



INTERN PLACEMENT OFFICE SYSTEM

Software Requirement Specification And Analysis

Intern Placement Office System

Course Name

Software Project Lab II

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SE 505

Submitted to

Sheikh Muhammad Sarwar

Assistant professor

and

Md. Asif Imran

Lecturer

Name of the supervisor

Md. Nurul Ahad Tawhid

Assistant Professor

Submitted by

Md. Sakib Rezoan (BSSE 0611)

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April 13, 2016



Institute of Information Technology
University of Dhaka

Letter of Transmittal

13th April, 2016
Md. Asif Imran
Lecturer
IIT, University of Dhaka

Dear Sir,

I have prepared the report on Software Requirements Specification of 'Intern Placement Office System' for your approval. This report details the requirements I gathered for the project.

The primary purpose of this report is to summarize my findings from the work that I completed as my Software Project Lab II course project. This report includes the details of each step I followed to collect the requirements excusable point.

Sincerely yours
Md. Sakib Rezoan (BSSE0611)

Executive Summary

An Intern Placement Office System (IPOS) is proposed by IIT, University of Dhaka (DU) for all students and stuffs associated with internship system.

Acknowledgements

By the grace of Almighty Allah I have completed my report on Software Requirements Specification of Intern Placement Office System of IIT, University of Dhaka. I am grateful to my honorable sir Md. Nurul Ahad Tawhid for his supervision throughout the working time. He helped me a lot by sharing his invaluable knowledge with me. I am also thankful to all the stuff and senior brothers of IIT, DU. They greatly helped me collecting information among all business.

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Chapter 1 Introduction

1.1 Purpose

This document is the Software Requirements Specification (SRS) for the Intern Placement Office System (IPOS). It contains detailed functional, non-functional, and support requirements and establishes a requirements baseline for development of the system. The requirements contained in the SRS are independent, uniquely numbered, and organized by topic. The SRS serves as the official means of communicating user requirements to the developer and provides a common reference point for both the developer team and stakeholder community. The SRS will evolve over time as users and developers work together to validate, clarify and expand its contents.

1.2 Intended Audience

This SRS is intended for several audiences, including the customer, as well as the project managers, designers, developers, and testers.

- The customer will use this SRS to verify that the developer team has created a product that is acceptable to the customer.
- The project managers of the developer team will use this SRS to plan milestones and a delivery date, and ensure that the developing team is on track during development of the system.
- The designers will use this SRS as a basis for creating the system's design. The designers will continually refer back to this SRS to ensure that the system they are designing will fulfill the customer's needs.
- The developers will use this SRS as a basis for developing the system's functionality. The developers will link the requirements defined in this SRS to the software they create to ensure that they have created software that will fulfill all of the customer's documented requirements.
- The testers will use this SRS to derive test plans and test cases for each documented requirement. When portions of the software are complete, the testers will run their tests on that software to ensure that the software fulfills the requirements documented in this SRS. The testers will again run their tests on the entire system when it is complete and ensure that all requirements documented in this SRS have been fulfilled.

Chapter 2 Inception

2.1 Introduction

Inception is the beginning phase of requirements engineering. It defines how does a software project get started and what is the scope and nature of the problem to be solved. The goal of the inception phase is to identify concurrence needs and conflict requirements among the stakeholders of a software project. To establish the groundwork I have worked with the following factors related to the inception phases:

- Creating a preliminary scenario
- Identifying Stakeholders
- Recognizing multiple viewpoints
- Working towards collaboration
- Asking the first question

2.1.1 Creating a preliminary scenario

The Intern Placement Office System (IPOS) is the automated software to manage all the internship system of the students of 7th semester Bachelor of Science in Software Engineering (BSSE) at IIT, University of Dhaka.

About 35 students study under this program. The information of the students are recorded by IIT.

2.1.2 Identifying Stakeholders

Stakeholder refers to any person or group who will be affected by the system directly or indirectly. Stakeholders include end-users who interact with the system and everyone else in an organization that may be affected by its installation. To identify stakeholders I consulted with Intern Placement Office Head (IPOH) and asked him following questions:

- Who is paying for the project?
- Who will be using the project outcomes?
- Who gets to make the decisions about the project?
- Who has resources I need to get the project done?
- Whose work will my project affect? (During the project and also once the project is completed)?

I identified the stakeholders for my IPOS are:

1. IPO Head
2. Student of 7th semester
3. Regular Program Officer

2.1.3 Recognizing multiple viewpoints

After the discussion with the stakeholders I collected multiple viewpoints

1. IPOH's viewpoints:

- An intern's information should be verified by the IPOH.
- The intern's company selection process must not only be depended on intern's CGPA
- The interns must be uploaded his CV and skills information and the committee gives a feedback on their skill information.
- The allocation process should be automated
- The system should only be accessed by the students of 7th semester of IIT, DU
- The program office would deliver the intern's CGPA in the system.
- The user will access the system by their BSSE Email.

2. Intern's viewpoints:

- The user must be able to access from any computer. So, the system should be web-based
- Notification system should be included
- Authentication should be effective.

3. RPO's viewpoints:

- Entering CGPA should be web based
- Notification system should be included

2.1.4 Working towards collaboration

Common requirements:

- Authentication
- Notification about upcoming events
- Web based system

Conflicting Requirements:

In this system, the intern enters a CV and skill set and the IPOH have to reallocate companies for students based on intern's skills. But, this is not a perfect selection process for all interns in all position.

Final Requirements:

I finalized following requirements for the system by categorizing and prioritizing the requirements:

- Web based system.
- Can be accessed from any computer using internet connection.
- The admins have access almost every features of the system.
- The interns will go through the login and logout process to use their account after being registered
- The students of 7th semester of IIT, DU only access the system.
- IPOH has the supreme authority to access the system.

- The system allocates the appropriate companies to the interns based on their CGPA.

2.1.5 Asking the first question

I set my first set of context-free questions focuses on the Interns and other stakeholders, overall project goals and benefits. The questions are mentioned above. These questions helped me to identify all stakeholders, measurable benefit of the successful implementation and possible alternatives to custom software development. Next set of question helped me to gain a better understanding of problem and allows the Interns to voice his or her perception about the solution. The final set of question focused on the effectiveness of the communication activity itself.

2.2 Conclusion

Inception phase helped me to establish basic understanding about Intern Placement office System, identify the people who will be benefited if the system becomes automated, define the nature of the software and establish a preliminary communication with our stakeholders.

Meetings:

- Meeting on identifying stakeholders with honorable supervisor
Md. Nurul Ahad Tawhid
Assistant Professor
IIT, University of Dhaka
On 24th January, 2016
- Meeting with Dr. Kazi Muheymin-Us-Sakib
Associate Professor
IIT, University of Dhaka
On 30th January, 2016
- Meeting with Amit seal Ami
Lecturer
IIT, University of Dhaka
On 7th February 2016
- Meeting with supervisor for correcting the requirements and scenario on basis of the meeting mentioned above
On 10th February 2016

Chapter 3 Elicitation

3.1 Introduction

Elicitation is a task that helps the customer to define what is required. To complete the elicitation step I face many problems like problems of scope, problems of volatility and problems of understanding. However, this is not an easy task. To help overcome these problems, I have worked with the Eliciting requirements activity in an organized and systematic manner.

3.2 Eliciting Requirements

Unlike inception where Q&A (Question and Answer) approach is used, elicitation makes use of a requirements elicitation format that combines the elements of problem solving, elaboration, negotiation, and specification. It requires the cooperation of a group of end-users and developers to elicit requirements. To elicit the requirements I completed following four works.

1. Collaborative Requirements Gathering
2. Quality Function Deployment
3. Usage Scenarios
4. Elicitation work products

3.2.1 Collaborative Requirements Gathering

Many different approaches to collaborative requirements gathering have been proposed. Each makes use of a slightly different scenario. I completed following steps to do it.

- The meetings were conducted with the stakeholders we mentioned earlier. They were questioned about their requirements and expectations from the Internship Management System.
- The IPOS Committee was asked about the problem the authority of the institute is facing with the current manual system.
- At last I selected my final requirement list from the meetings mentioned earlier.

3.2.2 Quality Function Deployment

Quality Function Deployment (QFD) is a technique that translates the needs of the customer into technical requirements for software. It concentrates on maximizing customer satisfaction from the Software engineering process. With respect to my project the following requirements are identified by a QFD.

3.2.2.1 Normal Requirements

Normal requirements consist of objectives and goals that are stated during the meeting with the customers. Normal requirements of my project are :-

- Web based system.
- Can be accessed from any computer using internet connection.
- The admins have access almost every features of the system.

- The interns will go through the login and logout process to use their account after being registered
- The students of 7th semester of IIT, DU only access the system.
- IPOH has the supreme authority to access the system.
- The system allocates the appropriate companies to the interns based on their CGPA.

3.2.2.3 Expected Requirements

These requirements are implicit to the system and may be so fundamental that the customer does not explicitly state them. Their absence will be a cause for dissatisfaction.

- Maintain a database to store the information of all students
- Administrator will be able to update database
- The system should allow the user to login based upon an assigned login id and password.
- The user interface of the system should be easy to use and make use of drop-down boxes, radio buttons, and other selectable fields wherever possible instead of fields that require the user to type in data.

3.2.2.3 Exciting requirements

These requirements are for features that go beyond the customer's expectations and prove to be very satisfying when present

- The user interface should provide appropriate error messages for invalid input as well as tool-tips and online help
- The user interface should follow standard web practices such that the web interface is consistent with typical internet applications
- Offer login with mobile phone
- The system's configuration shall be documented and updated as changes to the system are made due to patches, new releases, etc
- Send mail and formal letter about any updates

3.2.3 Usage scenario

An Intern Placement Office system (IPOS)

The internship semester starts from 1st January and ends at 30th June of every year.

The IPOS consists of a committee of 4 members, presided by the head of IPOS. Intern placement office head (IPOH) initially enters the intern taking company names, available intern positions, the job responsibilities of each position with company addresses and HR's email address. IPOH then sends a notice to the students for filling up the internship company choice forms. The form consists of list of company names and job position with priority numbers (1 to upwards, lowest number highest priority). Sample list is given below:

Priority no:	Company Name	Preferred Position
1	M&H	Java Developer
2	Progmatic	Testing and QA

Upon receiving the notice, student view the available company information and fill up the choice form according to their wish. Students also upload their CV and a separate form mention their strong skills. Sample skill form is given below:

Priority No:	Skill Set
1	Java Developer
2	Testing and QA

The Regular program officer enters the CGPA of each student up to third year first semester into the IPOS.

Based on student's CGPA and Skill set, the system allocates the appropriate companies to the students. The selection process is, the highest CGPA holder will get the first preference. If the company choice form, skill set matched and the position is available, that intern place is allocated to that student.

However, IPOH has the supreme authority to place any students to any companies.

After allocation, a formal letter is generated to the companies HR by email mentioning these students has been selected for his/her company. One letter is also sent to the program office about the internship for office record.

In IPOS, all users authenticate by their BSSE email which is given by IIT, DU.

3.2.4 Elicitation work products

The output of the elicitation task can vary depending on size of the system or product to be built. My elicitation work product includes:

- Make a statement of our requirements for automated Pre-examination control system
- Make a bounded statement of scope for our system
- Make a list of customer, user and other stakeholder who participated in requirements elicitation
- Set of usage scenarios
- Description of the system's technical environment

Chapter 4 Scenario-Based Modeling

4.1 Introduction

In this model the system is described from the user's point of view. As this is the first model, it serves as input for creation of other modeling elements.

