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Software Engineering Project

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"Kindergarten"

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Abstract

In this paper we present the details of the project of Software Engineering course. This project is about building a web application in order to help the users to easier management the school system, most detailed about kindergarten as in the real usage. This software is intended to help them to manage the amount of data they deal with every day in an efficient way.

To our families, whom we love the most.

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1. Executive Summary

1.1 Project Overview

In this field there is a lot of systems management who aim to help managing the users in big data. These management systems most of the time are backed up or doesn't work properly.

KINDERGARDEN MANAGEMENT SYSTEM was developed following system development stages for smooth running and management of kindergarten system. After an information gathering process from several kindergartens managed by manual and computerized systems, we decide that, the kindergarten indeed needed a computerized management system. After a close analysis of samples collected during the problem definition stage we found that all the hardware and software requirements needed for implementation and maintenance of the system are readily available in the market. The system was carefully designed to ensure maximum efficiency of the system at the kindergarten. The system was skillfully and carefully coded to seal any possible loopholes in the system. The system was developed using visual basic for applications language. This system will indeed help the kindergarten management and the esteemed staff members to manage and steer the kindergarten's functionality and transactions to realize its maximum potential in addition to its competence in the kindergarten business field.

The application we will provide will help them to store and track information very fast, generate lists of information when needed, and what's most important it will help them to accurately handle their finances.

1.2 Purpose and Scope of this Specification

Kindergarten is an institution that is run by a small number of people. They perform many different tasks every day, from helping and feeding kids to storing and recording information about the kids they have. Being a small group they find it hard to cope with the huge amount of data, and sometimes the notes they keep in hardcopies get lost, which may lead to serious problems like not keeping track of the real amount of money they manage.

Our project will tend to cope with these problems in a faster and safer way. It will be a web application,

meaning it will be accessible from any Internet connected device that runs a web browser. The intended audience of this application is mainly related to the kindergarten staff, which is a small team of 4-6 people, which will most probably use it daily on a heavy basis to record new cases or update existing ones. The application will aid kindergarten team to cope with the huge amount of information they need to store and thereafter process those data to display their periodically performance. They will use it to check if their money is being well spent, not abused. The web application, which we will provide will also act as a simplified accounting system in which, the institution will find it easy to keep track of the finances. In this case the system will act as an accounting information system.

This application will be built by keeping in mind important features like: data consistency, security and overall application performance.

The mixture of these three main factors, mostly the first two ones, is very crucial because the data that will be recorded and processed through our application are highly sensitive and must be kept private.

2. Product/Service Description

In technological dimension, three variables are suggested: system quality, information quality, and service quality.

The quality of the system and quality of the information are considered as key factors.

System quality is the desirable characteristics of information system. For example: ease of use, system flexibility, system reliability, and ease of learning, as well as system features of intuitiveness, sophistication, flexibility, and response times.

Web applications are applications that provide their service by means of interconnected machines through a network. Beside the scope related factors that will be explained below there are many other “external” factors that will affect our application like the reliability of the network, the security of the residing host server and many more.

General factors that affect the product and its requirements are:

a) Huge amount of data to be stored

- From the information taken in the meeting held with the kindergarten staff we learned that they have 50-60 children's. Each child that receives service has its own list of daily activities that need to be recorded. In this way the information to be stored grows a lot. Daily records about the services provided are not the only data that will be recorded through the application. The finances related to every service

b) Information to be stored is sensitive.

- The data to be recorded are strictly sensitive, and this factor will have a huge impact on the way the application will be built, because every possible feature that we will provide like, information recording, accounting processes, and many more will be constructed by keeping in mind the security and privacy first

c) People Factors

- The users are not well informed about the technology; basically with the usage of a web application that will provide even complicated modules like accounting, so the application must be as smooth and simple as possible.

2.1 Product Context

The application will have many features, from simple ones as information recording to complex ones like financial reports. To do so the system will incorporate with many other systems.

Being a web application the system will mainly interface with the hosting server and the database management system of that server.

The product will incorporate in its functionality data storing and processing, accounting information systems, human resources management systems and many more.

Other products that are related to it are accounting information systems, also human resources management systems will be provided in the application.

2.2 User Characteristics

There are three types of users that interact with the system: users of the mobile application, kindergarten owner and staff. Each of these three types of users has different use of the system so each of them has their own requirements.
The mobile application users can only use the application to find a kindergarten or see what is allowed to be viewed. This means that the user have to be able to search for it and then navigate to it. In order for the users to get a relevant search result there is multiple criteria the users can specify and all results matches all of those.

- The kindergarten owners will not use the mobile application but the web portal instead. There they will manage the information about their kindergarten.

- The staff also only interacts with the web portal. They are managing the overall system so there is no incorrect information within it.

- The parents/children are the users of mobile application, they do can only view what is gong on in the kindergarten, what their children are doing, etc.

2.3 Assumptions

- One assumption about the products that it will always be used on mobile phones that have enough performance. If the phone does not have enough hardware resources available for the application, for example the users might have allocated them with other applications, there may be scenarios where the application does not work as intended or even at all.

- Another assumption is that the computer with any web browser like Google Chrome, Mozilla Firefox, Internet Explorer, Opera etc. will use the product

- They must have an Internet connection.

2.4 Constraints

Constraints are things or states of nature that will have an effect on our system. The constraints come of various types in different scopes. Some of them are resource constraints either human or product availability. If there were no constraints than everything would be simple as silk but in real world there are. We will build up our system keeping these non-changeable constraints in mind. Some of the most crucial constraints that will affect our web application are listed below:

- System resource constraints

The data to store will grow a lot in size so the server must have a considerable space available.

- Management and security

Information stored should be manageable is an important feature that the system should have to cope with the data. Normally these data should be secure since they consist of sensitive information.

- Data processing should be fast and efficient:

  - Faster and efficient storage of the information.
  - Faster and correct reports for the donators.

2.5 Dependencies

There are some basic dependencies for our web-application to run and perform correctly. Most of them are related to external factors, not the application itself but the environment where it will reside (the server) and the ways it will be reached. To access a web site or web application residing on a remote host we should firstly have Internet connection in our machine. The server also needs to be functional. If the server is down the desired content will not be reached.

3. Requirements

3.1 Functional Requirements

Req. #	Requirement	Comments	Priority	Date Reviewed
BR_01	Each User of the system depending in his/her role, must have different access and constraints to his/her access. They must be uniquely identified by their username and password. Not any one can access the system.	Child user for example can access only its own data. Cannot edit or perform any other data. All actors must be protected so that the data will be protected too.	1	
BR_02	Each user will face a different view.	Respect to their accessibility the user will have the view according to their role.	1	
BR_03	Every user will be automatically logged out after 5 minutes of inactivity after logged in the software.	Automatic log out by the system.	3	
BR_04	Generate monthly financial statement.	At end of each month income statement will be generated automatically by the system. The will be provided as PDF to both finance user and admin, so they can print them.	2	
BR_05	Work receipt generated each month automatically	At end of each month, work receipt will be generated by the system, providing working days, hours, extra hours, wage rate, total wage of each employee.	2	

Req. #	Requirement	Comments	Priority	Date Reviewed
BR_06	The software should have different modules, such as human resources, admission, teacher, admin, parent/child, and economists' module.	Children are being registered by the admission office in the admission module and data automatically distributed to other modules that request it. Employees added by HR department, who manages and can edit their credentials. Teacher can upload data, and documents respect to their access.	1	
BR_07	HR staff data changed and maintained by admin.	HR employees are added by admin of software (CEO). They can be edited only by CEO.	1	
BR_08	Each change made in system will be reported to admin automatically	Updates done by teachers, some of them, and other staff members such as economist, or other will be reported to admin in the form of notifications, mentioning what has been done, from who and when so keep track of any important manipulation done to the data in system. (Of course the most important ones.)	2	
BR_09	Confirmation required if economist want to add any new field to the different types of costs.	The economist can add new cost fields after also getting the confirmation of admin.	2	
BR_10	The system must also include a Search tool in particular parts of particular modules.	Makes more efficient working and easy in manipulating data.	3	

Req. #	Requirement	Comments	Priority	Date Reviewed
BR_11	The software will calculate automatically the tuition fee of each child for at each time.	The tuition fee will be growing automatically as days past depending in rates applied, so each day you can see the amount the clients owe you at that certain time.	1	
BR_12	The software will calculate automatically the wage of each employee at each time.	The wage amount will be growing automatically as days past depending in rates applied, working hours so each day you can see the amount you owe to your staff at that certain time.	1	
BR_13	Teachers can make evaluation to their pupils, comment, and add absences only on the respective day.	After day passed, evaluations cannot be edited of even filled anymore.	2	
BR_14	Every change, edit before final execution must be preceded by a confirmation.	When one of the actors tries to save a manipulation to data, he/she will be asked for the action. After the confirmation has been approved the changes will be automatically saved and no going back is allowed.	1	

3.2 User Interface Requirements

There will be a classical menu that will appear in each page of the application, which will be visible at the very first sight, with the buttons showing different submenus that are included in the program, to make it easier for the users of online web application.

The application should be user friendly and easy to use for all employees that will use it. If the user makes a mistake while using the program, error alerts will appear with specific messages notification, which will show what you have done wrong while operating in this module of the program.

The reports generated by the system will be in PDF format and the user can easily print or download them. An economist will not be able to add new types of costs without admin consent; in this case, admin will get notifications that need approval.

3.3 Usability

3.3.1 Accessibility

Each user of the application will have some unique access and constraints. Each user can access his/her account through their unique username and password. The top manager: CEO (Admin, Kindergarten Administrator) will has a unique access to the system, different from the others since they need to know and control everything going on in the company, he/she will be able to view everybody's job. On the other hand, the other employees will also have access to the program, but on a different way. They will have limited access to their tasks and roles.

3.3.2 Learnability

Users are going to be trained before using the application, at last 3 weeks. The system will be easy to use; everything will be explained inside the soft on help section in the menu bar. Also, the team that will create the application will always be there if the employees need support or something goes wrong. Trainings and help guide will be provided to all users. Important to emphasize is the fact that, the language of all menus, errors, notifications, labeling, etc. will be in Albanian. This will make also pretty easier the usage of the application. Anyone can navigate through it without lacking understanding.

3.4 Performance

We will make sure our application performs at its highest speed and nothing goes wrong with the code. When the user need to work with database, for example, adding the payment check, adding attendance, etc. the system will perform in highest speed that it can. When looking at transactions made during the day from finance employee, the application will firstly show the most recent ones, then if the user wants to see more, he will have a button to show all of the transactions made during that day (until one week or one month before them). When teachers will search video or different program to help them teach, the program will show all existing ones in the system.

1) Number of all transactions will be around 80 per day, but there might be times, where it may exceed 100 workloads per day.
2) The system should be able to support at least 10 terminals at the same time. HR employee, Admission office employee, teachers or admin might be registering or uploading, or updating data at the same date and time.
3) Reports generated will be one income statement, and other employee receipts (11 for the moment).
4) Report will be automatically generated at the respective period, but this might take some time, more than 30 seconds, since it the system has to make some calculation from previous fields, and needs to require them from the database.
5) The search will be provided to teachers to search for particular data, such as children, daily program, etc.
6) The information inserted, will not be just plain text, but also photos, or other documents, such as PDFs, docks, or videos (for the help menu), this requires a big server to maintain stable and always be accessible.

3.4.1 Capacity

The program will be flexible for our kindergarten, which means that everything that occurs every day in the kindergarten will be documented in a new form with this program. In this way, the managing work in kindergarten will save a lot of time by using this program. Users will be able to get as many reports as they want, anytime they want them.

1) Application needs to support at least 10 users at the same time, so that everyone is satisfied.
2) To support all these activities at the same time, with this large amount of data flow the server must be big, we are keeping apart the CCTV, since they already do have a hard disk where they are saved, HDD 6 TB. CCTV with stored in this hard disk of this size, can keep previous videos up to 6 weeks. There are 10 IP cameras installed, each of 3 megapixel full hd.
3) The system should allow insertion of 80 transactions or more per day.

3.4.2 Availability

Hours of operation: The program will be required to be online by parent users at least 10 hours (since the average working hours per day for a worker is 10 hours).

Level of availability: The program will be available 24/7 for the parent users.

By the geographic means, the program will be available from everywhere, the only constraint may be the slow internet connection that parent users may face depends on the place they are using the program.

Other actors, such as teacher, economist, HR employee, Admission employee, admin, may access the system only inside the business; this means the system will be accessed through an internal IP.

3.4.3 Latency

Despite the case where users have installed this program on old or slow PC's, the response time for the program to process some data will be very efficient and very fast.

3.5 Manageability / Maintainability

3.5.1 Monitoring

As we have mentioned, the program will be user friendly, and very easy to use. Users will have no issues in using our program, since everything will be explained on help button (located on the corner of the menu bar) on everything they see on the program and do not understand If the information that they find instructed on the program is not enough for them, and they are facing problems that they cannot solve, we will assist them for every problem since we are creating this program for our company.

3.5.2 Maintenance

Our program will have a simple and efficient design, which will help users to do their job without programming skills. It is easily understandable and very easy to use. Later on updates will be available to download for the program with some extra features that we will work on.

3.5.3 Operations

- Users can add new child when the program does not have that child.
- The user can access the system whenever they need information.
- The user can add, delete clients.
- The user can add, delete, and update video.
- The user can add daily menu.
- The user can see daily, weekly, monthly reports.
- The user can search for specific person.
- The user can search for specific video, or teaching plan.
- The user can search for specific data on a specific employee.
- The user can check financial situations for specific client.

3.6 System Interface/Integration

Our program is software that serves as a connecting interface between users and a database, which will contain everything it needs in order to work on a kindergarten. The program can be accessible from every computer that accesses the application.

3.6.1 Network and Hardware Interfaces

We have already mentioned that manipulation to data can be done only from those actors that have these rights, and only inside the kindergarten's building. We are using an Internal IP. We will have business's server, located inside the building. At the same time the data for children will be accessible outside the building, anywhere, enough that there is internet connection.

3.7 Security

3.7.1 Protection

We are storing very sensitive data in the server. There will be stored children's data, employee's data, and as a result high protection should be offered to the users of the application. One of the means of protection offered is validation of username and passwords, use of regular expressions and filtering so we keep a healthy database and accounts that cannot be easily accessed. At the same time, if you forget your account opened, (these applies for all users), the system will automatically log out for you if there are 5 minutes of inactivity. Some protection approaches are as follows:

- Encryption.
- Activity logging.
- Restrictions on inter-module communications.
- Data integrity checks.

3.8 Data Management

So even though we do provide some protection for the database and our sensitive data, still there will be filtering for the information that will be placed in database, such as:

- Data formats for some piece of information, such as adding phone number, comments, addresses, etc.
- Not all the data will be accessed from anyone; certain data will be accessed by certain users respect to their job and tasks they must perform. For example, economist, or finance officer will not be able to modify children's data, or teacher cannot access other employee's data, etc.
- Validation will be provided to some sort of information, checking for special characters that must be avoided, or the patterns that must be met to add or maniple a certain piece of data.
- The systems also requires different document formats uploads, such as PDFs, words, power point presentations, mp4, jpegs, gifs, etc.

3.9 Standards Compliance

We have chosen spiral model to develop our web application, as a result go through different components, get clients feedback, so that we meets the requirements and standards. At this stage, we do comply their requests and standards. The data and modules are easy to access reports generated by the system are in the right format.

3.10 Portability

Our application, which is a web application, developed in PHP, HTML mostly, and CSS can be accessed in Safari, Opera, Chrome, Mozilla, and etc. browsers. It is portable enough and quick. The whole database is saved in the kindergarten's server, thus being quick and secure. The web application itself is user friendly, but in fact not very flexible, the CEO's requests where so, that they could have access over their employees and control their performance.

3.11 Server room

Server is a Computer System (Hardware and Software), which provides various network services. Example: Email server (MAIL Server), server for File transfer (FTP server), file server distribution (FILE Server) etc.

Server Room - The physical location where the servers and other help devices that are needed for communication services are stored.

To build up a server room must, it needs to:

3.11.1 Location

Computer or server room location is the first consideration, even before considering the layout of the room's contents. Most designers agree that, where possible, the computer room should not be built where one of its walls is an exterior wall of the building. Exterior walls can often be quite damp and can contain water pipes that could burst and drench the equipment. Avoiding exterior windows means avoiding a security risk, and breakages. Avoiding both the top floors and basements means avoiding flooding, and leaks in the case of roofs. If a centralized computer room is not feasible, server closets on each floor may be an option. This is where computer, network and phone equipment are housed in closets and each closet is stacked above each other on the floor that they service.

3.11.2 Air conditioning

Computer equipment generates heat, and is sensitive to heat, humidity, and dust, but also the need for very high resilience and failover requirements. Maintaining a stable temperature and humidity within tight tolerances is critical to IT system reliability. Server room temperature has to be between 18-27°C; humidity should be between 40%-60% rH.

In most server rooms "close control air conditioning" systems, also known as PAC (precision air conditioning) systems, are installed. These systems control temperature, humidity and particle filtration within tight tolerances 24 hours a day and can be remotely monitored. They can have built-in automatic alerts when conditions within the server room move outside defined tolerances.

Air conditioning designs for most computer or server rooms will vary depending on various design considerations, but they are generally one of two types: "up-flow" and "down-flow" configurations.

3.11.3 Fire protection

The fire protection system's main goal should be to detect and alert of fire in the early stages, then bring fire under control without disrupting the flow of business and without threatening the personnel in the facility. Server room fire suppression technology has been around for as long as there have been server rooms.

3.11.4 Future-proofing

The demands of server rooms are constantly changing as organizations evolve and grow and as technology changes. An essential part of computer room design is future proofing so that new requirements can be accommodated with minimal effort. As computing requirements grow, so will a server room's power and cooling requirements. As a rough guide, for every additional 100 kW of equipment installed, a further 30 kW of energy is required to cool it. As a result, air conditioning designs will need to have scalability designed in from the outset.

3.11.5 Redundancy

If the computer systems in a server room are mission critical, removing single points of failure and common-mode failures may be of high importance. The level of desired redundancy is determined by

factors such as whether the organization can tolerate interruption whilst failover systems are activated, or must they be seamless without any business impacts. Other than computer hardware redundancy, the main consideration here is the provisioning of failover power supplies and cooling.

4. User Stories

Nr	User Story Name	Description
1.	Personnel Log In	To provide the users of the MDL to access the system functionality by entering correctly the username and password.
2.	Register	The Admission Office manager adds a new child that takes services by the MDL system at the database. The user in order to make the registration needs to provide to the system name, surname, parent information, birthplace, birthdate, specific required documentation.
3.	View/Edit option of children data	If the user during the registration process has made errors, he/ she may edit the child information and make the proper changes. Also from this option he can only take a view of the information available.
4.	Register a service to the child.	The user makes the daily registration of the service/s that a child takes in that day.
5.	Search by name	The teacher searches for a child by putting in the form the child name and surname. The result will show all the information that the system has linked with that child.
6.	Generate report I	The system generates a report with all the children that have taken services from the specific month that the user wants to access.
7.	Generate report II	The system also prepares daily reports since the service takers may differ from day to day, so each day is generated a report with the services offered and the children who took the service that day (mainly the food service).
8.	Print report.	The user may download the report and print it whenever he/she needs it.
9.	Enter the salaries	The finance manager enters to the finance model the total value of the salaries of the employees, which corresponds to the total monthly salaries cost.
10.	Enter the utilities cost	The finance manager enters to the finance model the total monthly utilities cost.
11.	Enter the Food cost	The financer enters the total monthly cost for the food that is served to the children and staff.
12.	Other cost	The financer records in the system the total other monthly costs that are generated by other means but are not including to previous costs.
13.	Generate the income statements.	The admin and financer want to see the profit of the kindergarten so far, so they can generate from the system income statement.
14.	Print the income statements.	The financer downloads and prints the income statements which are in a printable form for each accounting period set by the finance department.

15.	Access the admin module	If the admin tries to access his module he will access all the system module since he is the owner and administrator of everything. Without his permission, no change can be made to any of the modules.
16.	Parent Module	The parent of each child has its own module to have access to the performance of his child. Here he can view and require for any edit to the errors made in information written.
17.	CCTV section	Under the CCTV section user has camera access to the kindergarten classes where he/she can see anytime what his/her child is doing.
18.	Password change	Parent can change password and username if wanted from the dropdown menu of the “Llogaria ime” section, always with the confirmation of the admission office.
19.	Access the HRM module	If the user is the Human Resources Manager when he/she tries to access the HRM module it will access all the system functionalities that are linked with this module. If the user is not the Human Resources Manager the MDL system will display an error message that the user cannot access this model, since the access of this module and department is only allowed to this person who holds this duty.
20.	See the HR structure	Human Resources Manager controls the structure of the Human Resources Department, he can also access the organizational chart of the company with the permission of admin.
21.	Employee Data	Human Resources Manager has the right to create a folder with all the information that the MDL should have for an employee. This folder includes data such as name, surname, gender, age, position, email, CV, photo, qualifications, diploma accompanied by the list of the grades, salary etc.
22.	Edit Employee Data	Human Resources Manager may edit the information that each of the employee has in the system, with permission of admin.
23.	Upload a CV	Human Resources Manager uploads the CV of the employee in the pdf format at the particular folder where the employee has the other information.
24.	Upload a photo	Human Resources Manager uploads the photo of the employee in the jpg format at the particular folder where the employee has the other information.
25.	Add new employee	Human Resources Manager adds a new employee with all the information in the HR database.

26.	Delete an employee	Human Resources Manager has the right to edit the employees list and so he can remove from the list the employees who do not work in the kindergarten anymore.
27.	Job description	Add the job description of each position to the structure of MDL Human Recourses.
28.	Personal Profile Log in	The staff that are using the system will have their accounts and can access their module where they can see their profiles, but don't have the right to edit anything.
29.	Check the activities	The teachers that have their accounts can check the activities that are available and can propose changes to be made.
30.	About	Help button will provide information about the software and the main functions for what it is build.
31.	Contact	Contact button will provide contact information that users may need to communicate with admin (owner of the kindergarten).
32.	Log out	Provide the users of the MDL the right to terminate the accessibility of the system functionality.

5. User Scenarios

5.1 Finance Module

Scenario 1

1. User enters username and password (correctly).
2. System authenticates username password.
3. User is logged in as Finance Manager.
4. User enters the employees' wages and all types of costs.
5. User asks for confirmation from CEO in order to add new costs.
6. Wages are paid in cash directly to the employee.
7. Confirmation notification is sent to the admin.
8. Changes are recorded in the system.
9. Costs tab is updated.
10. Save changes.
11. Log Out

Scenario 2

1. User enters username and password (correctly).
2. System authenticates username password.
3. User is logged in as Finance Manager.
4. User opens the income section.
5. Children are classified by class degree.
6. User checks the children's accounts and the payment status.
7. Confirmation required for the payment.
8. Changes saved after confirmation.
9. Log out.

Scenario 3

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Finance Manager.
4. User opens the balance sheet section.
5. User generates income statement.
6. It updates automatically from the database changes.
7. Print income statement.
8. Log Out.

Scenario 4

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Finance Manager.
4. User opens the balance sheet section.
5. User generates income statement.
6. It updates automatically from the database changes.
7. Print income statement.
8. Log Out.

Scenario 5

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Finance Manager.
4. User opens “Llogaria ime” section.
5. User can change the password and the username, only by making a request to the human resources department.(security reasons)
6. After confirmation, user can change username or password based on some constraints.
7. If the username is already in use it shows the message “Already in use”.
8. Password should be at least 8 digits, one capital letter and one special character.
9. Log Out. (Done in the dropdown menu of the “Llogaria ime” section, in order not to pass through all the personal info without reason.)

5.2 Child/Parent Module

Scenario 6

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as a Parent.
4. User can view the performance of his child, the absent days, the curricula of studies, the food menu and the comments (evaluation) of the teacher under performance section.
5. He can view the personal data of the child.
6. If the user wants to change any data for his child, he/she should contact admission office.
7. Under the CCTV section user has camera access to the kindergarten classes where he/she can see anytime what her/his child is doing.
8. He can change password and username if wanted from the dropdown menu of the “Llogaria ime” section, always with the confirmation of the admission office.
9. Log Out.

5.3 Teacher Module

Scenario 7

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Teacher.
4. Complete teaching dairy daily with activity details done with children.
5. Add any comments.
6. Edit anything in the document.
7. Save changes.
8. Log out.

Scenario 8

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Teacher.
4. Complete the annual teaching plan under “Annual Plan” section.
5. Record data.
6. List of data is updated.
7. “Upload file” option available.
8. Save changes.
9. Print document.
10. Log out.

Scenario 9

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Teacher.
4. Complete school registry with the daily list of participating children.
5. Save changes.
6. Log out.

Scenario 10

1. User enters username and password.
2. System authenticates username password combo.
3. User is logged in as Teacher.
4. Under “New Methodologies” section teacher can add new methods and from who is proposed.
5. Upload files.
6. Record the date.

7. Confirmation notification window is shown in order to have a successful publication of documents.
8. Save changes.
9. Log out.

Scenario 11

1. User enters username and password.
2. System authenticates username password combo.
3. User is logged in as Teacher.
4. User opens “Llogaria ime” section.
5. User can change the password and the username, only by making a request to the human resources department. (Security reasons)
6. After confirmation, user can change username or password based on some constraints.
7. If the username is already in use it shows the message “Already in use”.
8. Password should be at least 8 digits, one capital letter and one special character.
9. Log Out. (Done in the dropdown menu of the my Account section, in order not to pass through all the personal info without reason.)

