Title of the Project: Project Management System

Introduction

The topic that we have chosen is “Project Management System”. We have seen various kinds of management systems, but Project Management System has attained a legitimate place in the evolution of management systems. A project is nothing without the project plans. Project plans prescribe both the ends and the means for successful project accomplishments. A constant monitoring of the activity of all the members working on different projects and their performance is possible with this system that plays a big part in a project being successfully completed. Managing a project involves many different aspects and many things that have to be tracked and followed up upon. As a project manager, one is responsible for the overall success of different projects under his supervision, and this system will effectively help him to keep track of all those different aspects of a project.

Motivation

As a student of BRAC University, during every semester we do various courses and in many of them we have to complete different kinds of projects. And as we go deep into the semester, we lose track of many things. Such as many the home works, assignments, lab works, and the most important aspect are the project tasks. And sometimes we lose track of the projects of what needs to be done, when is the due date of submission and what not. This is just while studying, and doing few projects during a semester. Now let’s imagine a company that does hundreds of projects during 6 months, or 12 months’ time? The misplace of one single document can put a project far from being complete and can waste a lots of work hours. So, why not make a management system? That’s why we wanted to make such management system that will allow us, or let’s say a big Corporation to manage all their project so that they can be done within due time.

System Description

Now, before making any system, we have to determine what we want this system to do. As we are developing a Project Management System, we need to look upon 4 aspects while developing such as Business Need, Business Requirement, Business Value and some Special Constraints.

A system must have some business needs, and what it means is, what is essential for our system. First of all, we need to develop well-designed software to manage and monitor the overall project activities. Most importantly, Project Management is required to complete projects in a given time, otherwise our system will be useless. The process of planning, scheduling, resource management, requirement analysis, designing, and testing to achieve project goals and objectives have to be conducted in the project management system.
Secondly, Business requirements are the things that this system must have to function on. Such as, what different actors of the system have the authority to do no not do. Communication ability between actors and keeping track of the performance so that a timeline can be drafted about how the resource should be managed and how many work hours are needed to complete the project within due time.
Thirdly, a very important aspect is business value, which determines all forms of values that determine the health and wellbeing of an organization in the long run. As we develop this system, we expect a total of 200% increase in productivity and a total of 80% increase in employee performance, over 60% of the projects delivered within due time and lastly about 5% reduction of extra time and effort required to manage and monitor all projects.
And finally, Some Special Constraints say that the system needs to be ready before the next vacation and the system should have some top-level security clearance needed by the project team to work with data.

Requirement analysis

Before we do some requirement analysis, we have to know about the two types of requirements a system has. One is Functional Requirement and the other one is Non-Functional Requirement. Functional Requirement says WHAT the system will do or not do and Non-Functional Requirement specifies HOW the system should do it.
Functional requirements are features that allow the system to function as it was intended. On the other hand, Non-functional requirements define system behavior, features, and general characteristics that affect the user experience. How well non-functional requirements are defined and executed determines how easy the system is to use, and is used to judge system performance.