4.2 Use Case Scenario

Level 0	Level 1	Level 2	Actor
Intern Placement Office System (IPOS)	Authentication	Register	Student
		Login	IPOH, RPO, Student
		Logout	IPOH, RPO, Student
	Form Fill Up	Upload Choice Form	IPOH
		Fill Up Choice form	Student
		Upload CV and Skills Set	Student
	Notification	Upload Notice	IPOH
		View Notice	Student, RPO
	Company Information	Upload Company Information	IPOH
		View Company Information	Student
	Allocation	Upload CGPA	RPO
		Generate Allocation List	System
		Modify Allocation List	IPOH
		View Allocation List	IPOH, Student
		Send Formal Letter	System

4.3 Use Case Diagram

Here is the use case diagram of level-0 for PECS:

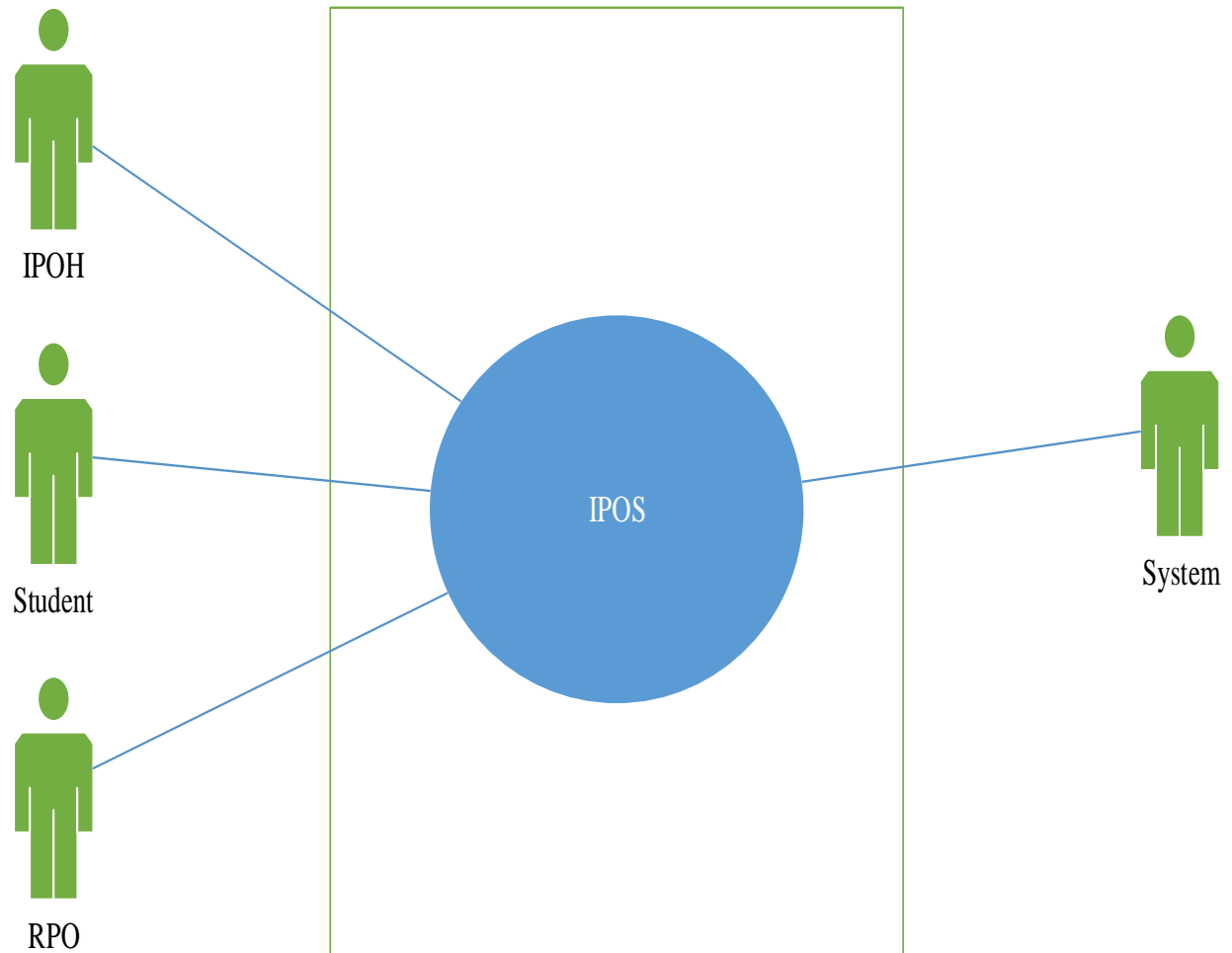


Figure 1 : Level 0

4.3.1 Intern Placement Office System (IPOS)

This is the elaborated form of level-0 for PECS:

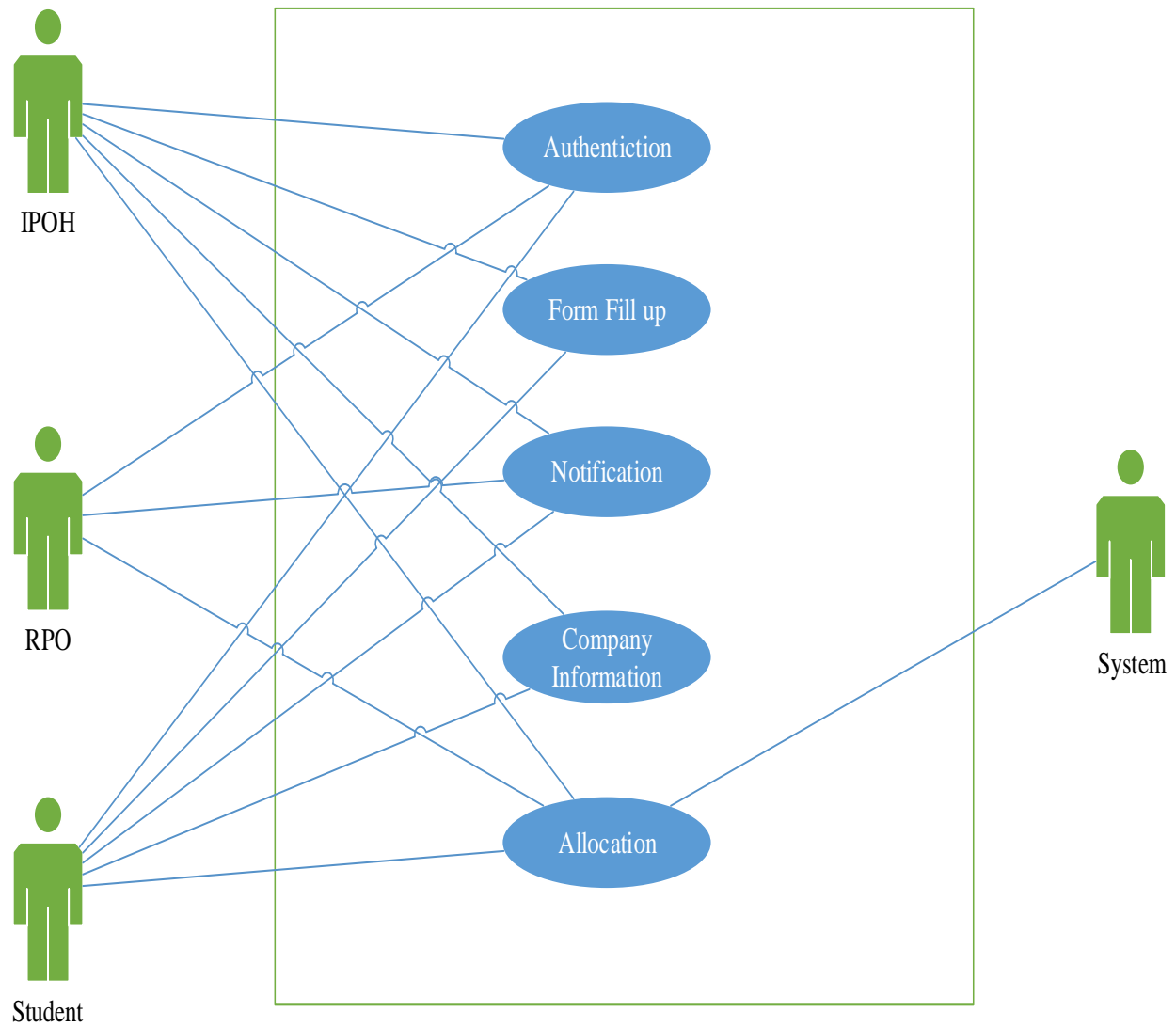
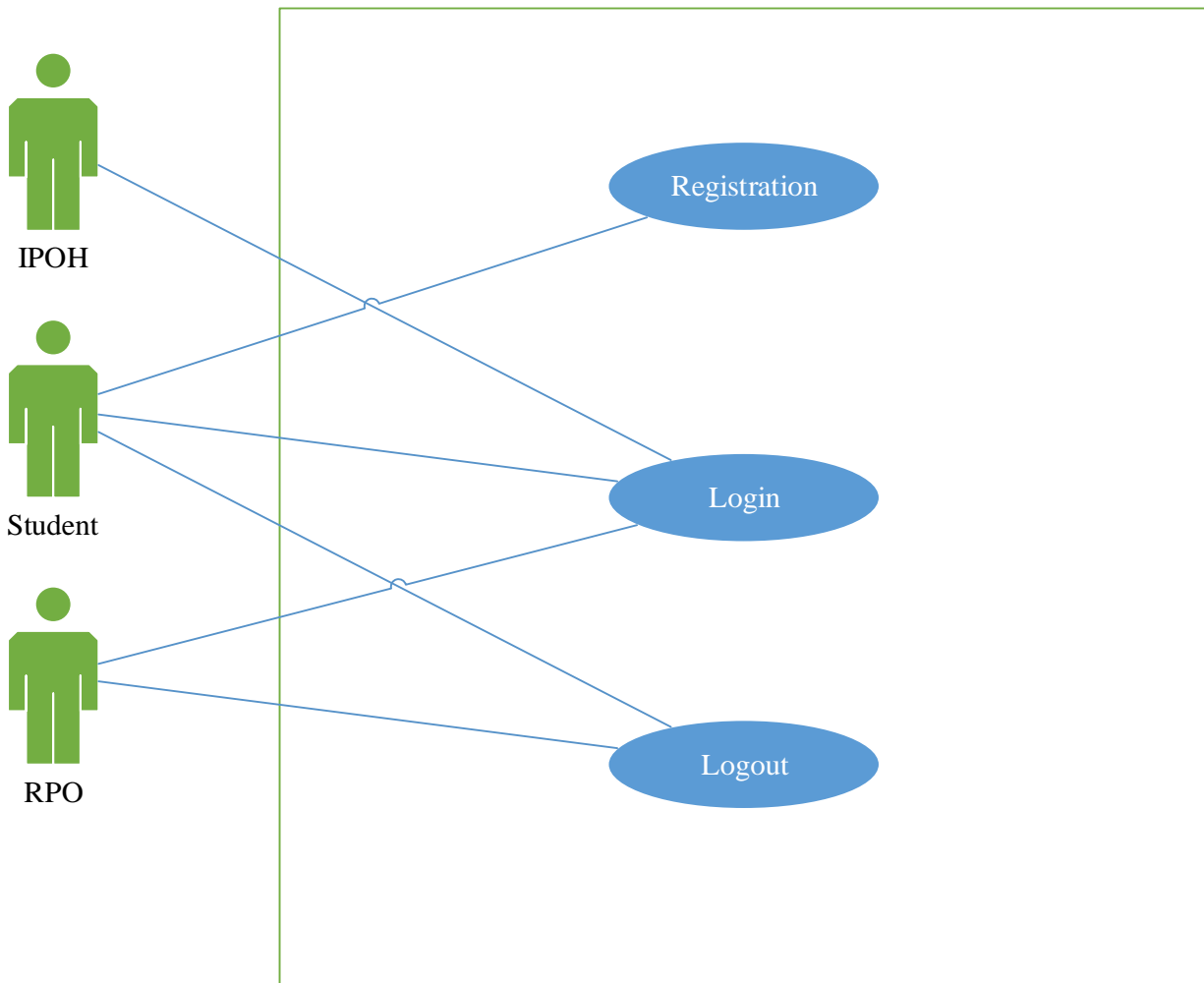


Figure 2 : Level 1 (IPOS)

4.3.1.1 Authentication

I can further section Authentication system into three sub-systems:



Use Case ID	:	uc_1.1
Use Case Name	:	Authentication
Primary Actor	:	<ol style="list-style-type: none"> 1. IPOH 2. Student 3. RPO
Secondary Actor	:	No secondary actor
Goal in Context	:	To enter the system
Precondition	:	User must have an account in the system
Action in Reply	:	Enter Username and Password to access
Exceptions	:	<ol style="list-style-type: none"> 1. Unrecognized user ID. 2. Wrong password. 3. User is blocked.
Priority	:	Essential, must be implemented.
When available	:	First Increment.
Frequency of Use	:	Many times per day.