5.4 Human Resources Module

Scenario 12

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Human Resource Manager.
4. Monitor HR structure.
5. Make job rotation.
6. Make overview of staff data.
7. Perform Job evaluation.
8. Save all changes.
9. Log out.

Scenario 13

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Human Resource Manager.
4. Monitor HR structure.
5. If changes to be made to HR module admin approval necessary.
6. If changes to be made to teachers module, finance module, admission office and others only notification sent to admin.
7. View detailed information for each employee with dropdown option.
8. Save all changes.
9. Log out.

Scenario 14

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Human Resource Manager.
4. Add new employee under “Recruit” section.
5. Add new employee personal details.
6. Upload legal documents required.
7. Make job rotation.
8. Register the new employee.
9. Save Changes.
10. Log out.

Scenario 15

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Human Resource Manager.
4. Add new employee under “Recruit” section.
5. Add new employee personal details.
6. Upload legal documents required.
7. Make job rotation.
8. Register the new employee.
9. Save Changes.
10. Log out.

5.5 Admission Office Module

Scenario 16

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Admission Office Manager.
4. Maintain the system of registered children.
5. Classification of groups of children with respective teacher.
6. View & edit option for list of students for each group with a click on the right side on the dropdown menu.
7. Notifications send to admin and teacher.
8. Save changes.
9. Log Out.

Scenario 17

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Admission Office Manager.
4. Register new children under “Register” section.
5. Add new children personal details.
6. Upload all legal documents required.
7. Notifications send to admin and teacher.
8. Do not allow registering, if not all required fields filled.
9. Confirmation notification.
10. Save changes.
11. Log out.

Scenario 18

1. User enters username and password.
2. System authenticates username password.
3. User is logged in as Admission Office Manager.
4. Under “Announcement” section view new mails or notifications.
5. Response option.
6. Log out.

Scenario 19

1. User enters username and password.
2. System authenticates username password combo.
3. User is logged in as Admission Office Manager.
4. User opens “Llogaria ime” section.
5. User can change the password and the username, only by making a request to the human resources department. (Security reasons)
6. After confirmation, user can change username or password based on some constraints.
7. If the username is already in use it shows the message “Already in use”.
8. Password should be at least 8 digits, one capital letter and one special character.
9. Log Out. (Done in the dropdown menu of the “Llogaria ime” section.)

5.6 Admin Module

Scenario 20

1. User enters username and password.
2. System authenticates username password combo.
3. User is logged in as Admin.
4. Includes sections: →Finance
   →Children
   →Teachers
   →HR
   →Announcements
   →my Account.
5. View all data of all users.
6. Upload daily food menu.
7. Approve changes that others who use the platform ask for.
8. HR staff data maintained by admin.
9. Every change made, send notification to admin.
10. Log Out.

Scenario 21 (Applied to all Modules)

1. Person enters username and password (incorrectly).
2. A warning is displayed to the person for this problem and asked for reentering username and password again.
3. System authenticates username password combo.
4. Person is logged in to his personal account.
5. Person accesses his/her profile.
6. Person looks the list of services available at the center.
7. Person selects some of the services he/she is interested in.
8. Person log out.

6. Use Cases

Use case number	UC-01
Use case name	Log in
Overview	To provide the users of the MDL to access the system functionality by entering correctly the username and password.
Actor(s)	User, MDL system
Pre-condition(s)	User must have a valid username and password. Internet connection is a requirement.
Scenario flow	**Main (success) flow :** 1. MDL system displays the log in form to the user. 2. User enters the username and password. 3. MDL checks the username and password. 4. MDL displays the home page.
	Alternate Flows-1: Wrong username or password. MDL displays an error message. MDL system displays the log in form again.
Post condition(s)	User is logged in. He/ She may access the modules of the system where has rights as long as is logged in.

Use case number	UC-02
Use case name	Register a child
Overview	The Admission Office manager adds a new child that takes services by the MDL system at the database. The user in order to make the registration needs to provide to the system name, surname, parent information, birthplace, birthdate, specific required documentation.
Actor(s)	User, MDL.
Pre-condition(s)	User must be logged in
Scenario flow	**Main (success) flow :** 1. User logs in.

	2. User enters to the registration tab. 3. MDL system displays the registration form. 4. Admission manager enters the name, surname, birthdate, birthplace, age, parent information, and the respective teacher the child will have. 5. MDL displays a message that the registration is completed.
	Alternate Flows-1: Not valid data entered in the registration form. MDL displays an error message. MDL allows the user to edit & reenter the data.
Post condition(s)	After finishing this task User may access other functionalities of the MDL system.

Use case number	UC-03
Use case name	View/Edit child information
Overview	If the user during the registration process has made errors, he/ she may edit the child information and make the proper changes. Also from this option he can only take a view of the information available.
Actor(s)	User, MDL
Pre-condition(s)	User must be logged in
Scenario flow	**Main (success) flow :** 1. User wants to see the list of all the children. 2. MDL displays the list of the children. 3. User clicks to the name of the child that wants to make changes. 4. MDL displays all the information that the child has in the system. 5. User clicks on the data that he/she wants to change and press edit. 6. MDL displays the fields to reenter the data. 7. MDL makes the changes of that data in the database.
	Alternate Flows-1: The new data added to the child information is not valid. MDL displays an error message for non-valid information. MDL gives the user the opportunity to reenter the data.
Post condition(s)	After finishing this task User may access other functionalities of the MDL system.

Use case number	UC-04
Use case name	Register a service to the child.
Overview	The user makes the daily registration of the service/s that a child takes in that day.
Actor(s)	User, MDL
Pre-condition(s)	User must be logged in.
Scenario flow	**Main (success) flow :** 1. User wants to add service to the child information. 2. MDL displays the children list. 3. User selects one child to add services. 4. User adds the service to the child by ticking each service provided to him. 5. MDL registers the new service to the child information and the date when the service has taken. 6. MDL confirms the registration by showing a message.
	Alternate Flows-1: 1. User wants to add service to the child information. 2. MDL displays the children list. 3. User selects one child to add services. 4. User adds the service to the child by ticking each service provided to him. 5. MDL does not add the new service to the child information an error occurs.
Post condition(s)	After finishing this task User may access other functionalities of the MDL system.

Use case number	UC-05
Use case name	Search by name
Overview	The teacher searches for a child by putting in the form the child name and surname. The result will show all the information that the system has linked with that child.
Actor(s)	Teacher, MDL
Pre-condition(s)	Teacher must be logged in.
Scenario flow	**Main (success) flow :** 1. Teacher clicks the search button 2. Teacher clicks to search by name tab. 3. Teacher enters the name of the child that is looking for. 4. MDL displays the child's information.
	Alternate Flows-1: 1. Teacher clicks the search button 2. Teacher clicks to search by name tab. 3. Teacher enters the name of the child that is looking for. 4. MDL displays an error message that shows "It is not possible to connect to the database".
	Alternate Flows-2: 1. Teacher clicks the search button 2. Teacher clicks to search by name tab. 3. Teacher enters the name of the child that is looking for. 4. MDL displays an error message that shows "There is no child with this name in MDL database".
Post condition(s)	After finishing this task Teacher may access other functionalities of the MDL system.

Use case number	UC-6
Use case name	Generate report I
Overview	The system generates a report with all the children that have taken services from the specific month that the user wants to access.
Actor(s)	User, MDL
Pre-condition(s)	User must be logged in.
Scenario flow	**Main (success) flow :** 1. User clicks the report button. 2. User ticks the report that generates a list of services. 3. User ticks the pdf format of the report. 4. MDL shows the report in the pdf format.
	Alternate Flows-1: 1. User clicks the report button. 2. User ticks the report that generates a list of services. 3. User ticks the pdf format of the report. 4. MDL shows an error message “It is not possible to generate the report”.
Post condition(s)	After finishing this task User may access other functionalities of the MDL system.

Use case number	UC-7
Use case name	Generate report II
Overview	The system also prepares daily reports since the service takers may differ from day to day, so each day is generated a report with the services offered and the children who took the service that day (mainly the food service).
Actor(s)	User, MDL
Pre-condition(s)	User must be logged in.
Scenario flow	**Main (success) flow :** 1. User clicks the report button. 2. User ticks the report that generates a list of all the children grouped by services that they take. 3. User ticks the pdf format of the report. 4. MDL shows the report in the pdf format.
	Alternate Flows-1: 1. User clicks the report button. 2. User ticks the report that generates a list of all the children grouped by services that they take. 3. User ticks the pdf format of the report. 4. MDL shows an error message “It is not possible to generate the report”.
Post condition(s)	After finishing this task User may access other functionalities of the MDL system.

Use case number	UC-8
Use case name	Print report
Overview	The user may download the report and print it whenever he/she needs it.
Actor(s)	User, MDL
Pre-condition(s)	User must be logged in
Scenario flow	**Main (success) flow :** 1. User Generate Report I. 2. User downloads the Report 1. 3. User prints the Report 1.
	Alternate Flows-1: 1. User Generate Report II.

	2. User downloads the Report 1I. 3. User prints the Report 1I.
Post condition(s)	MDL must have the necessary hardware and software resources to print the Report.

Use case number	UC-9
Use case name	Record the expenses
Overview	The financer enters to the finance model the monthly rent costs, utilities, food, salaries, transport costs.
Actor(s)	Financer, MDL
Pre-condition(s)	Financer has to be logged in.
Scenario flow	**Main (success) flow :** 1. Financer selects Expenses Form at the Finance Module. 2. MDL displays the expenses form. 3. Financer fills in the form the food cost. 4. Financer fills in the form the salaries cost. 5. Financer fills in the form the other cost. 6. MDL displays a message that the record of the expenses has been done correctly.
	Alternate Flows-1: 1. Financer selects Expenses Form at the Finance Module. 2. MDL displays the expenses form. 3. Financer fills in the form only the food cost. 4. MDL displays a message that the record of the expenses has been done correctly.
	Alternate Flows-2: 1. Financer selects Expenses Form at the Finance Module. 2. MDL displays the expenses form. 3. Financer fills in the form the food cost. 4. Financer fills in the form the salaries cost.

	5. Financer fills in the form the other cost. 6. MDL displays an error message" The record of the expenses has not been done" 7. Financer reenters the data at the Expenses Form.
Post condition(s)	After finishing this task Financer may access other functionalities of the finance model or other functionalities of MDL system.

Use case number	UC-10
Use case name	Generate the income statements.
Overview	The admin and financer want to see the profit of the kindergarten so far, so they can generate from the system income statement.
Actor(s)	Financier, Admin, MDL
Pre-condition(s)	Financier has to be logged in.
Scenario flow	**Main (success) flow :** 1. Financer selects the Income Statement at the Finance Module. 2. MDL generates the Income Statement. 3. MDL uses pdf form to display the Income Statement. 4. Financer sees the Income Statement and shows it to the admin.
	Alternate Flows-1: 1. Financer selects the Income Statement at the Finance Module. 2. MDL generates the Income Statement. 3. An error occurs and MDL cannot display the Income Statement. 4. Financer reselects the Income Statement at the Finance Module. 5. MDL generates the Income Statement. 6. MDL uses pdf form to display the Income Statement. 7. Financer sees the Income Statement and shows it to the admin.
Post condition(s)	After finishing this task financer may download the Income Statement or may access other functionalities of MDL system.

Use case number	UC-11
Use case name	Print the income statements.
Overview	The financer downloads and prints the income statements which are in a printable form for each accounting period set by the finance department.
Actor(s)	Financier, MDL
Pre-condition(s)	Financer has to be logged in.
Scenario flow	**Main (success) flow :** 1. Financer selects the Income Statement at the Finance Module. 2. MDL generates the Income Statement. 3. MDL uses pdf form to display the Income Statement. 4. Financer downloads the Income Statement.
	Alternate Flows-1: 1. Financer selects the Income Statement at the Finance Module. 2. MDL generates the Income Statement. 3. MDL uses pdf form to display the Income Statement. 4. Financer downloads the Income Statement. 5. An error occurs and MDL cannot display (download) the Income Statement. 6. Financer reselects the Income Statement at the Finance Module. 7. MDL generates the Income Statement. 8. MDL uses pdf form to display the Income Statement. 9. MDL downloads and prints the Income Statement.
Post condition(s)	After finishing this task Financer may access other functionalities of the finance model or other functionalities of MDL system.

Use case number	UC-12
Use case name	Access the admin module
Overview	If the admin tries to access his module he will access all the system module since he is the owner and administrator of everything. Without his permission, no change can be made to any of the modules.
Actor(s)	Admin, MDL
Pre-condition(s)	Internet connection. Admin has to be logged in.
Scenario flow	**Main (success) flow :** 1. Admin selects the admin module. 2. MDL displays the functionalities that the admin module offers.

	Alternate Flows-1: 1. User is not the admin. 2. MDL displays a message "You as a user cannot access this module". 3. MDL redirects the user to the home page.
Post condition(s)	Admin can access the other functionality of MDL system.

Use case number	UC-13
Use case name	Access the Parent module
Overview	The parent of each child has its own module to have access to the performance of his child. Here he can view and require for any edit to the errors made in information written.
Actor(s)	Parent, MDL
Pre-condition(s)	Internet connection. Parent has to be logged in.
Scenario flow	**Main (success) flow :** 3. Parent selects the Child/Parent module. 4. MDL displays the functionalities that this module offers.
	Alternate Flows-1: 4. User is not the Parent. 5. MDL displays a message "You as a user cannot access this module". 6. MDL redirects the user to the home page.
Post condition(s)	Parent can access the other functionality of MDL system.

Use case number	UC-14
Use case name	Access the HRM module
Overview	If the user is the Human Resources Manager when he/she tries to access the HRM module it will access all the system functionalities that are linked with this module. If the user is not the Human Resources Manager the MDL system will display an error message that the user cannot access this model, since the access of this module and department is only allowed to this person who holds this duty.

Actor(s)	Human Resources Manager, MDL
Pre-condition(s)	Internet connection. Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow :** 5. Human Resources Manager selects the HRM module. 6. MDL displays the functionalities that the HRM module offers.
	Alternate Flows-1: 7. User is not the Human Resources Manager. 8. MDL displays a message "You as a user cannot access this module". 9. MDL redirects the user to the home page.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-15
Use case name	See the HR structure
Overview	Human Resources Manager controls the structure of the Human Resources Department, he can also access the organizational chart of the company with the permission of admin.
Actor(s)	Human Resources Manager, MDL.
Pre-condition(s)	Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow:** 1. Human Resources Manager selects the HR Structure button at the HRM module. 2. MDL display in pdf the HR structure. 3. Human Resources Manager downloads the pdf format.
	Alternate Flows-1: 1. Human Resources Manager selects the HR Structure button at the HRM module. 2. MDL display in pdf the HR structure. 3. An error message is shown: " MDL faced an error displaying the pdf format" 4. MDL clicks again to display the pdf format. 5. HR manager downloads the pdf file.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-16
Use case name	Employee Data
Overview	Human Resources Manager has the right to create a folder with all the information that the MDL should have for an employee. This folder includes data such as name, surname, gender, age, position, email, CV, photo, qualifications, diploma accompanied by the list of the grades, salary etc.
Actor(s)	Human Resources Manager, MDL
Pre-condition(s)	Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow :** **1.** Human Resources Manager selects the Employee Data button at the HRM module. **2.** MDL displays the Employee Data form. **3.** Human Resources Manager fills in the form the personal data of the employee. **4.** Human Resources Manager uploads to the Employee Data the CV in pdf format. **5.** Human Resources Manager uploads a jpg photo to the Employee Data. 6. MDL finishes the record process of the Employee Data successfully.
	Alternate Flows-1: **1.** Human Resources Manager selects the Employee Data button at the HRM module. **2.** MDL displays the Employee Data form. **3.** Human Resources Manager fills in the form the personal data of the employee. **4.** Human Resources Manager uploads to the Employee Data the CV in word format. 5. MDL displays a message “Upload your CV in pdf format.” **6.** Human Resources Manager uploads to the Employee Data the CV in pdf format. 7. MDL finishes the record process of the Employee Data successfully.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-17
Use case name	Edit Employees Data
Overview	Human Resources Manager may edit the information that each of the employees have in the system, with permission of admin.
Actor(s)	Human Resources Manager, MDL
Pre-condition(s)	Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow :** **1.** Human Resources Manager selects the Employee Data button at the HRM module. **2.** MDL displays the Employee Data form. **3.** Human Resources Manager fills in the form the personal data of the employee. **4.** Human Resources Manager uploads to the Employee Data the CV in pdf format. **5.** Human Resources Manager uploads a jpg photo to the Employee Data. MDL finishes the record process of the Employee Data successfully.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-18
Use case name	Add new employee
Overview	Human Resources Manager adds a new employee with all the information in the HR database.
Actor(s)	Human Resources Manager, MDL
Pre-condition(s)	Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow :** **1.** Human Resources Manager selects the Add Employee button at the HRM module. **2.** MDL displays the Add Employee form. **3.** Human Resources Manager fills in the form the personal data of the employee.

	4. Human Resources Manager gives to the new employee a username and a password. 5. MDL makes the registration of the new employee data into the system.
	Alternate Flows-1: 1. Human Resources Manager selects the Add Employee button at the HRM module. 2. MDL displays the Add Employee form. 3. Human Resources Manager fills in the form the personal data of the employee. 4. Human Resources Manager gives to the new employee a username and a password. 5. An error occurs MDL displays the message "The new employee is not register to the database. Repeat the add process". 6. Human Resources Manager refills in the form the personal data of the employee. 7. Human Resources Manager gives to the new employee a username and a password 8. MDL makes the registration of the new employee data into the system.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-19
Use case name	Delete an employee
Overview	Human Resources Manager has the right to edit the employees list and so he can remove from the list the employees the ones who do not work in the kindergarten anymore.
Actor(s)	Human Resources Manager, MDL
Pre-condition(s)	Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow :** 1. Human Resources Manager selects the Delete Employee button at the HRM module. 2. MDL displays the list of employees. 3. Human Resources Manager selects the employee that will be deleted from the database. 4. MDL displays a message "Do you want to delete this information".

	5. Human Resources Manager confirms. **6.** MDL deletes from the database that employee.
	Alternate Flows-1: **1.** Human Resources Manager selects the Delete Employee button at the HRM module. **2.** MDL displays the list of employees. **3.** Human Resources Manager selects the employee that will be deleted from the database. **4.** MDL displays a message "Do you want to delete this information". **5.** Human Resources Manager does not confirm the deletion process. **6.** MDL cancels the deletion process and the employee is part of the database.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-20
Use case name	Job description
Overview	Add the job description of each position to the structure of MDL Human Recourses.
Actor(s)	Human Resources Manager, MDL
Pre-condition(s)	Human Resources Manager has to be logged in.
Scenario flow	**Main (success) flow :** 1. Human Resources Manager selects the Job description button at the HRM module. 2. MDL displays the list of employees with the corresponding position in the Kindergarten. 3. Human Resources Manager selects the employee. 4. Human Resources Manager changes the employee's job description. 5. MDL saves the changes.
	Alternate Flows-1: 1. Human Resources Manager selects the Job description button at the HRM module.

	2. MDL displays the list of employees with the corresponding position in the Kindergarten. 3. Human Resources Manager selects the employee. 4. Human Resources Manager changes the employee's job description. 5. MDL displays an error message "System does not record the job description". 6. Human Resources Manager changes the employee's job description. 7. MDL saves the changes.
Post condition(s)	Human Resources Manager can access the other functionality of MDL system.

Use case number	UC-21
Use case name	Personal Profile Log in
Overview	The staff that are using the system will have their accounts and can access their module where they can see their profiles, but don't have the right to edit anything.
Actor(s)	Staff, MDL
Pre-condition(s)	Internet connection.
Scenario flow	**Main (success) flow :** 1. MDL system displays the log in form to the user. 2. User enters the username and password. 3. MDL checks the User's username and password. 4. MDL displays the home page for the person.
Post condition(s)	Person may access the other functionalities of the module.

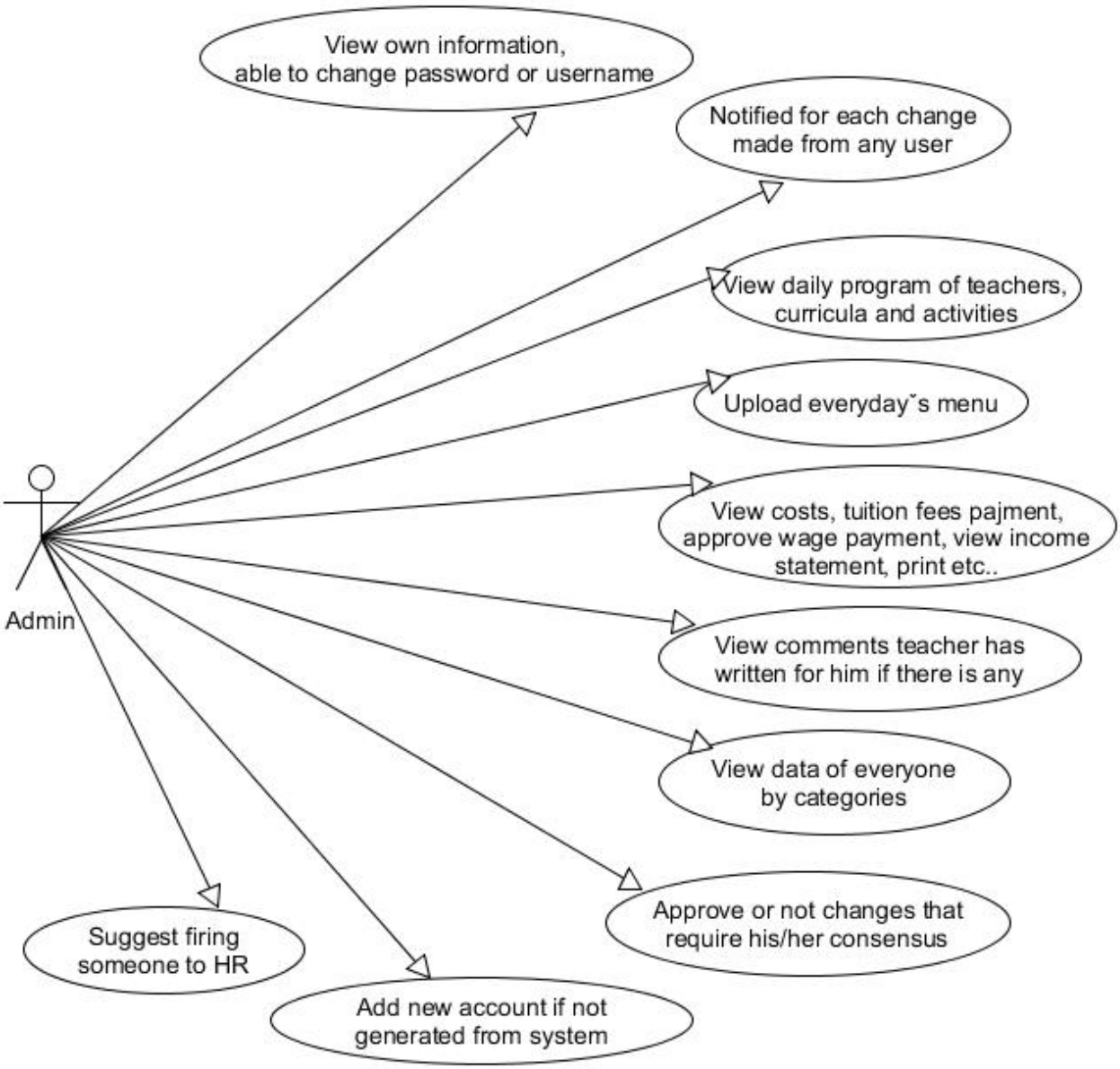
Use case number	UC-22
Use case name	Check the activities
Overview	The teachers that have their accounts can check the activities that are available and can propose changes to be made.

Actor(s)	Teacher, MDL
Pre-condition(s)	Teacher has to be logged in.
Scenario flow	**Main (success) flow :** 1. Teacher selects the check activities. 2. MDL displays a list of all the activities and services that will be provided in that month.
Post condition(s)	Teacher may access the other functionalities of the module.

