CONTENTS

1 INTRODUCTION

1.1 PURPOSE

This document outlines the Project Management System's Software Requirements Specification (SRS) (PMS). This document is for describing the system's scope, the software's functional and non-functional requirements, design limitations, system interfaces, and others related to a SRS document.

1.1 1.2 SCOPE

The Project Management System addresses the management of software project development. It implements a framework of agile methodology and provide some extra functionality for smooth software development workflow management. It offers the structure for allocating and controlling resources so that they accomplish all work necessary to complete a software project within specified scope, timing, and defined restrictions.

The system is solely applicable to the administration of software projects, and it is a tool that aids in decision-making rather than making decisions itself.

This SRS describes only required functionality of PMS, not the functionality of external systems like data storage, change management or version control systems.

1.1.1 1.2.1 Use case Model

The Use-case model is defined as a model which is used to show how users interact with the system in order to solve a problem. As such, the use case model defines the user's objective, the interactions between the system and the user, and the system's behavior required to meet these objectives. The use cases of the system will be describe in upcoming section.

1.2 1.3 DEFINITIONS, ACRONYMS AND ABBREVIATIONS

The following table explains the terms and abbreviations used in the document.

Term	Explanations
PMS	Project Management System.
GUI	Graphical User Interface
DBMS	Database Management System
CMS	Change Management System

1.3 1.4 GLOSSARY

Word	Explanation

Project Management	The main aspect of this document. Represent the entire solution.
Host System	The main part of the system that resides on the server and where the business logic runs. Maintains physical connections to all external systems (data storage system, version control and change management systems)
Client System	The part of the system that runs on the user PC. Provide GUI and required system functionality. Maintains physical connection to the host system
Project Team Leader	The person who has the overall responsibility for the successful planning and execution of any project. Project Team Leader leads the team of developers.
Manager/ Project Owner	The person who has the overall responsibility for the project portfolio
Project Team Member	One of the developers who does not have responsibility for the project. The project team member has responsibility for carrying out the task assigned to him or her.
User	Any person who uses the system and is registered within the system. It means that he or she has the user login.
User Profile	Preferences of the registered user of the system that are saved within the system
Report	A defined view on the project that contains the specified project attributes tasks and resources and provides information about project status.
Authorized user	The user who has logged into the system and has a right to perform some operation. The system “knows” the identity of the user and permission that are granted to this user.
Authenticated user	The user who has logged into the system. The system “knows” the identity of the user.

2 OVERALL DESCRIPTION

2.1 CURRENT SOLUTION

I current time software development industry mostly use agile methodology and for managing the tasks in different sprints towards multiple team and person there exist multiple solution in the market. As for the moment every team leader is using a specific software product or no software at all, for maintaining the project schedule, to organize the tasks of the project and to physically store the all project data.

1.4 PROJECT PERSPECTIVE

The main perspective of the project is to develop a simple workflow management system where I will use simple functionality for managing workflow towards multiple team or individual team member. There will have several types of user role in the system for differentiating available feature in the system.

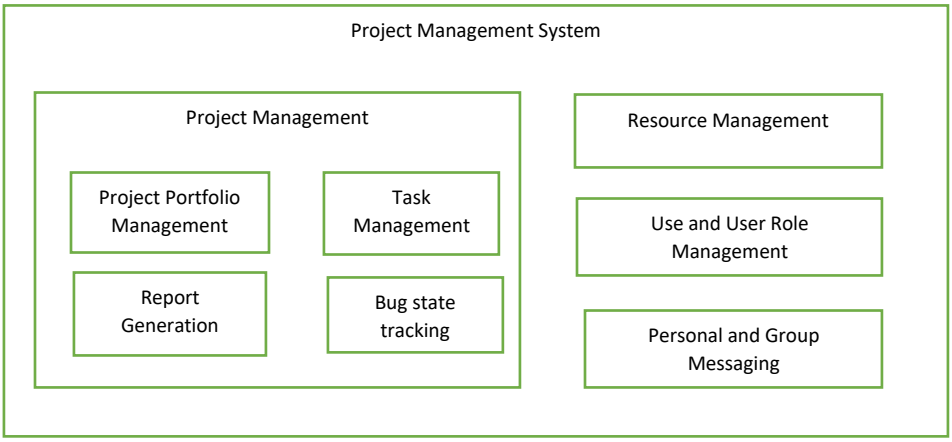


Fig 1: Project Management System Perspective

2.2 PROJECT FUNCTIONS

2.2.1 Supported Functions

The project functions:

- Provide a framework for project management
- Supports multiple project
- Support distributed development
- Support workflow management
- Support Scrum framework of agile methodology in project
- Support sprint wise task management in scrum frameworks project
- Allows to create dependencies between tasks
- Provide user role management
- Provide report generation
- Support messaging feature between users
- Provide user and user role management

2.2.2 Unsupported functions

The project management system:

- does not provide code management or code storage,
- does not provide version control,
- does not provide Employee time scheduling
- does not provide employee management,
- does not provide work time accounting and payroll.

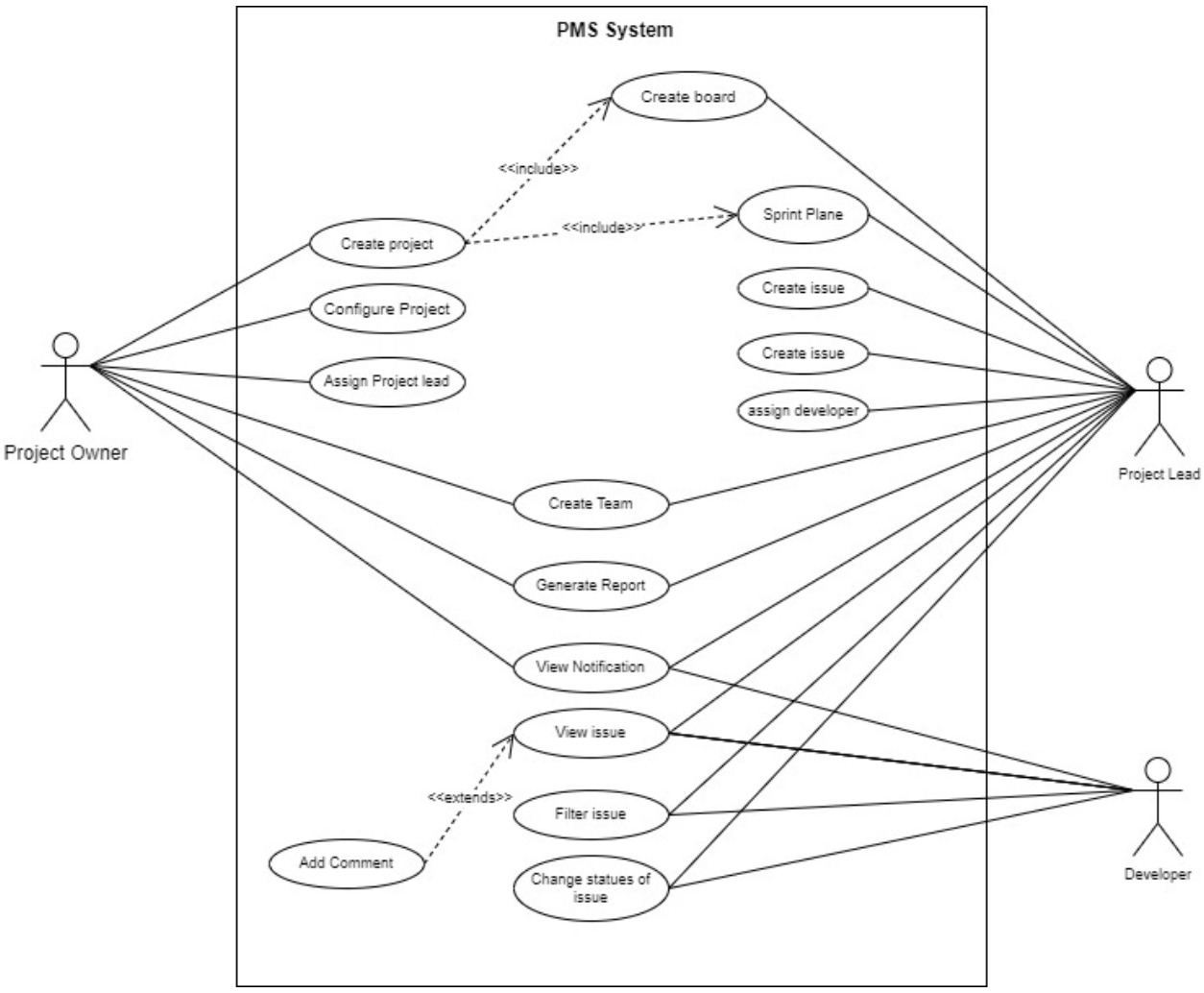
2.3 User Profiles

The system is intended to be used by various users. We can divide all users into three profiles, each with own responsibility and role in the PMS:

User	Functions and Responsibility
Project Owner	Responsible for the batch of the projects and controls overall development flow. Assigns projects to the project team leader and controls fulfilment of the project team leader's tasks.
Project Team Leader	Responsible for a particular project. Leads a project team of developers. Assigns tasks to project team members and controls their fulfilment. Reports to the project Owner.
Project Team Member/ Developer	Responsible for a particular task or part of a task. Reports to the Project Team Leader.

2.4 Use Cases

Use Case model defines the users of the system (actors) and specifies the activities performed by a particular type of user. The use case model is decomposed into functional areas and each functional area comprises use cases. Each use case describes how the system shall be used by the actors to achieve a specific business goal or function. The use cases do not capture non-functional requirements of the system. In writing use cases we use only minimal level of details: a brief use case. It consists of a few sentences summarizing the use case. It is not intended to specify the PMS requirements in term of the defined use cases. The use cases server only for decomposing the whole system into functional areas. The use cases description of the system is given in chapter 3 of this document.



Use Care Diagram

2.5 SPECIFIC REQUIREMENT

All software needs, both functional and non-functional, are listed in this section. According to the use case model, the functional needs are categorized.

Requirements Id	**Identifies each need in every PMS document in a unique way.**
Title	Defines the functional group the requirement belongs to. Gives the requirement a symbolic name
Description	It is definition of the requirement and here details should be place here.