4.3.1.2 Form Fill Up

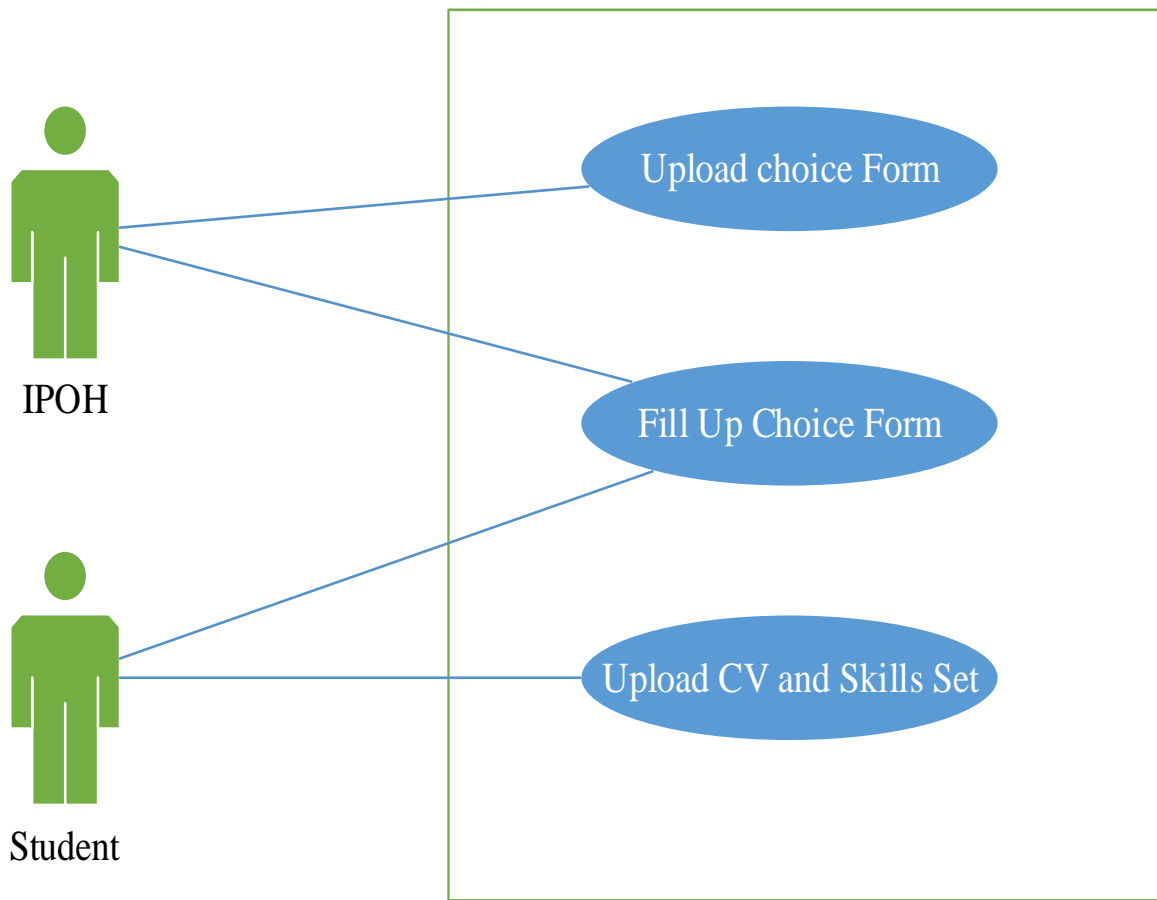


Figure 3 : Level – 1.2 (Form Fill Up)

Use Case ID : uc_1.2

Use Case Name : Form Fill Up

Primary Actor :

1. IPOH
2. Student

Secondary Actor : No secondary actor

Goal in Context : Get students filled form, CV and skills Set

Precondition : IPOH allow students to fill up choice form, upload CV and skills set

Action in Reply : Filled choice form will be stored in database.

Exceptions : No major exceptions but CV must be in doc format.

Priority : Essential, must be implemented.

When available : First Increment.

Frequency of Use : Many times per day.

4.3.1.3 Notification

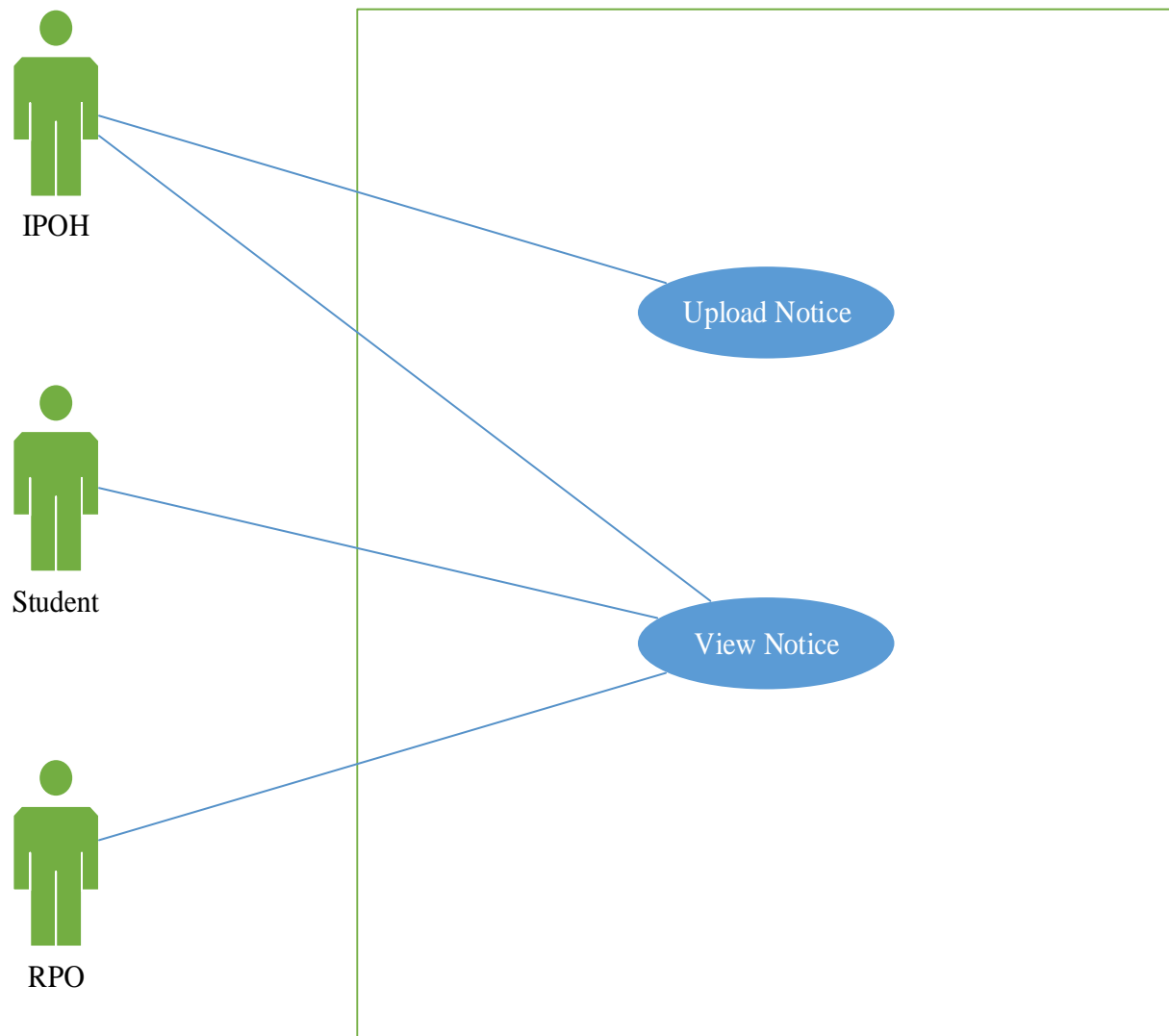


Figure 4 : Level 1.3 (Notification)

Use Case ID	:	uc_1.3
Use Case Name	:	Notification
Primary Actor	:	<ol style="list-style-type: none">1. IPOH2. Student3. RPO
Secondary Actor	:	No secondary actor
Goal in Context	:	To notify users
Precondition	:	User have to logged in
Action in reply	:	User view notice
Exceptions	:	No exception
Priority	:	Essential, must be implemented.
When available	:	First Increment.
Frequency of Use	:	Many times per day.

4.3.1.4 Company Information

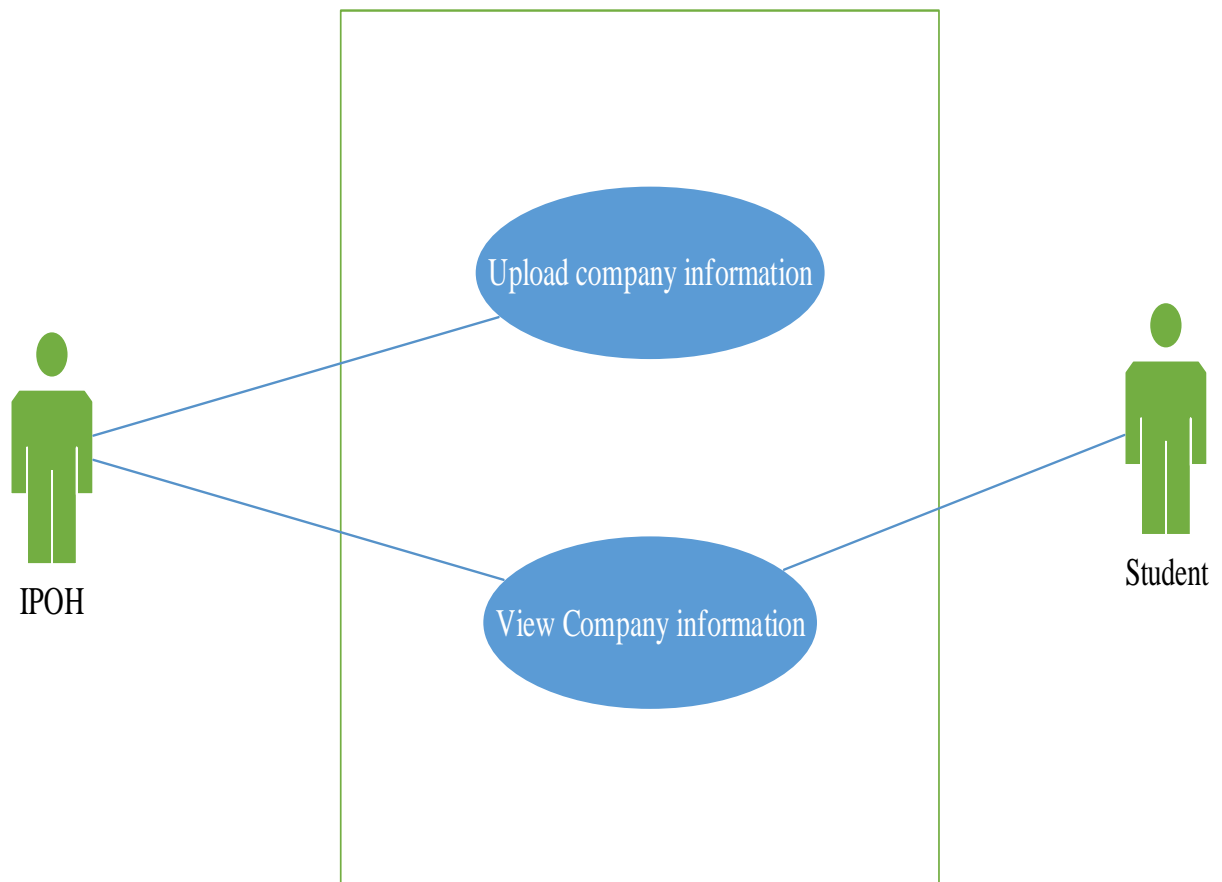


Figure 5 : Level - 1.4 (Company Information)

Use Case ID : uc_1.4

Use Case Name : Company Information

Primary Actor :

1. IPOH
2. Student

Goal in Context : View company information

Precondition : IPOH have to upload company information

Action in reply : Company information will store in database

Exceptions : No exception

Priority : Essential, must be implemented.