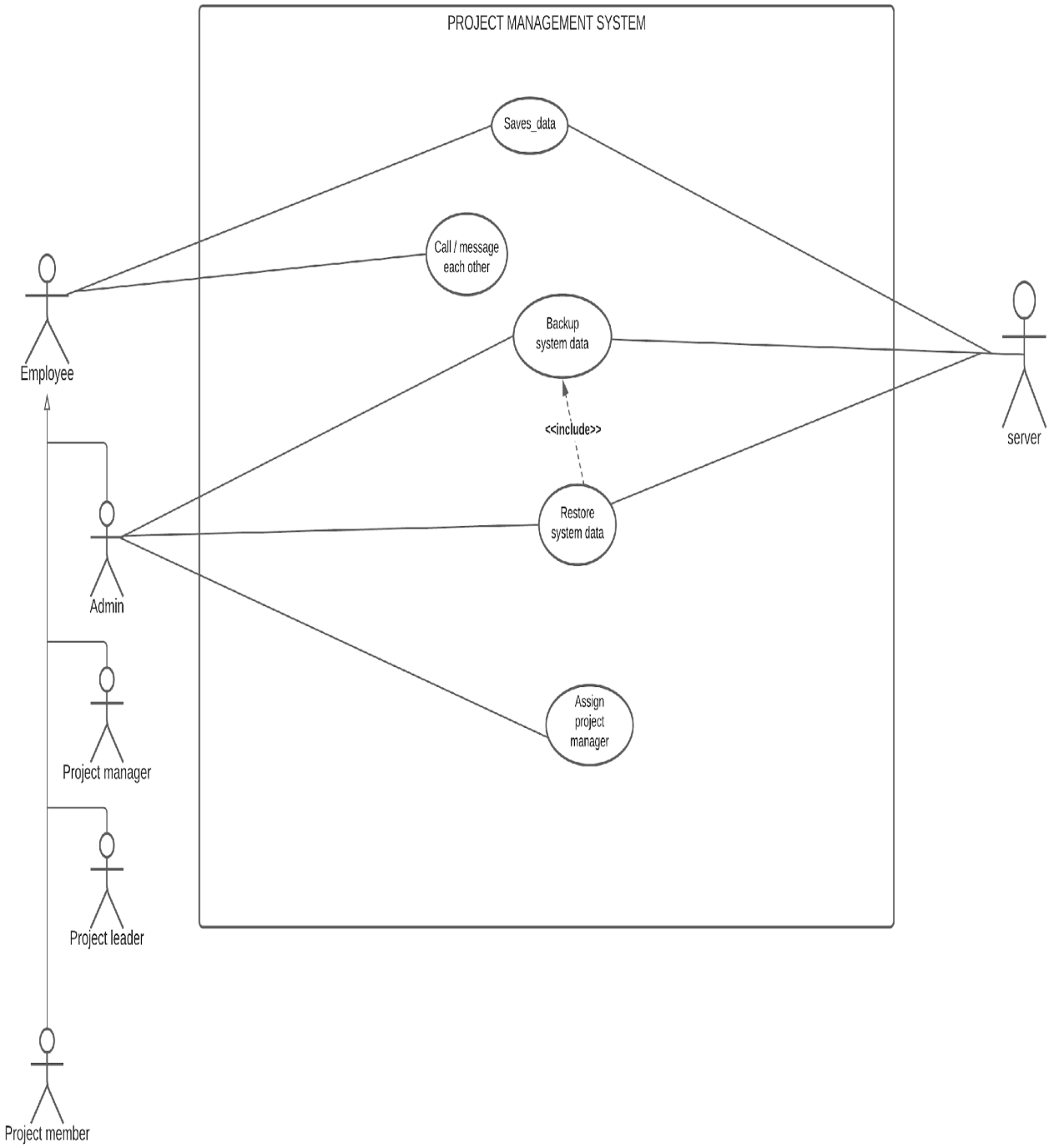
First let's talk about the Functional requirement of our system. One absolute functionality is that "Only authorized users can gain access to the system", otherwise a project might get compromised even before it is ready to launch. Then, a manager should be there to manage the overall status of all the projects and only an Admin can assign a project manager and in time when a lead is needed to a particular project, only a manager can assign a project leader. A project consists of many members to do different tasks, and the project manager and project leader can assign members to a particular project and also can remove a particular member from the project team. Communication is an important

part of any team and a project leader can create different channels for discussion. That being said, any member of a team can contact and send messages to their respective leader or project manager. Project Manager and project leader can give out important and all the other announcements in the Announcement channel. Based on the performance of a member, a project leader or project manager can give review to other members. One big problem created while managing any system, is the file management, that's why any member or leader or manager can upload files to a respective project folder so that no files ever goes missing and anyone assigned to a project can have access to the files related to the project.

