
| Task Title | NOT NULL, FK with User |  |
| Description | NULL |
| Assigned To | NOT NULL, FK with ProjectMember |  |
| Task Type | NOT NULL |  |
| StartDate | NULL |  |
| End Date | NULL |  |
| Task Status | NOT NULL FK with TaskTypeMaster |  |

Comment:

|  |  |
| --- | --- |
| Comment Id | PK , NOT NULL, AUTO |
| Title | NOT NULL |
| ParentTaskId | NOTNULL, FK with Task |
| TaskDescription | NULL |
| CommentBy | NOT NULL, FK with ProjectMember |
| CommentDate | NOT NULL |