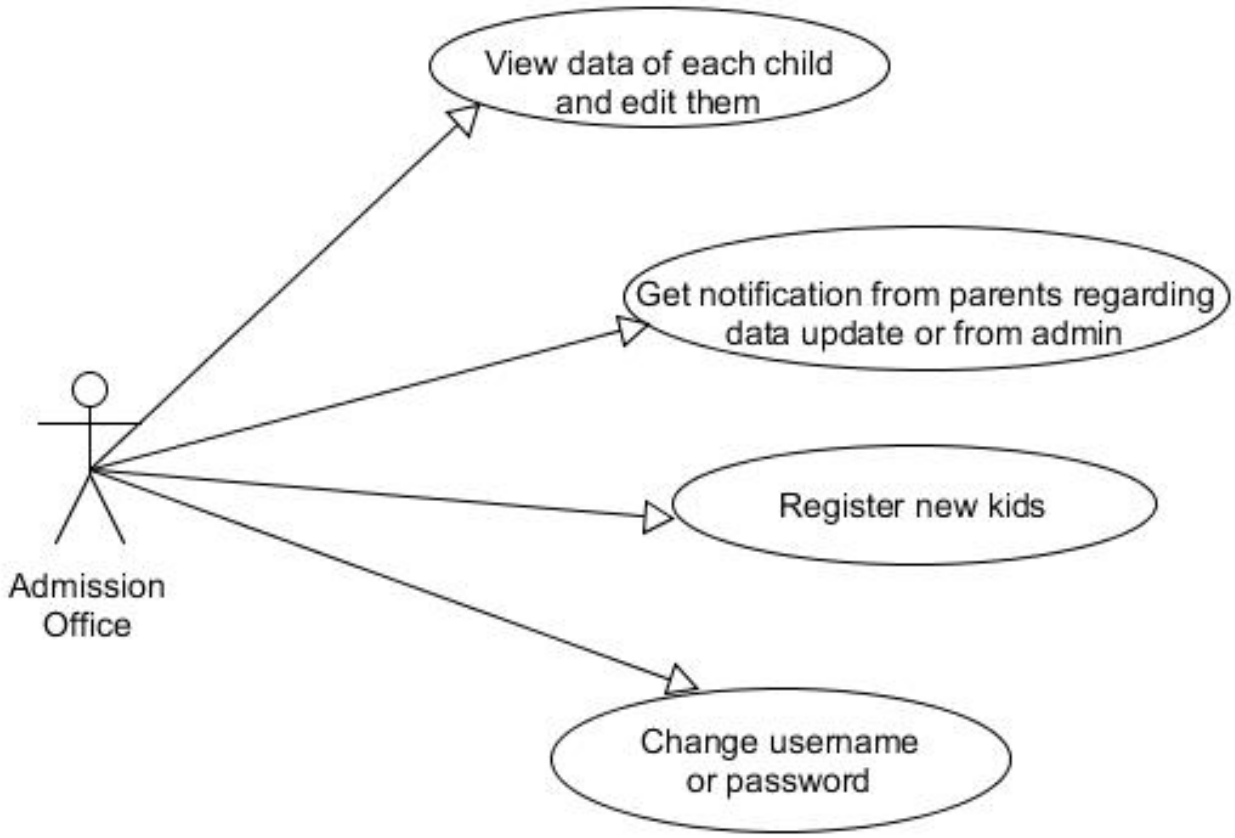
Use case number	UC-23
Use case name	About, Contact, Log out → Options
Overview	To provide the users of the MDL with opportunity of extra information, help and terminate program.
Actor(s)	User, MDL system
Pre-condition(s)	User must have a valid username and password. Internet connection is a requirement.
Scenario flow	**Main (success) flow :** 1. MDL system displays the log in form to the user. 2. User selects the About section for more information. 3. User selects the Help section for help when not understanding. 4. User selects the Log out button to leave.
	Alternate Flows-1: Wrong username or password. MDL displays an error message. MDL system displays the log in form again.
Post condition(s)	User is logged in. He/ She may access the modules of the system where has rights as long as is logged in. After finishing can leave by logging out.