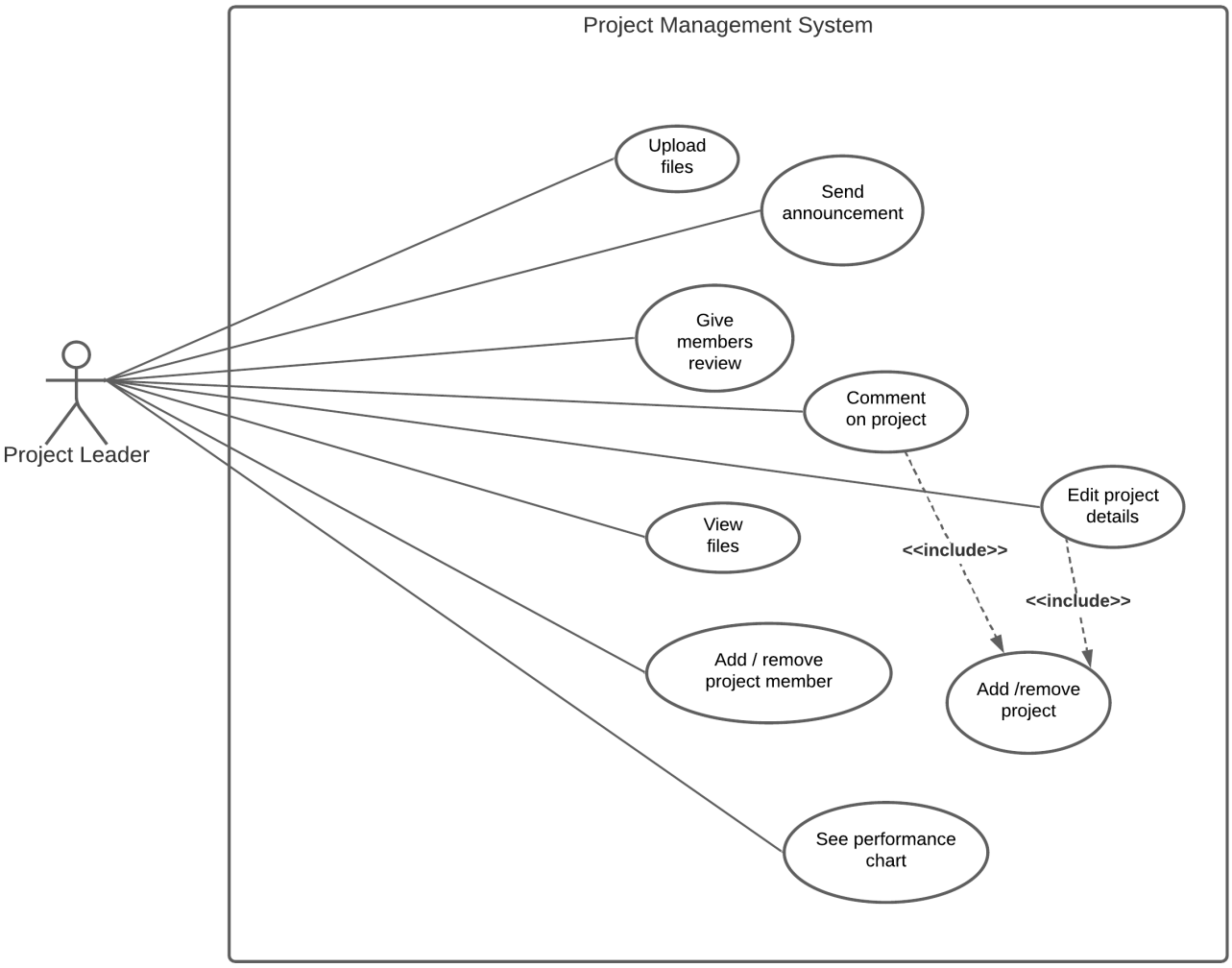
To do Non-Functional Requirement we have to look at four arts as such, Operational, Performance, Security and Cultural and Political requirement.
For the Operational requirement we can say that the system can be accessed in a web browser and there will be applications to use in Linux, Windows, Android and Mac. The system can be synced with a personal server or any cloud storage.
Performance is what makes a system properly usable and nowadays, customers want more performance than any other things. So, for that, our system will allow at most 100 users to be added in a project. Any files more than 1GB cannot be shared, admin can fix systems availability according to need, and the interaction between the end user and the system should not exceed 2 seconds.
Security is a must in any system, or the integrity of a system can be compromised. Our system will only allow the admin to see personal information and records of the staff. Admin and end users of a particular account can change password and end users can request to change any of their information to admin.
Cultural and political requirements are another important part of software development. Personal information is protected in compliance with the data protection act is an important requirement to have as it protects us from the cyber world risks. Additionally, project managers are permitted to authorize custom interfaces within their unit. And finally, as this system is going to be launched internationally, various languages should be integrated within the system so that users from any region of the planet don't face any problems while using the system. And no project information from this platform can be shared on other platforms.