Priority	Defines the order in which requirements should be implemented. Priorities are designated (highest to lowest) “1”, “2”, and “3” … Requirements of priority 1 must be implemented in the first productive system release. The requirements of priority 2 and lower are subject of special releaseagreement, which is out of scope of this document

Source	In a real-time SRS it refers to the source, what the requirement originates from.
Risk	Specifies risk of not implementing the requirement. It shows how the particular requirement is critical to the system. There are following risk's levels and associated impact to the system if the requirement is not implemented or implemented incorrectly: • Critical (C) – will break the main functionality of the system. The system can not be used if this requirement is not implemented • High (H) – will impact the main functionality of the system. Some function of the system could be inaccessible, but the system can be generally used. • Medium (M) – will impact some system's features, but not the main functionality. System can be used with some limitation • Low (L) – the system can be used without limitation, but with some workarounds.
References	Gives link to the related use cases or requirements

Fig: Properties of the requirements

1.5 FUNCTIONALITY

This section describes the main functional requirements of the Project Management System. The requirements are structured by functionality area and correspond in general the user case model, defined in Use Case diagrams document. Each requirement, if applicable, has the reference to the equivalent use case.

1.6 MAIN FEATURES

1.6.1 Users

Requirement Id	**R1.01.1**
Title	Users
Group	Main Functionality\Users
Description	The system shall support the concept of user. Every user of the system has a username and a password. The username must be unique. In addition, every user has a set of properties: Full Name, Full Business Title (Company Name, Position), E-Mail Address, Phone, Working Address. Each user is uniquely identified by its username within the system

Priority	High
Source	
Risk	
Reference	

1.6.2 User role

Requirement Id	**R1.01.2**
Title	User Role
Group	Main Functionality\Users Roles
Description	The system shall support the concept of **user roles**. The role will vary project to project. So an user will be able to play multiple role by multiple project but one role will have specific feature than other. The system feature will be enable and disable based on user role. One project will have one owner , one or more assignee/project manager and one or more assigned user.
Priority	High
Source	
Risk	
Reference	

1.6.3 User Role wise Permission level

User Role	**Is Allowed To**
Project Owner	Browse project list, Create/Delete/View/Update project, Assign/Re-assign a resource to the project . Create/Delete/View/Update Board.
Team Leader	Create/Delete/View/Update task and sprint, Assign/Re-assign a resource to the task, associated to him.
Team Member	View Task and can change the state of their assigned Tasks.

