2. Introduction of Project

1.1 Project Summary :

- **Project Name:** Task Organizer – Online Task Management System
- **Type of Application:** Single Platform Application(Windows)
- **Developers:** (1)Mansi Modi
  (2) Nirali Pardeshi
  (3) Nisha Patel
- **University:** Veer Narmad South Gujarat University
- **Internal Guide:** -
- **Front End:** ASP.NET (MVC)
- **Back End:** SQL Server 2019

2.2 Project Definition :

Task Organizer is a task management tool used by an individual, team, or organization to complete projects efficiently by organizing and prioritizing related tasks.

Task Organizer is used to manage your tasks, help with the estimation and scheduling, track dependencies, resources and milestones and help you make decisions when changes in priority are needed.

On this Platform, Users can interact with other Project Members and ask their query to solve it in an easy and effective way. All users can Track their Progress and take action to improve it.

On this Platform, Admin can create a project and assign it to Project Manager .It Manage project and assign it to Team leader .Team leader leads the project and assigns different tasks to Developers and They can manage their task and see task status.

2.3 Objective :

Task management is the process of managing a task through its life cycle. It involves planning, testing, tracking, and reporting.

Task management helps you plan your day and time without relying too much on others. It reduces the interdependence of tasks, making it easier for you to complete your work. You can simply check what needs to be done, ask questions where needed and work more efficiently.

2.4 Description of Each Module :

Admin

- **Signup**: Only Admin Can Signup Into The System.
- **Login**: Admin Can Login Into The System.
- **Project:** Admin can create Project ,Modify Project and Assign It to Project Manager.
- **Users Types:** Admin Can Add Project Manager,Team Leader and Developer.
- **Project Task:** Admin can Add Project Task.
- **Message :** Admin can pass messages and Reply to all Users.
- **User Profile** : Admin Can Edit his Profile.
- **Manage Data**: Admin Can Manage All Kinds Of Data.
- **View**: Admin Can View All Project Progress and all Task Progress.

Project Manager

- **Login**: Project Manager Can Login Into The System.
- **Project:** Project Manager Manage Project and Assign It to Team Leader.
- **Users Types:** Project Manager Can Add Team Leader and Developer.
- **Project Task:** Project Manager can Add Project Task and Raise Query Related Task.
- **Message :** Project Manager can pass messages and Reply to all Users.
- **User Profile** : Project Manager Can Edit his Profile.
- **Manage Data**: Project Manager Can Manage his/her Assign Project Data.
- **View**: Project Manager Can View All Project Progress that Assign to him/her and his/her Task Progress.

Team Leader

- **Login**: Team Leader Can Login Into The System.
- **Project:** Team Leader Lead Project.
- **Users Types:** Team Leader Can Add Developer.
- **Project Task:** Team Leader can Add Project Task ,Raise Query Related Task and Assign task to Developer.
- **Message :** Team Leader can pass messages and Reply to all Users.
- **User Profile** : Team Leader Can Edit his Profile.
- **Manage Data**: Team Leader Can Manage his/her Assign Project Data.
- **View**: Team Leader Can View All Project Progress that Assign to him/her and his/her Task Progress.

Developer

- **Login:** Developer Can Login Into The System.
- **Project:** Developer sees Project Data which is assigned to him/her.
- **Users Types:** Developer Can Add Developer.
- **Project Task:** Developer can Raise Query Related Task.
- **Message :** Developer can pass messages and Reply to all Users.
- **User Profile** : Developer Can Edit his/her Profile.
- **Manage Data**: Developer Can Manage his/her Assign Project Task Data.
- **View**: Developer Can View All Project Progress that Assign to him/her and his/her Task Progress.

2.5 Tools and Technology

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1. ASP.NET MVC 5

ASP.NET MVC is a web application framework developed by Microsoft. ASP.NET MVC is based on the Model View Controller (MVC) design pattern.

The ASP.NET MVC framework provides an alternative to the ASP.NET web forms pattern for creating web applications.The ASP.NET MVC framework is a lightweight,highly testable presentation framework that (as with Web Forms-based applications) is integrated with existing ASP.NET features, such as master pages and membership-based authentication. The MVC framework is defined in the System.Web.Mvc assembly.

Features of ASP.NET MVC 5

1. Scaffolding

Using this framework, you can quickly generate code that interacts with your data models. This feature reduces the amount of time required to build MVC application with standard data operations. Scaffolding uses code-first approach for data operations.