When available : First Increment.

Frequency of Use : Many times per day.

4.3.1.5 Allocation



Figure 6 : Level – 1.5 (Allocation)

Use Case ID : uc_1.5

Use Case Name : Allocation

Primary Actor :

1. IPOH
2. RPO
3. Student

Secondary Actor : System

Goal in Context : Generate allocation list

Precondition : Student have to be passed

Exceptions : No exception

Priority : Essential, must be implemented.

When available : First Increment.

Frequency of Use : Once.

4.4 Activity Diagram

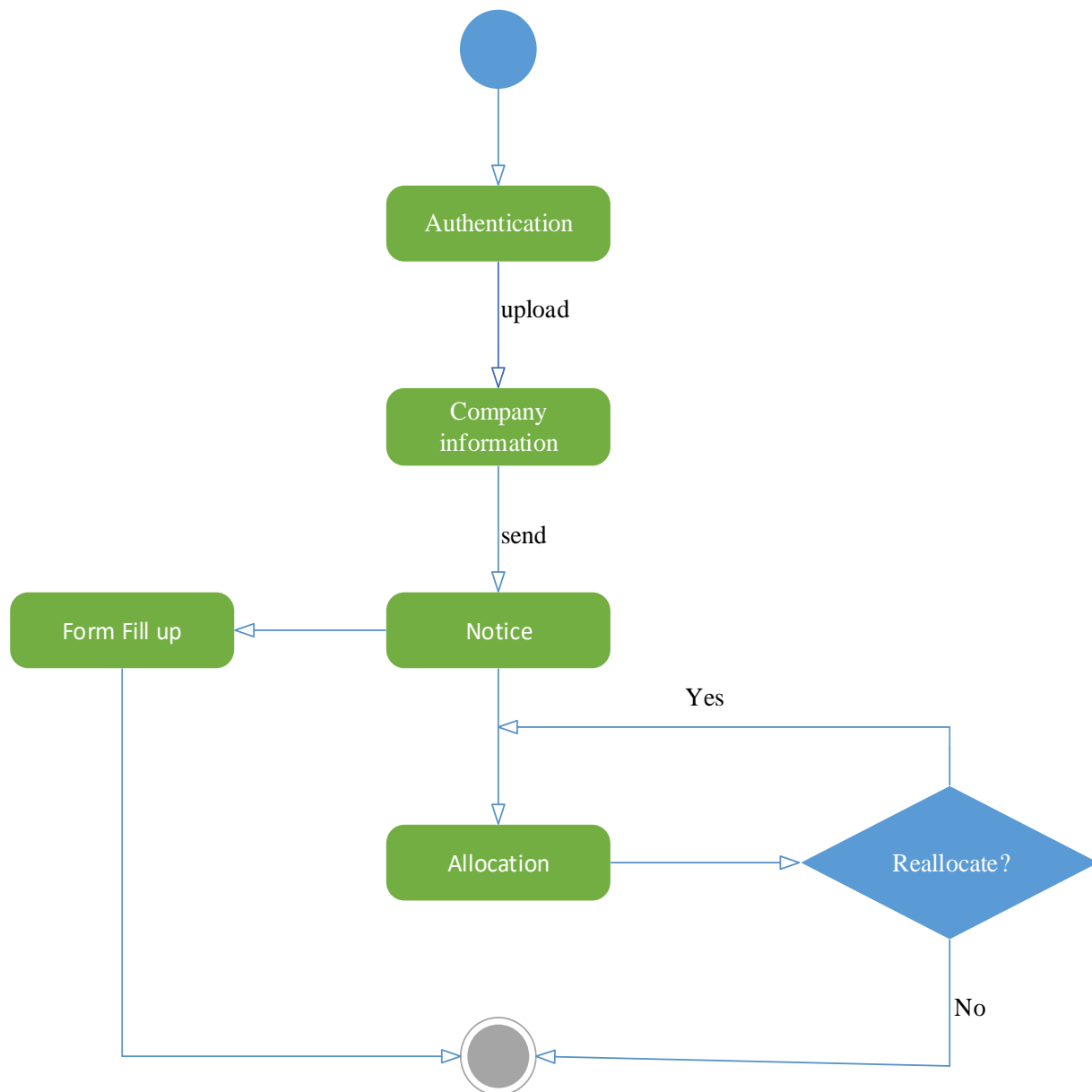


Figure 7 : Activity Diagram for IPOS (Level - 1)

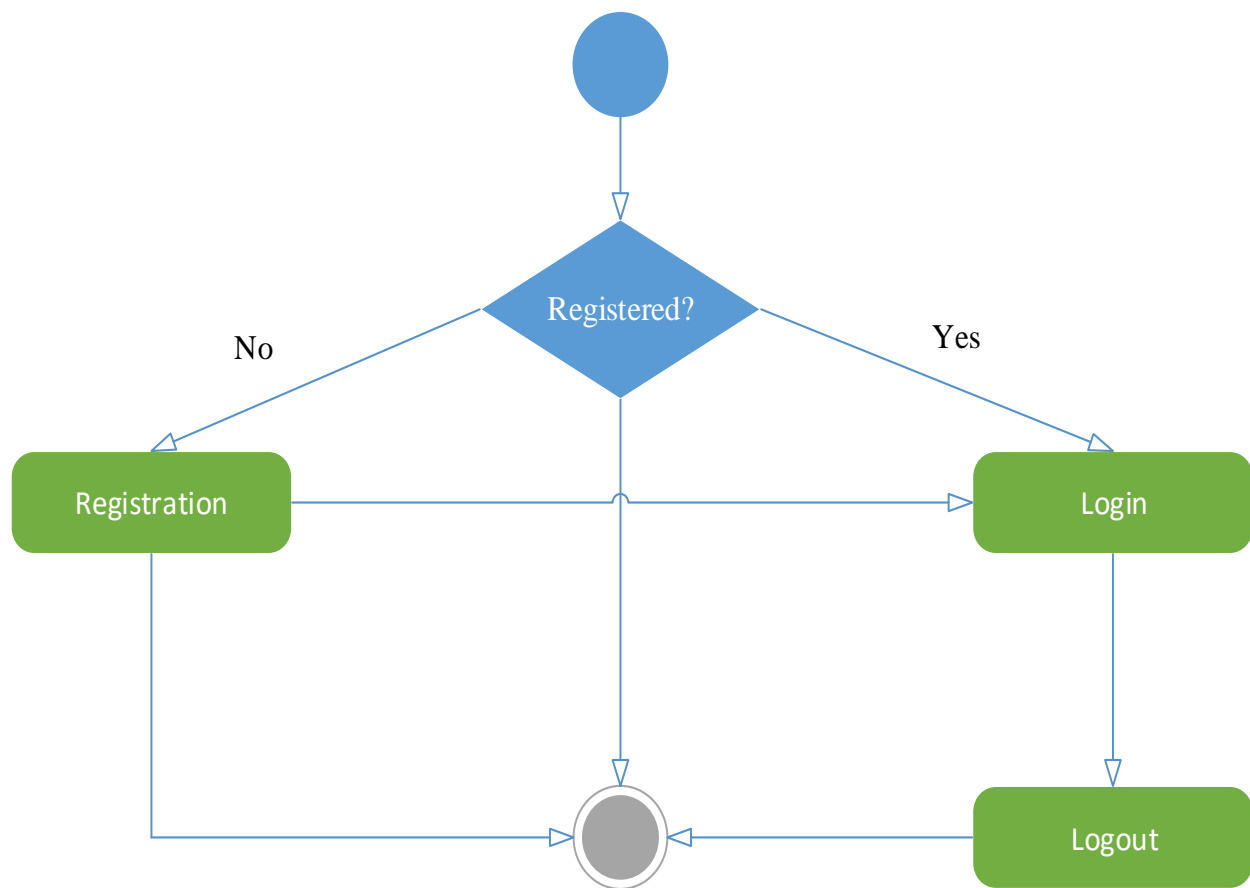


Figure 8 : Activity Diagram for Authentication (Level – 1.1)

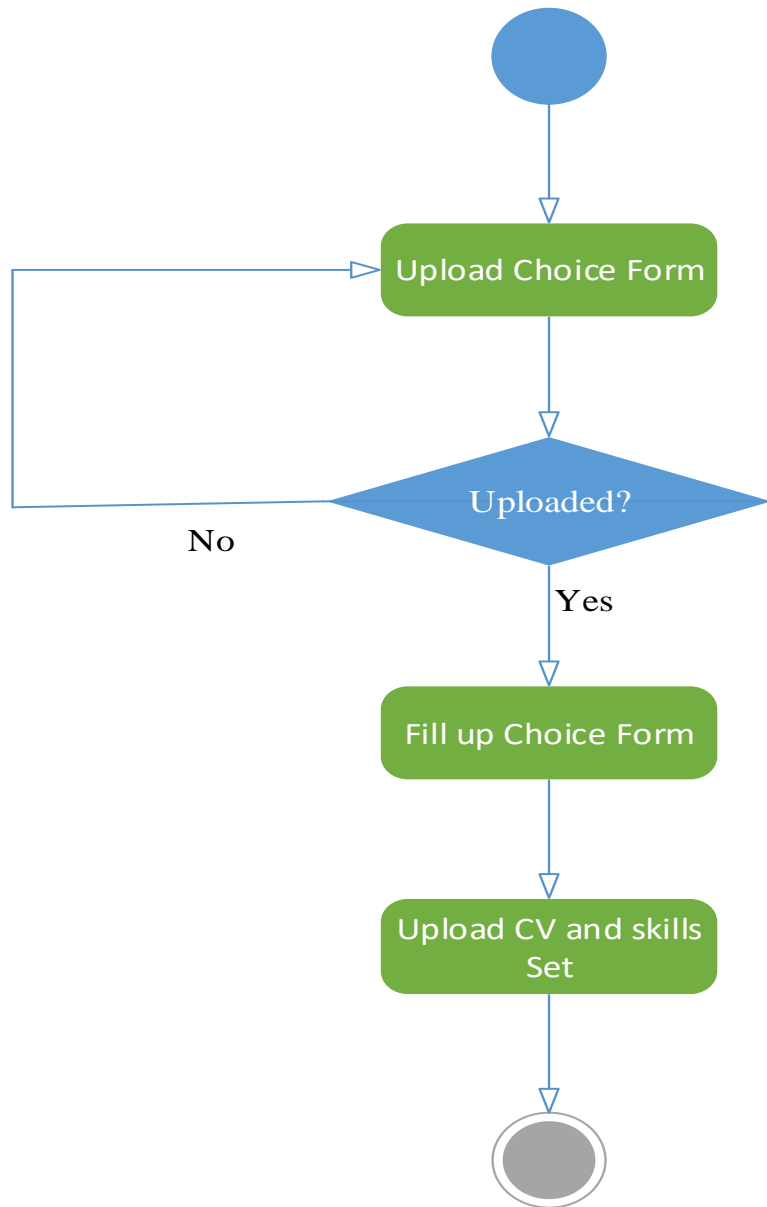


Figure 9 : Activity Diagram for Form Fill Up (Level – 1.2)