Fig: User Roles

1.6.4 Storing user and User role

Requirement Id	**R1.01.3**
Title	Storing Users and Users Roles

Group	Main Functionality\User Roles\Storage
Description	The system must permanently maintain the list of all users (together with all of their permitted properties), the list of all user roles, and any relationships between users and user roles. The system must have storage capacity. at least five user roles and 200 users, respectively.
Priority	High
Source	
Risk	
Reference	Security Requirements, Performance Requirement, Number of user

1.6.5 User role management

1.7 USER PROFILE

1.7.1 User profile

Requirement Id	**R1.02.01**
Title	User Profile
Group	Main Functionality\User Profile
Description	The system shall provide the concept of User Profile. The user profile contains the user-specific configurable parameters of the system. The user profile is associated with one and only one user that is registered in the system (has a user name and a password)
Priority	High
Source	
Risk	
Reference	

Requirement Id	**R1.02.02**
Title	User Profile Edite
Group	Main Functionality\User Profile\Edit
Description	The system shall provide the concept of User Profile. The user profile contains

	the user-specific configurable parameters of the system. The user profile is associated with one and only one user that is registered in the system (has a user name and a password)
Priority	High
Source	
Risk	
Reference	

1.7.2 System Login and Logout

Requirement Id	**R1.03.02**
Title	System Login
Group	Main Functionality\System Login
Description	Any user who wants to use the system his/her have to login the system first. The user need to log in the system by specifying exact username and password. There is no limit of login tries. After a successful login, the system will link the user to their roles and set the GUI's appearance to match their profiles. After logging in, the user becomes an authorized and authenticated user.
Priority	High
Source	
Risk	
Reference	

Requirement Id	**R1.03.01**
Title	System Logout
Group	Main Functionality\System Logout
Description	Any Logged in user can logout the system. After logout client used browser can’t access his/her profile associated functionalities without login in the system again by providing credential.
Priority	High
Source	
Risk	
Reference	

1.8 MANAGE PROJECT LIST

1.8.1 Show list of project

Requirement Id	**R1.04.01**
Title	Show List of Projects
Group	Main Functionality\Show project List
Description	The system will organize have functionality to show list of assigned and created project by them. List of project should be able to shown by their minimal properties Name, Description, Owner, and Creation Date. Every project is associated through the property Owner with one and only one user. The projects where the user is not performing any role, these project will not be shown to them.
Priority	High
Source	
Risk	
Reference	

1.8.2 Store Project Information

Requirement Id	**R1.04.02**
Title	Store Project information
Group	Main Functionality\Project\Storage
Description	Every project will have access to permanent storage to store its all necessary information in server permanent file storage and database
Priority	High
Source	
Risk	
Reference	

1.8.3 Filtering Project

Requirement Id	**R1.04.03**
Title	Filtering Project
Group	Main Functionality\Project\Filter

Description	List of project can be filter by its owner, created date, created by user himself/ herself. The projects where the user is not performing any role, these project will not be shown to them.
Priority	Medium
Source	
Risk	
Reference	

1.8.4 Searching Project

Requirement Id	**R1.04.03**
Title	Searching Project
Group	Main Functionality\Project\Search
Description	List of project can be search its name
Priority	Medium
Source	
Risk	
Reference	