2. ASP.NET Identity

This allowed the application to store user's data in a SQL Server database. This membership model has changed over the years. The notion that a user can log-in by *only* using a user-name and password registered in the application, can now be ignored.

3. One ASP.NET

This system makes it easier to work with multiple frameworks like Web Forms, MVC, Web API etc., in a single project. So essentially using the *One ASP.NET* project system, you can use ASP.NET Web Forms and MVC together, and can easily add ASP.NET Web API and SignalR too; in the same Web application.

4. Bootstrap

In Visual Studio 2013, Twitter Bootstrap is added as the default user interface framework for an MVC application. Bootstrap is a free collection of HTML and CSS based design templates created at Twitter for designing forms, navigation, buttons, tables etc.

5. **Attribute Routing**

The beauty of MVC is in its routing feature. Routing is how ASP.NET MVC matches a URL to an action. In earlier versions of MVC, the routing expressions were provided in the Global.asax class in Application_start event.

6. **Filter overrides**

MVC 5 introduces Filter Overrides which is defined in the documentation as "You can now override which filters apply to a given action method or controller, by specifying an override filter. Override filters specify a set of filter types that should not run for a given scope (action or controller). This allows you to add global filters, but then exclude some from specific actions or controllers".

Benefits of ASP.NET MVC 5

1. **Testability :**

MVC framework provides good support toward testing during development of web applications.

2. **LightWeight :**

MVC framework reduces the bandwidth.

3. **More Control :**

We have more control over CSS,HTML and javascript relative to the older frameworks.

2. SQL SERVER 2019

SQL Server 2019 is designed to solve challenges of the modern data professional including:

- Store enterprise data in a data lake and offer SQL and Spark query capability overall data
- Reduce the need for Extract, Transform, and Load (ETL) applications by eliminating data movement
- Integrate and secure machine learning applications with scalable performance
- Reduce the need for application and query changes to gain a boost in performance
- Increase confidential computing of data through hardware enclaves
- Increase application and database uptime and availability through features like ADR (Advanced Database Recovery)
- Extend the power of the T-SQL language in a secure and robust fashion
- Run applications and deploy databases across multiple operating systems and platforms with compatibility
- Reduce the risk of upgrades while using new SQL capabilities when you are ready though inbuilt database compatibility levels

Features of SQL SERVER 2019

1. UTF-8 Support

SQL Server 2019 provides support for UTF-8 character encoding. We can now create a char or varchar column to store UTF-8 data. This feature improves data compatibility and performance improvements.

2. Vulnerability Assessment

We can use vulnerability assessment to track compliance of SQL Server instances and Azure SQL Database instances with recognized security best practices. We can implement using the reports shared by this tool. This provides easy to implement security compliance such as GDPR.

3. Environment Specification

3.1 Hardware Requirement

- **Android :** Android Devices with Android 5.0 API 21
- **Admin Panel :** Windows XP/Vista/7/8/8.1/10 with Web Browser

3.2 Software Requirement

- .NET framework 4.7.2
- Visual Studio 2022
- SQL SERVER 2019
- Microsoft SQL Server Management Studio (SSMS)

The tools & technology used in preparing this system are :

- **Front-end :** ASP.NET(MVC)
- **Back-end :** SQL Server
- **Environment :** Visual Studio Community 2019/2022
- **SmartDraw :** Data Flow Diagram and E-R Diagram

3.3 Development Description

4. Data Description

4.1 Database Design

USER

Field	Type	Constraints
UserId	Int	Primary Key
EmailID	Nvarchar(200)	
Password	Nvarchar(50)	
FirstName	Nvarchar(20)	
LastName	nVarchar(20)	
BirthDate	DateTime	
ContactNo	Int	
Gender	nVarchar(20)	
Address	nVarchar(max)	
UserType(enum)	Int	Enum

ProjectMaster

Field	Type	Constraints
ProjectID	Int	Primary Key
ProjectTitle	Nvarchar(200)	
Key	Nvarchar(20)	
Duration	Int	
UserID	Int	Foreign Key
Description	Nvarchar(400)	
StartDate	DateTime	
EndDate	DateTime	

ProjectAssignMaster

Field	Type	Constraints
ProjectAssignID	Int	Primary Key
UserID	Int	Foreign Key
projectID	Int	Foreign Key