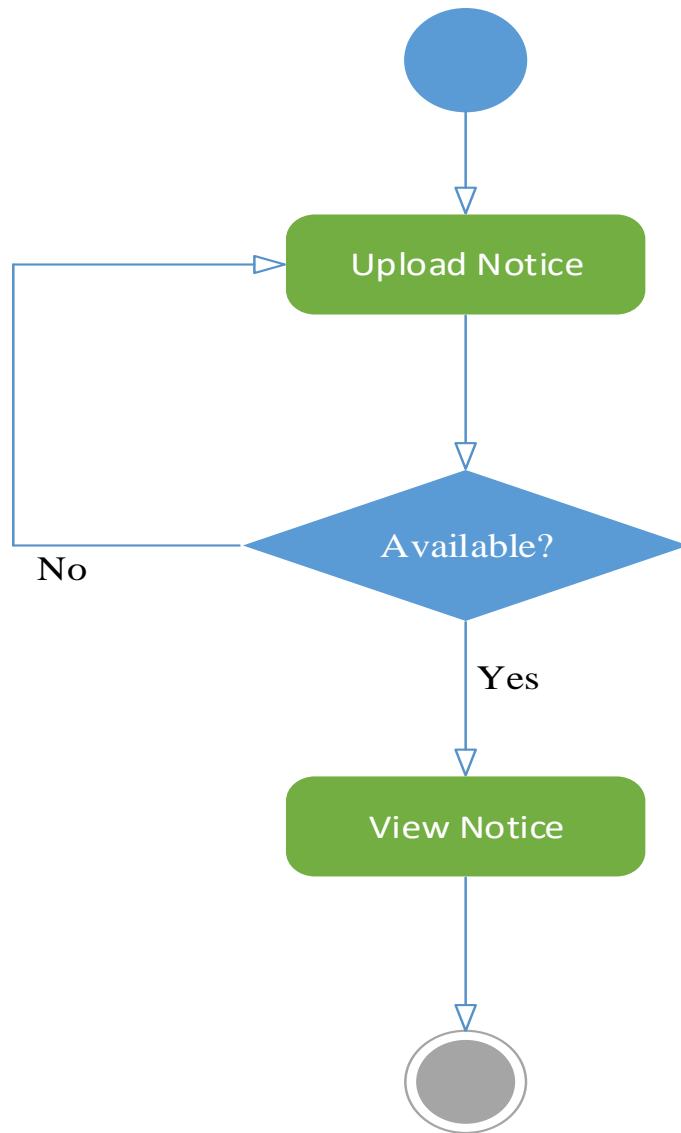


Figure 10 : Activity Diagram for Notification (Level 1.3)

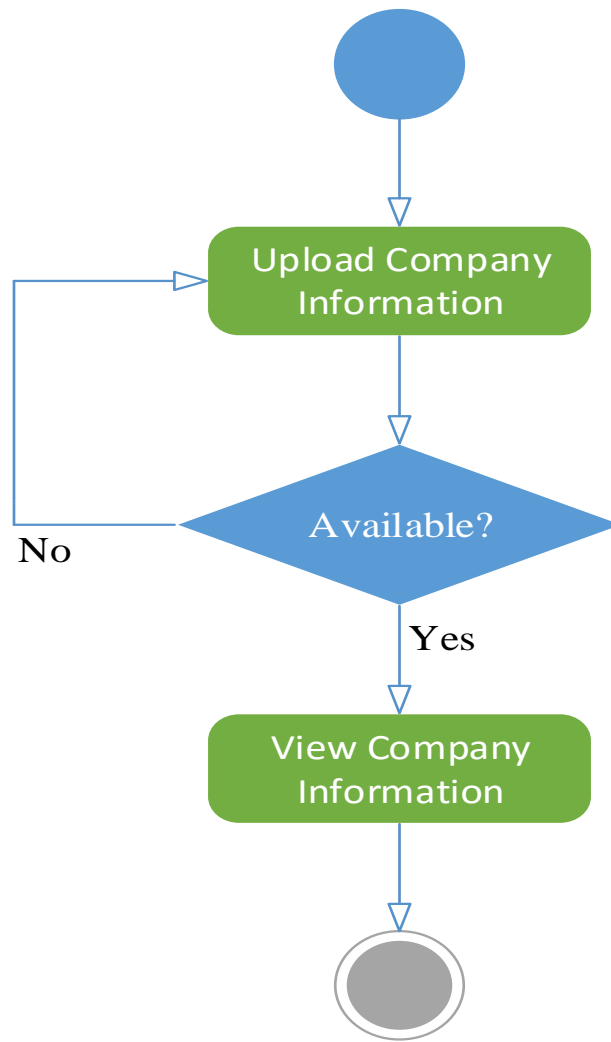


Figure 11 : Activity Diagram for Company Information (Level 1.4)

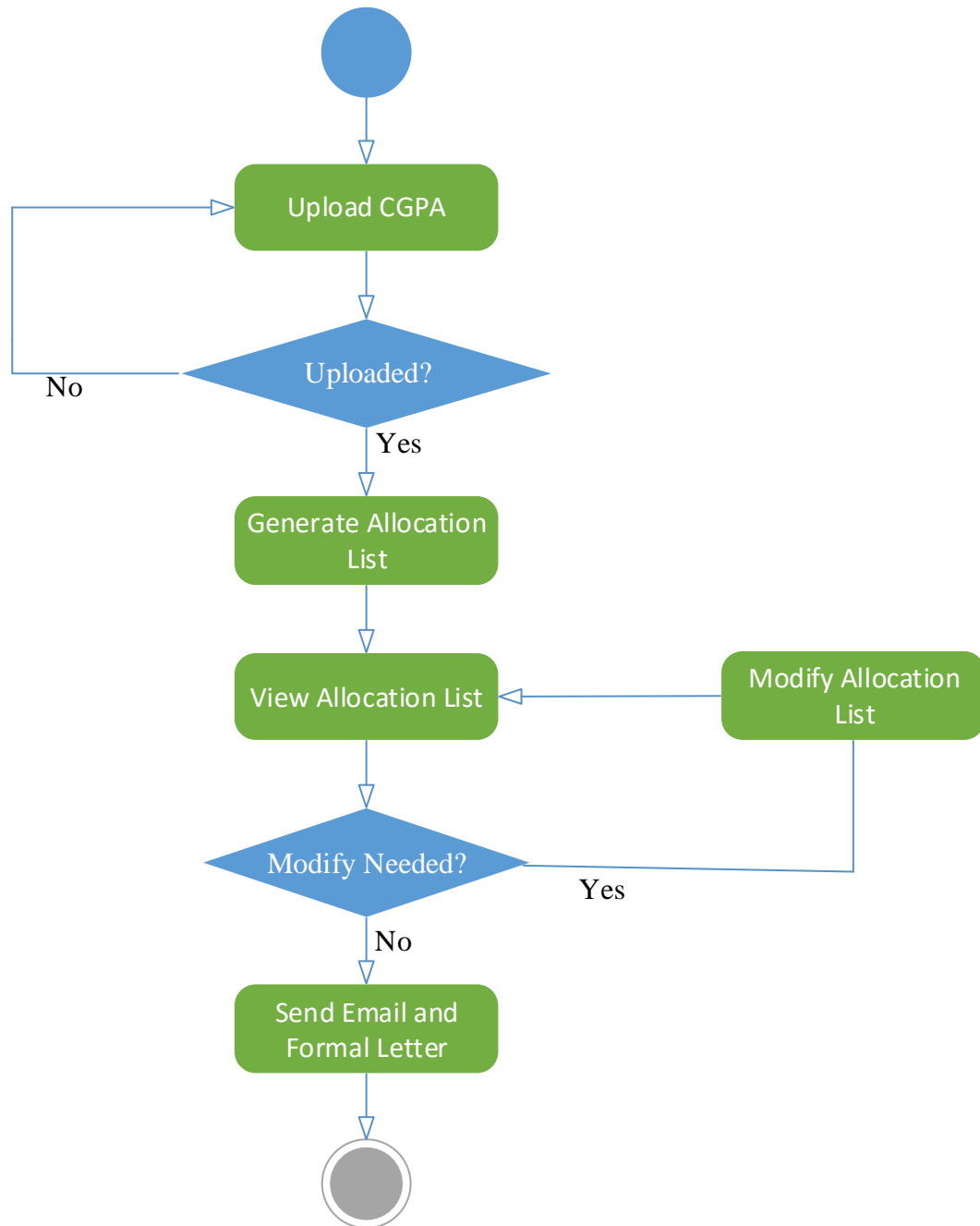


Figure 12 : Activity Diagram for Allocation (Level – 1.5)

4.5 Swim Lane Diagram

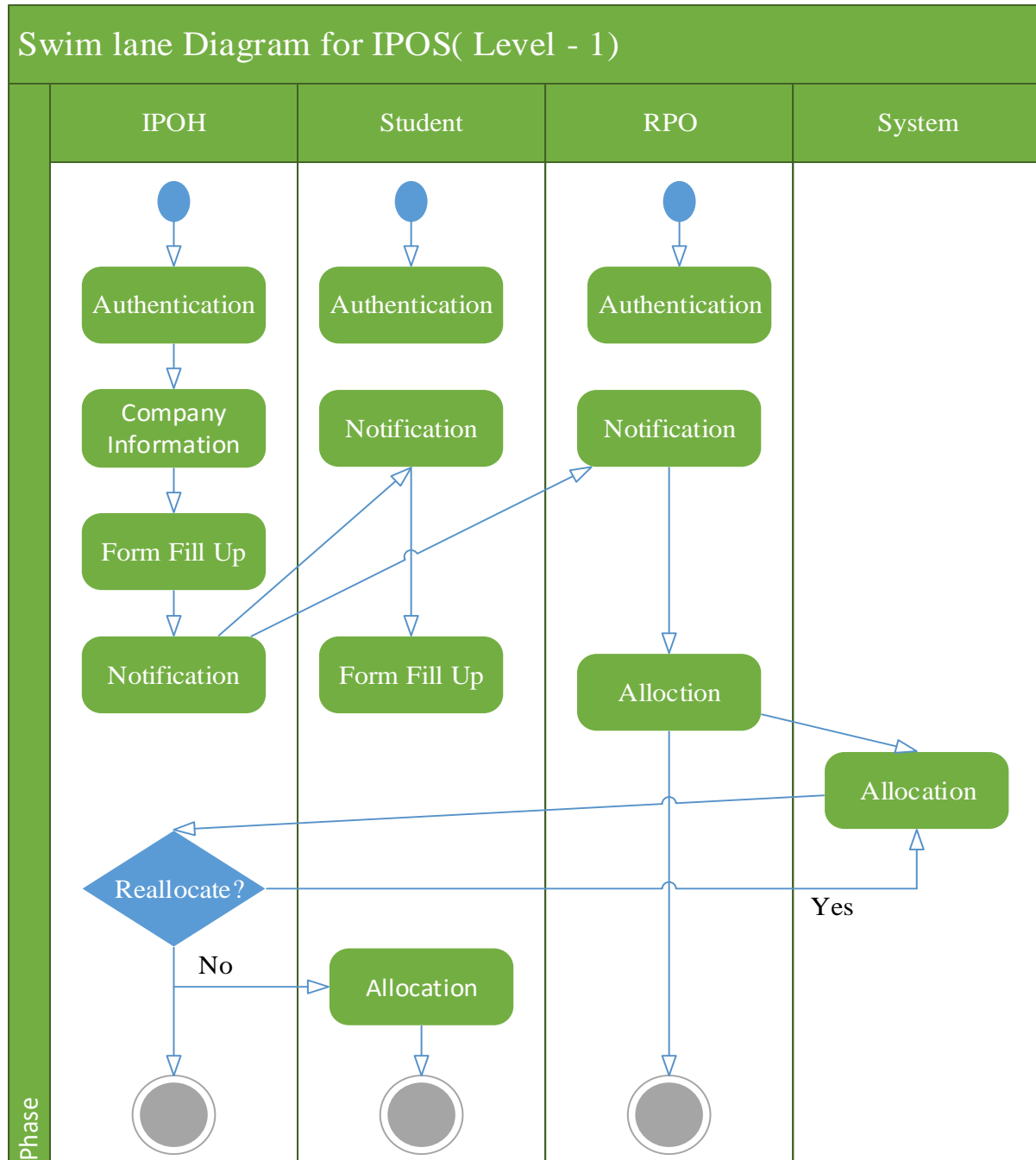


Figure 13 : Swim Lane Diagram for IPOS (Level - 1)