1.8.5 Creating Project

Requirement Id	**R1.04.04**
Title	Creating Project
Group	Main Functionality\Project\Create
Description	Any user can create project who are registered to the system. A user who create a project by default he is the project owner. At the time of creating a project users have to give unique project name compare to his created project. A unique project key will be automatically generated by the system, however user can modify the project key but the condition is project key has to be unique within the whole system. List of other project properties like project type, Project Lead, Default Assignee fields has to fill for creating a project
Priority	High
Source	

Risk	
Reference	

1.8.6 Selecting Project

Requirement Id	**R1.04.05**
Title	Select Project
Group	Main Functionality\Project\Select
Description	From list of project a user can be able to select a project. After selecting a project the system GUI will detect the project as selected project and based the selected project information GUI will be render to the user.
Priority	High
Source	
Risk	
Reference	

1.8.7 Edite Project Configuration

Requirement Id	**R1.04.05**
Title	Edite Project configuration
Group	Main Functionality\Project\Edit
Description	The projects which the user is in owner role these project configuration can be editable by the user. Other role users are not permitted to edit project configuration. Project configuration editable properties will be project name, project key, Project Lead , default assignee.
Priority	High
Source	
Risk	
Reference	

1.8.8 Delete Project

Requirement Id	**R1.04.06**
Title	Delete Project
Group	Main Functionality\Project\Delete
Description	Only project owner will be able to delete the project. Deleting a project will also delete the

	project from other users who are not owner of the project but had dependency to the project.
Priority	High
Source	
Risk	
Reference	

1.8.9 Manage Project Leader

Requirement Id	**R1.04.07**
Title	Manage Project Leader
Group	Main Functionality\Mange Project Leader
Description	Under the condition that the user has permission "edit project", the user must be able to assign or re-assign any of available users to the Project Leader property of the project. The user can be associated with any number of projects, but project can be associated only with one user.
Priority	High
Source	
Risk	
Reference	

1.9 MANAGE CURRENT PROJECT

1.9.1 Make active Project

Requirement Id	**R1.05.01**
Title	Make active Project
Group	Main Functionality\Project\Current Project
Description	The system will be able to detect current project after selecting a project from project list
Priority	High
Source	
Risk	
Reference	

1.9.2 Project as an root entity

Requirement Id	**R1.05.02**
Title	Project as an root entity
Group	Main Functionality\Project\Project
Description	The System shall provide the concept of projects. The project will have one or more board. Each board will have one or more sprints. Each sprint will have start and end date. And every sprint will have one or more issues. An issue will have one or more properties associated with them.
Priority	High
Source	
Risk	
Reference	

Requirement Id	**R1.05.02**
Title	Create Board
Group	Main Functionality\Project\Create Board
Description	The project Leader of the project will be able to create one or more board.
Priority	High
Source	
Risk	
Reference	

Requirement Id	**R1.05.03**
Title	Project view as a member of the projects
Group	Main Functionality\Project\Only view
Description	As a assigned member of the project a user can view assigned project but the user won't have edit permission of the project configuration
Priority	High
Source	
Risk	
Reference	

Requirement Id	**R1.05.04**

Title	Reporting
Group	Main Functionality\Project\Reporting
Description	The system shall provide the authorized user with permission “create report” the ability to create a various reports on the project. Available report type will vary from user to user.
Priority	High
Source	
Risk	
Reference	

1.10 MANAGE ISSUE

1.10.1 Changing State of issue

Requirement Id	**R1.05.05**
Title	Changing State of issue
Group	Main Functionality\Manage Issue\issue state
Description	Project lead and assigned member will be able to change the state of issue. The state of issue are To do, In progress, To review, Done
Priority	High
Source	
Risk	
Reference	

1.10.2 Comment on issue

Requirement Id	**R1.05.06**
Title	Comment on Issue
Group	Main Functionality\Manage Issue\issue
Description	User will be able to add comment to issues. The user who are assigned to the issue, project lead and owner of the project will be able to comment on the issue
Priority	Medium
Source	
Risk	

Reference	

1.10.3 Add helper link to a issue

Requirement Id	**R1.05.07**
Title	Add helper link to the issue
Group	Main Functionality\Manage Issue\Add helper link
Description	Any authorized user associated with the project will be able to add link on the issue.
Priority	Low
Source	
Risk	
Reference	