TaskMaster

Field	Type	Constraints
TaskID	Int	Primary Key
AssigneeID	Int	Foreign key
ReporterID	Int	Foreign key
TaskType(enum)	Int	Enum
ProjectID	Int	Foreign key
TaskTitle	NVarchar(200)	
AttachmentID	Int	Foreign Key
Labels	Nvarchar(200)	
Priority(enum)	Int	
Status(enum)	Int	
StartDate	DateTime	
EndDate	DateTime	

TaskAssignMaster

Field	Type	Constraints
TaskAssignID	Int	Primary Key
TaskID	Int	Foreign Key
UserID	Int	Foreign Key

AttachmentMaster

Field	Type	Constraints
AttachmentID	Int	Primary Key
attachmentType	Int	Enum

CommentMaster

Field	Type	Constraints
commentID	Int	Primary Key
UserID	Int	Foreign Key
TaskID	Int	Foreign Key
commentQuestion	Nvarchar(MAX)	
commentAnswer	Nvarchar(MAX)	
AttachmentID	Nvarchar(MAX)	Foreign Key

CommentReplyMaster

Field	Type	Constraints
commentReplyID	Int	Primary Key
CommentID	Int	Foreign Key
AttachmentID	Int	Foreign Key
SenderID	Int	Foreign Key

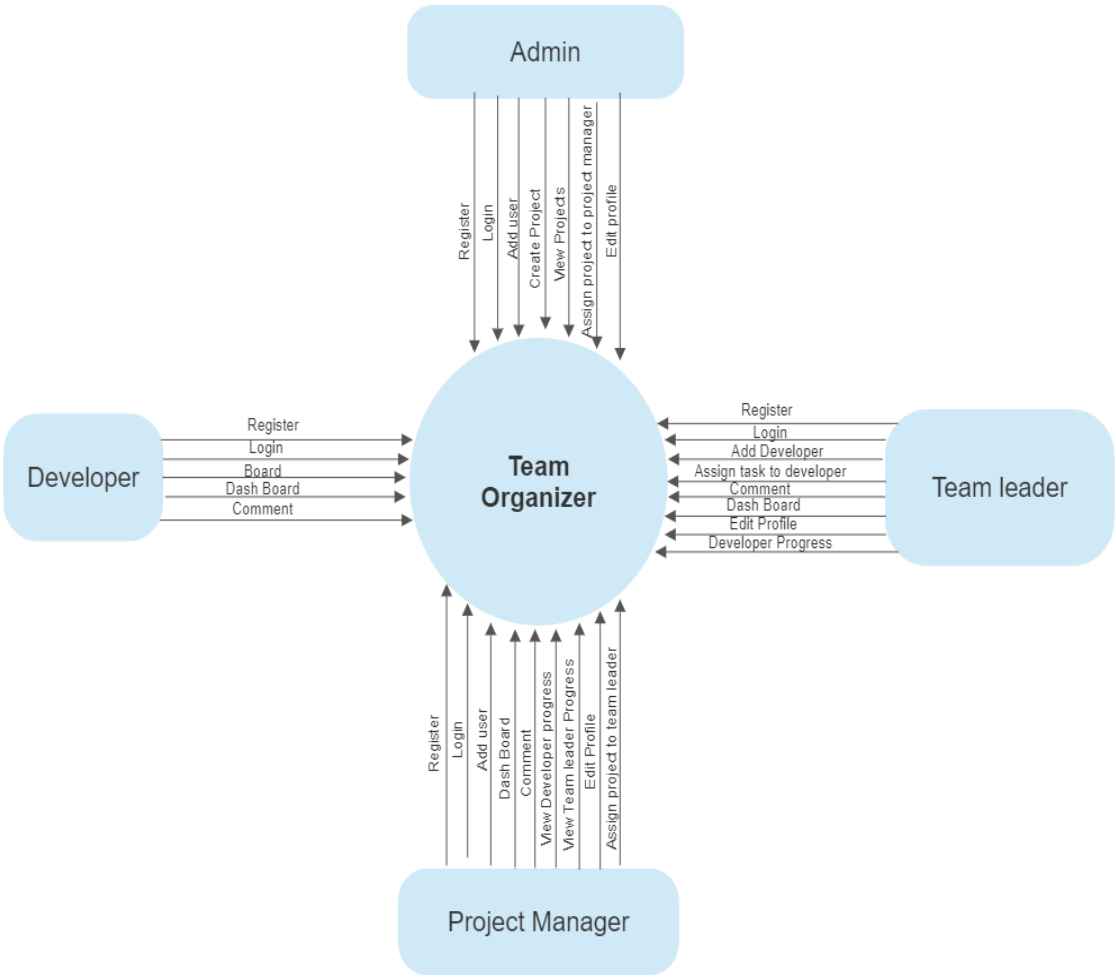
TaskID	Int	Foreign Key
CreatedTime	DateTime	