7. Diagrams

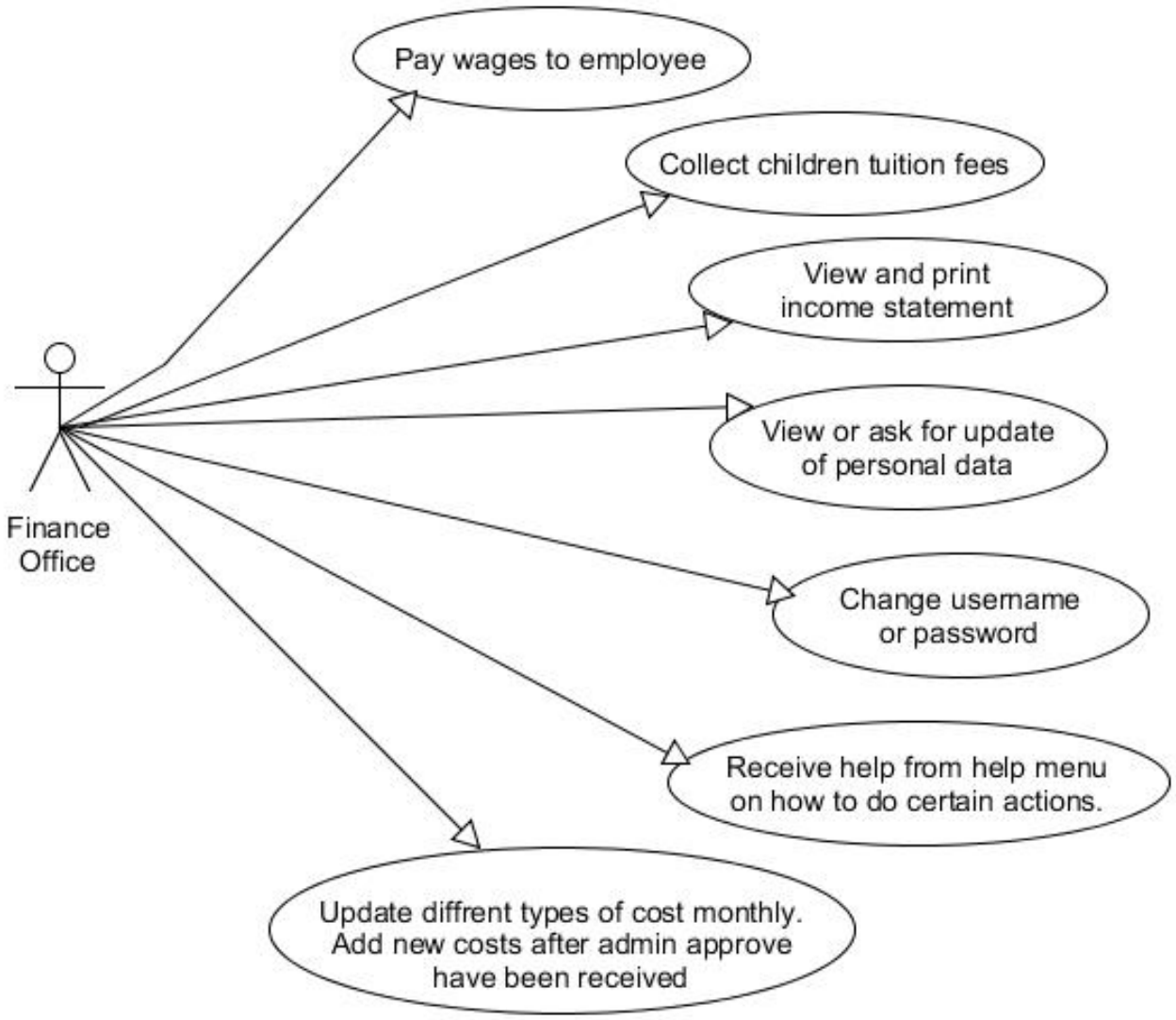
7.1 Use Case Diagrams



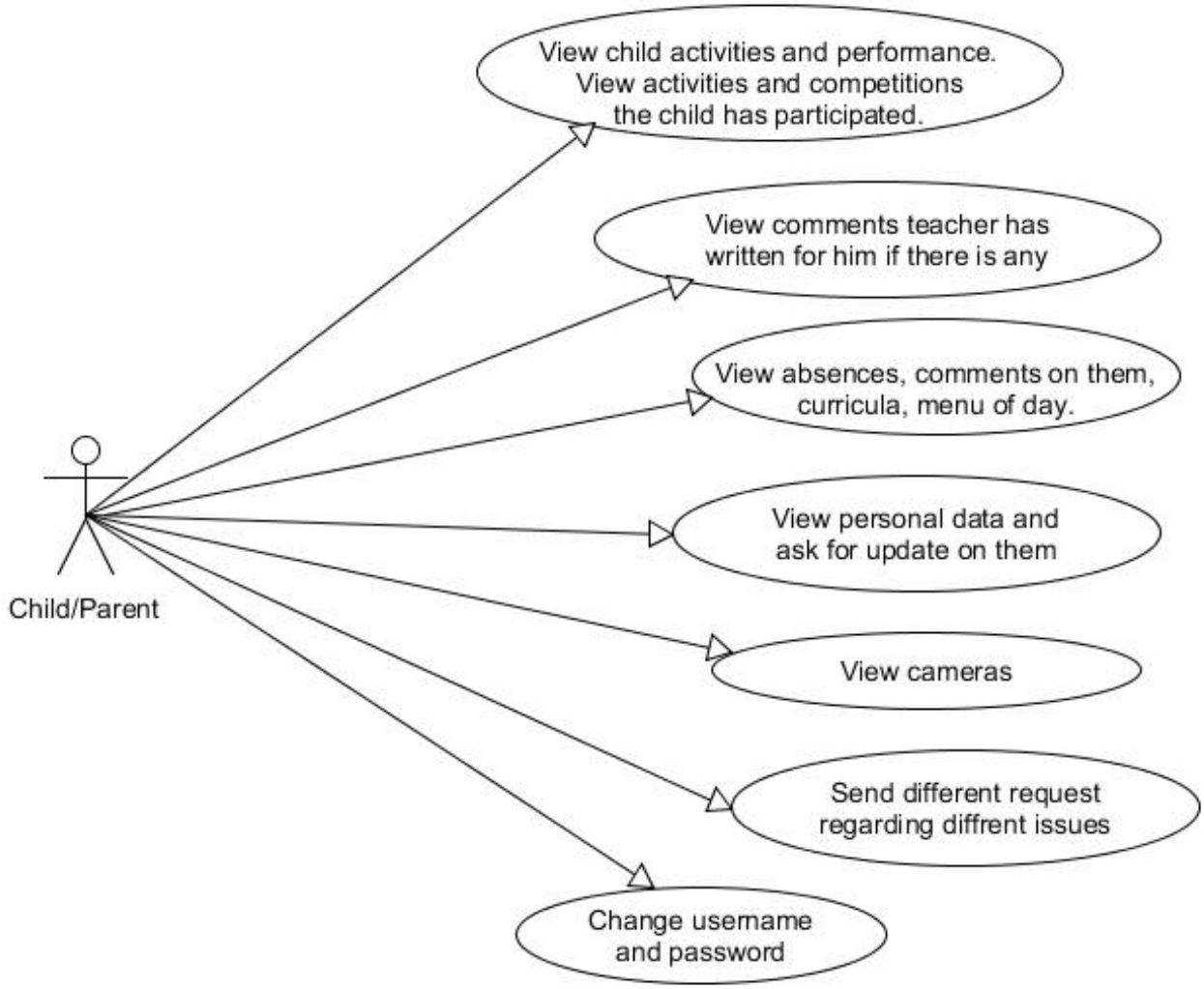
Admin Use Case Diagram



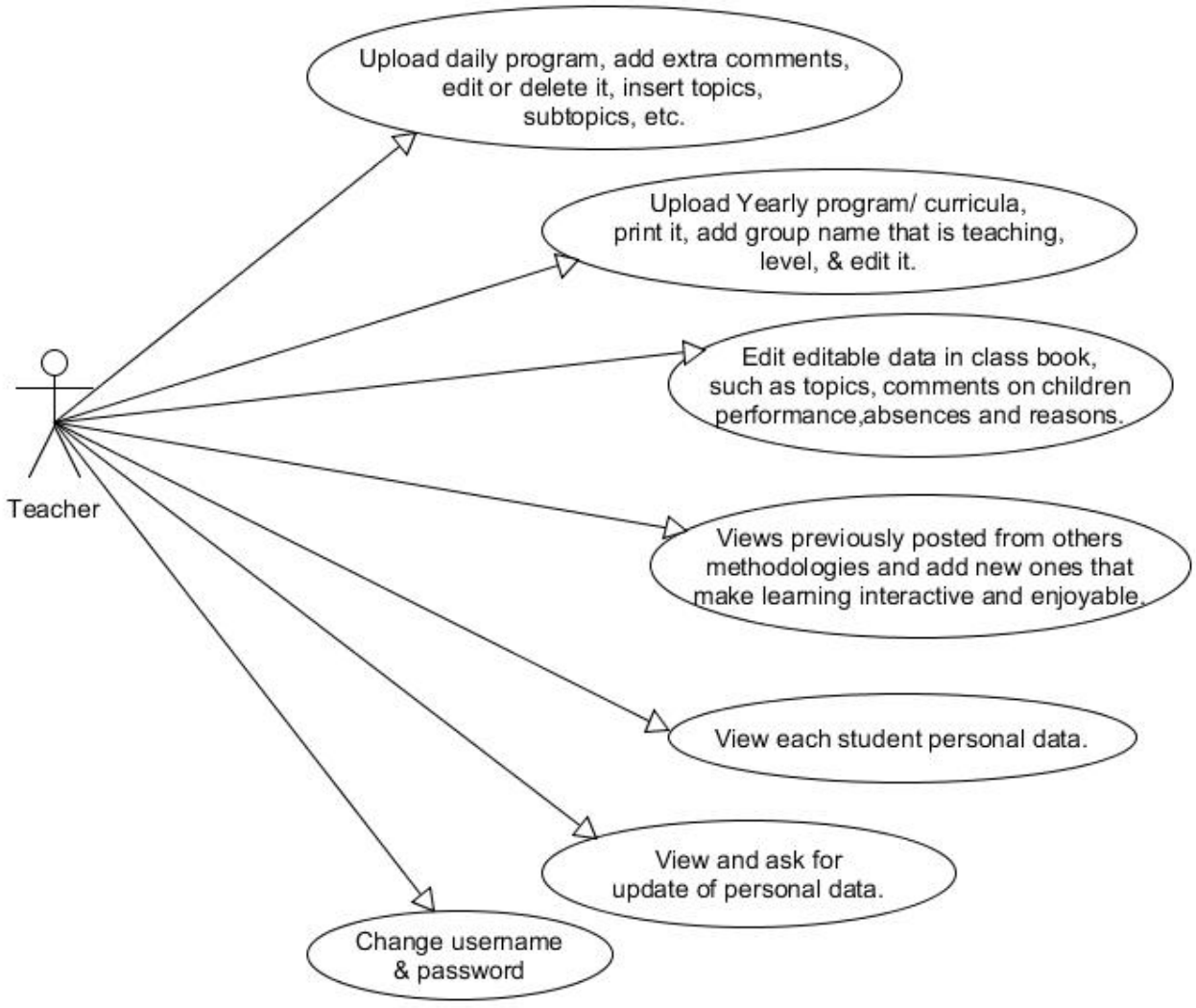
Admission Office Use Case Diagram



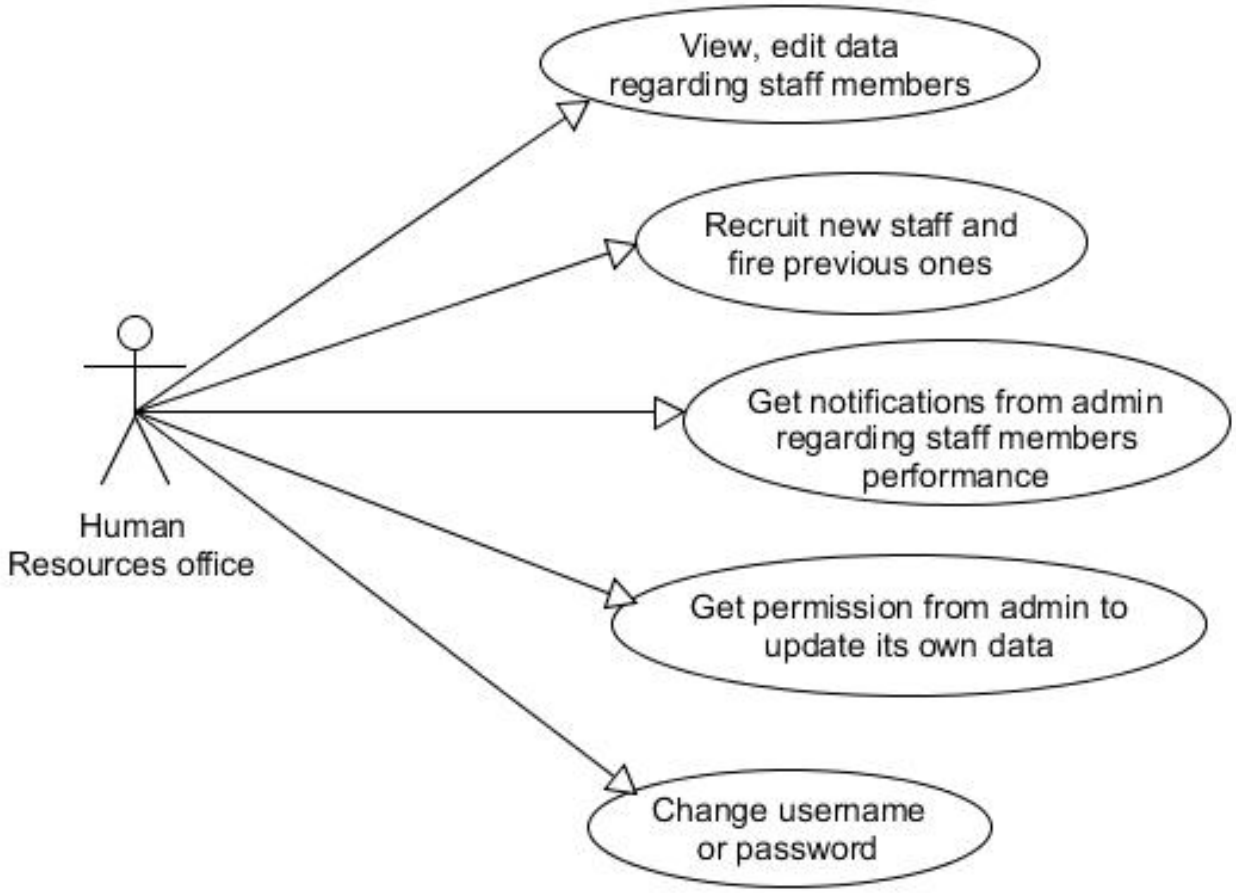
Finance Office Use Case Diagram



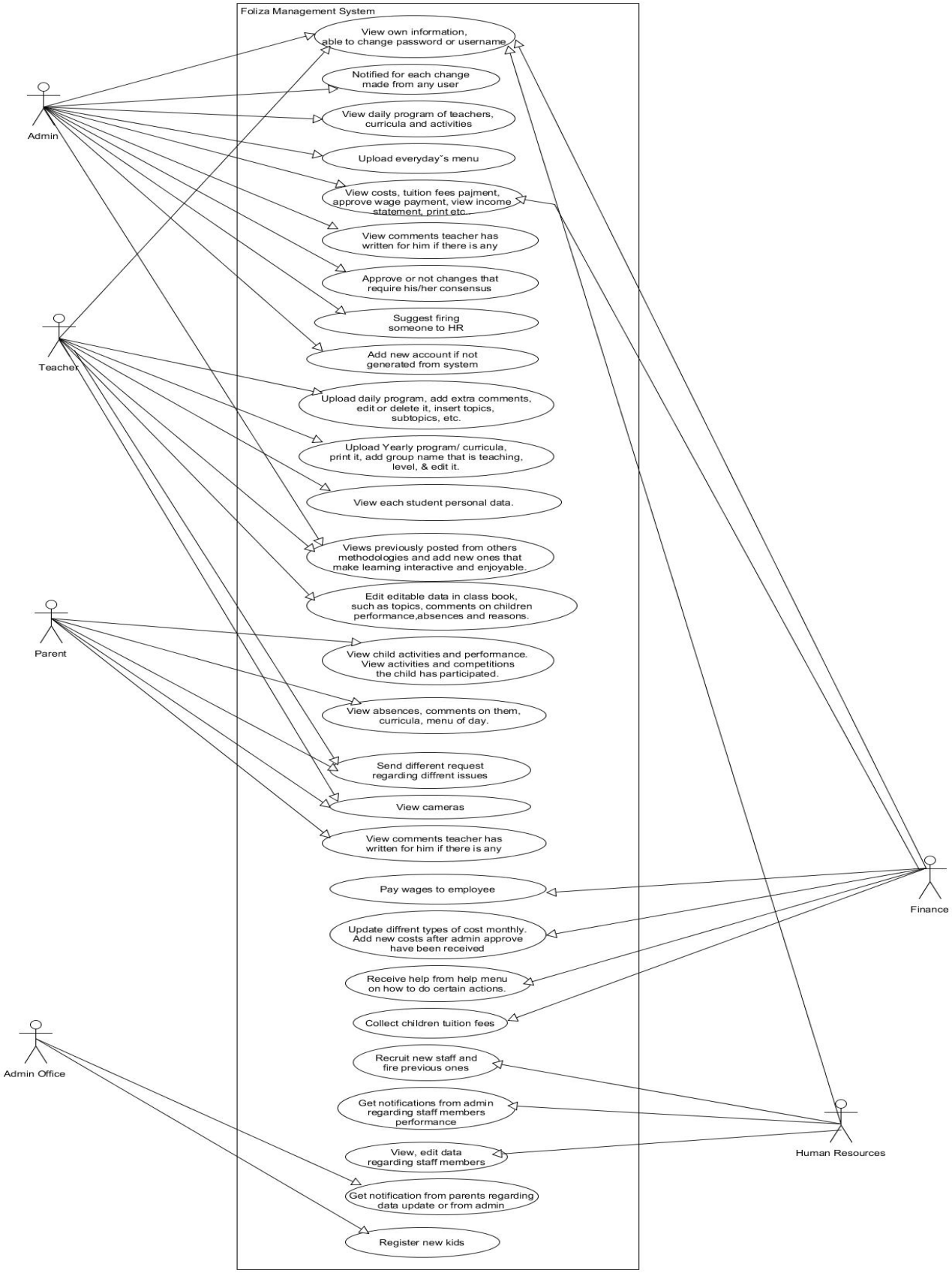
Parent Use Case Diagram



Teacher Use Case Diagram

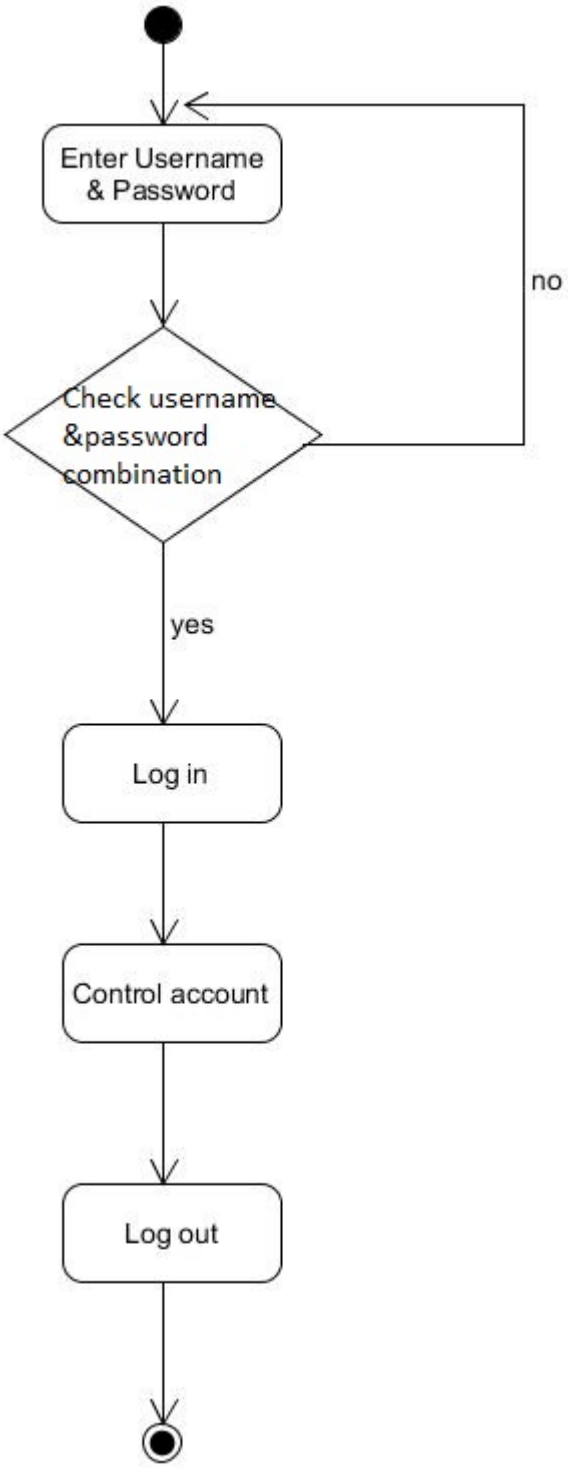


Human Resources Use Case Diagram

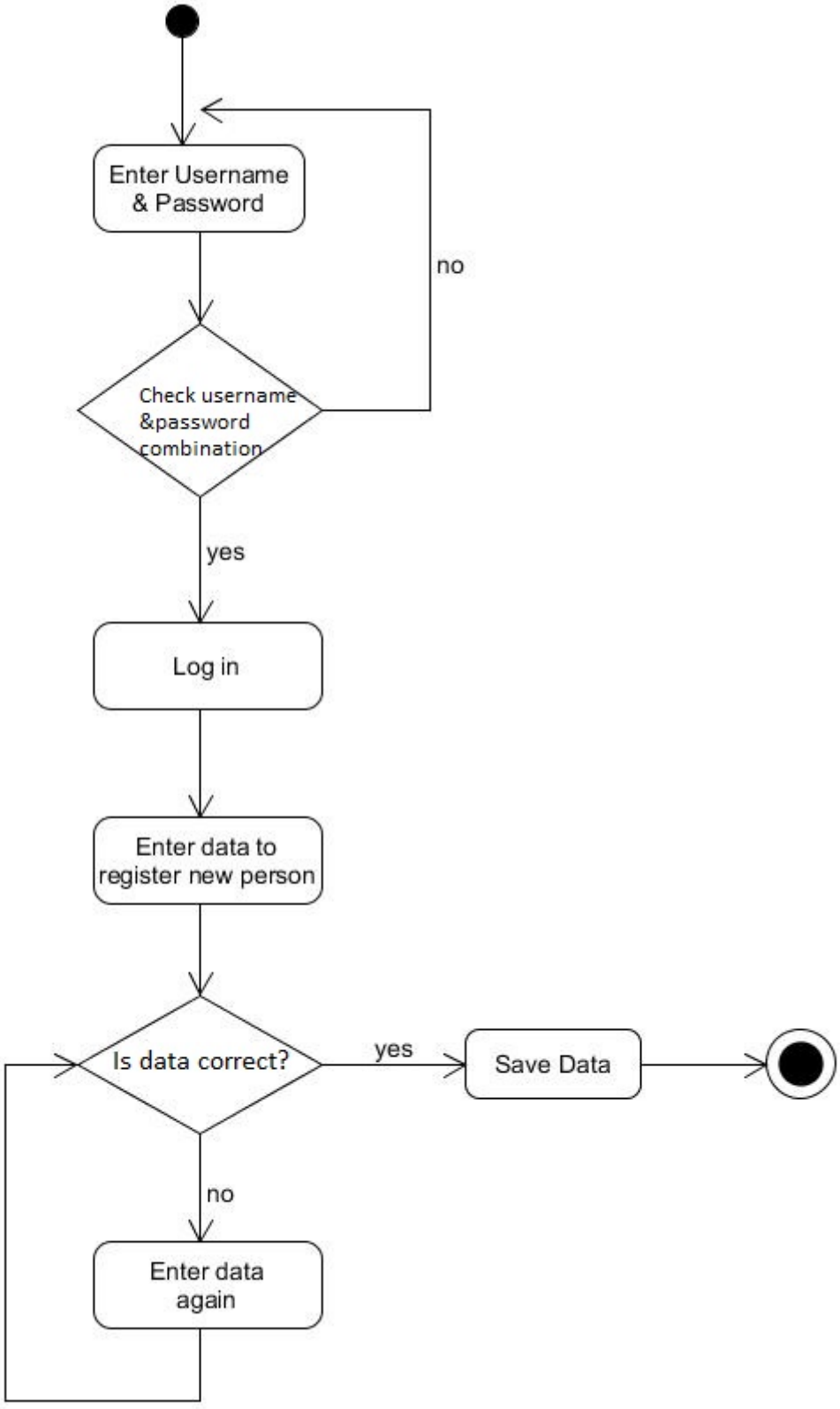


General Use Case Diagram

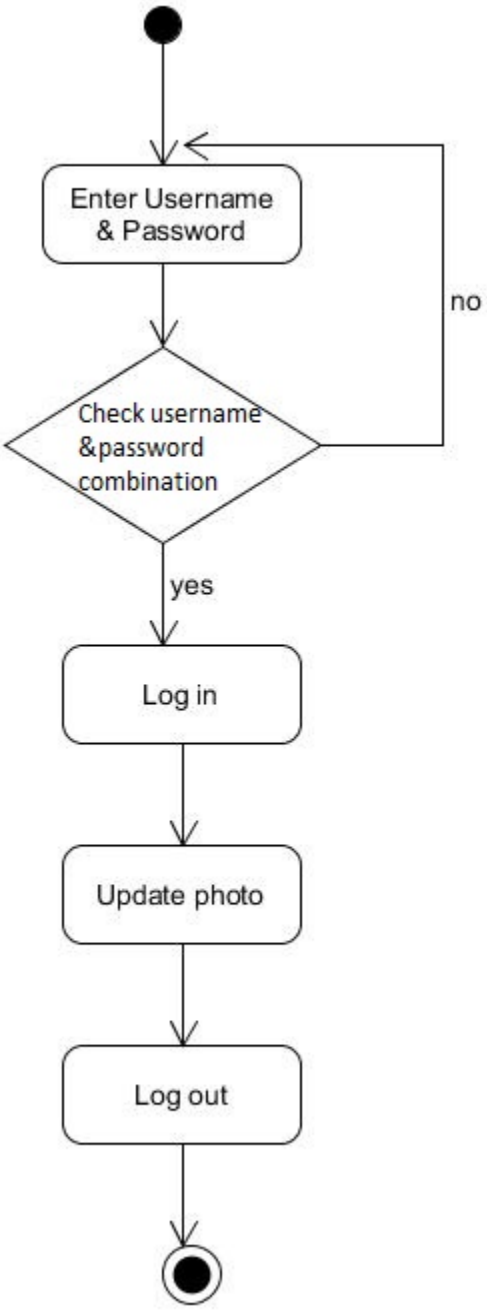
7.2 Activity Diagrams



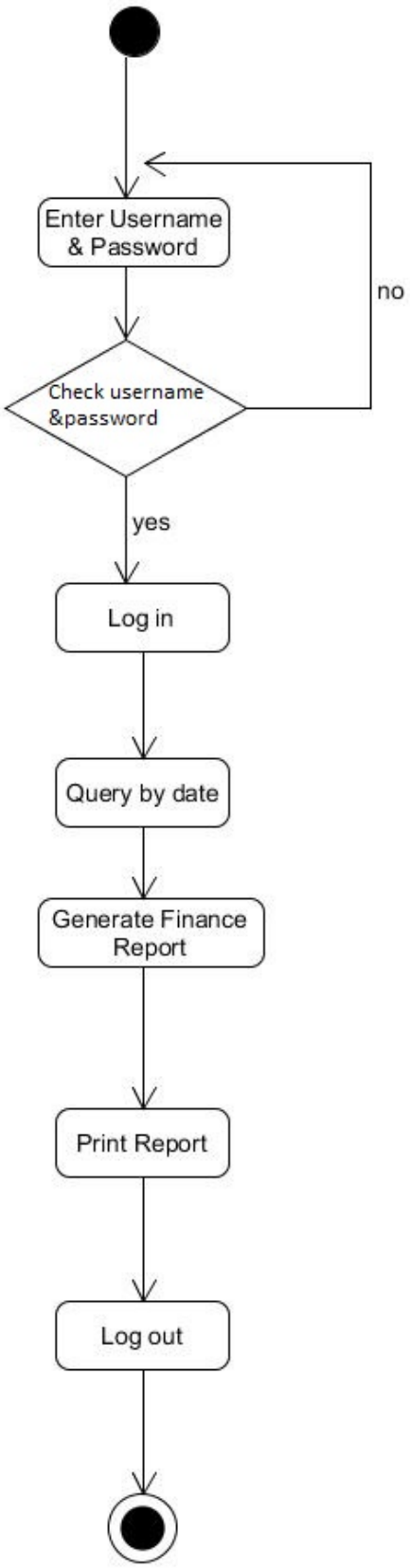
Activity Diagram 1



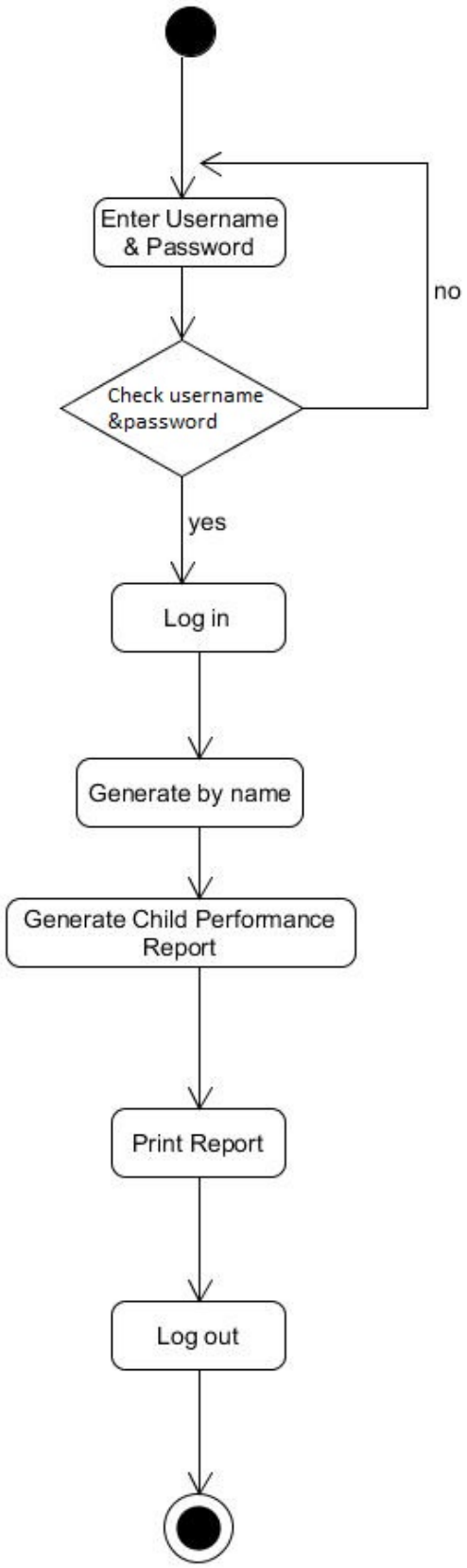
Activity Diagram 2



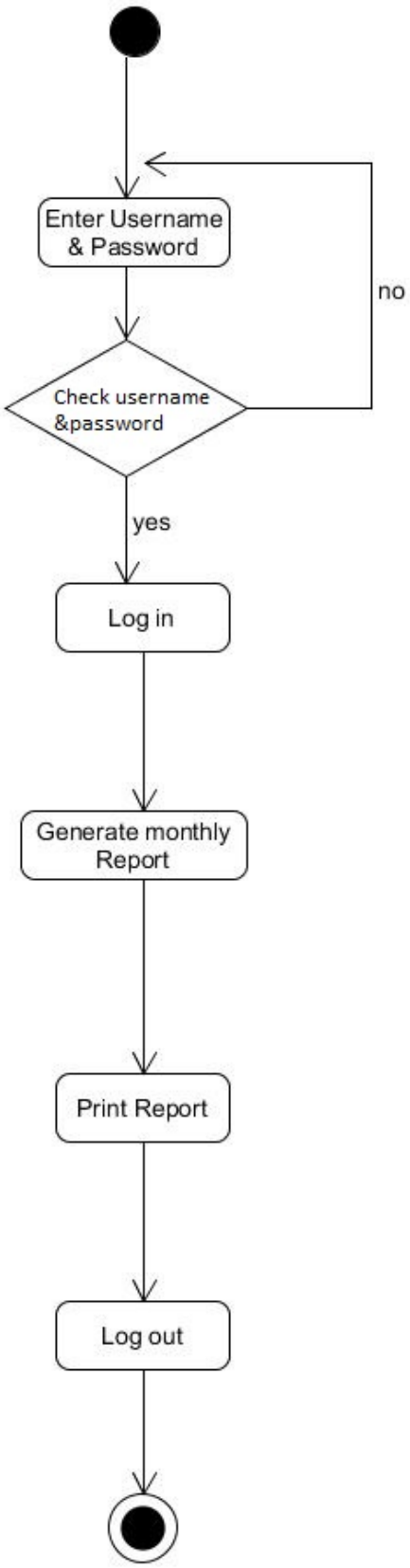
Activity Diagram 3



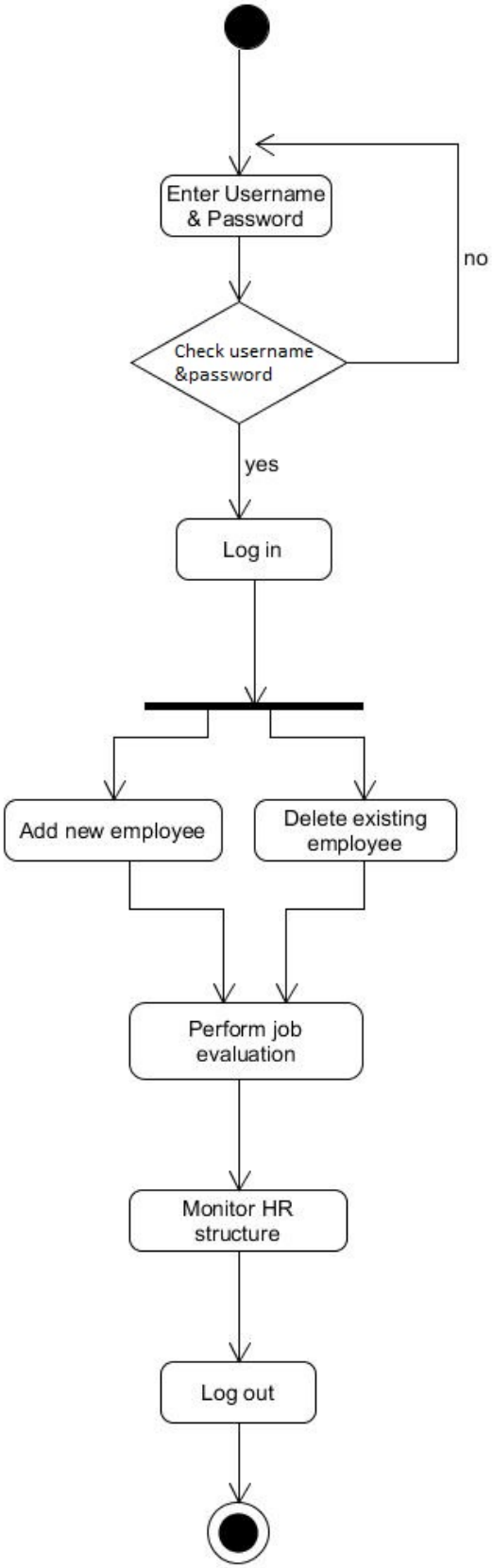
Activity Diagram 4



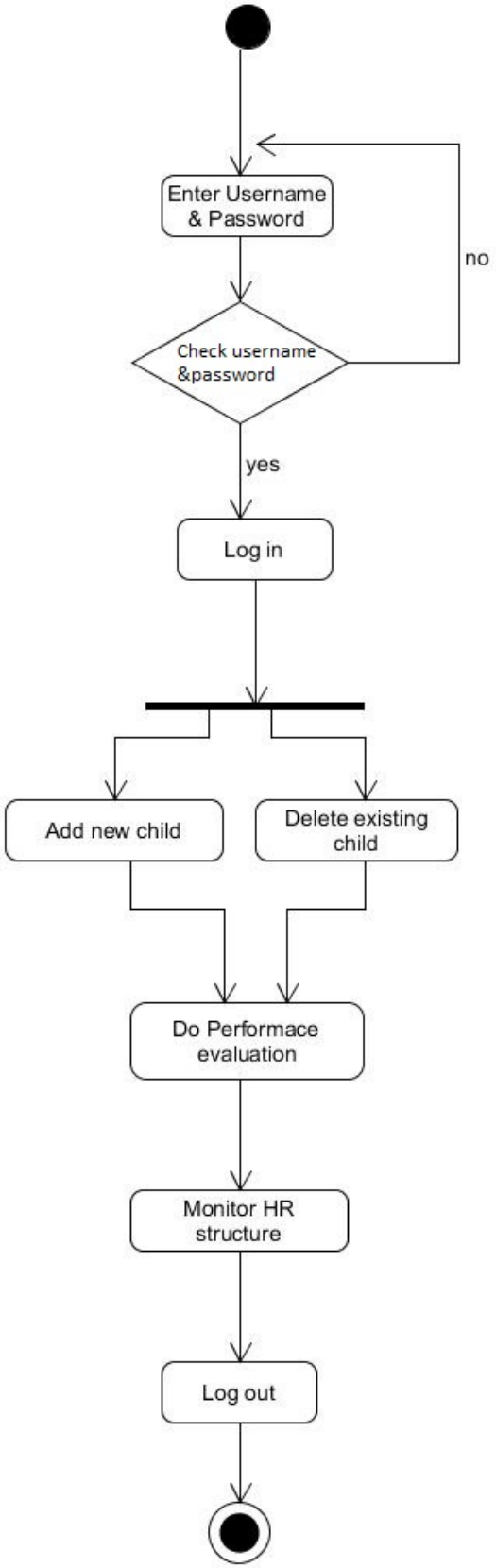
Activity Diagram 5