1.10.4 Update issue

Requirement Id	**R1.05.08**
Title	Update Issue
Group	Main Functionality\Manage Issue\Update
Description	Project Lead Will be able to update properties of issue Like issue title, issue description, Add issue Link, Update File Link.
Priority	Low
Source	
Risk	
Reference	

Requirement Id	**R1.05.08**
Title	Assign developer to an issue
Group	Main Functionality\Manage Issue\Update
Description	Project Lead Will be able to update properties of issue Like issue title, issue description, Add issue Link, Update File Link.
Priority	Low
Source	
Risk	
Reference	

2 USE CASES

In software and systems engineering, a use case is a list of action or event steps, typically defining the interactions between a role and a system, to achieve a goal while software requirements specification (SRS) is a document that captures complete description about how the system is expected to perform. PMS for agile team use cases description are given below.

2.1 ADD PROJECT

Use Case 1	Add Project	
Goal	Any registered user create project	
Preconditions	User have to sign in their account	
Success End Condition	User successfully create project	
Fail End Condition	User can't successfully create the project	
Primary Actor: **Secondary Actor:**	Any registered user of the system	
Trigger	Click on create project button	
Main Success Flow	**Steps**	**Action**
	1.	User will provide input for following field • Project Name • Project Key • Project Category • Project default board Name • Project Assignee/ Lead • Default Assignee
	2	User will click on create button
	3	User go to created project dashboard
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.2 CREATE ISSUE

Use Case 1	Create Issue
Goal	User create issue to a project sprint
Preconditions	User have a selected project.
Success End Condition	User will be able to create board

Fail End Condition	User can't successfully create issue	
Primary Actor: **Secondary Actor:**	Project Lead	
Trigger	Click on Create issue button	
Main Success Flow	**Steps**	**Action**
	1.	User will provide input for following field • Issue title • Issue sprint • Issue type • Labels • priority
	2	Click on create button
	3	Created issue will be added to chose sprint
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.3 CREATE BOARD

Use Case 1	Create Board	
Goal	User create board for container of multiple sprint	
Preconditions	User have a selected project.	
Success End Condition	User will be able to create board	
Fail End Condition	User can't successfully create the board	
Primary Actor: **Secondary Actor:**	Project Lead, Project owner	
Trigger	Click on Create issue button	
Main Success Flow	**Steps**	**Action**
	1.	User will provide input for following field • Board Name • Board Type
	2	Click on create button
	3	Created board added to under the selected project
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**

	1	
	2	

2.4 CONFIGURE PROJECT

Use Case 4	Configure Project	
Goal	User edit/update project configuration according to user need	
Preconditions	User select target project to configure	
Success End Condition	User able to change project configuration	
Fail End Condition	User can't successfully change project configuration	
Primary Actor: **Secondary Actor:**	Project owner	
Trigger	Click on target configure project button	
Main Success Flow	**Steps**	**Action**
	1.	User will provide change configuration which his/her need from the following field • Project Name • Project Key • Project Lead • Default Assignee
	2	Click on save button
	3	Configuration will be saved and user will be redirected to list of projects page
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.5 ASSIGN PROJECT LEAD

Use Case	Assign Project Lead
Goal	User will be able to assign project lead under a project
Preconditions	User select target project to configure
Success End Condition	User able to change selected project 'Project Lead'.
Fail End Condition	User can't successfully change project lead
Primary Actor: **Secondary Actor:**	Project owner

Trigger	Click on target configure project button	
Main Success Flow	**Steps**	**Action**
	1.	From list of configure input User will select project lead input
	2	User type user name of project lead which he/she want to assign.
	3	Click on 'save' button
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.6 CREATE TEAM

Use Case	Create Team	
Goal	User will be able to Create team	
Preconditions	1. User open his/her profile 2. User select a project	
Success End Condition	User send create team request to peoples	
Fail End Condition	User can't successfully send create team request to peoples	
Primary Actor: **Secondary Actor:**	Project Lead, Project owner	
Trigger	Click on create Team button	
Main Success Flow	**Steps**	**Action**
	1.	Enter team Name
	2	Add peoples in Invite people to your team field
	3	Click on 'Create team' button
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.7 GENERATE REPORT