5. System Analysis

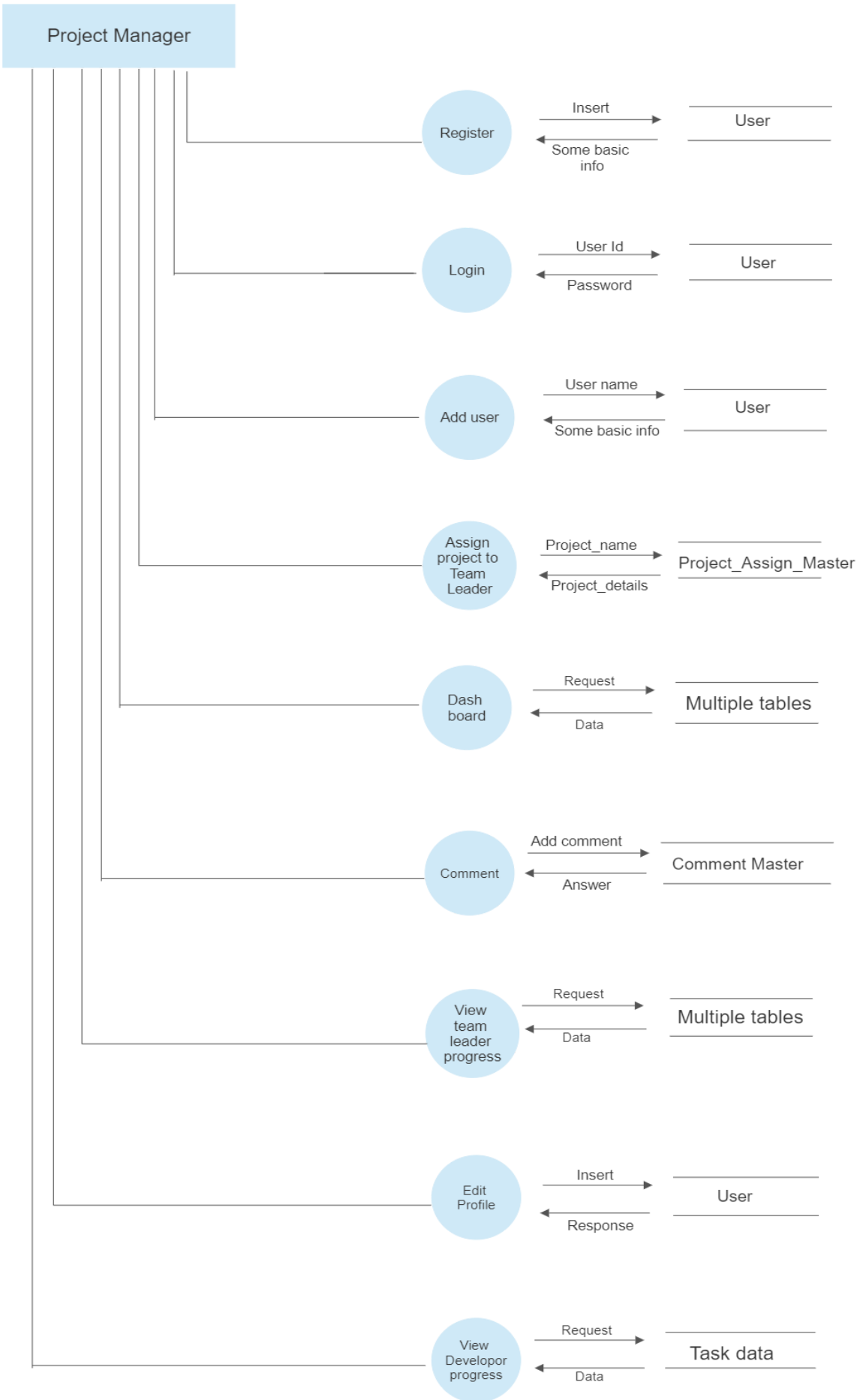
5.1 Detailed SRS

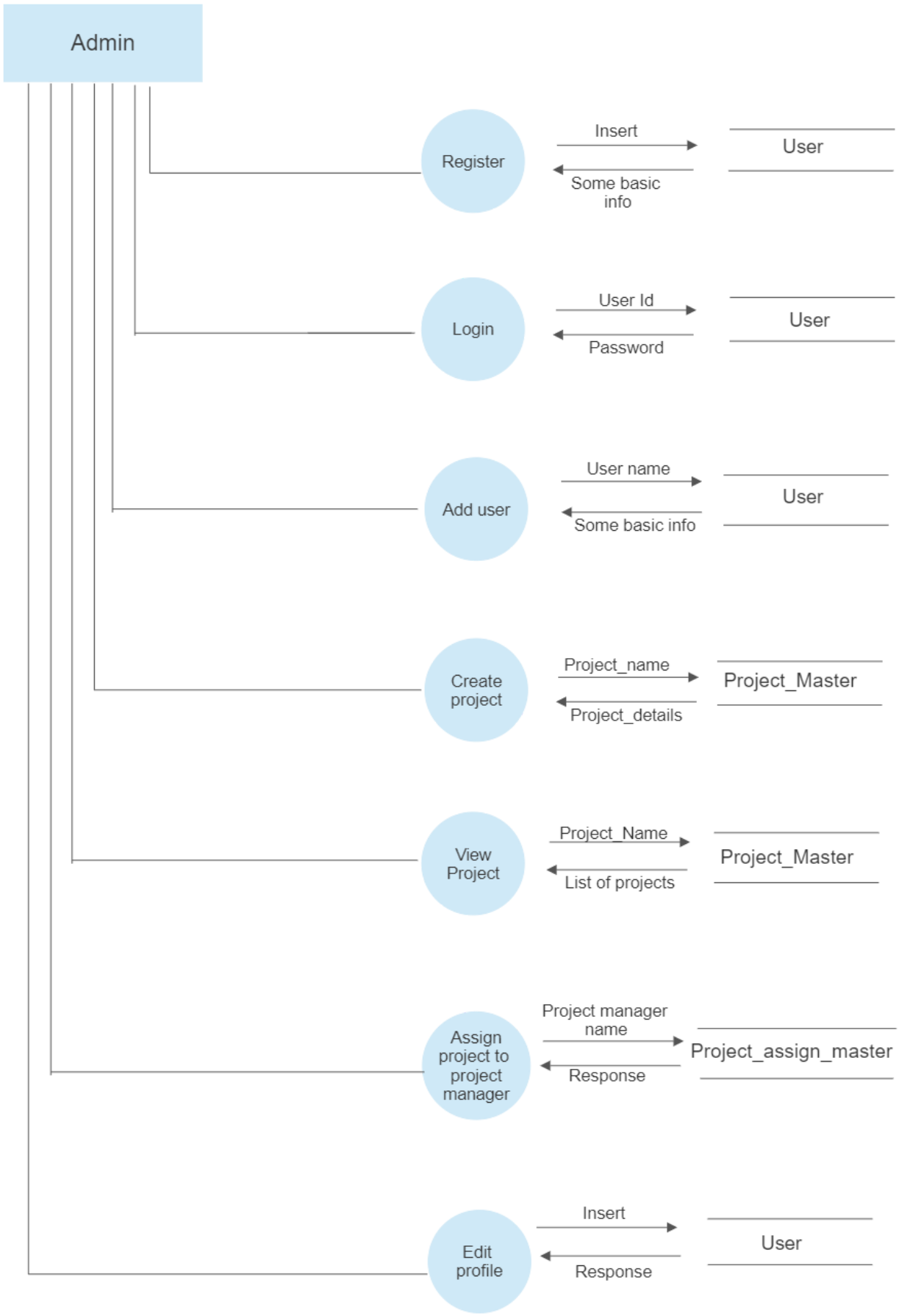
5.2 Data Flow Diagram (DFD) Details

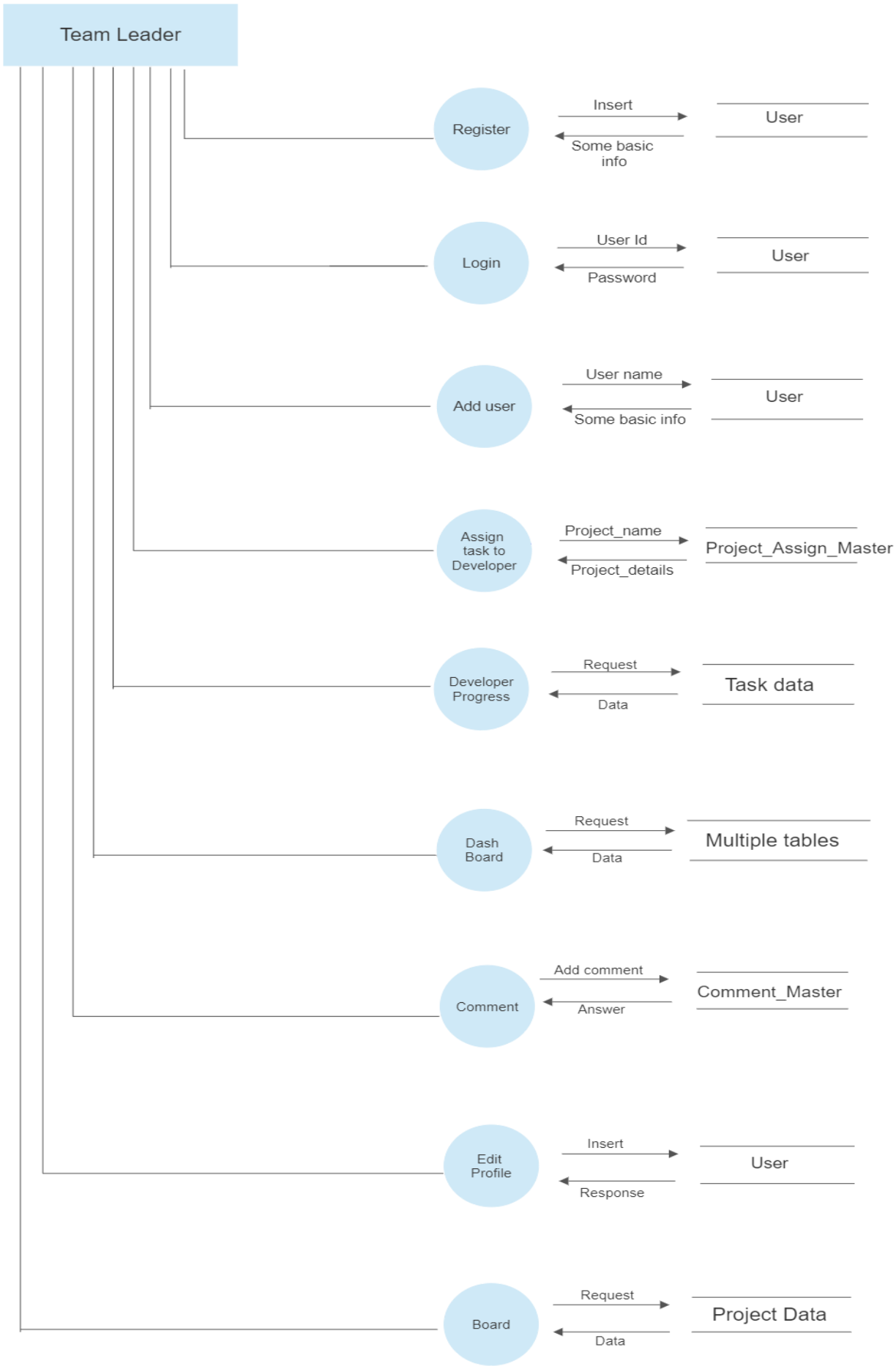
5.2.1 0-level Diagram

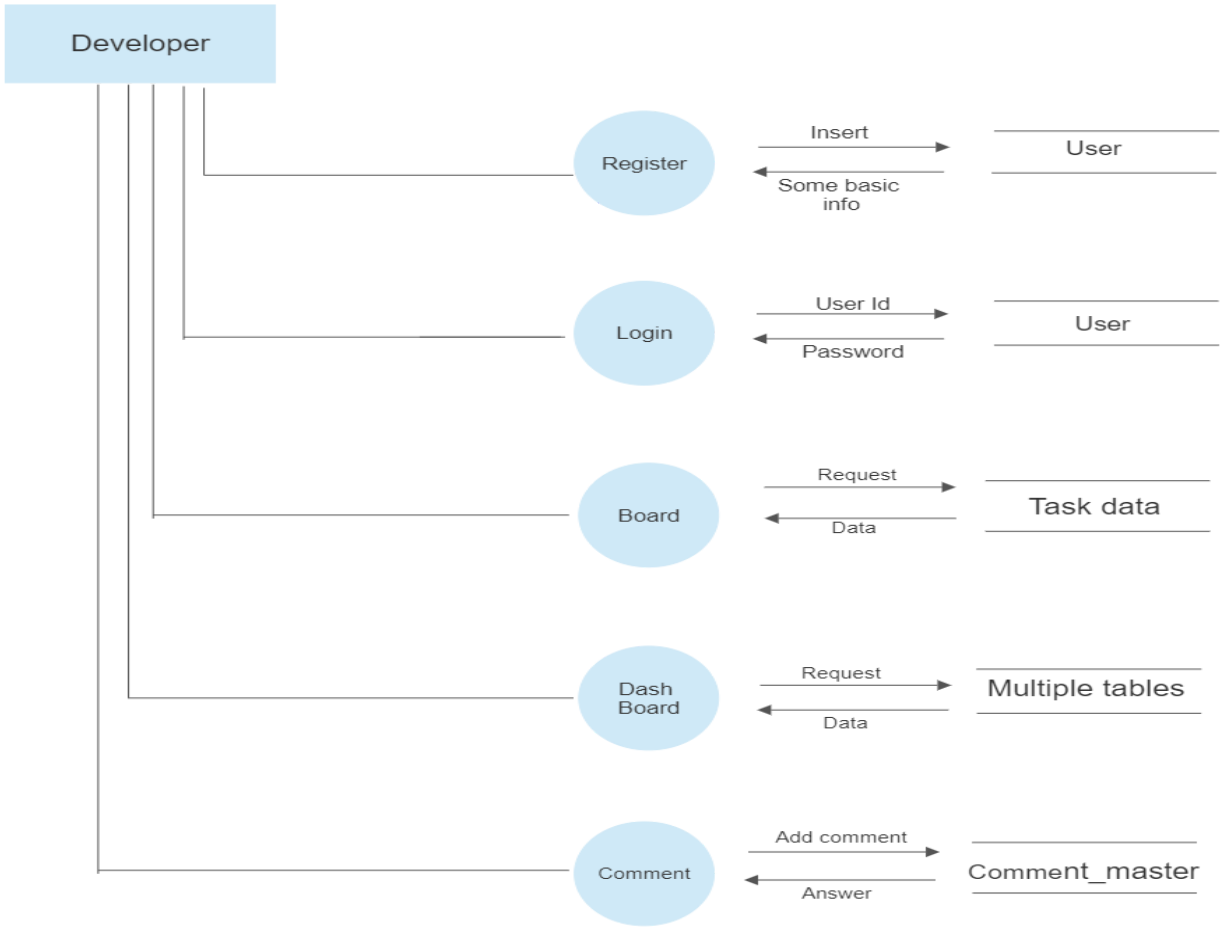


5.2.2 1-Level Diagram


Project Manager
Register
Insert
Some basic info
User
Login
User Id
Password
User
Add user
User name
Some basic info
User
Assign project to Team Leader
Project_name
Project_details
Project_Assign_Master
Dash board
Request
Data
Multiple tables
Comment
Add comment
Answer
Comment Master
View team leader progress
Request
Data
Multiple tables
Edit Profile
Insert
Response
User
View Developor progress
Request
Data
Task data


Admin
Register
Insert
Some basic info
User
Login
User Id
Password
User
Add user
User name
Some basic info
User
Create project
Project_name
Project_details
Project_Master
View Project
Project_Name
List of projects
Project_Master
Assign project to project manager
Project manager name
Response
Project_assign_master
Edit profile
Insert
Response
User


Team Leader
Register
Insert
Some basic info
User
Login
User Id
Password
User
Add user
User name
Some basic info
User
Assign task to Developer
Project_name
Project_details
Project_Assign_Master
Developer Progress
Request
Data
Task data
Dash Board
Request
Data
Multiple tables
Comment
Add comment
Answer
Comment_Master
Edit Profile
Insert
Response
User
Board
Request
Data
Project Data


Developer
Register
Insert
Some basic info
User
Login
User Id
Password
User
Board
Request
Data
Task data
Dash Board
Request
Data
Multiple tables
Comment
Add comment
Answer
Comment_master

5.3 E-R Diagram