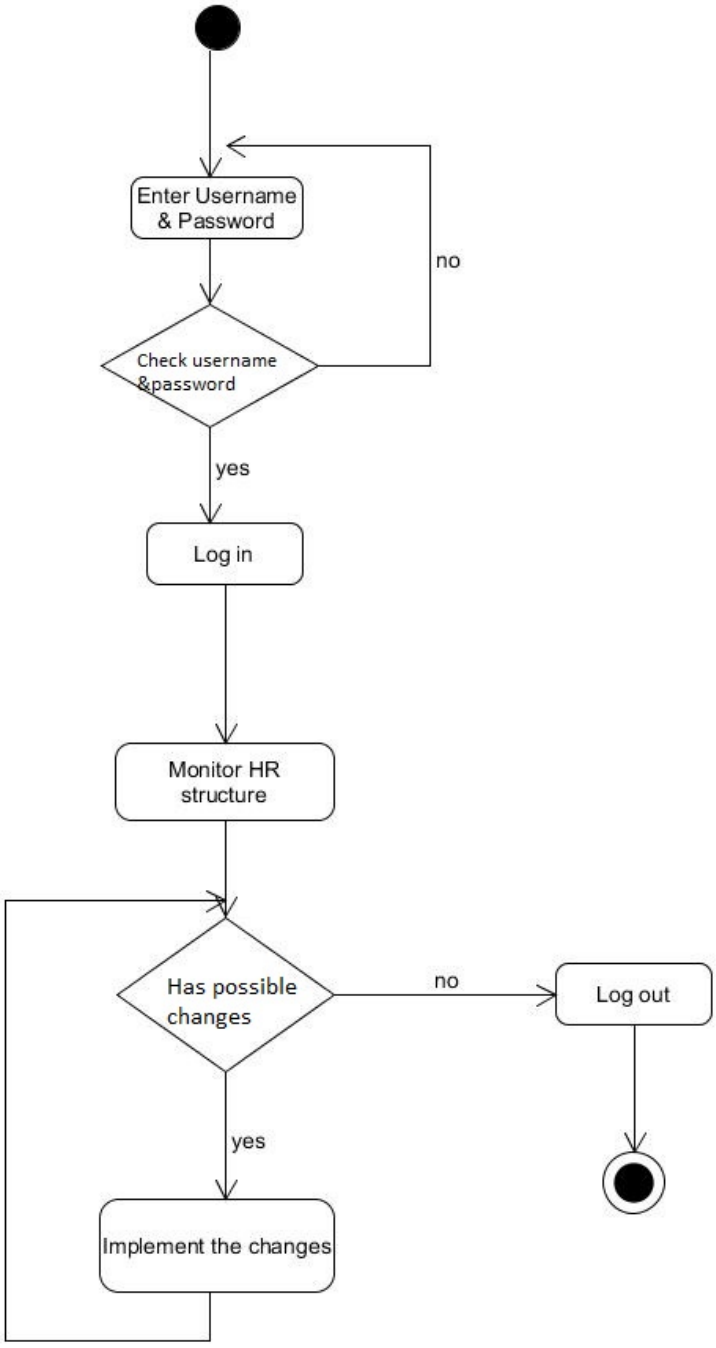
Activity Diagram 6



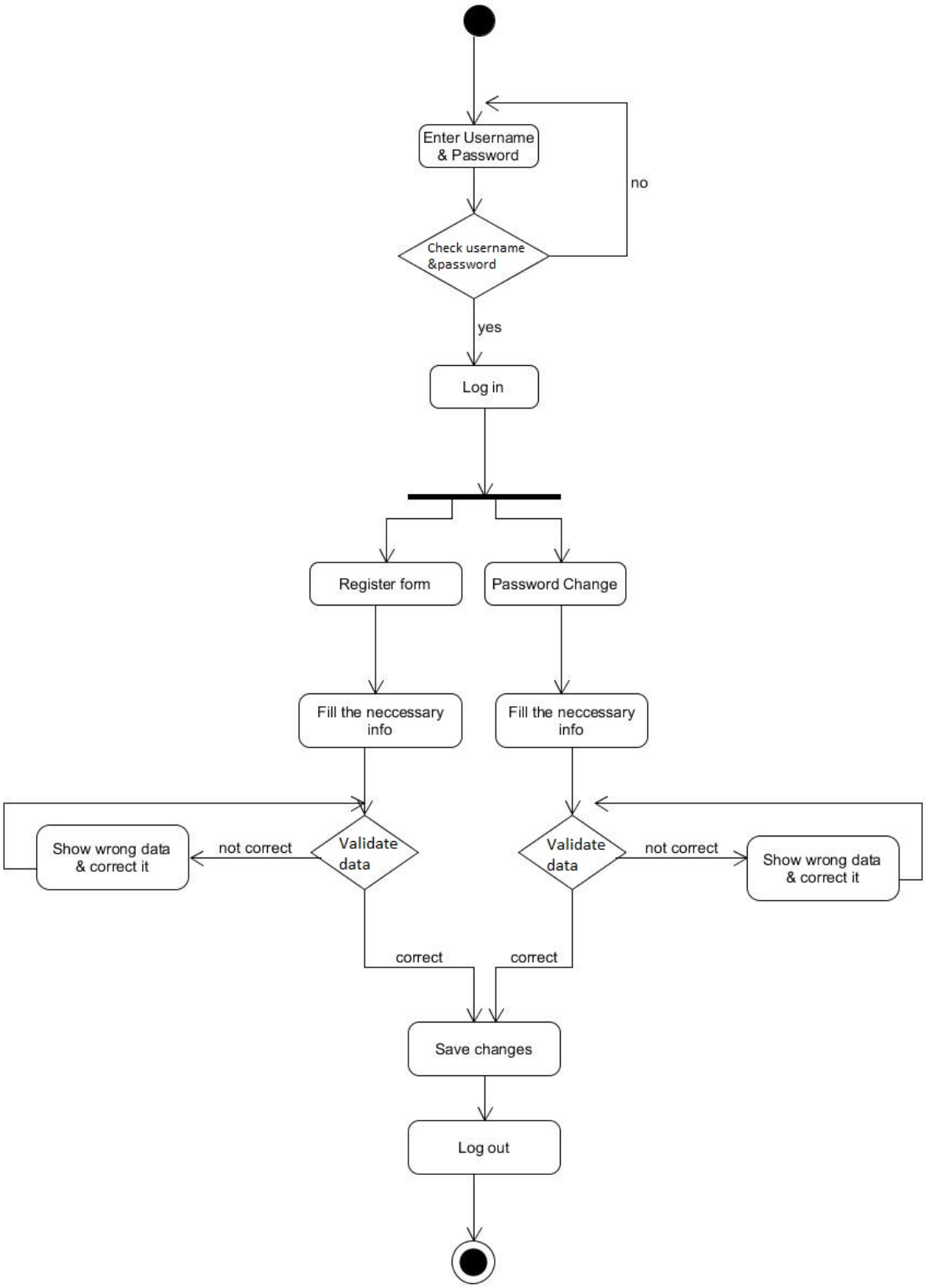
Activity Diagram 7



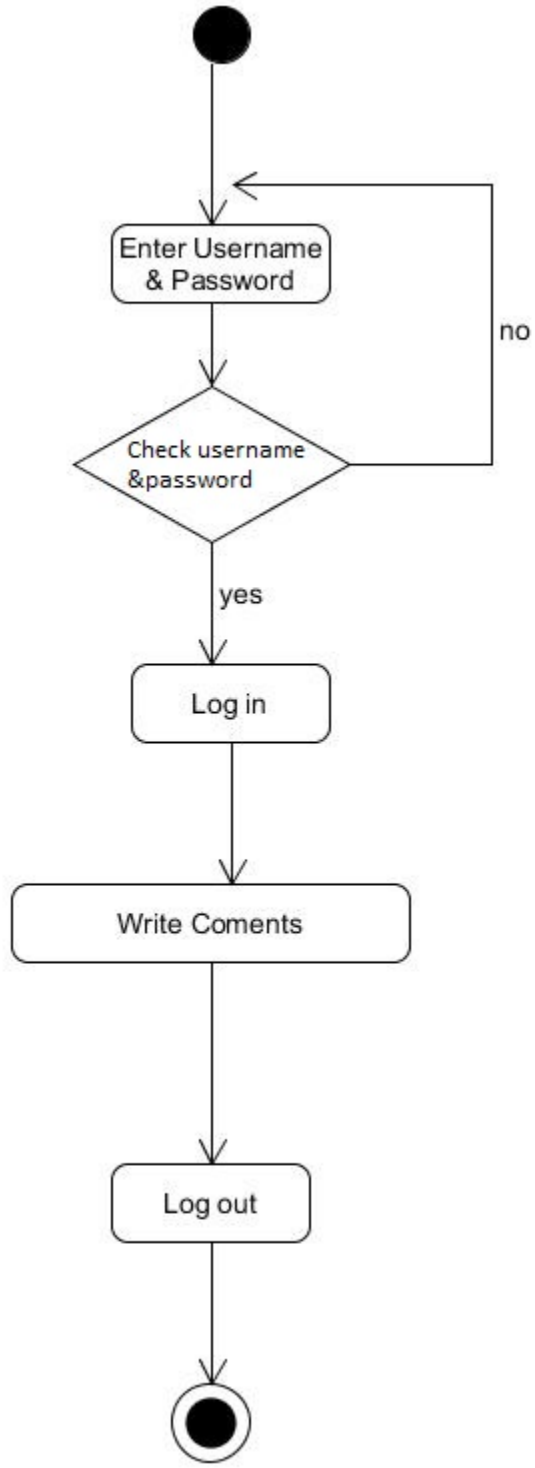
Activity Diagram 8



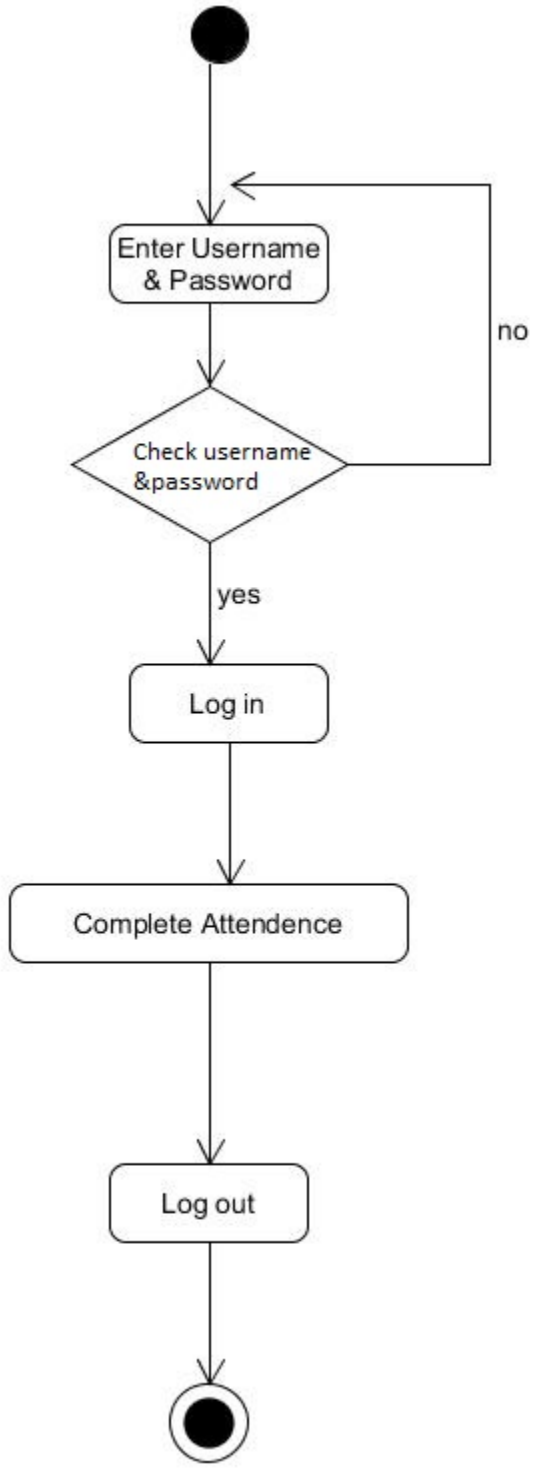
Activity Diagram 9



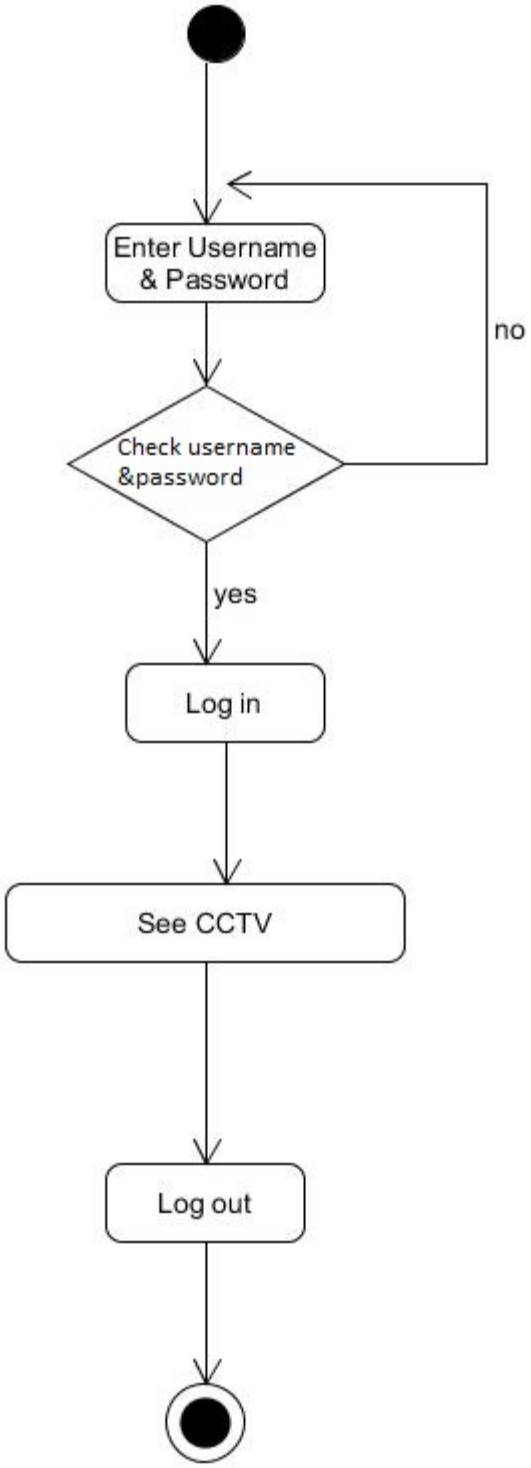
Activity Diagram 10



Activity Diagram 11

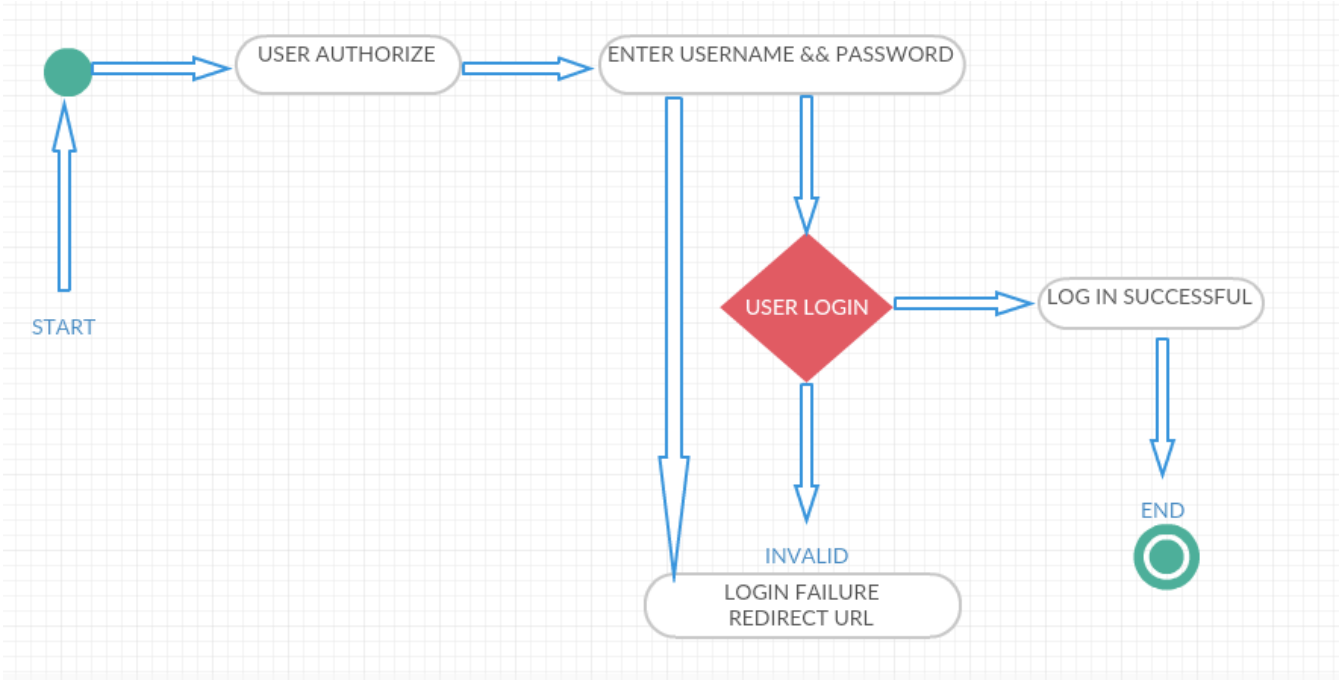


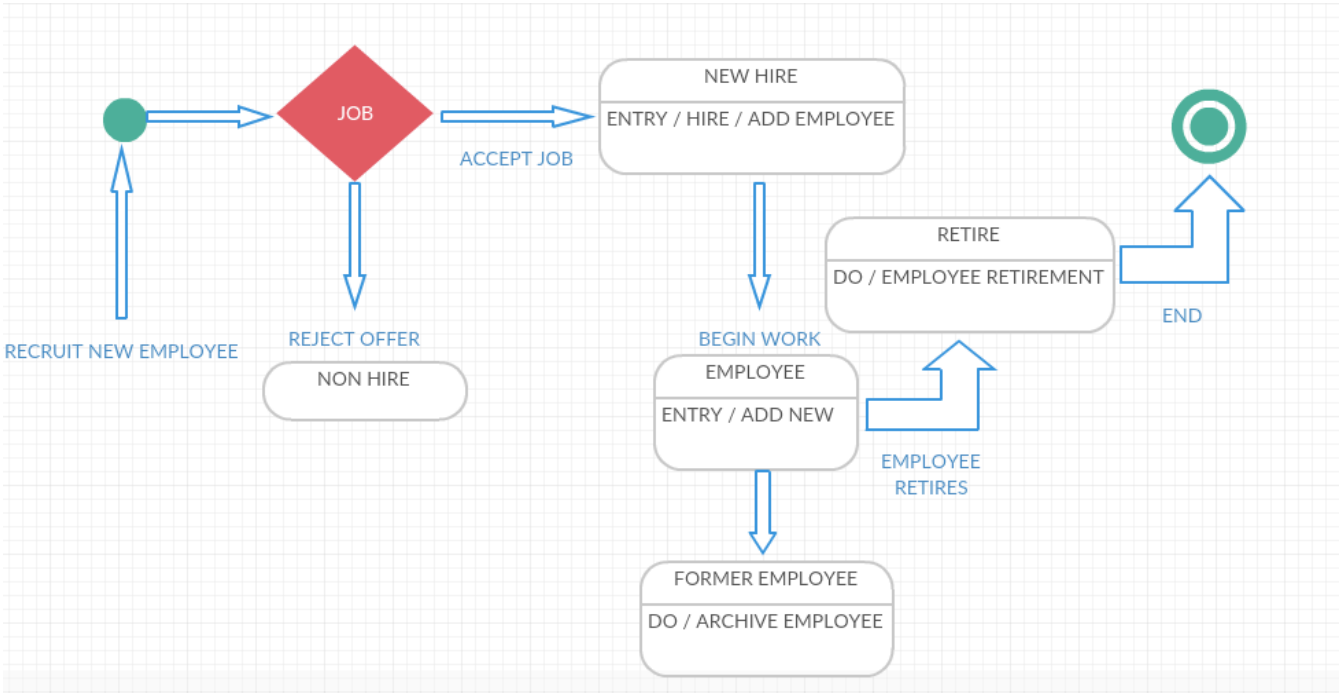
Activity Diagram 12

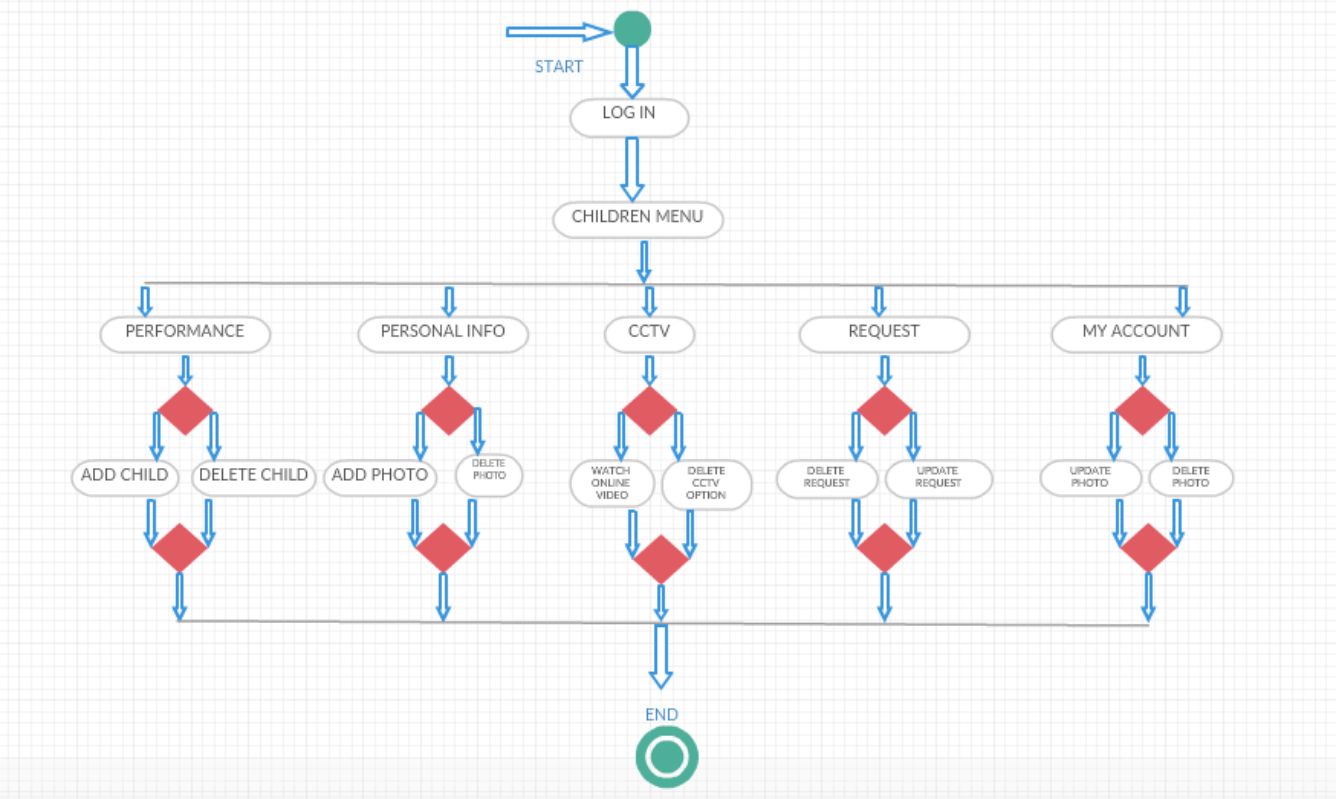


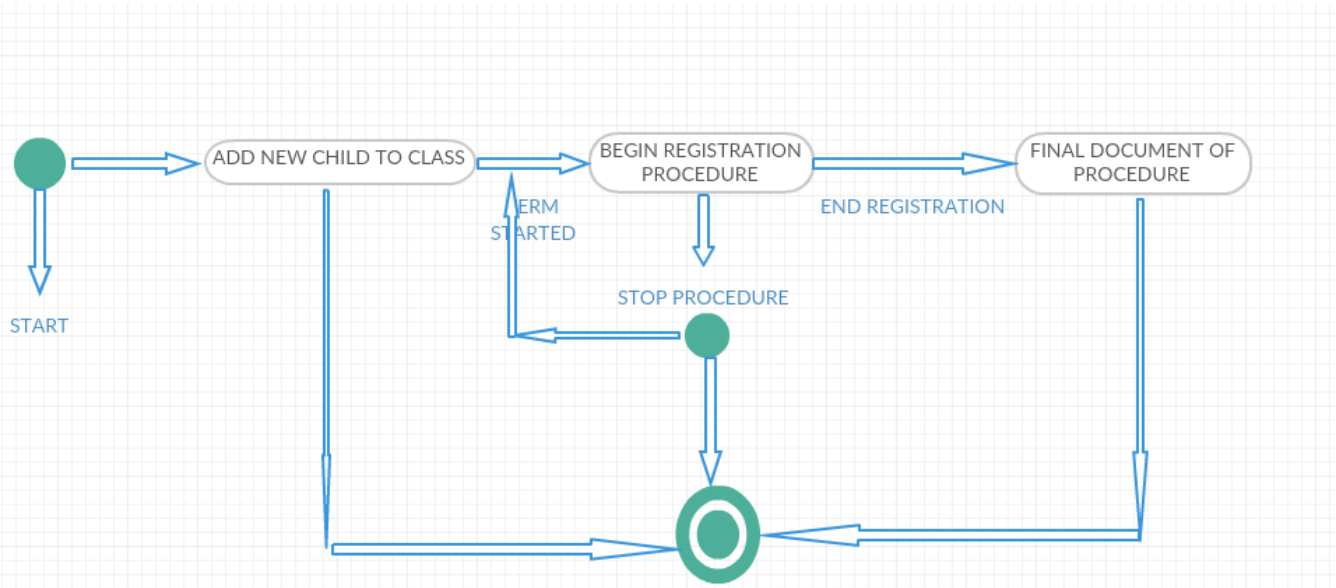
Activity Diagram 13

7.3 State Diagrams

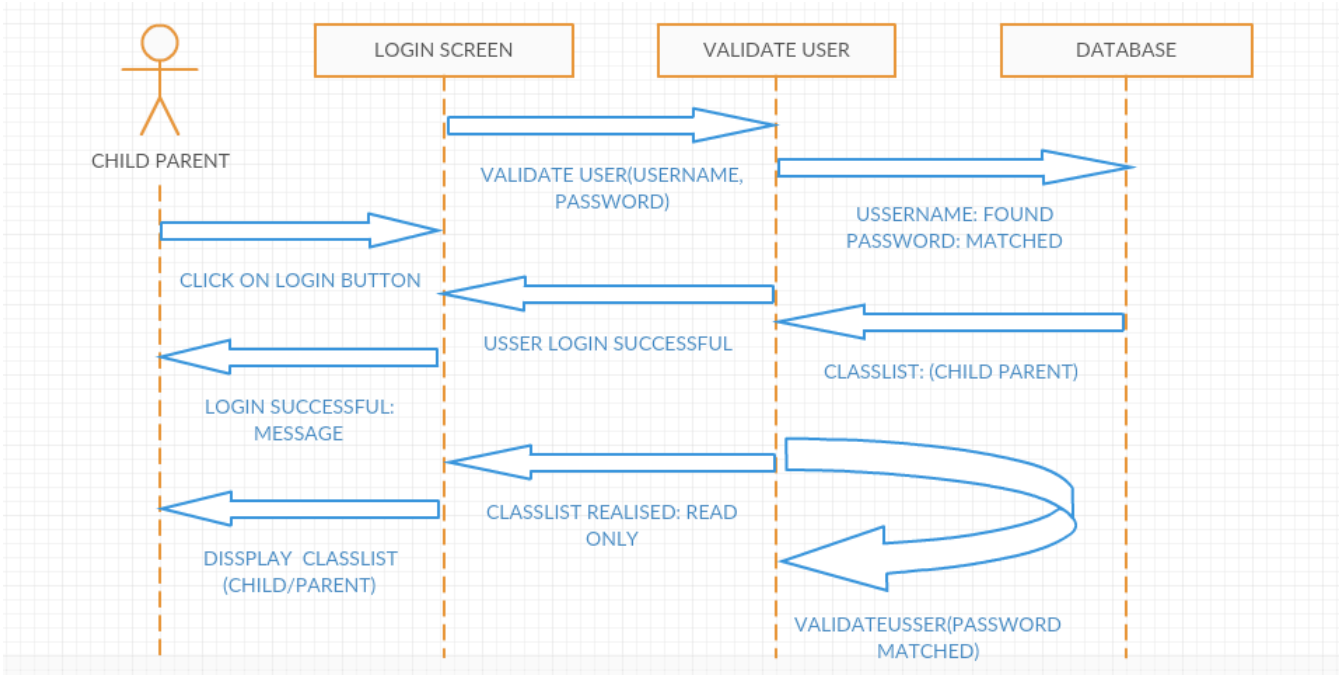


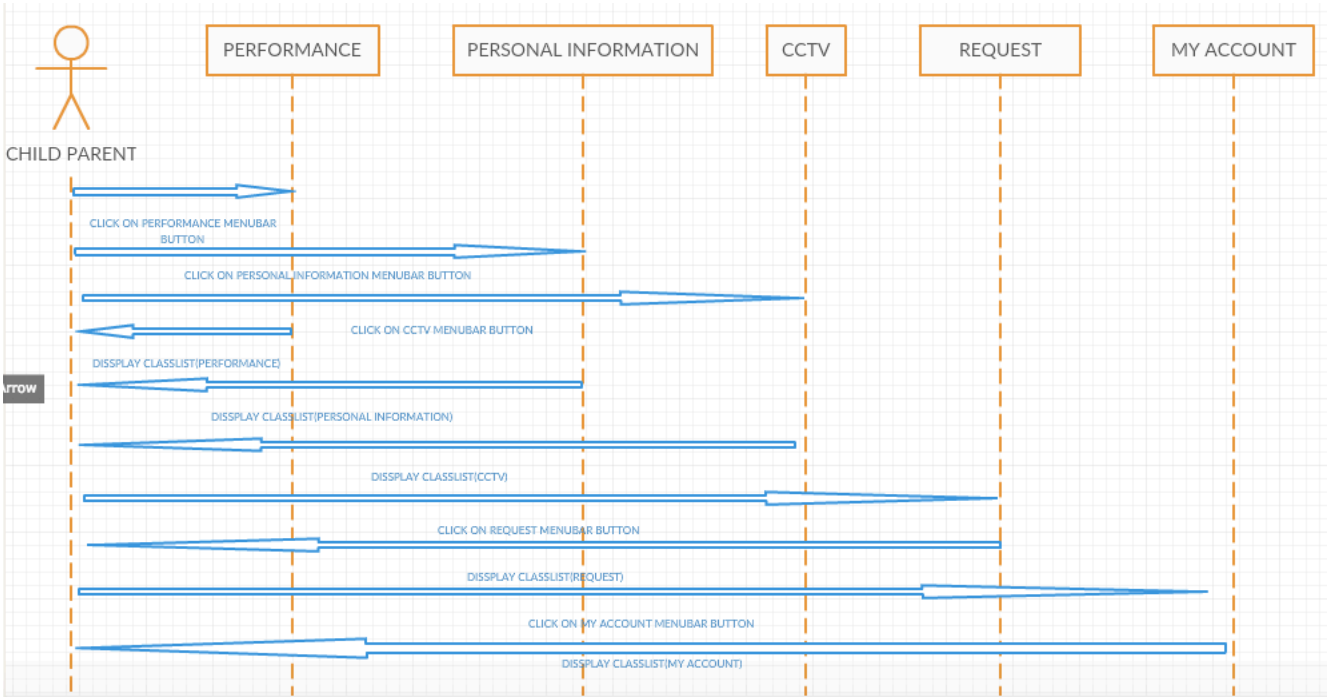


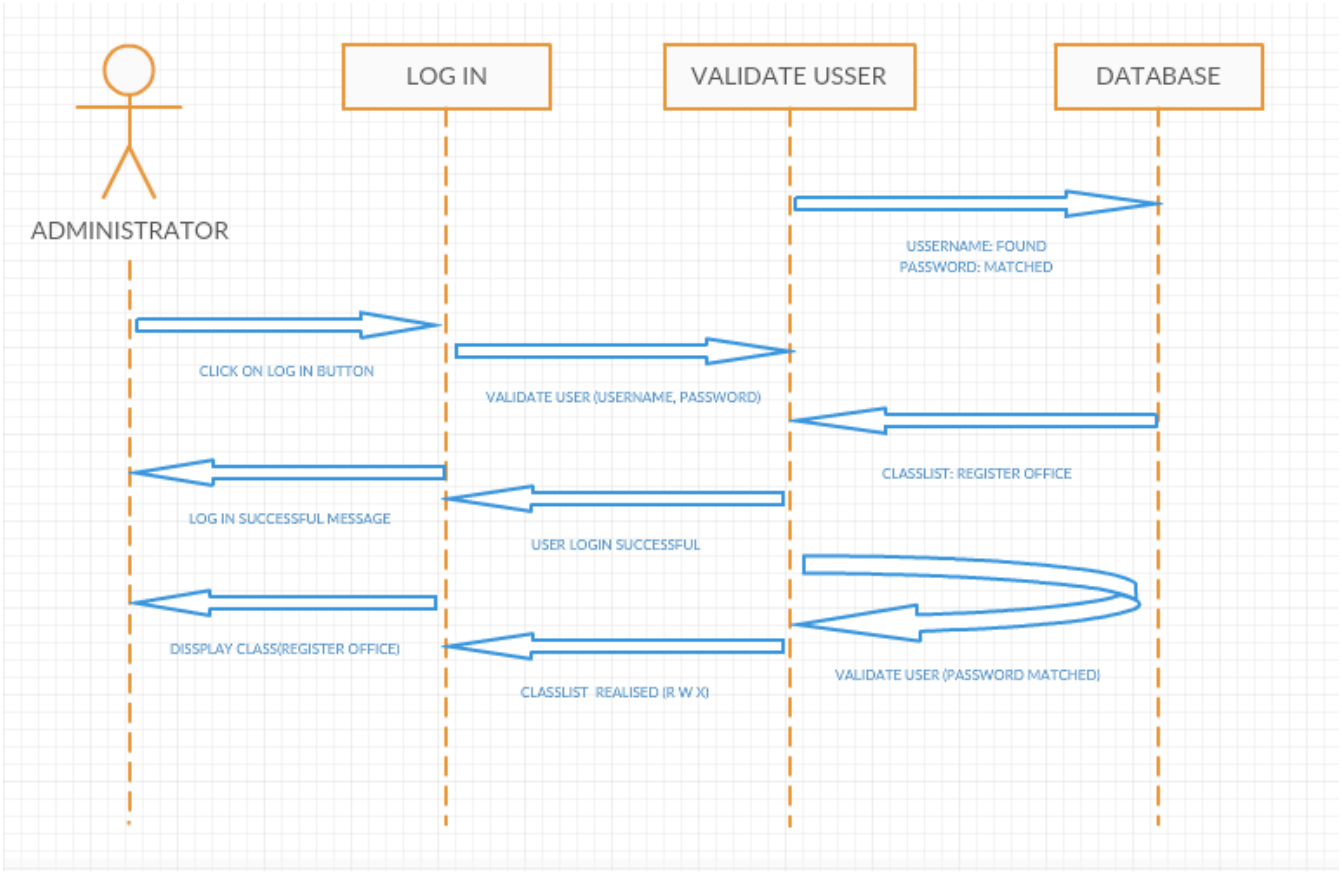

START
LOG IN
CHILDREN MENU
PERFORMANCE
PERSONAL INFO
CCTV
REQUEST
MY ACCOUNT
ADD CHILD
DELETE CHILD
ADD PHOTO
DELETE PHOTO
WATCH ONLINE VIDEO
DELETE CCTV OPTION
DELETE REQUEST
UPDATE REQUEST
UPDATE PHOTO
DELETE PHOTO
END