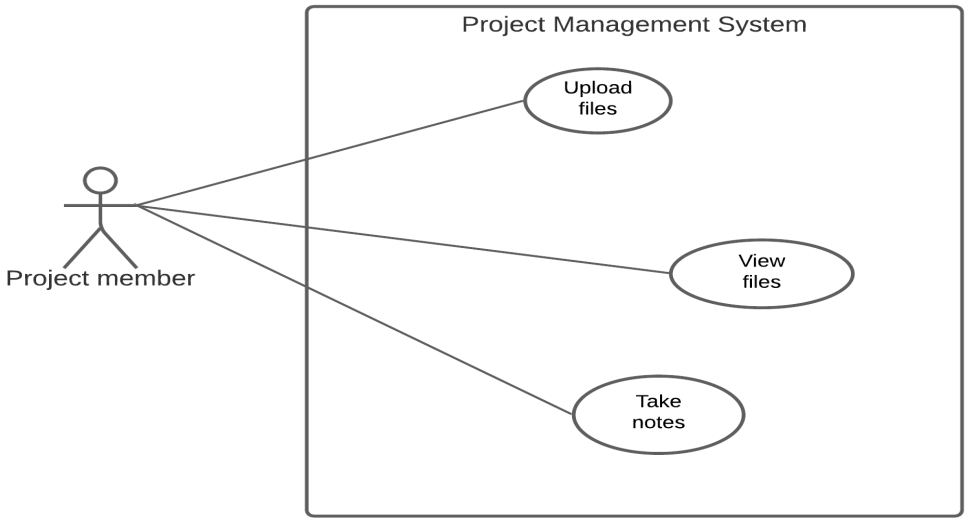
Design diagram

Use case diagram:



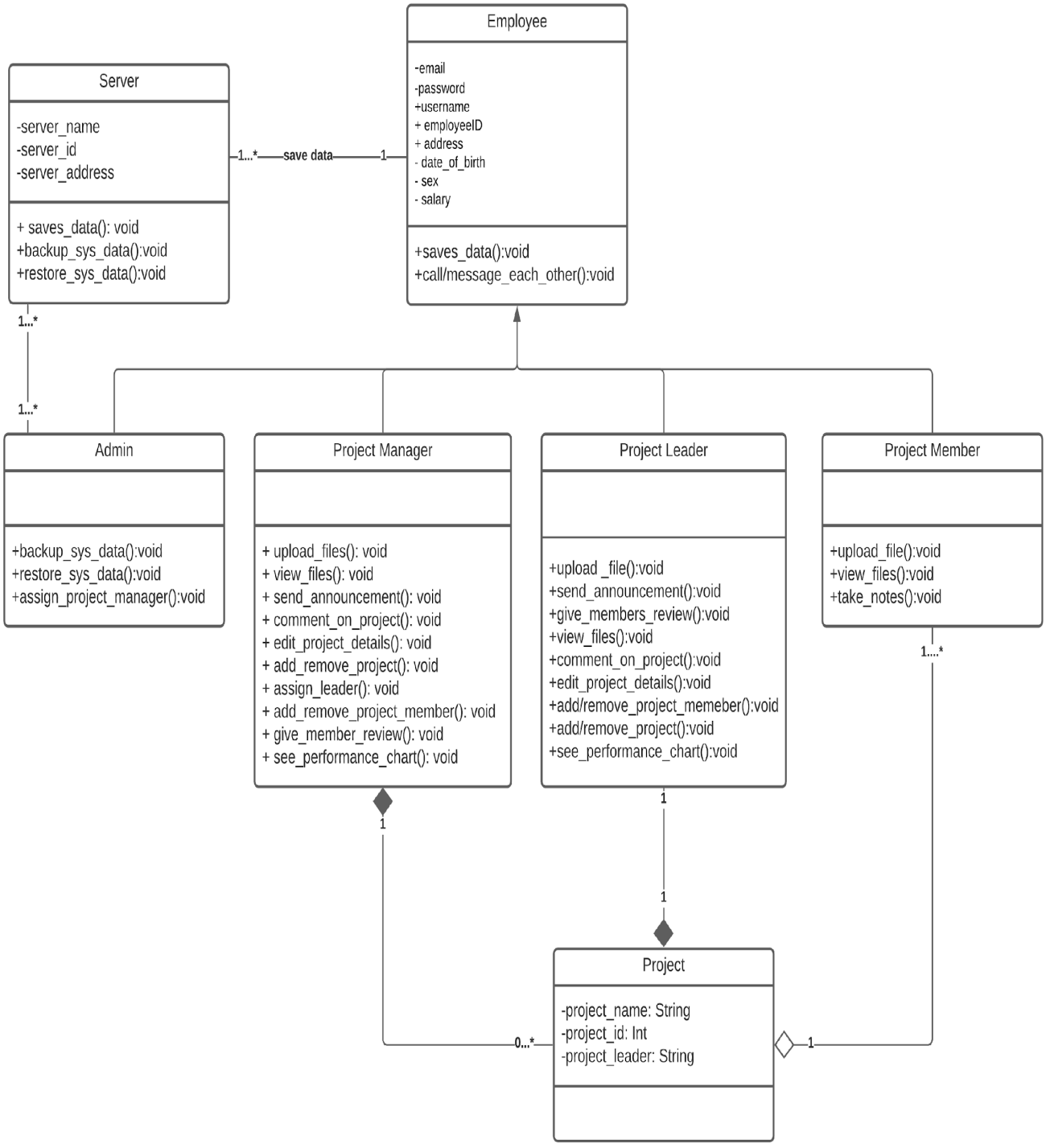

Project Management System
Upload files
Send announcement
Comment on project
Edit project details
<<include>>
<<include>>
Add /remove project
<<include>>
Assign leader
Project manager
Add / Remove project member
View files
<<include>>
Give members review
See performance Chart


Project Management System
Upload files
Send announcement
Give members review
Comment on project
Edit project details
View files
<<include>>
<<include>>
Add / remove project member
Add /remove project
See performance chart
Project Leader