Use Case	Generate Report
Goal	User will be able to generate report

Preconditions	1. User select project from which he/she want to generate report	
Success End Condition	User download required project report	
Fail End Condition	User can't successfully send create team request to peoples	
Primary Actor: **Secondary Actor:**	Project Lead, Project owner	
Trigger	Click on generate Report button	
Main Success Flow	**Steps**	**Action**
	1.	User Chose required report
	2	Click on 'generate' button
	3	Required report download will be started
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.8 ASSIGN DEVELOPERS TO AN ISSUE

Use Case	Assign Developer to an issue	
Goal	Project lead will be able to assign developer to an issue	
Preconditions	1. User select a project 2. User go to backlog page	
Success End Condition	User download required project report	
Fail End Condition	User can't successfully send create team request to peoples	
Primary Actor: **Secondary Actor:**	Project Lead	
Trigger	Click on a issue	
Main Success Flow	**Steps**	**Action**
	1.	User will click on issue
	2	From list of issue configuration click on assign member
	3	Input one or more developer to an issue
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.9 VIEW NOTIFICATION

Use Case	View Notification	
Goal	Use will show their notification	
Preconditions	User has logged in the system	
Success End Condition	User successfully show their notification.	
Fail End Condition	Use can't successfully show their notification	
Primary Actor: **Secondary Actor:**	Project Lead, Project owner, Developers	
Trigger	Click on notification icon	
Main Success Flow	**Steps**	**Action**
	1.	User will show a spinner
	2	User will show at most 8 recent notification in a modal
Alternative Success Flows	**Step**	**Action**
	1	User show a spinner
	2	User will show at most 8 recent notification in a modal
	3	User click on show all notification
	4	User will redirected to all notification page
Quality Requirements	**Step**	**Action**
	1	
	2	

2.10 VIEW ISSUE

Use Case	View issue
Goal	User will view issue
Preconditions	1. User is logged in the system 2. User is connected to a project 3. User click on My Work
Success End Condition	User will successfully view issue.
Fail End Condition	User will show message 'You have no issue to show'
Primary Actor:	Developer, Project Lead

Secondary Actor:		
Trigger	User click on assigned to me	
Main Success Flow	**Steps**	**Action**
	1.	User will see spinner
	2	User will see list of recent assigned issue which is assigned to him/her
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.11 FILTER ISSUES