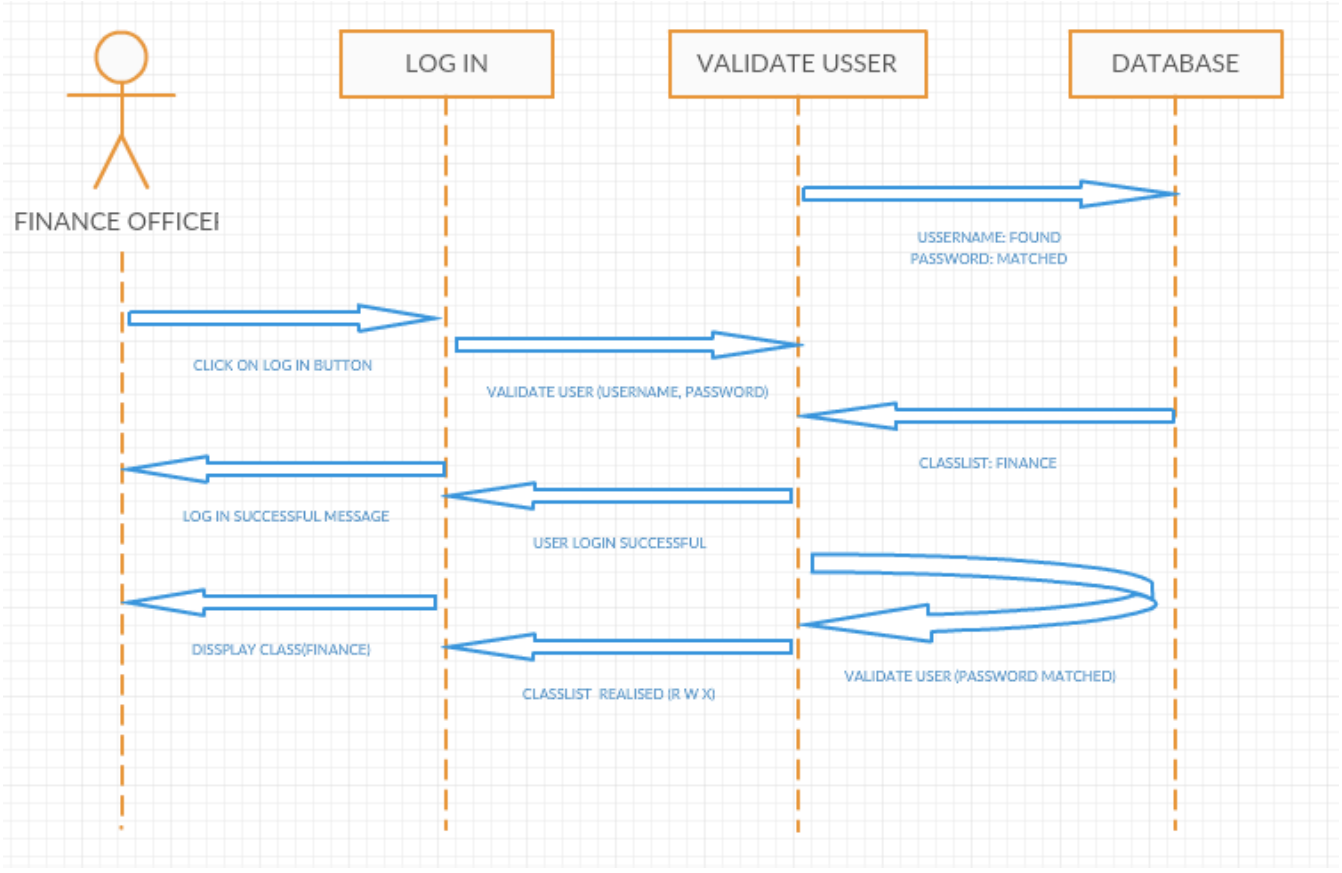

START
ADD NEW CHILD TO CLASS
BEGIN REGISTRATION PROCEDURE
FINAL DOCUMENT OF PROCEDURE
ERM STARTED
END REGISTRATION
STOP PROCEDURE

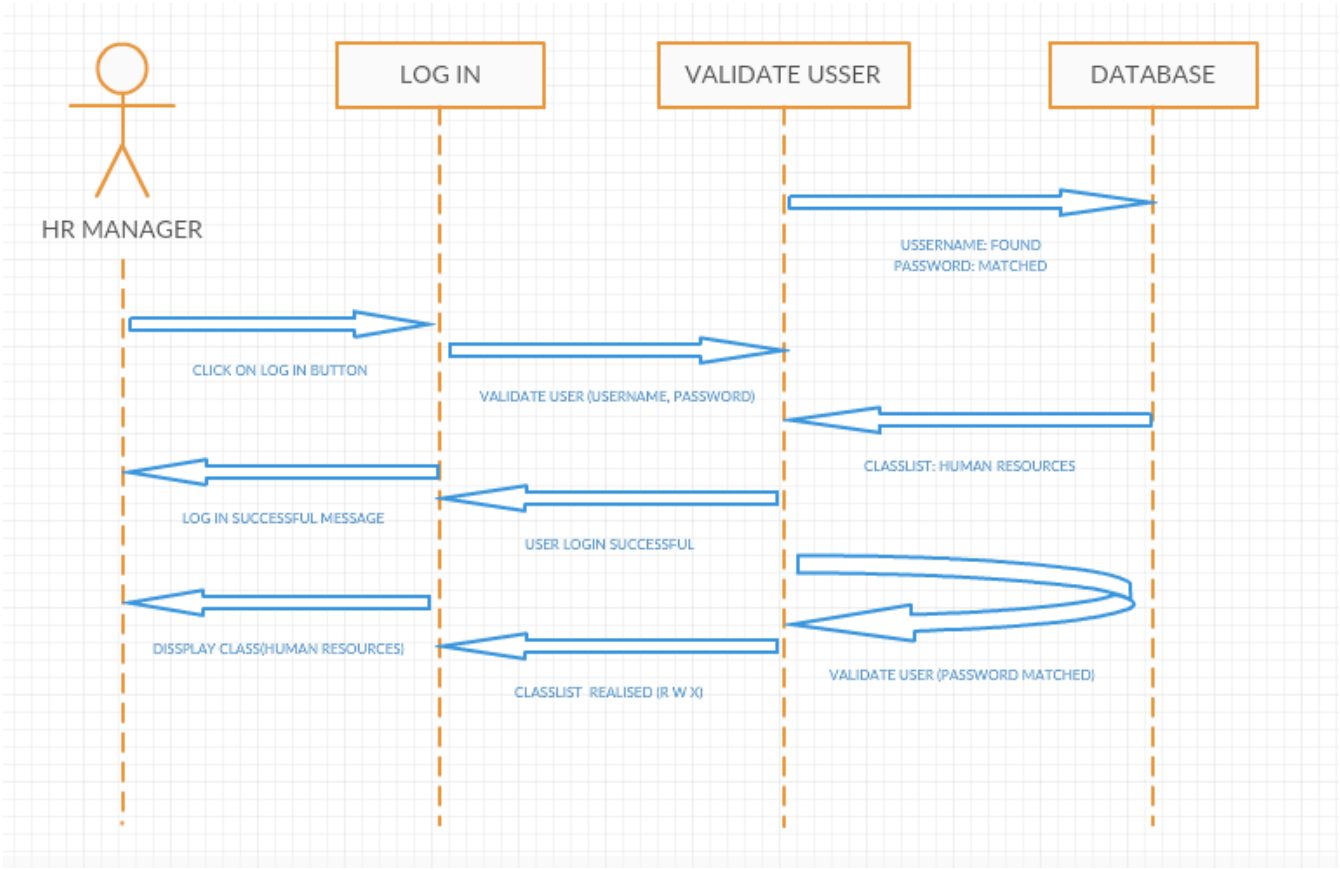
7.4 Sequence Diagrams

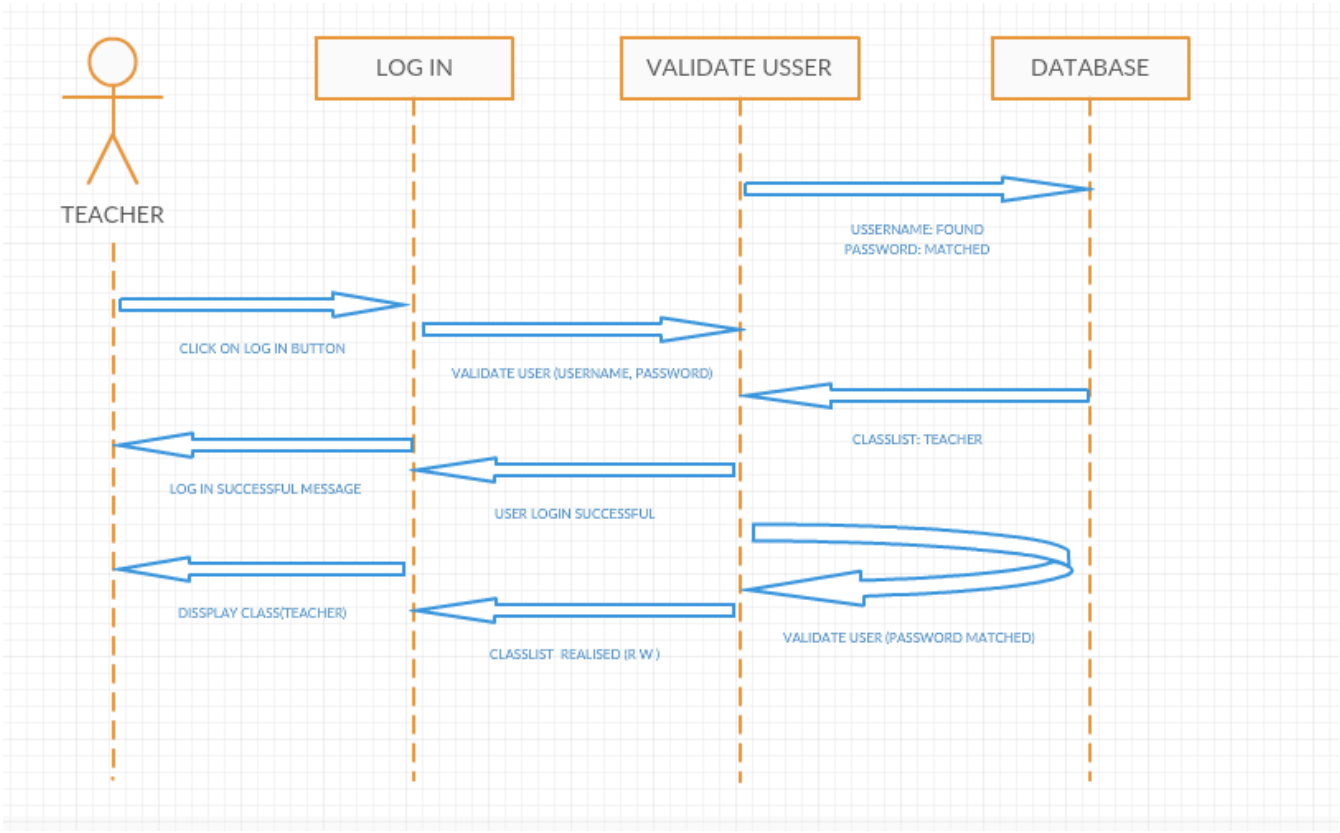


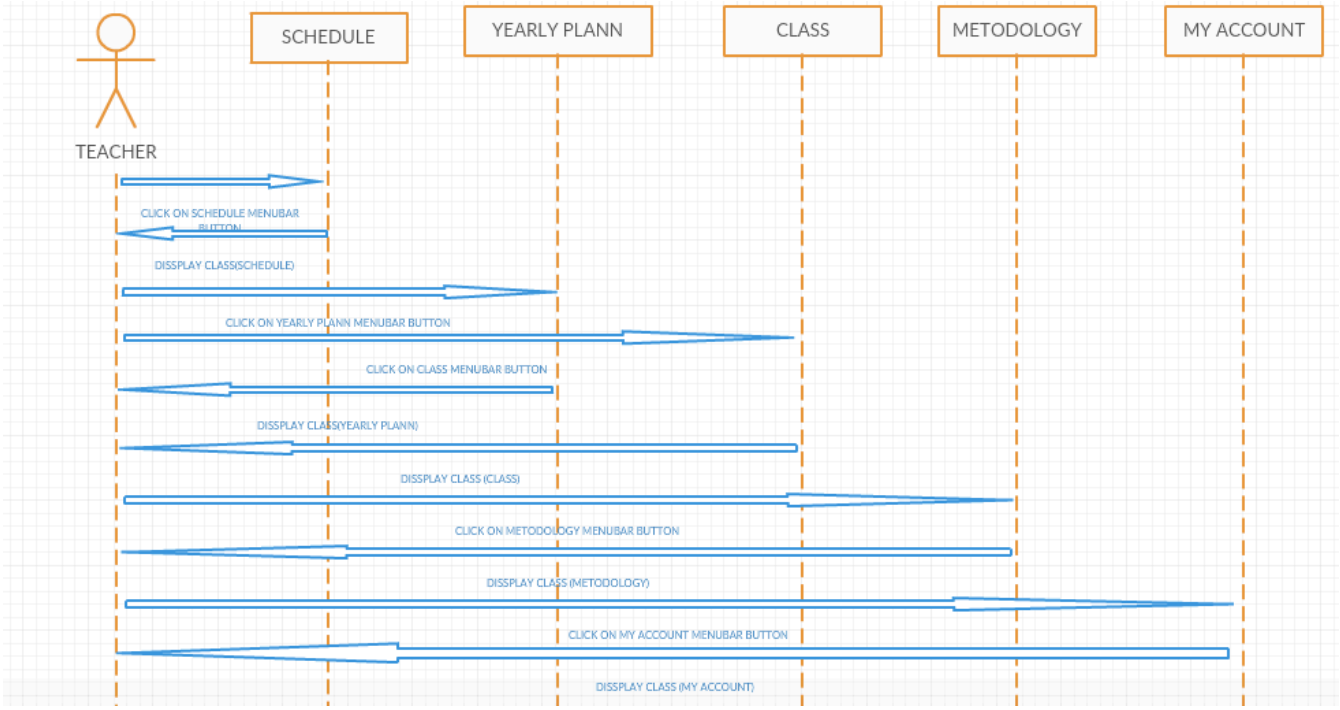


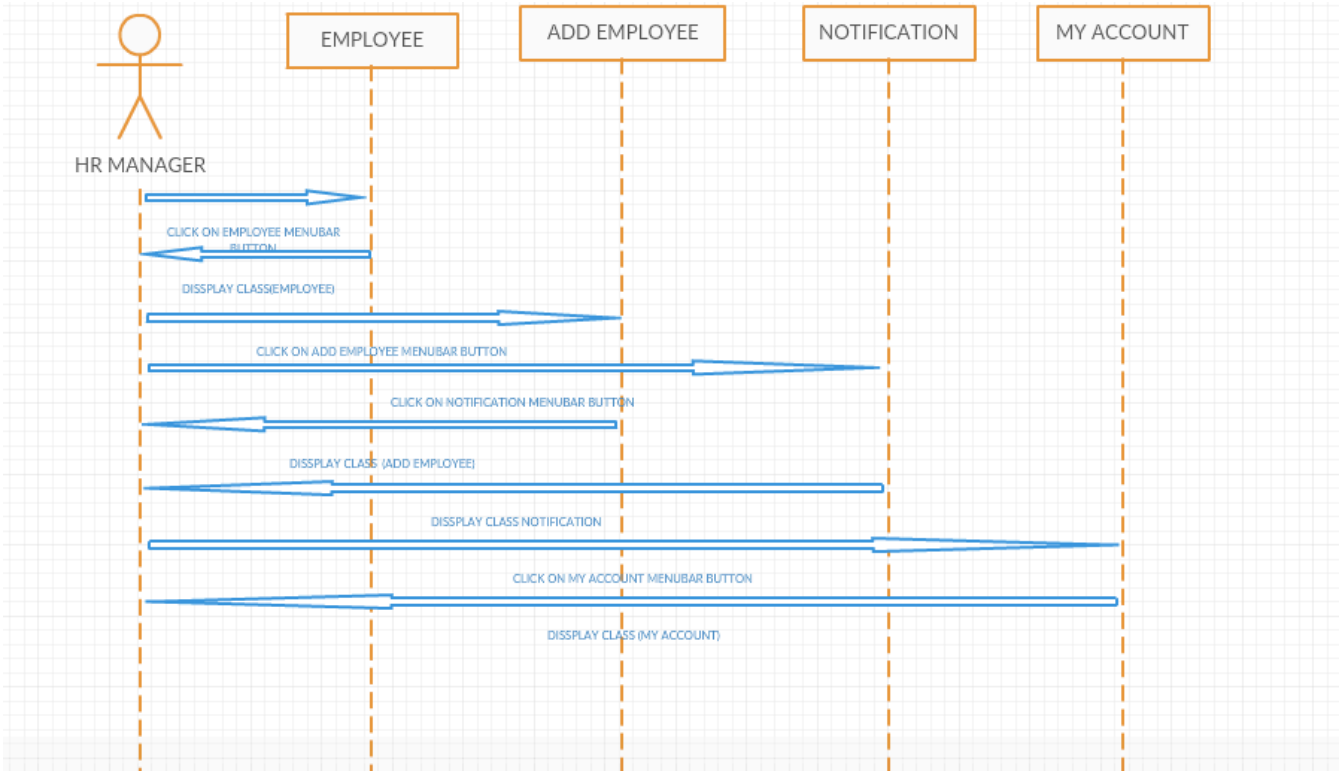

LOG IN
VALIDATE USSER
DATABASE
ADMINISTRATOR
USSERNAME: FOUND
PASSWORD: MATCHED
CLICK ON LOG IN BUTTON
VALIDATE USER (USERNAME, PASSWORD)
CLASSLIST: REGISTER OFFICE
LOG IN SUCCESSFUL MESSAGE
USER LOGIN SUCCESSFUL
DISSPLAY CLASS(REGISTER OFFICE)
VALIDATE USER (PASSWORD MATCHED)
CLASSLIST REALISED (R W X)

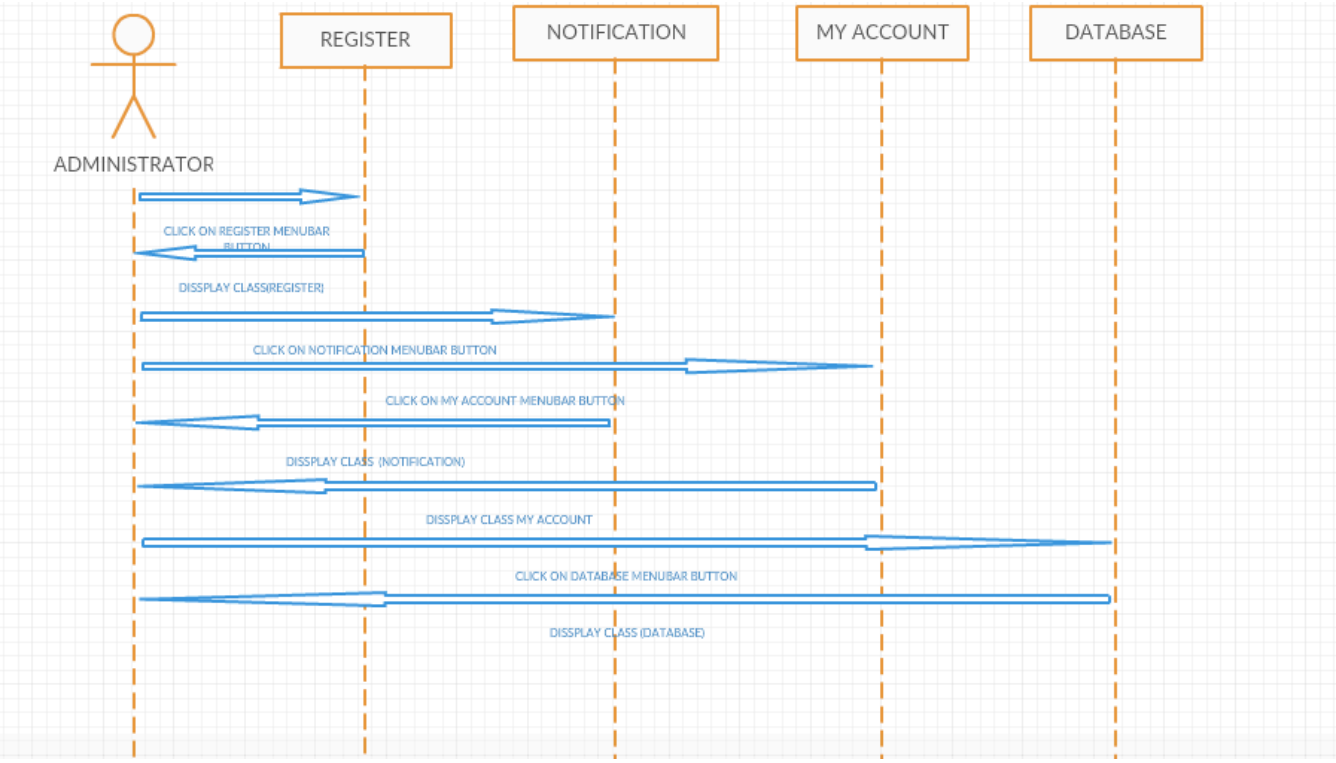

LOG IN
VALIDATE USSER
DATABASE
FINANCE OFFICEI
USSERNAME: FOUND
PASSWORD: MATCHED
CLICK ON LOG IN BUTTON
VALIDATE USER (USERNAME, PASSWORD)
CLASSLIST: FINANCE
LOG IN SUCCESSFUL MESSAGE
USER LOGIN SUCCESSFUL
DISSPLAY CLASS(FINANCE)
VALIDATE USER (PASSWORD MATCHED)
CLASSLIST REALISED (R W X)


LOG IN
VALIDATE USSER
DATABASE
HR MANAGER
USSERNAME: FOUND
PASSWORD: MATCHED
CLICK ON LOG IN BUTTON
VALIDATE USER (USERNAME, PASSWORD)
CLASSLIST: HUMAN RESOURCES
LOG IN SUCCESSFUL MESSAGE
USER LOGIN SUCCESSFUL
DISSPLAY CLASS(HUMAN RESOURCES)
VALIDATE USER (PASSWORD MATCHED)
CLASSLIST REALISED (R W X)

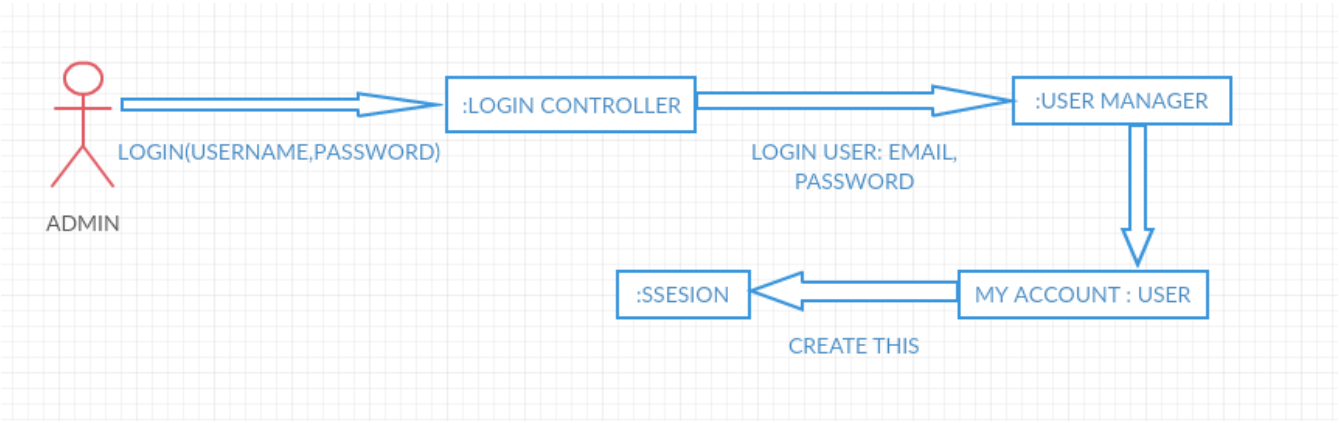

LOG IN
VALIDATE USSER
DATABASE
TEACHER
USSERNAME: FOUND
PASSWORD: MATCHED
CLICK ON LOG IN BUTTON
VALIDATE USER (USERNAME, PASSWORD)
CLASSLIST: TEACHER
LOG IN SUCCESSFUL MESSAGE
USER LOGIN SUCCESSFUL
DISSPLAY CLASS(TEACHER)
VALIDATE USER (PASSWORD MATCHED)
CLASSLIST REALISED (R W)