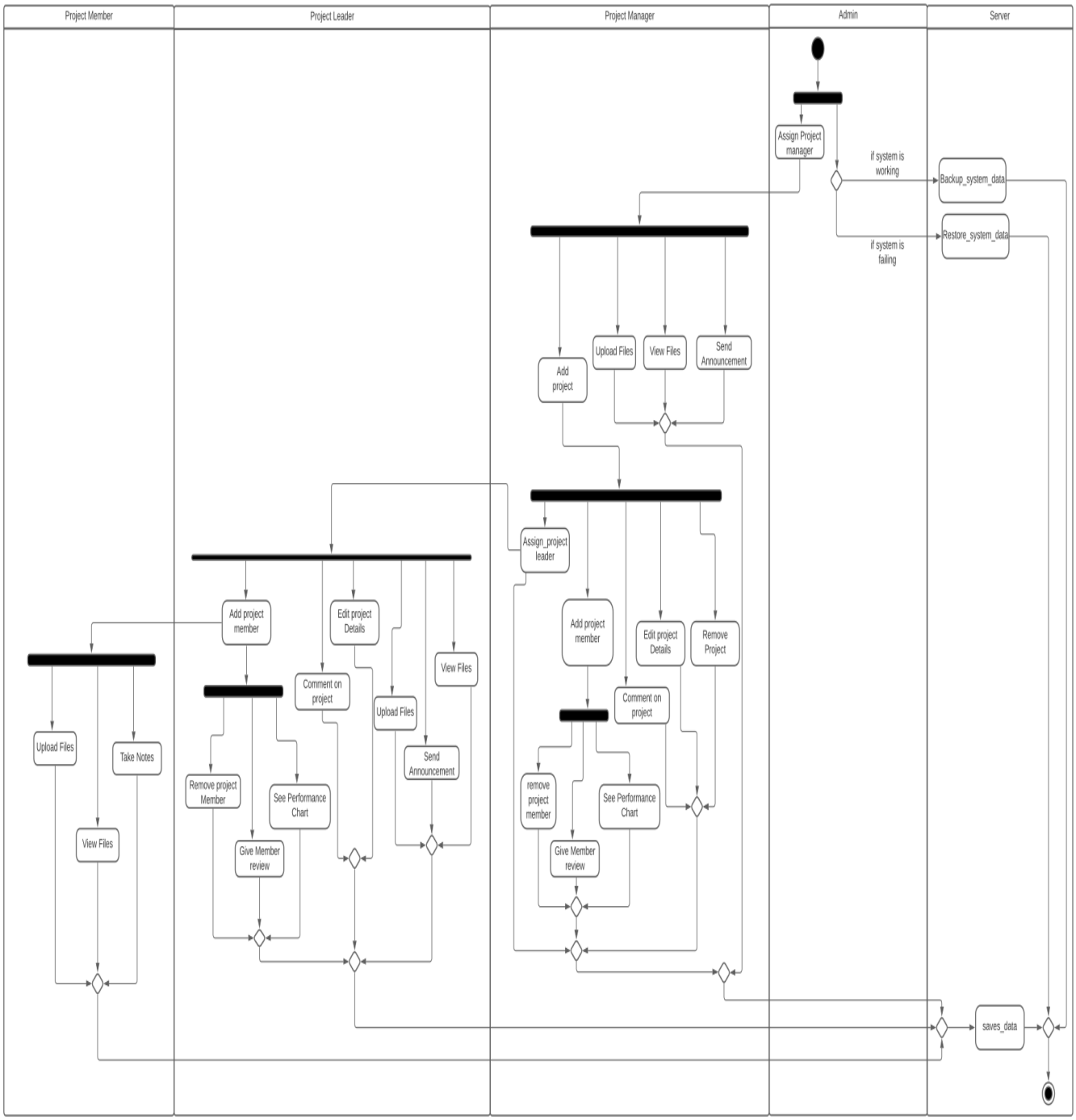


Class Diagram:

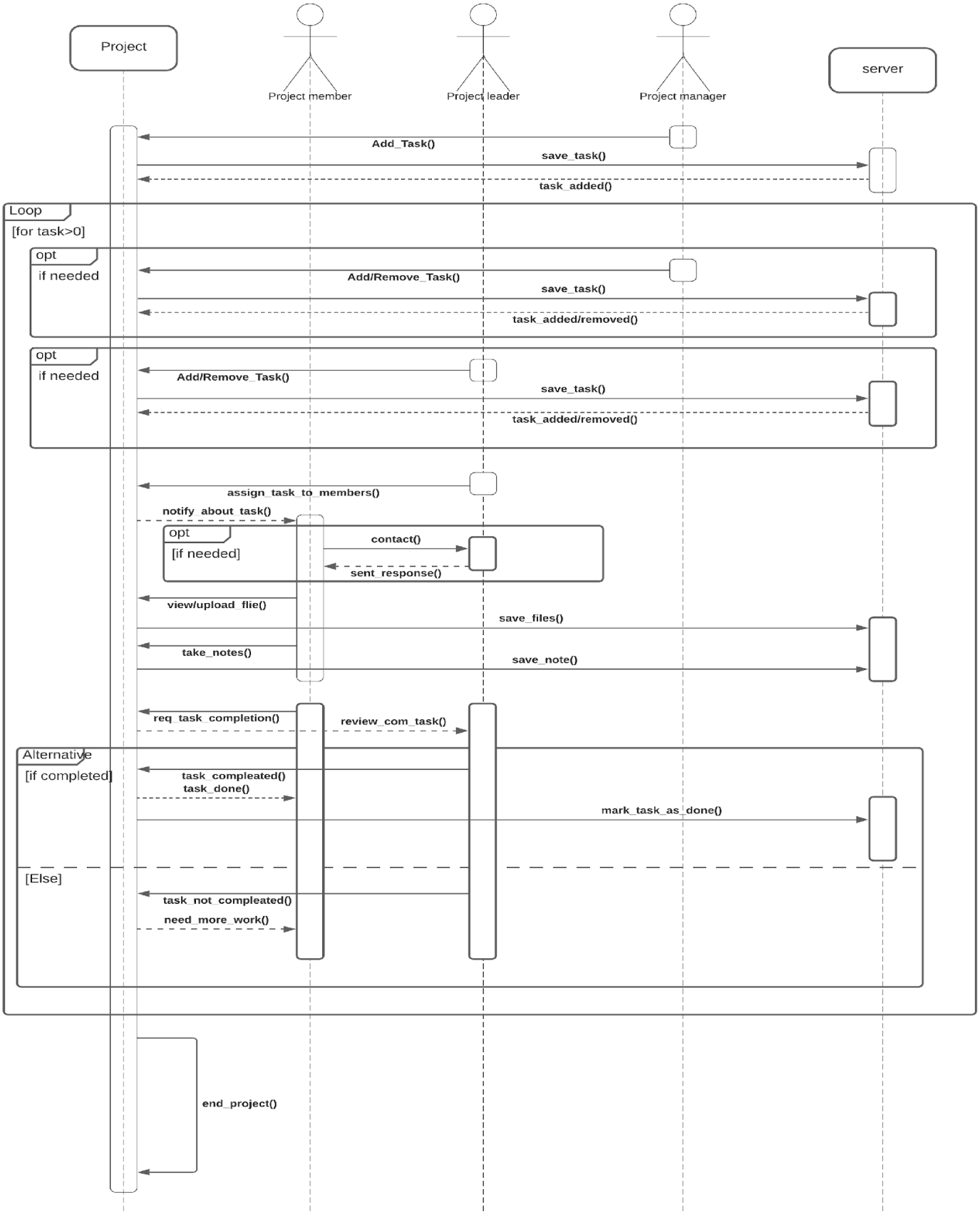
Class diagram



Activity diagram:

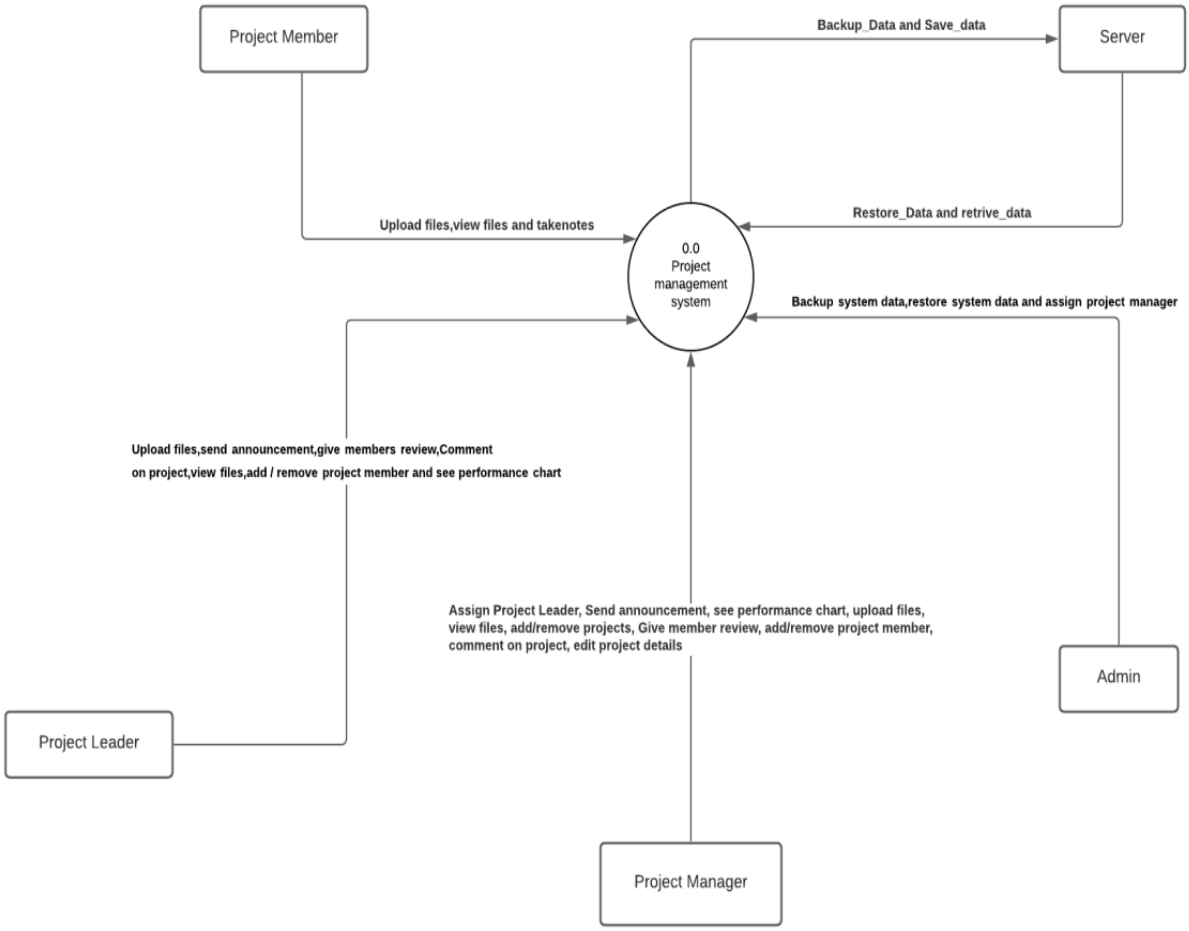


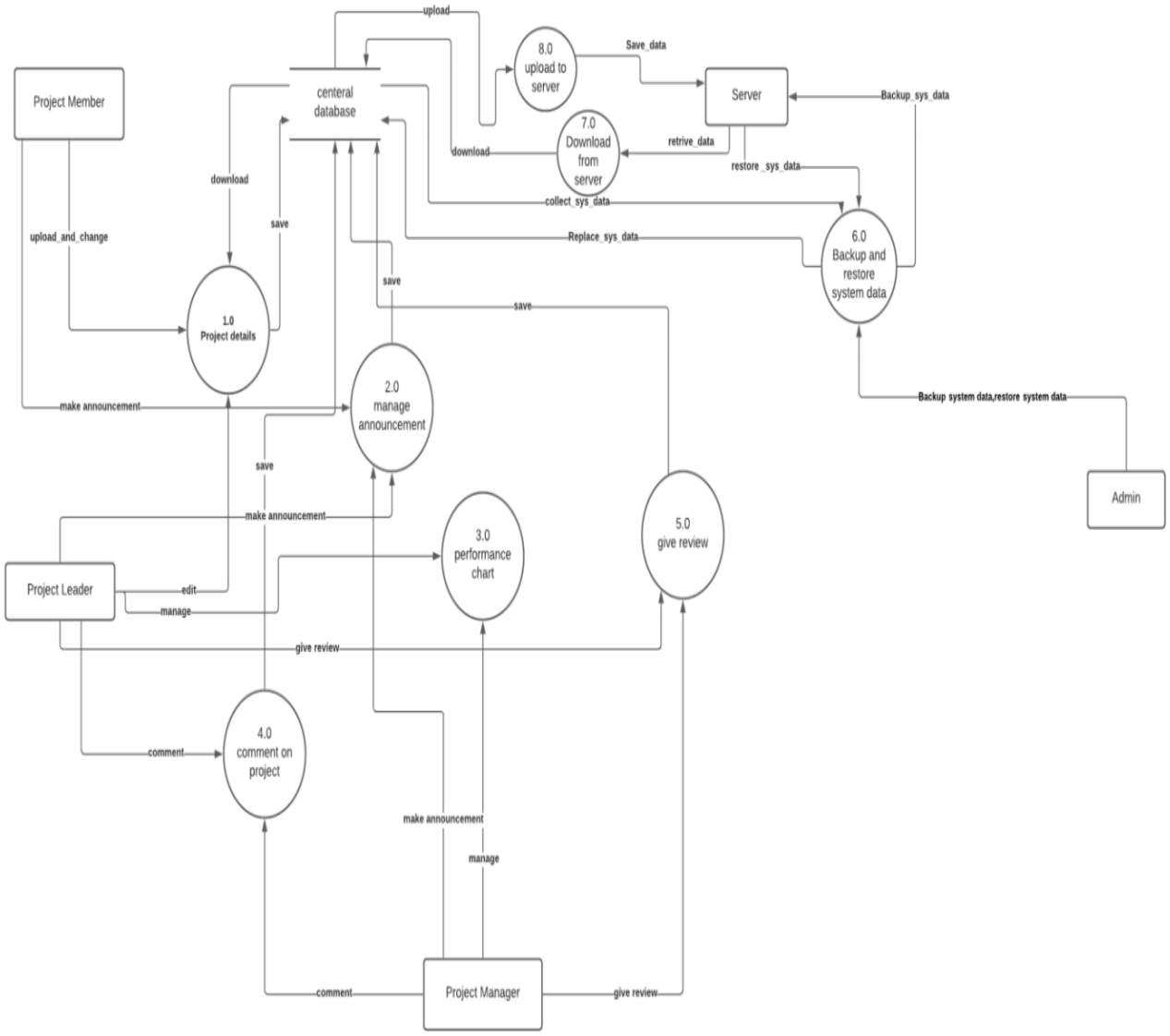
Sequence diagram:



DFD Diagram:

1. Context Diagram





DFD Level-1

Conclusion

To sum up, I want to state that managerial expertise is unparalleled in both the personal and professional spheres. In many ways, it benefits us. As a result, this project management system will assist a business in effectively managing all of its ongoing projects so that they may be finished on schedule.