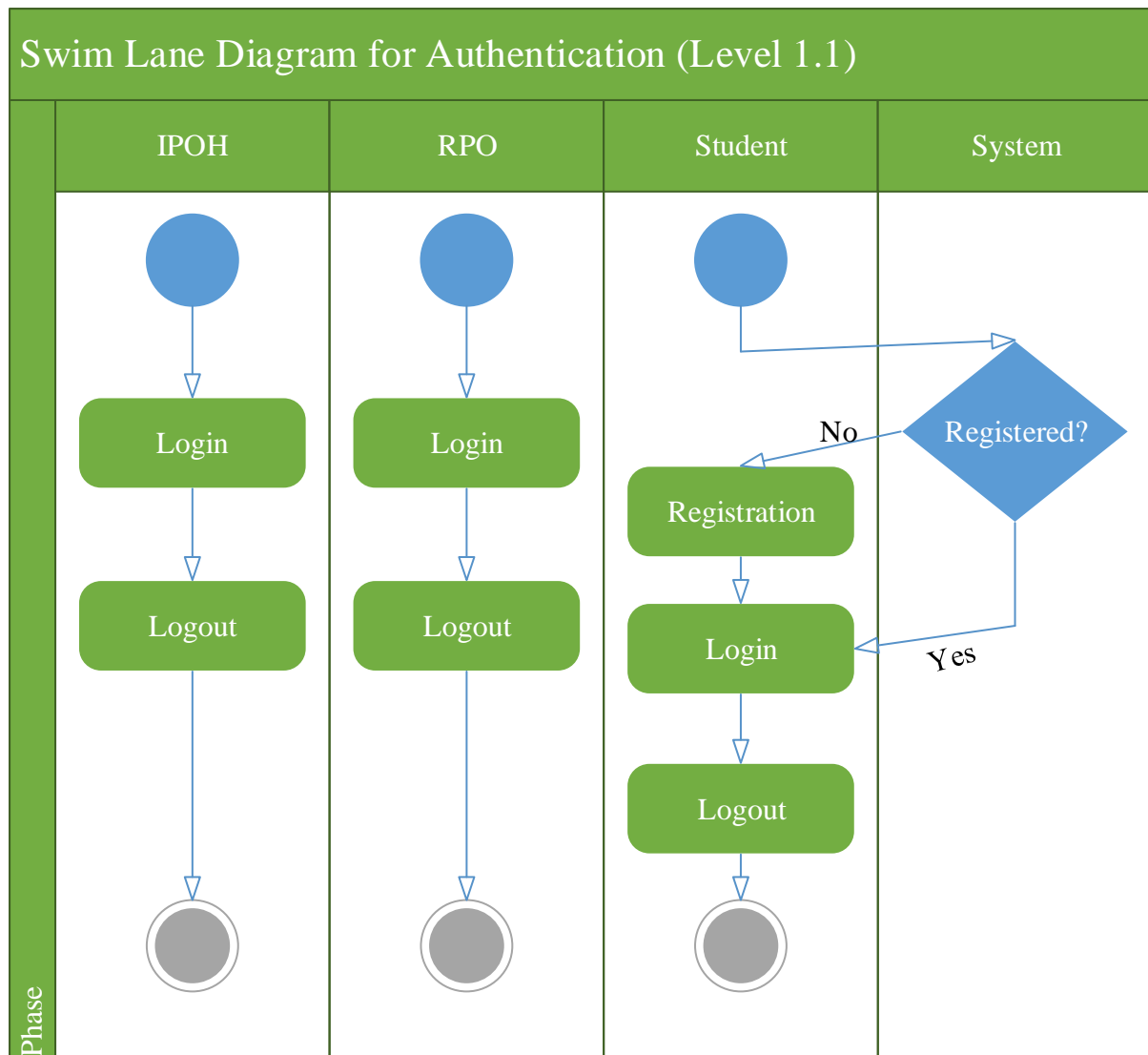


Figure 14 : Swim Lane Diagram for Authentication (Level – 1.1)

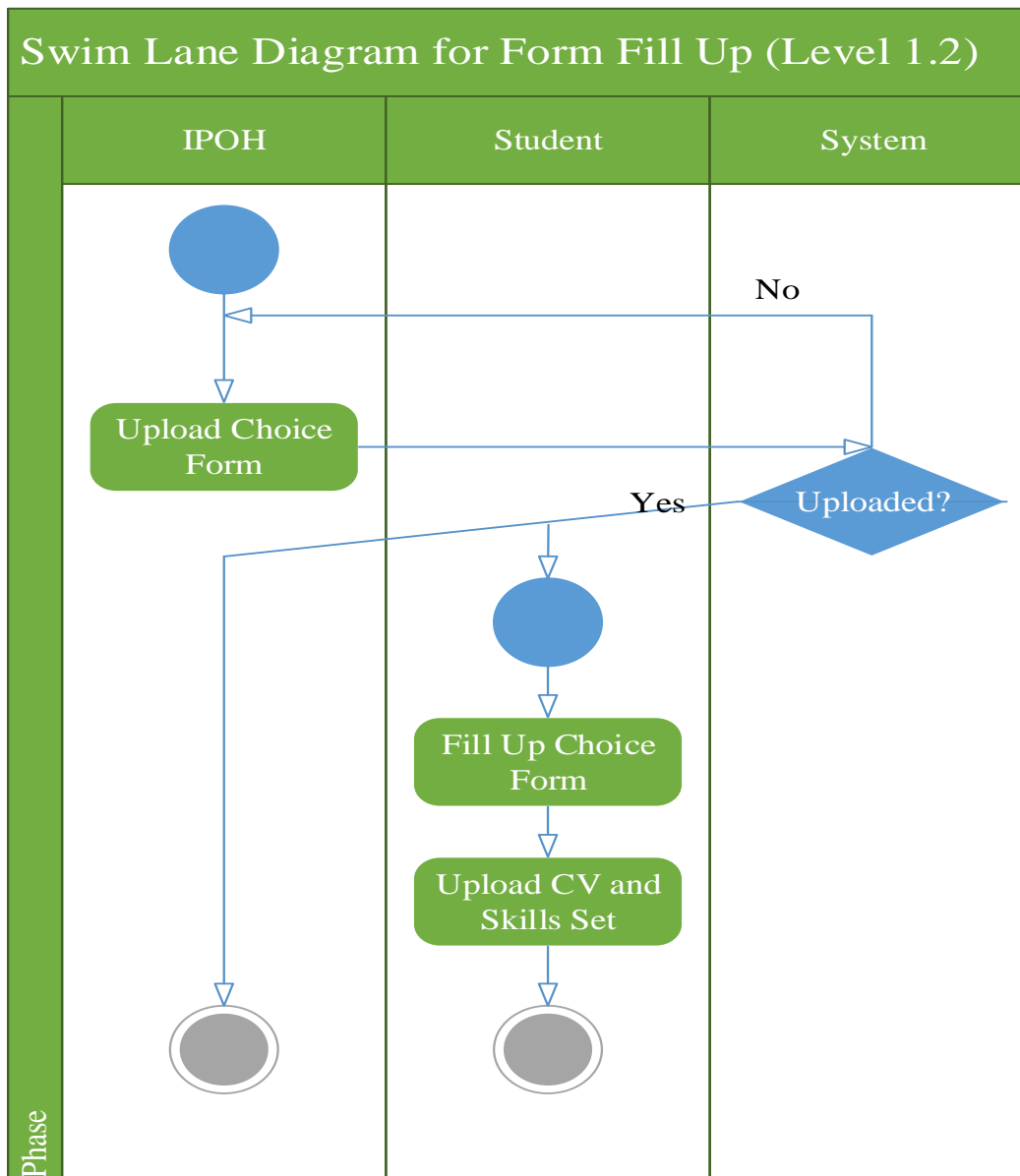


Figure 15 : Swim Lane Diagram for Form Fill Up (Level – 1.2)

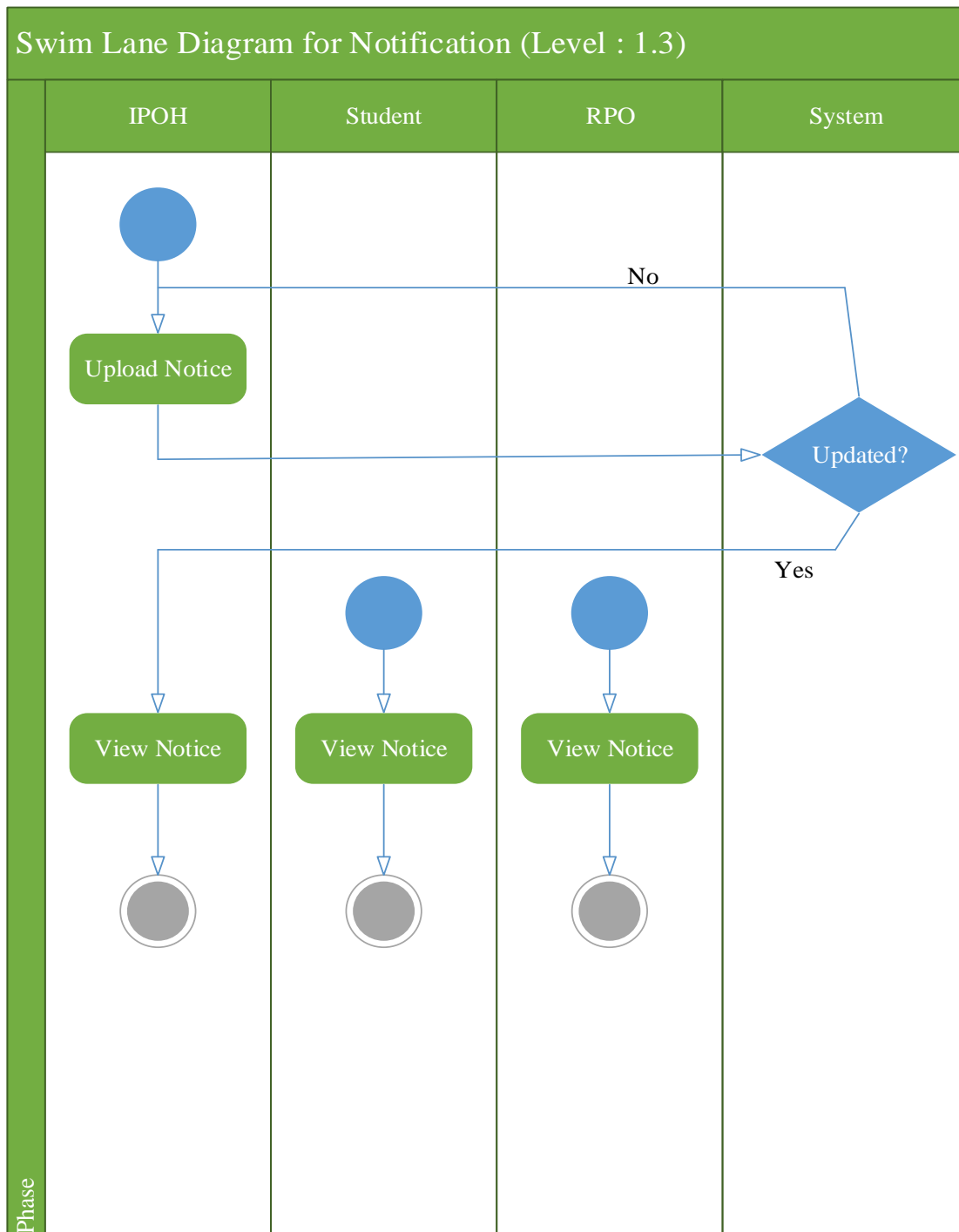


Figure 16 Swim Lane Diagram for Notification (Level – 1.3)