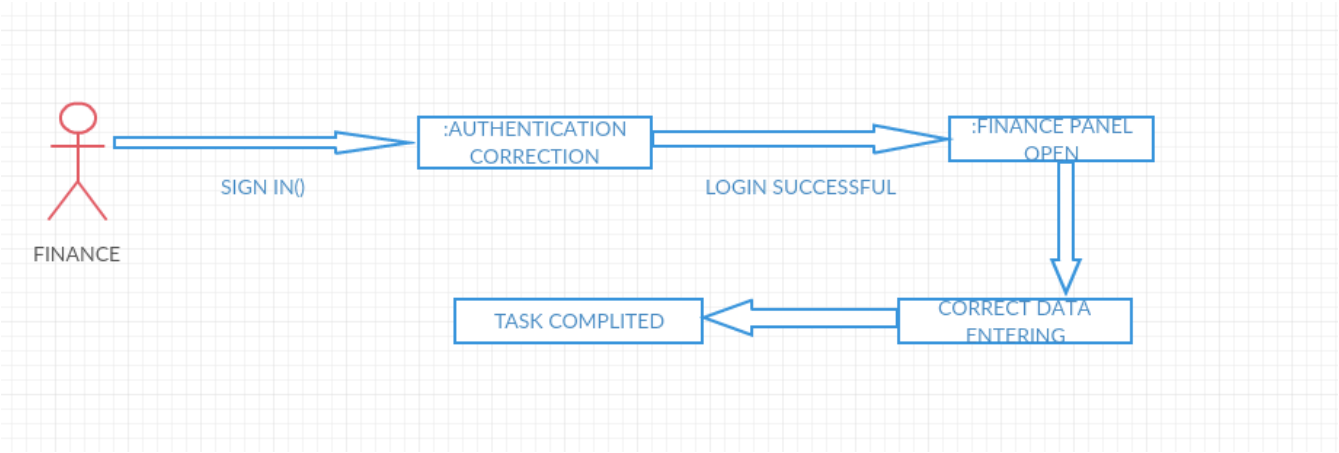

SCHEDULE
YEARLY PLANN
CLASS
METODOLOGY
MY ACCOUNT
TEACHER
CLICK ON SCHEDULE MENUBAR BUTTON
DISSPLAY CLASS(SCHEDULE)
CLICK ON YEARLY PLANN MENUBAR BUTTON
CLICK ON CLASS MENUBAR BUTTON
DISSPLAY CLASS(YEARLY PLANN)
DISSPLAY CLASS (CLASS)
CLICK ON METODOLOGY MENUBAR BUTTON
DISSPLAY CLASS (METODOLOGY)
CLICK ON MY ACCOUNT MENUBAR BUTTON
DISSPLAY CLASS (MY ACCOUNT)

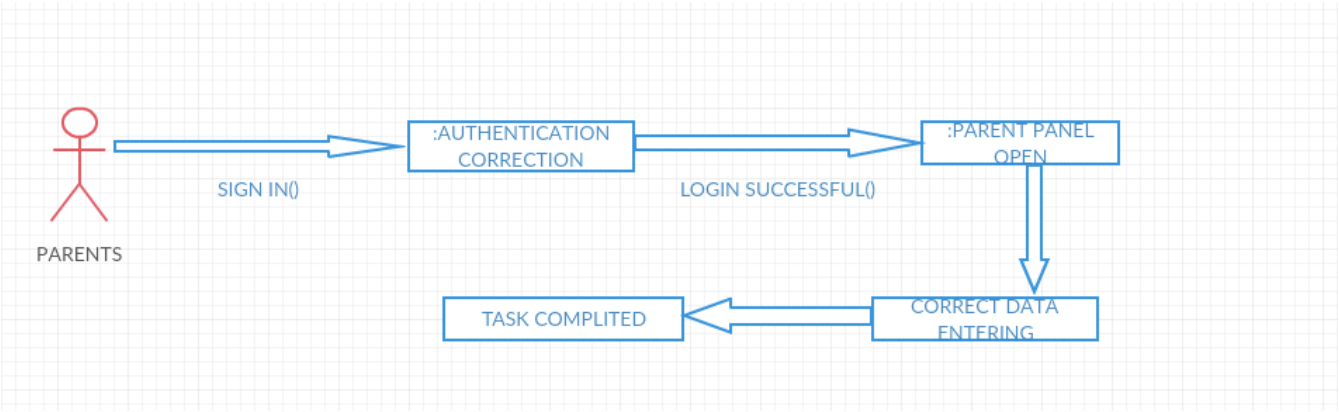

EMPLOYEE
ADD EMPLOYEE
NOTIFICATION
MY ACCOUNT
HR MANAGER
CLICK ON EMPLOYEE MENUBAR BUTTON
DISSPLAY CLASS(EMPLOYEE)
CLICK ON ADD EMPLOYEE MENUBAR BUTTON
CLICK ON NOTIFICATION MENUBAR BUTTON
DISSPLAY CLASS (ADD EMPLOYEE)
DISSPLAY CLASS NOTIFICATION
CLICK ON MY ACCOUNT MENUBAR BUTTON
DISSPLAY CLASS (MY ACCOUNT)

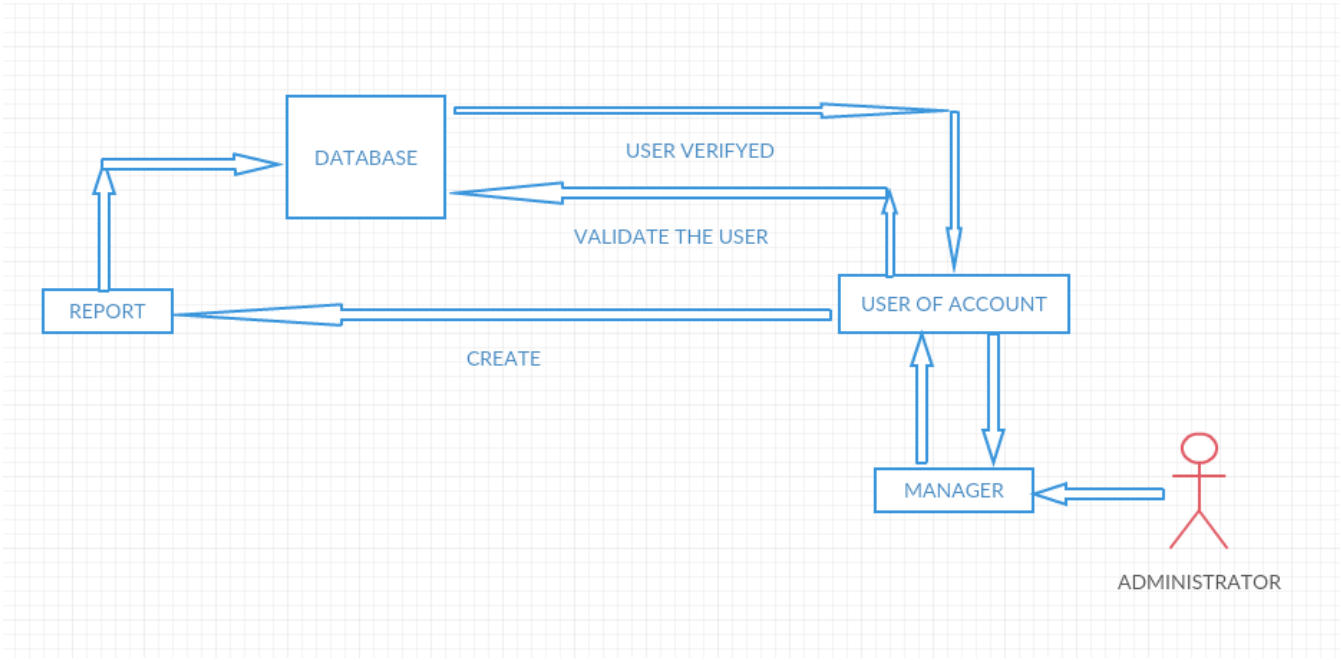

ADMINISTRATOR
REGISTER
NOTIFICATION
MY ACCOUNT
DATABASE
CLICK ON REGISTER MENUBAR BUTTON
DISSPLAY CLASS(REGISTER)
CLICK ON NOTIFICATION MENUBAR BUTTON
CLICK ON MY ACCOUNT MENUBAR BUTTON
DISSPLAY CLASS (NOTIFICATION)
DISSPLAY CLASS MY ACCOUNT
CLICK ON DATABASE MENUBAR BUTTON
DISSPLAY CLASS (DATABASE)

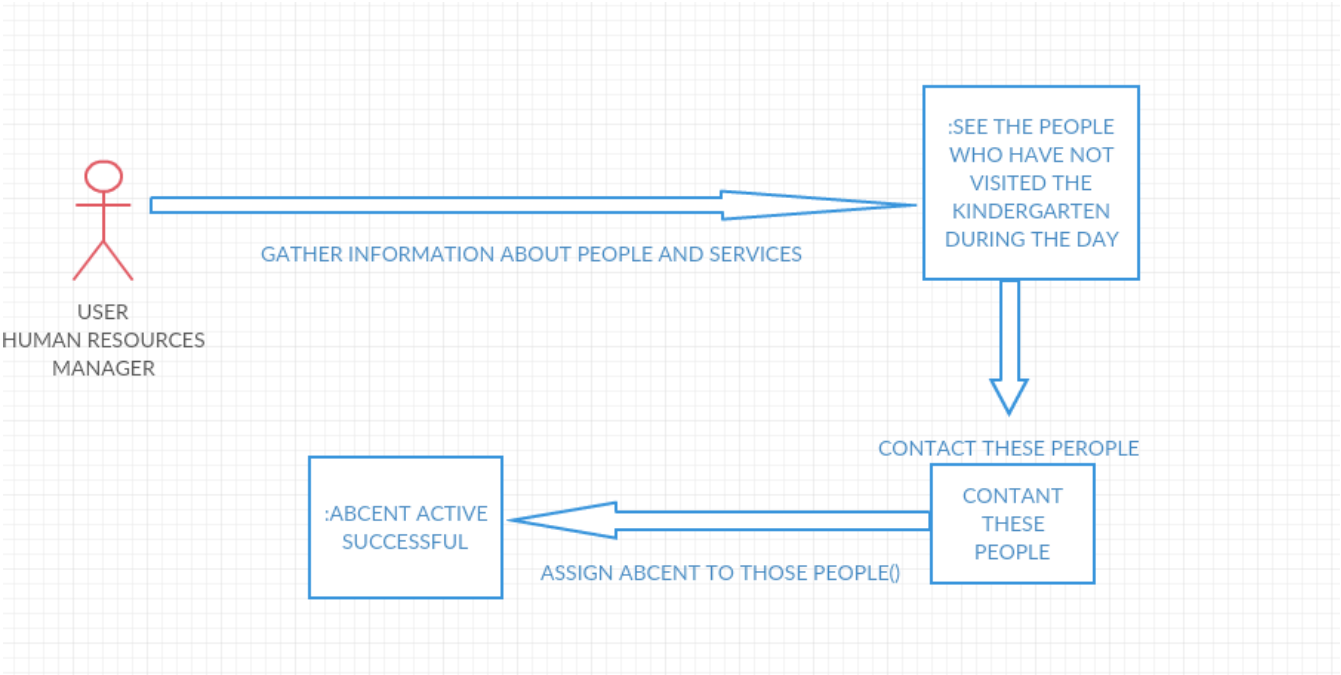
7.5 Collaboration Diagrams



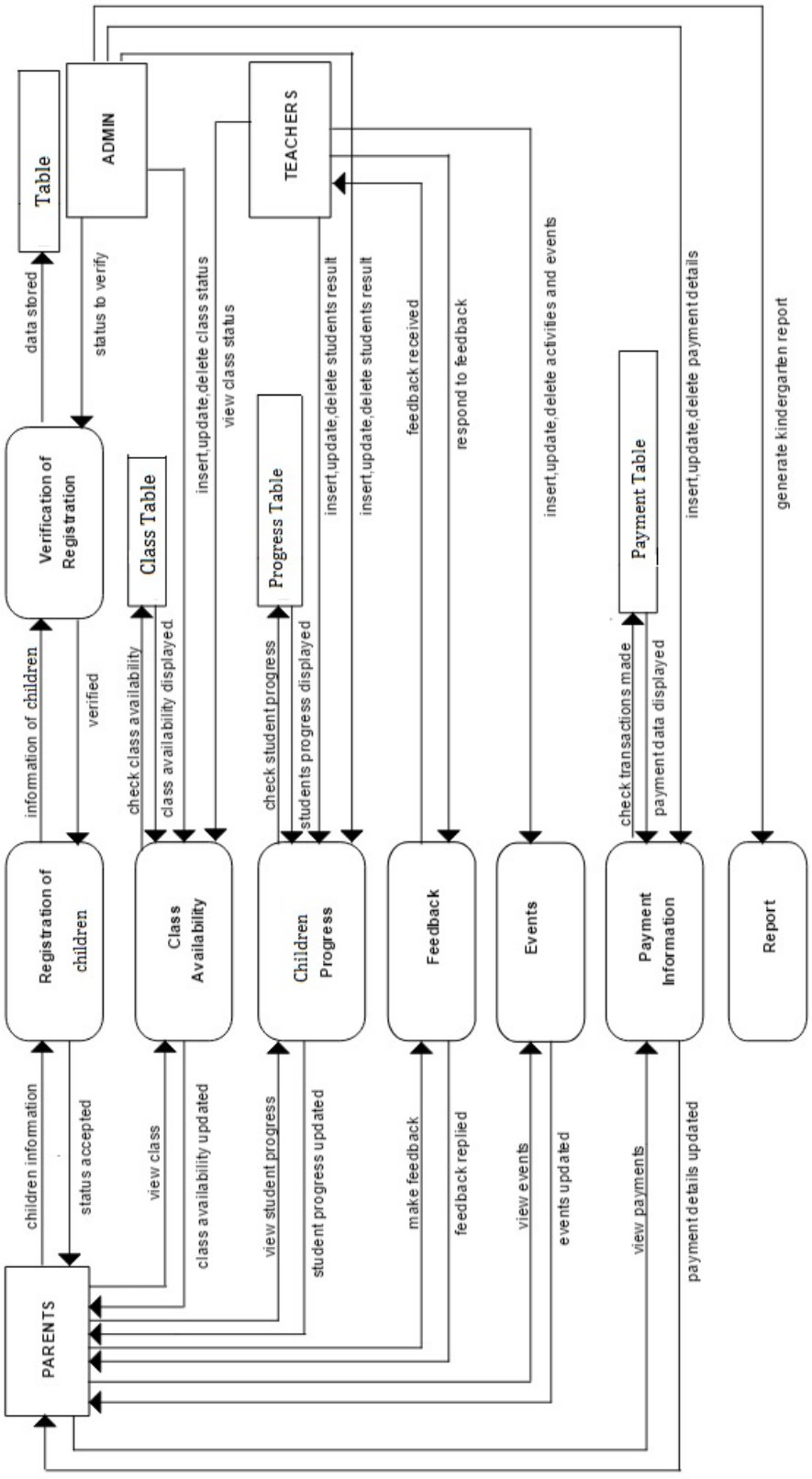




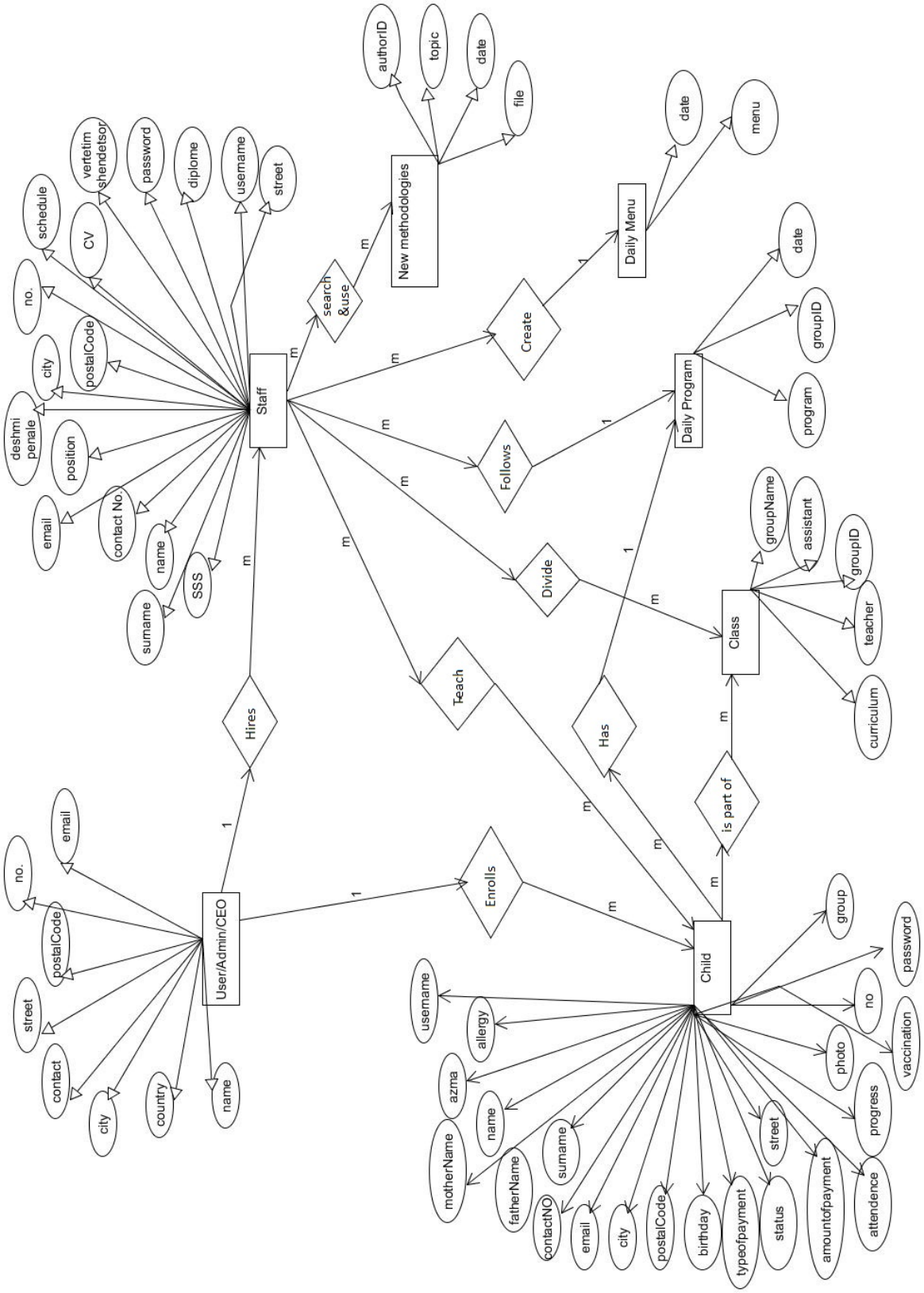

DATABASE
USER VERIFYED
VALIDATE THE USER
REPORT
USER OF ACCOUNT
CREATE
MANAGER
ADMINISTRATOR


:SEE THE PEOPLE WHO HAVE NOT VISITED THE KINDERGARTEN DURING THE DAY
GATHER INFORMATION ABOUT PEOPLE AND SERVICES
USER
HUMAN RESOURCES MANAGER
CONTACT THESE PEROPLE
CONTANT THESE PEOPLE
:ABCENT ACTIVE SUCCESSFUL
ASSIGN ABCENT TO THOSE PEOPLE()