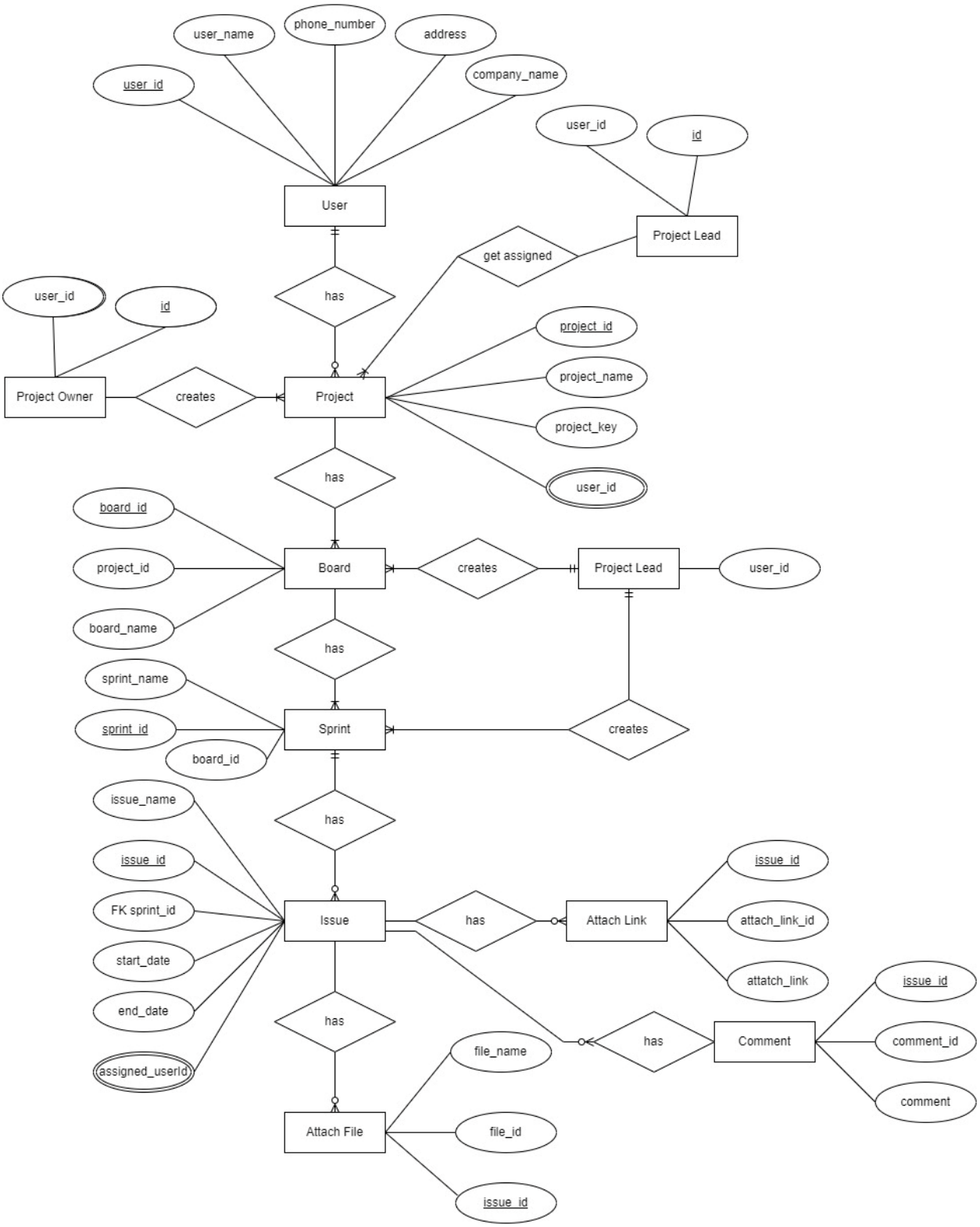
Use Case 11	Filter issue	
Goal	User will be able to filer issue	
Preconditions	1. User is in all issues page	
Success End Condition	User will be able to filter issue	
Fail End Condition	User will be shown 'no issues to show'.	
Primary Actor: **Secondary Actor:**	Project Owner, Project lead, developer	
Trigger	Only My issue, recently updated	
Main Success Flow	**Steps**	**Action**
	1.	User will click on any one filter option button
	2	If user click on only my issue he/she will be shown only issues which they are related with.
	3	User will successfully shown filtered issues.
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

2.12 CHANGE STATE OF ISSUE

Use Case	Change state of issue	
Goal	The state of an issue will be change	
Preconditions	1. User is assigned to the issue 2. User is in sprint dashboard	
Success End Condition	User change the state of an	
Fail End Condition	User can't successfully send create team request to peoples	
Primary Actor: **Secondary Actor:**	Developers	
Trigger	Dragging the issue card one state to another state region	
Main Success Flow	**Steps**	**Action**
	1.	User dragged the issue where he/she want to changed the state of an issue
	2	Dragged over the issue on a issue state container like To do, In progress , Done.
	3	Dragged issue card html element will be replaced to the replace container.
	4	Issue state will be change in the database as well.
Alternative Success Flows	**Step**	**Action**
	1	
Quality Requirements	**Step**	**Action**
	1	
	2	

3 ER DIAGRAM

ER Model stands for Entity Relationship Model is a high-level conceptual data model diagram. ER model helps to systematically analyze data requirements to produce a well-designed database. The ER Model represents real-world entities and the relationships between them. Creating an ER Model in DBMS is considered as a best practice before implementing your database.
Er Model helps us to analyze data requirements systematically to produce a well-designed database. So, it is considered a best practice to complete ER modeling before implementing database.



ER Diagram of project management system for agile team