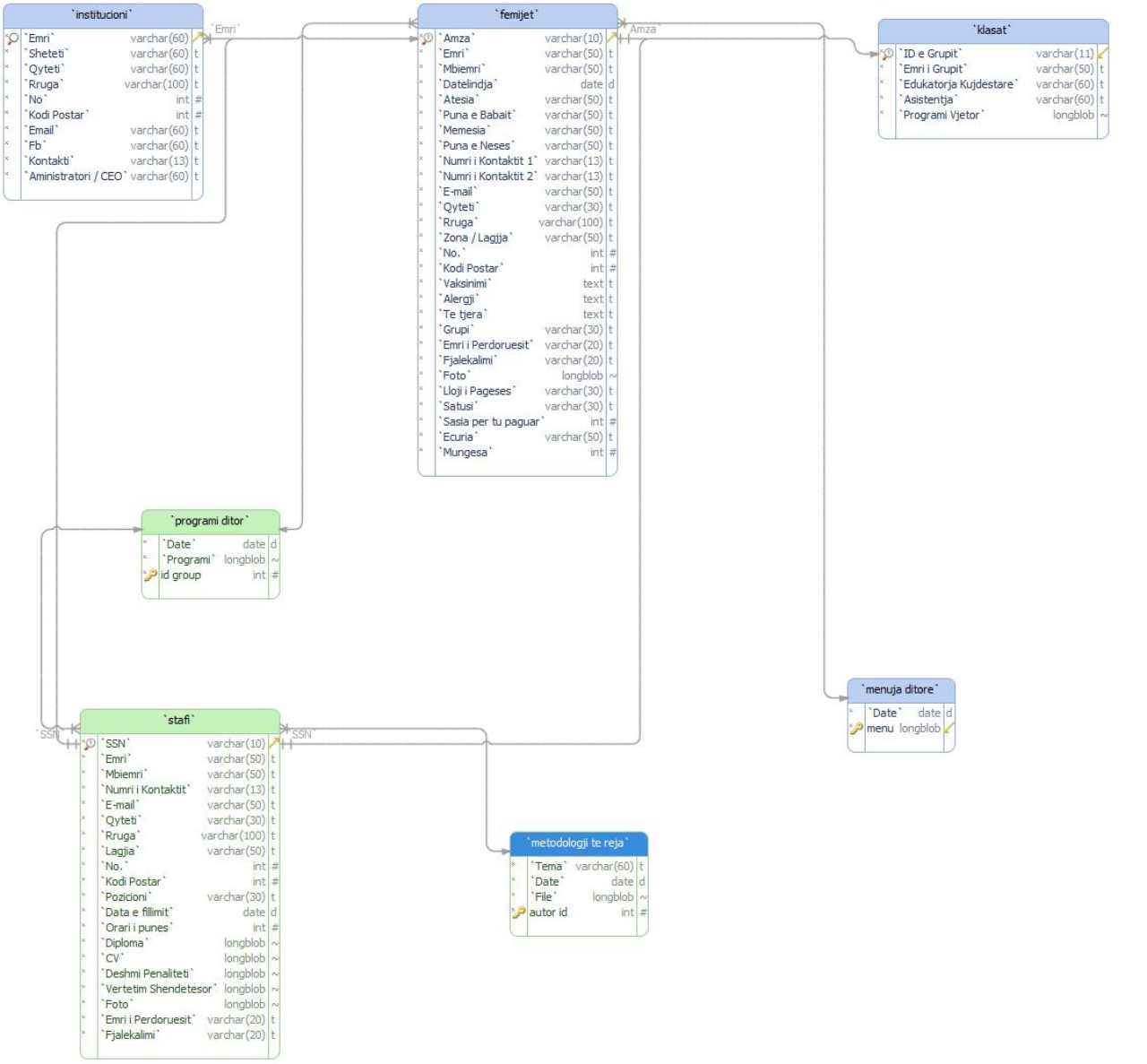
7.6 Dataflow Diagram



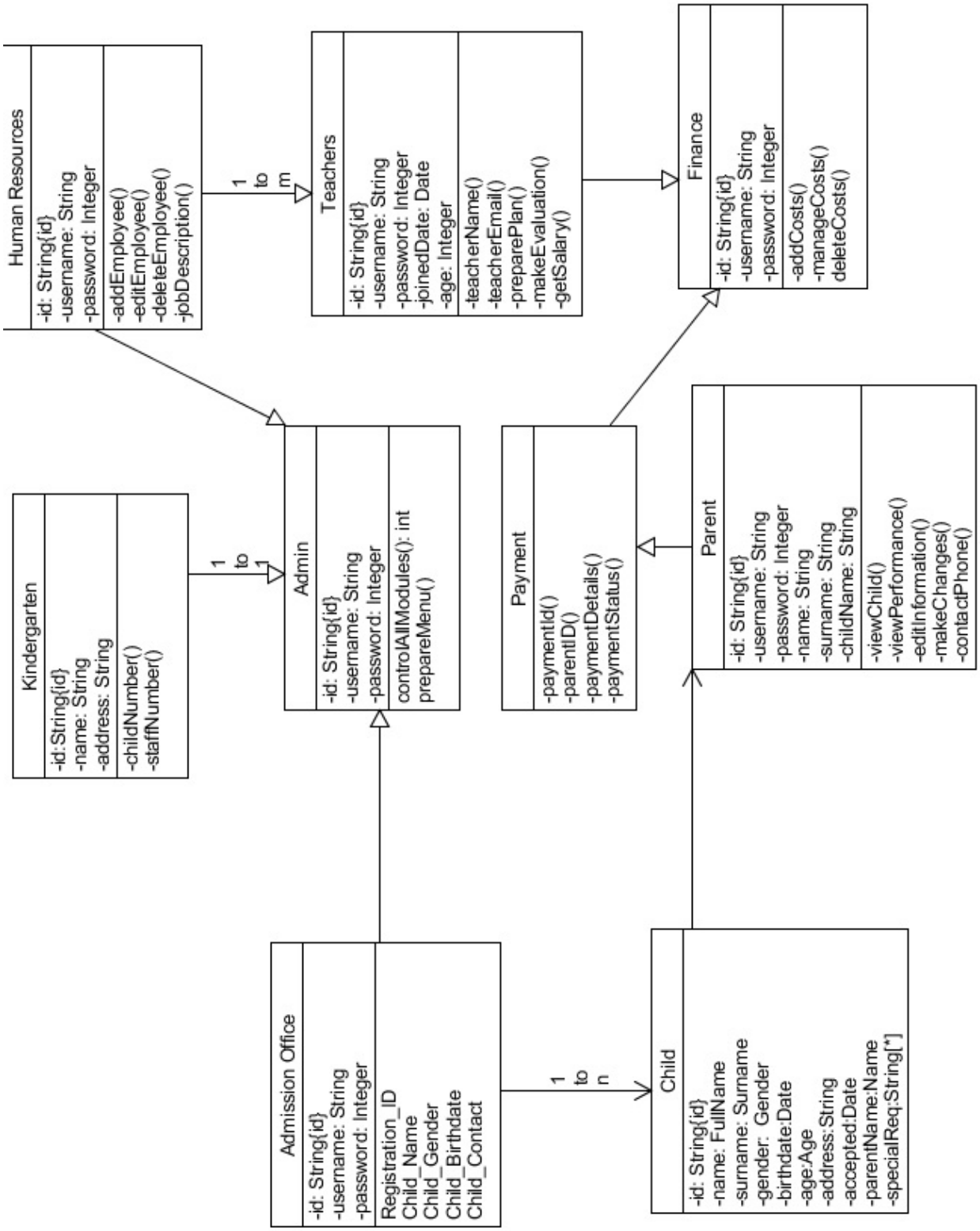
7.7 ERD Diagram



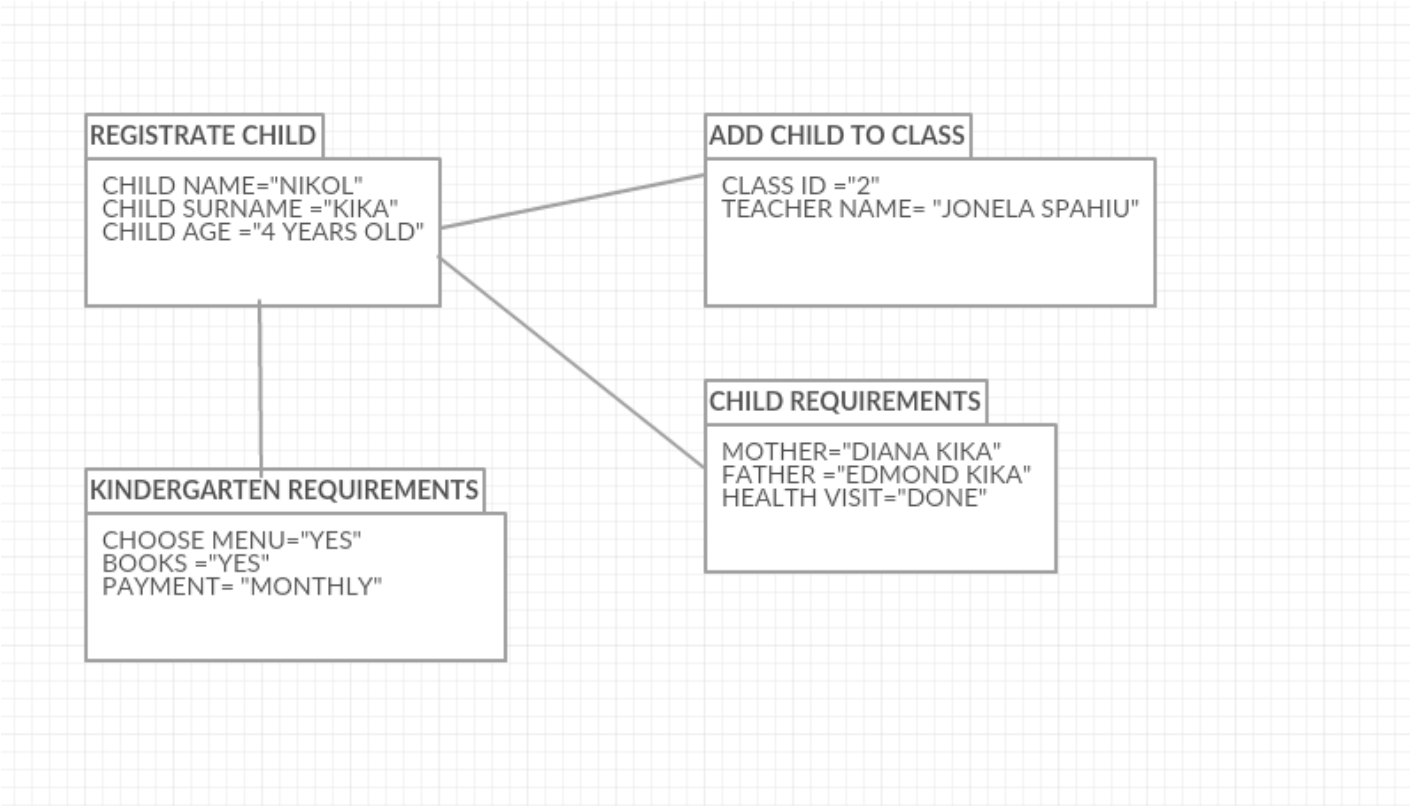
7.8 Database Schema



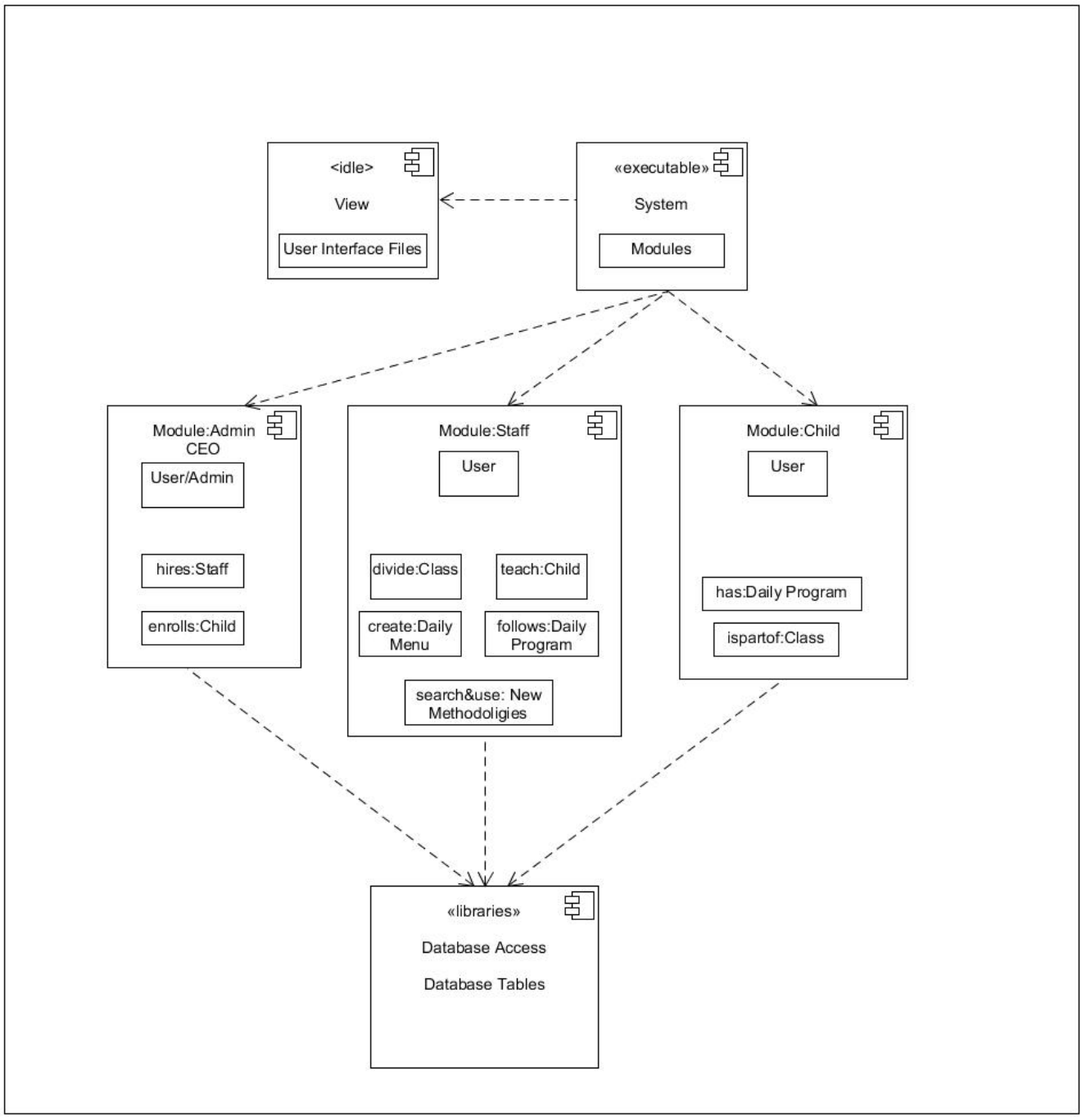
7.9 Class Diagram



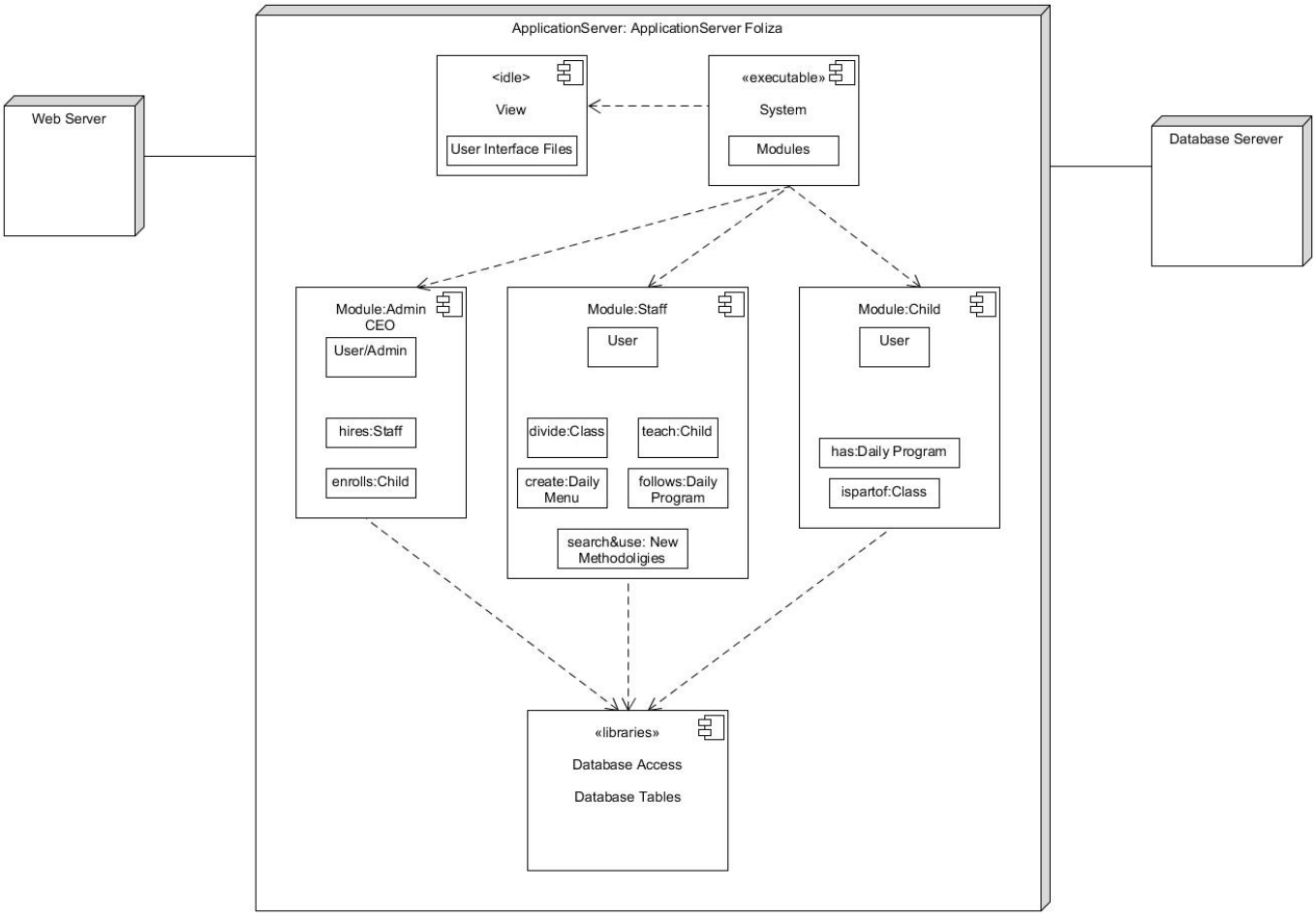
7.10 Object Diagram



7.11 Component Diagram



7.12 Deployment Diagram



8. Installation Manual

The “Foleza e Dijes” Kindergarten web application can be deployed and used from your computer in two ways:

1) You can use it locally only in your personal computer.

2) You can use it everywhere, every time from any computer which has internet connection by searching it with the website name.

To be able to use the Kindergarten application in your personal computer you should:

a) Install XAMPP (free downloadable software)

b) Unzip the mdl.zip file located in the accompanying CD.

c) Copy and paste the folder as it is in the folder named htdocs in the C:/xampp/htdocs

d) Open xampp control panel and start apache and MySql servers.

e) Open your browser and go to-> localhost/phpmyadmin

f) There you import the mdl.sql file to set up the database.

g) Now everything is ready and you can use the application under the path localhost/mdl/web

*every time you want to use the application you should start the apache and MySql servers *the application usage is only local. You cannot access the application and the data from another machine

For any problem in your installation you can contact us via email:

Emails: abali14@epoka.edu.al
amaldi14@epoka.edu.al
ihasmujaj14@epoka.edu.al
msinaj14@epoka.edu.al
malimucaj14@epoka.edu.al

9. Requirements Confirmation / Stakeholder sign-off

Meeting Date	Attendees (name and role)	Comments
04/032017	Megi Alimucaj - CEO Majlinda Alimucaj – Administartor Durim Alimucaj – Human Resources Jonela Spahiu – Teacher Ida Kapaj – Teacher Mirjeta Tushaj – Teacher Lida Myrtaj – Teacher Ida Kronaj – Layer & Financier	♦ Problem Statement
9/03/2017	Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Formulation of the solution to the problem and definition of the way of solving it.
14/03/2017	Igli Hakrama - Project Advisor Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Discussion about the project type and structure.
23/03/2017	Megi Alimucaj - CEO Majlinda Alimucaj – Administartor Durim Alimucaj – Human Resources Ida Kronaj – Layer & Financier Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Define software specifications. ♦ Specify starting and finishing date of the project ♦ Collaboration between the users and software developers.
29/03/2017	Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Prepare the project structure ♦ Choose the type of model to follow
02/042017	Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member	♦ The division of tasks among group members ♦ Writing of the requirement specifications of the

	Iselda Hasmujaj- Group Member	software.
11/04/2017	Igli Hakrama - Project Advisor Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Critics about the requirement of the software document by project adviser. ♦ Correcting the mistakes
21/04/2017	Megi Alimucaj - CEO Majlinda Alimucaj – Administartor Durim Alimucaj – Human Resources Ida Kronaj – Layer & Financier Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Membe	♦ Meeting with the users to see if they need to make changes
25/04/2017	Igli Hakrama - Project Advisor Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Advisor explains in detail the requirements of the project, and the UML diagrams needed.
27/04/2017	Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Specify the modules of the project. ♦ Build the whole structure of the project and divide into small tasks. ♦ Starts coding
02/05/2017	Igli Hakrama - Project Advisor Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Discus the modules and structure with the advisor. ♦ Requirements clarification
12/05/2017	Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Write scenarios and use cases. ♦ Division of tasks among group members for building the required diagrams.

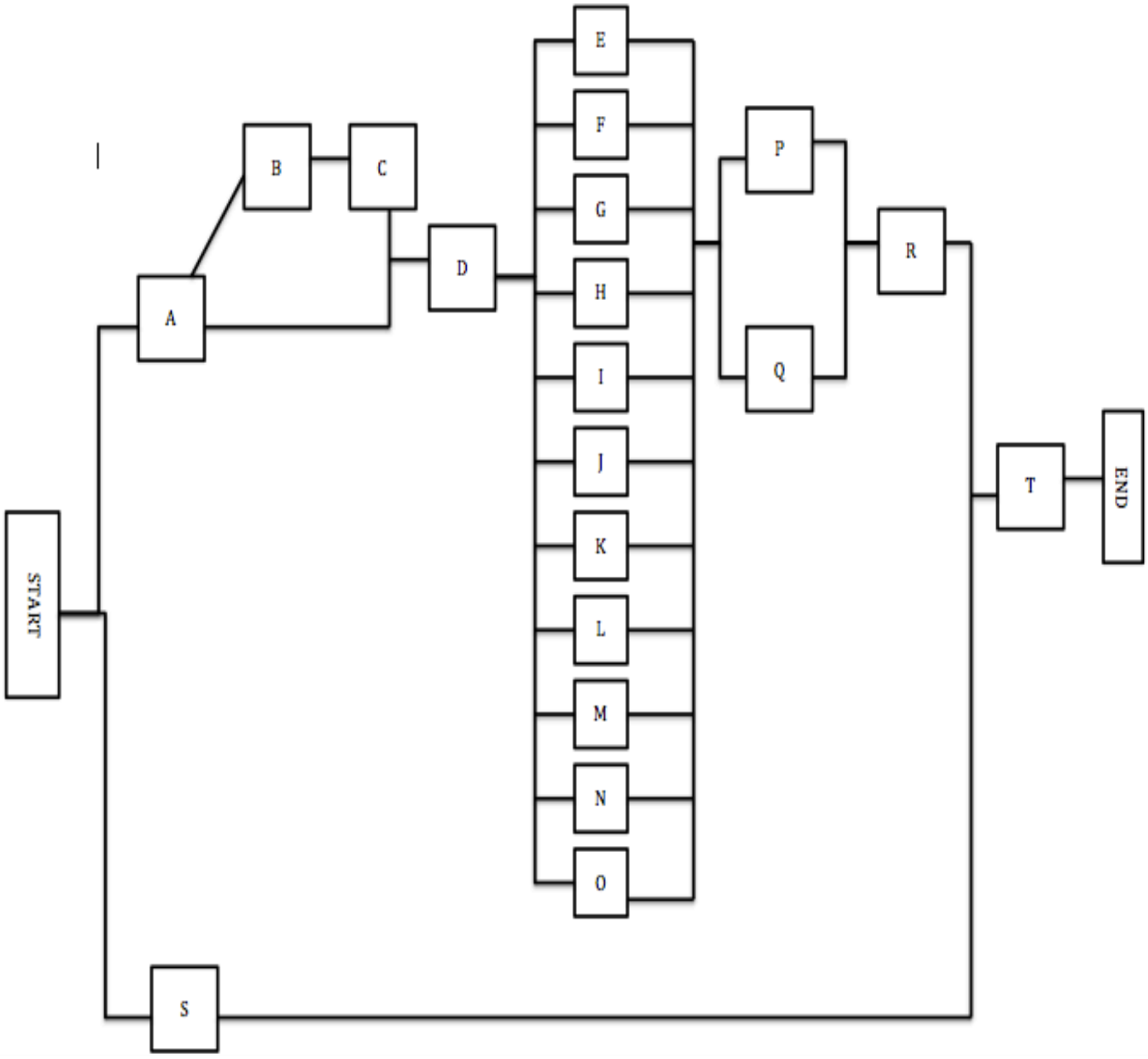
10/06/2017	Malbora Sinaj - Group Leader Arsena Maldi – Group Member Anxhela Bali - Group Member Megi Alimucaj - Group Member Iselda Hasmujaj- Group Member	♦ Discuss what was done till this time. ♦ Completion of the last required details.

10. Project Management

Activity	Activity name	Proc. Time	Time required
A	FIND TOPIC, TALK WITH CLIENT, ORGANIZE WORK	_	1 WEEK
B	ABSTRACT, INTRODUCTION, DEPENDENCIES	A	1 WEEK
C	REQUIREMENTS	B	2 WEEKS
D	SCENARIOS & USE CASES	A,C	3 WEEKS
E	ACTIVITY DIAGRAMS	D	1 WEEK
F	STATE DIAGRAMS	D	1 WEEK
G	SEQUENCE DIAGRAMS	D	1 WEEK
H	COLLABORATION DIAGRAMS	D	1 WEEK
I	DATAFLOW DIAGRAMS	D	1 WEEK
J	ERD DIAGRAMS	D	1 WEEK
K	DATABASE SCHEMA	D	1 WEEK
L	CLASS DIAGRAMS	D	1 WEEK
M	OBJECT DIAGRAMS	D	1 WEEK
N	COMPONENT DIAGRAMS	D	1 WEEK
O	DEPLOYMENT DIAGRAMS	D	1 WEEK
P	TESTING	E,F,G,H,I,J,K,L,M,N,O	3 WEEKS
Q	SERVER ROOM DESIGN & INSTALATION	E,F,G,H,I,J,K,L,M,N,O	2 WEEKS
R	PROJECT MANAGEMENT	P,Q	1 WEEK
S	CODING	_	15 WEEKS
T	FINAL WORK ORGANIZATION	S,R	2 WEEKS

ACTIVITY	EARLY START	EARLY FINISH	LATEST START	LATEST FINISH	SLACK TIME
A	0 WEEKS	1 WEEK	3 WEEKS	4 WEEKS	3 WEEKS
B	1 WEEK	2 WEEKS	4 WEEKS	5 WEEKS	3 WEEKS
C	2 WEEKS	4 WEEKS	5 WEEKS	7 WEEKS	3 WEEKS
D	4 WEEKS	7 WEEKS	7 WEEKS	10 WEEKS	3 WEEKS
E	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
F	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
G	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
H	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
I	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
J	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
K	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
L	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
M	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
N	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
O	7 WEEKS	8 WEEKS	10 WEEKS	11 WEEKS	3 WEEKS
P	8 WEEKS	11 WEEKS	11 WEEKS	14 WEEKS	3 WEEKS
Q	8 WEEKS	10 WEEKS	12 WEEKS	14 WEEKS	4 WEEKS
R	11 WEEKS	12 WEEKS	14 WEEKS	15 WEEKS	3 WEEKS
S	0 WEEKS	15 WEEKS	0 WEEKS	15 WEEKS	0 WEEKS
T	15 WEEKS	17 WEEKS	15 WEEKS	17 WEEKS	0 WEEKS

The critical path are those activities at which slack time are 0 weeks. We should not delay or postpone those activities because the whole project would be delayed or postpone. The critical path is s – t, coding and final work organization. We should not delay or postpone the code part because if it goes something wrong the whole project would be delayed. Also the final work organization is very important because what we have done during the weeks should be collected and organize for the very last time before being submitted.


START
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B
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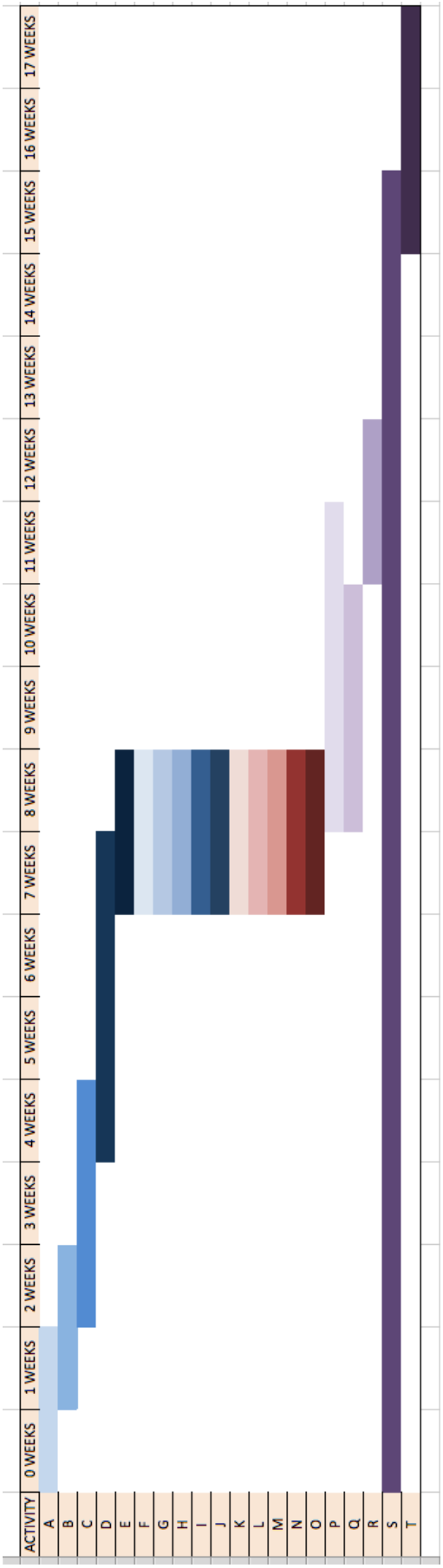
END


ACTIVITY
0 WEEKS
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6 WEEKS
7 WEEKS
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9 WEEKS
10 WEEKS
11 WEEKS
12 WEEKS
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