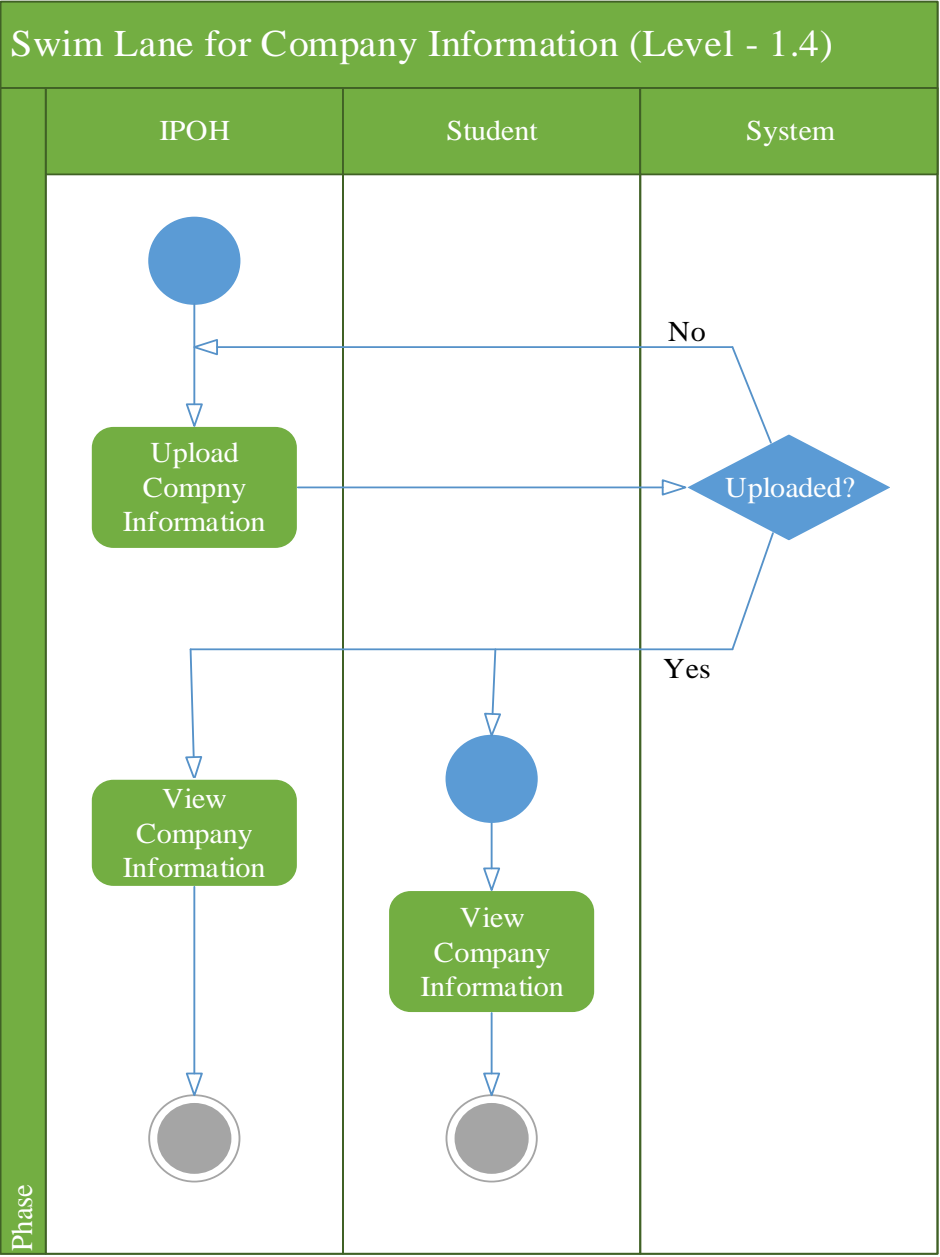


Figure 17 : Swim Lane Diagram for Company Information (Level – 1.4)

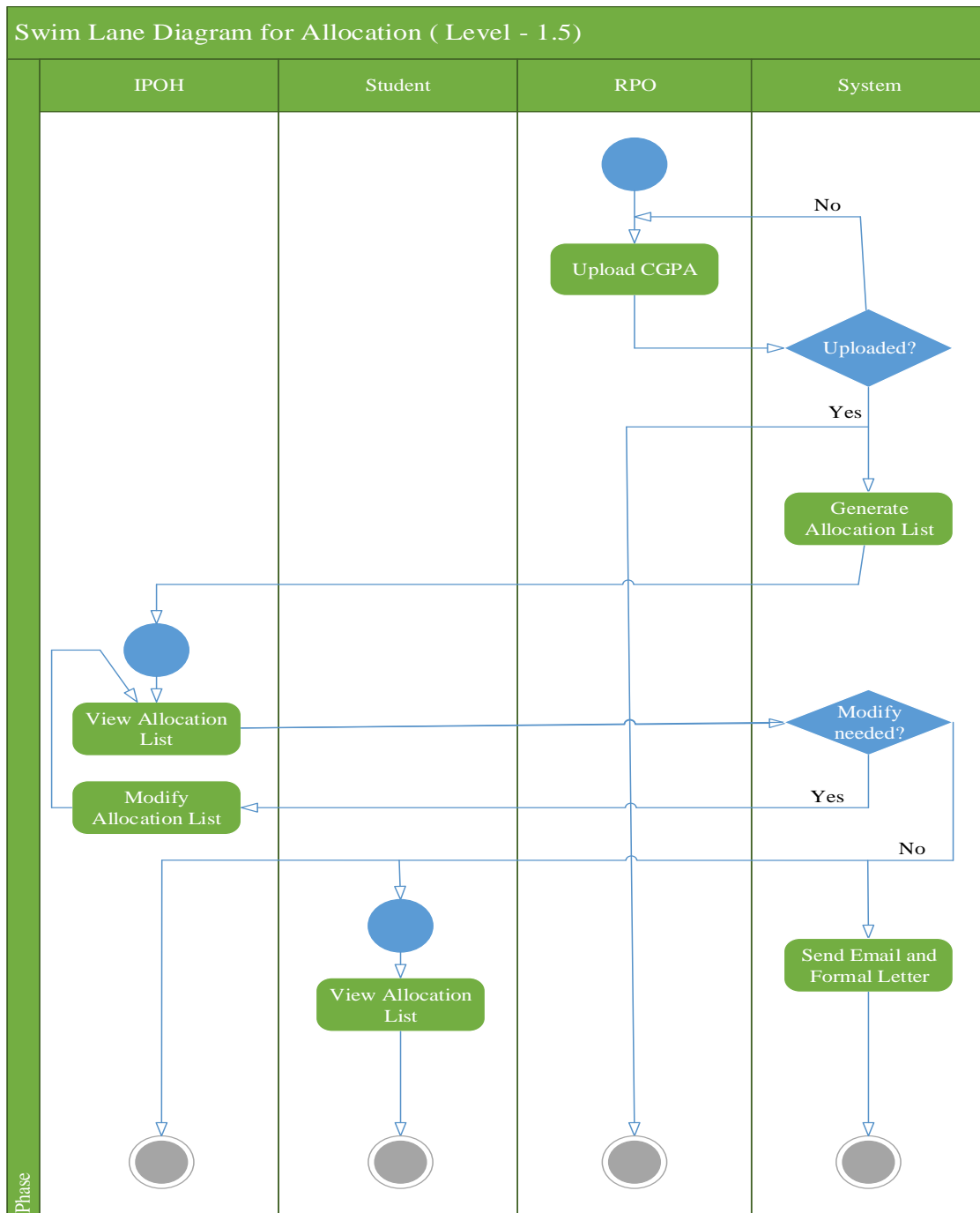


Figure 18 : Swim Lane Diagram for Allocation

Chapter 5 Data Model

5.1 Introduction

If software requirements include the need to create, extend, or interface with a database or if complex data structures must be constructed and manipulated, the software team may choose to create a data model as part of overall requirements modeling.

5.2 Data Object Selection

A data object is a representation of information which has different properties or attributes that must be understood by software. Here is the table of potential data objects. Some attributes were not present in the scenario, but I included them as they are necessary attributes in my system.

Noun	Attributes	Description	Remarks
Institute		Out of Scope	Rejected
Internship		Out of Scope	Rejected
Student	Username, Password, CGPA, Year, Semester, Choice Form, CV, Skills Set, SID	Potential Data Object	Accepted
Company	Company Name, Company Address, Available Position, Job responsibilities, HR's email	Potential Data Object	Accepted
Committee		Out of Scope	Rejected
Member		Out of Scope	Rejected
IPOH	Username, Password, EID, Designation	Potential Data Object	Accepted
Company Name		Attribute of Company	Rejected
Available Position		Attribute of Company	Rejected
Job Responsibilities		Attribute of Company	Rejected
Company Address		Attribute of Company	Rejected
HR's email		Attribute of Company, Allocation List	Rejected
Notice	Notice id, Notice Type, Notice Content	Potential Data Object	Accepted
Choice Form	Company Name, Job Position, Job responsibilities, Priority No	Potential Data Object	Accepted
Job Position		Attribute of Company, Choice Form	Rejected

Priority No		Attribute of Choice Form	Rejected
CV		Attribute of Student	Rejected
Skills Set		Attribute of Student	Rejected
RPO	Username, Password, EID, Designation	Potential Data Object	Accepted
CGPA		Attribute of Student	Rejected
Year		Attribute of Student	Rejected
Semester		Attribute of Student	Rejected
System		Out of scope	Rejected
Allocation List	Company Name, SID, Formal Letter, HR's email, EID	Potential Data Object	Accepted
Formal Letter		Attribute of Allocation List	Rejected
Username		Attribute of Student, IPOH, RPO	Rejected
EID		Attribute of Student, IPOH, RPO	Rejected
Password		Attribute of Student, IPOH, RPO	Rejected
Notice id		Attribute of Notice	Rejected
Notice Type		Attribute of Notice	Rejected
Notice Content		Attribute of Notice	Rejected
Office		Out of scope	Rejected
Designation		Attribute of IPOH, RPO	Rejected
SID		Attribute of Student, Allocation List	Rejected

5.3 Data Objects and Attributes

This is a brief view of all attributes I have found so far:

Student = Username + Password + CGPA + Year + Semester + CV + Skills Set + SID

Company = Company Name + Job Position + Job responsibilities + Priority No

Choice Form = Company Name + Job Position + Job responsibilities + Priority No

Notice = Notice id + Notice Type + Notice Content

RPO = Username + Password + EID + Designation

IPOH = Username + Password + EID + Designation

Allocation List = Company Name + SID + Formal Letter + HR's email + EID

5.4 Relationship between Data Objects

Here I have shown pair wise relation between two entities-

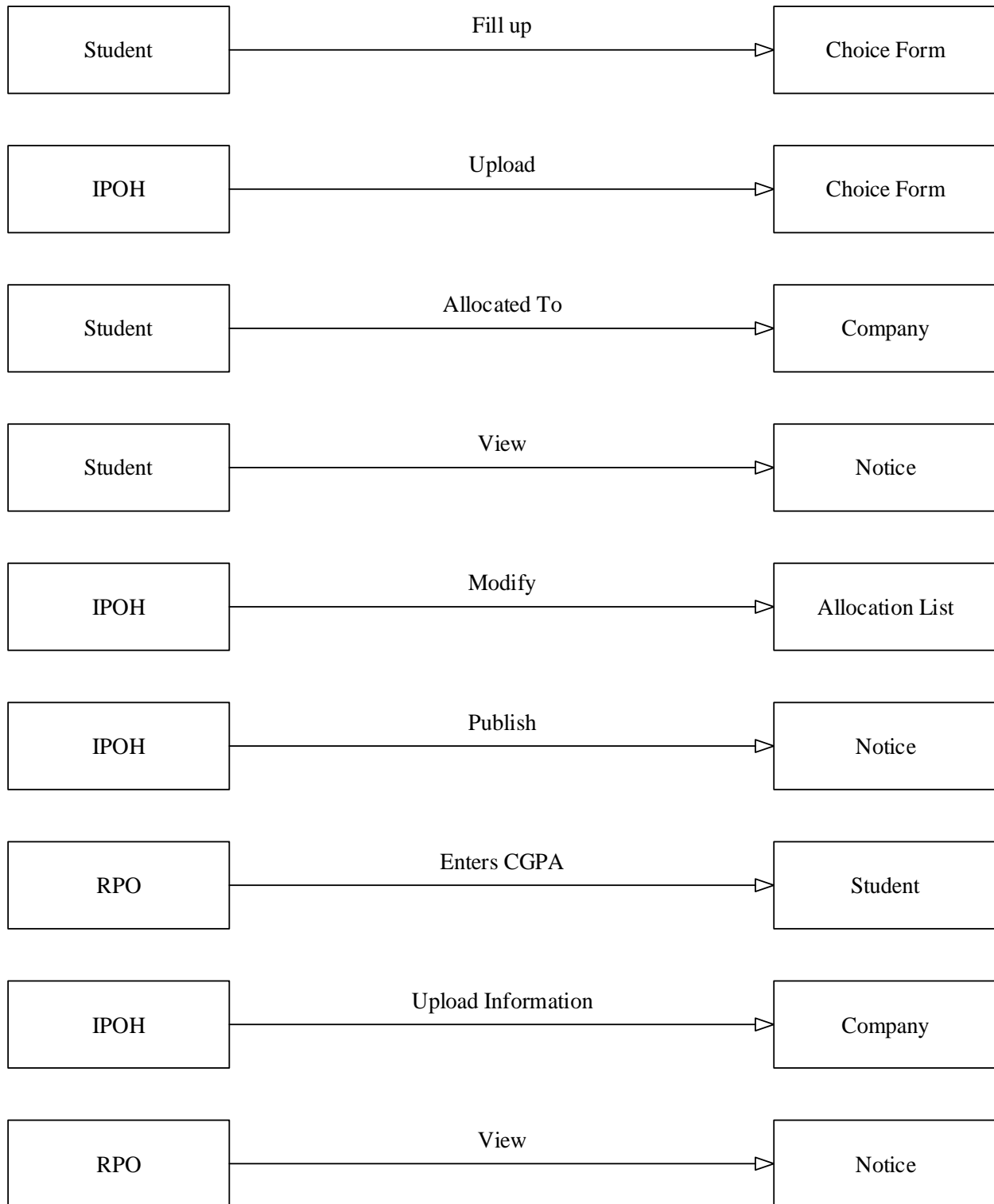


Figure 19 : Relationship between Data Object

5.5 Entity Relationship(ER) Diagram

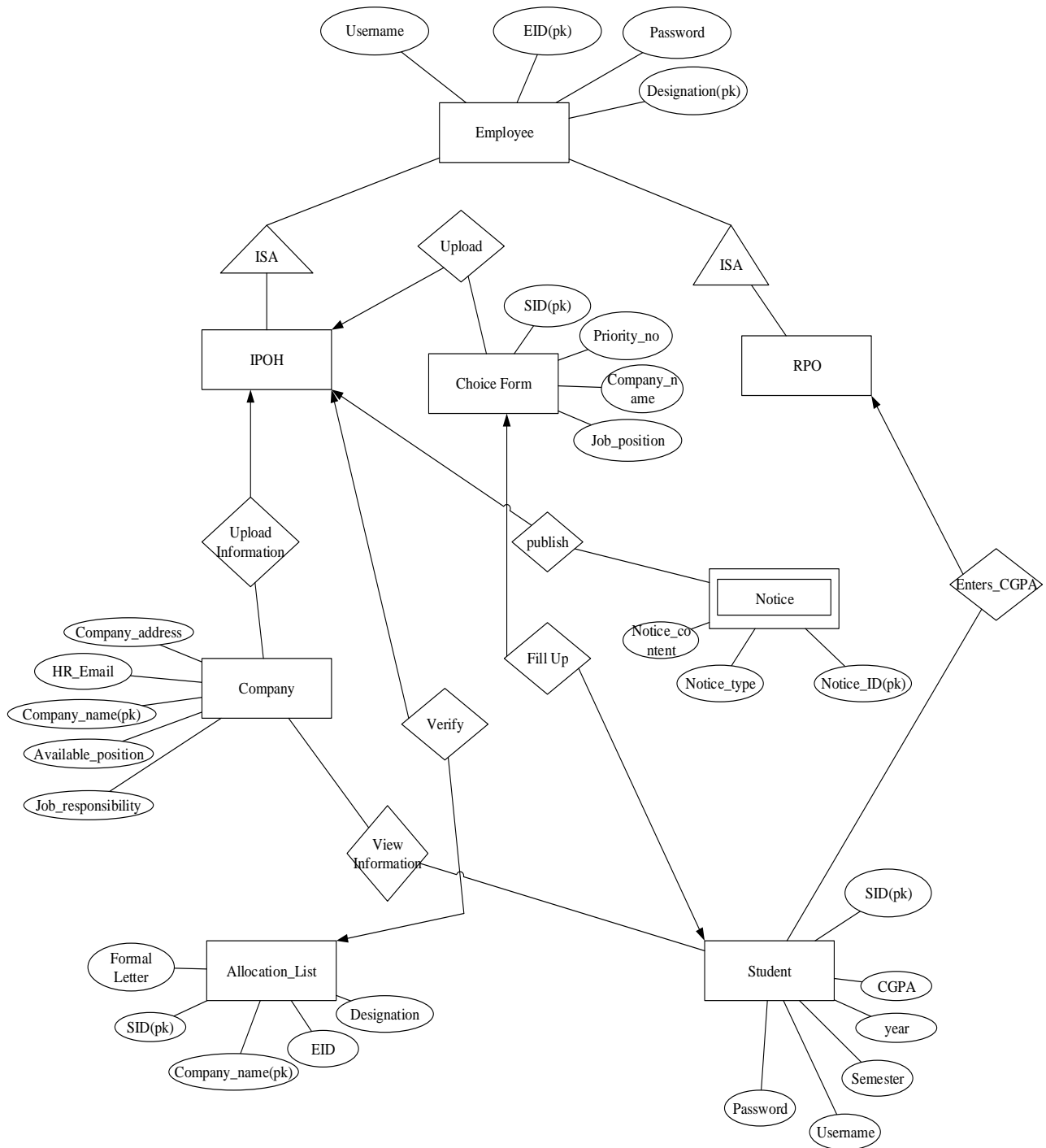


Figure 20: ER Diagram

5.6 Schema

Table: Student	
Attribute	Data type (Size)
Username	Varchar (50)
Password	Varchar (20)
CGPA	Number (1,2)
Year	Number (5)
Semester	Number (2)
CV	Varchar (200)
Company name	Varchar (50)
SID	Varchar (50)

Table: Employee	
Attribute	Data type (Size)
Username	Varchar (50)
Password	Varchar (20)
Designation	Varchar (20)
EID	Varchar (50)

Table: Company	
Attribute	Data type (Size)
Company name	Varchar (50)
Company Address	Varchar (200)
Available position	Varchar (5)
Job Responsibilities	Varchar (50)
HR's email	Varchar (50)

Table: Notice	
Attribute	Data type (Size)
Notice id	Number (5)
Notice Type	Varchar (20)
Notice Content	Varchar (500)

Table: Allocation List	
Attribute	Data type (Size)
SID	Varchar (50)
CGPA	Number (1,2)
Designation	Varchar (20)
EID	Varchar (50)
Formal Letter	Varchar (1000)
Company Name	Varchar (50)
HR's Email	Varchar (50)

Table: Choice Form	
Attribute	Data type (Size)
Company Name	Varchar (50)
Job Position	Varchar (20)
Priority No	Number (3)
SID	Varchar (50)

Chapter 6 Class Based Modeling

6.1 Introduction

Class based modeling is designed to demonstrate the whole software on the view or perspective of object oriented concept. In this model what the objects are and what their responsibilities will be, how they will interact with each other is defined very clearly.

6.2 General Classifications

After selecting the nouns by grammatical parsing from the solution space of the story, these are characterized in seven general classifications. The seven general characteristics are as follow:

1. External entities
2. Things
3. Occurrences
4. Roles
5. Organizational units
6. Places
7. Structures

Here the ‘yes’ nouns are the potential classes and the ‘no’ nouns become the attributes of the classes.

Noun	General Classification	Remarks
Student	4,5	yes
Company	1,5	yes
IPOH	4,5	yes
Company Name	Null	no
Available Position	Null	no
Job Responsibilities	Null	no
Company Address	6	yes
HR's email	Null	no
Notice	2	yes
Choice Form	7	yes
Job Position	Null	no

Priority No	Null	No
CV	2	yes
Skills Set	Null	no
RPO	4	yes
CGPA	Null	no
Year	Null	no
Semester	Null	no
Allocation List	1,3	yes
Formal Letter	3	yes
Username	Null	no
EID	Null	no
Password	Null	no
Notice id	Null	no
Notice Type	Null	no
Notice Content	Null	no
Designation	Null	no
SID	Null	No

6.3 Selection Criteria

The potential classes are then selected as class by six ‘selection characteristics’. A potential class becomes a class when it fulfills some of these characteristics.

1. Retained Information
2. Needed Services
3. Multiple Attributes
4. Common attributes
5. Common operations
6. Essential requirements

Here the ‘Selected’ nouns are the selected classes.

Noun	Attributes	Selection Criteria	Remarks
------	------------	--------------------	---------

Student	Username, Password, CGPA, Year, Semester, Choice Form, CV, Skills Set, SID	1,2,3,4,5,6	Selected
Company	Company Name, Company Address, Available Position, Job responsibilities, HR's email	1,2,3,4,5,6	Selected
IPOH	Username, Password, EID, Designation	1,2,3,4,5,6	Selected
Company Address		1	Rejected
Notice	Notice id, Notice Type, Notice Content	1,2,3,4,6	Selected
Choice Form	Company Name, Job Position, Job responsibilities, Priority No	1,2,3,4,5,6	Selected
CV		2	Rejected
RPO	Username, Password, EID, Designation	1,2,3,6	Selected
Allocation List	Company Name, SID, Formal Letter, HR's email, EID	1,2,3,4,5,6	Selected
Formal Letter		1	Rejected

Primary Classes:

1. Student
2. Company
3. IPOH
4. RPO
5. Notice
6. Choice Form
7. Allocation List

6.4 Attribute Selection

Class Name	Attribute
Student	Username, password, SID, CGPA, CV, Skills_Set, Choice_Form, Company_Name
Company	Company_Name, Available_Position, Job_Responsibilities, Company_Address, Email_of_HR
IPOH	Username, Password, EID, Designation
RPO	Username, Password, EID, Designation
Notice	Notice_id, Notice_type, Notice_Content
Choice Form	Company_name, Job_Position, Priority_No, SID
Allocation List	Email_of_HR, Formal_Letter, EID, SID, Company_name

6.5 Method Identification

Class Name	Methods
Student	Login () Logout () Register () Setter () Getter () Fill_Up_Choice_Form () Upload_CV () Mention_Skills_Set () View_Notice ()
Company	Getter () Setter ()
IPOH	Login () Logout () Enter_Company_Info () Upload_Choice_Form () Update_Notice () Re_allocate_Student () Publish_allocation_List ()
RPO	Login () Logout () View_Notice () Enter_CGPA ()
Notice	Getter () Setter ()
Choice_Form	Getter () Setter ()
Allocation	Getter () Setter () Allocate () Generate_Letter ()

6.6 Class Card

Class: Student	
Attributes	Methods
Username Password SID CGPA CV Skills_Set Choice Form Company Name	Login () Logout () Register () Setter () Getter () Fill_Up_Choice_Form () Upload_CV () Mention_Skills_Set () View_Notice ()
Responsibilities	Collaborative Classes
View notice	Notice
Fill Up Choice Form	Choice_Form
View Company Information	Company
Upload CV and skills Set	Self

Class: Company	
Attributes	Methods
Company_Name Available_Position Job_Responsibilities Company_Address Email_of_HR	Getter () Setter ()
Responsibilities	Collaborative Classes
Company HR receive email	Allocation_List
IPOH upload company information	IPOH

Class: Notice	
Attributes	Methods
Notice_id Notice_type Notice_Content	Getter () Setter ()
Responsibilities	Collaborative Classes
IPOH upload notice	IPOH
Student view notice	Student
RPO view notice	RPO

Class: Choice_Form	
Attributes	Methods
Company_name Job_Position Priority_No SID	Getter () Setter ()
Responsibilities	Collaborative Classes
Students Fill Up Choice Form	Student
IPOH upload Choice Form	IPOH

Class: Allocation	
Attributes	Methods
Email_of_HR Formal_Letter EID SID Company_name	Getter () Setter () Allocate () Generate_Letter ()
Responsibilities	Collaborative Classes
Allocate Students to company	Student, Company
Generate Formal Letter	Self

Class: IPOH	
Attributes	Methods
Username Password EID Designation	Login () Logout () Enter_Company_Info () Upload_Choice_Form () Update_Notice () Re_allocate_Student () Publish_allocation_List ()
Responsibilities	Collaborative Classes
Enter company information	Company
Send Notice	Notice
Replace students to company	Allocation

Class: RPO	
Attributes	Methods
Username Password EID Designation	Login () Logout () Enter_CGPA ()
Responsibilities	Collaborative Classes
View notice	Notice
Enter CGPA of student	Student

After analyzing each class, I found that IPOH and RPO have some similar attributes and methods. So we can consider a super class named “Employee” of them which will hold common attributes and common methods. So these two classes will be subclass of this super class.

Common Attributes: Username, Password, EID, Designation

Common Methods: Login (), Logout ()

Class: Employee	
Attributes	Methods
Username Password EID Designation	Login () Logout ()

6.7 CRC Diagram

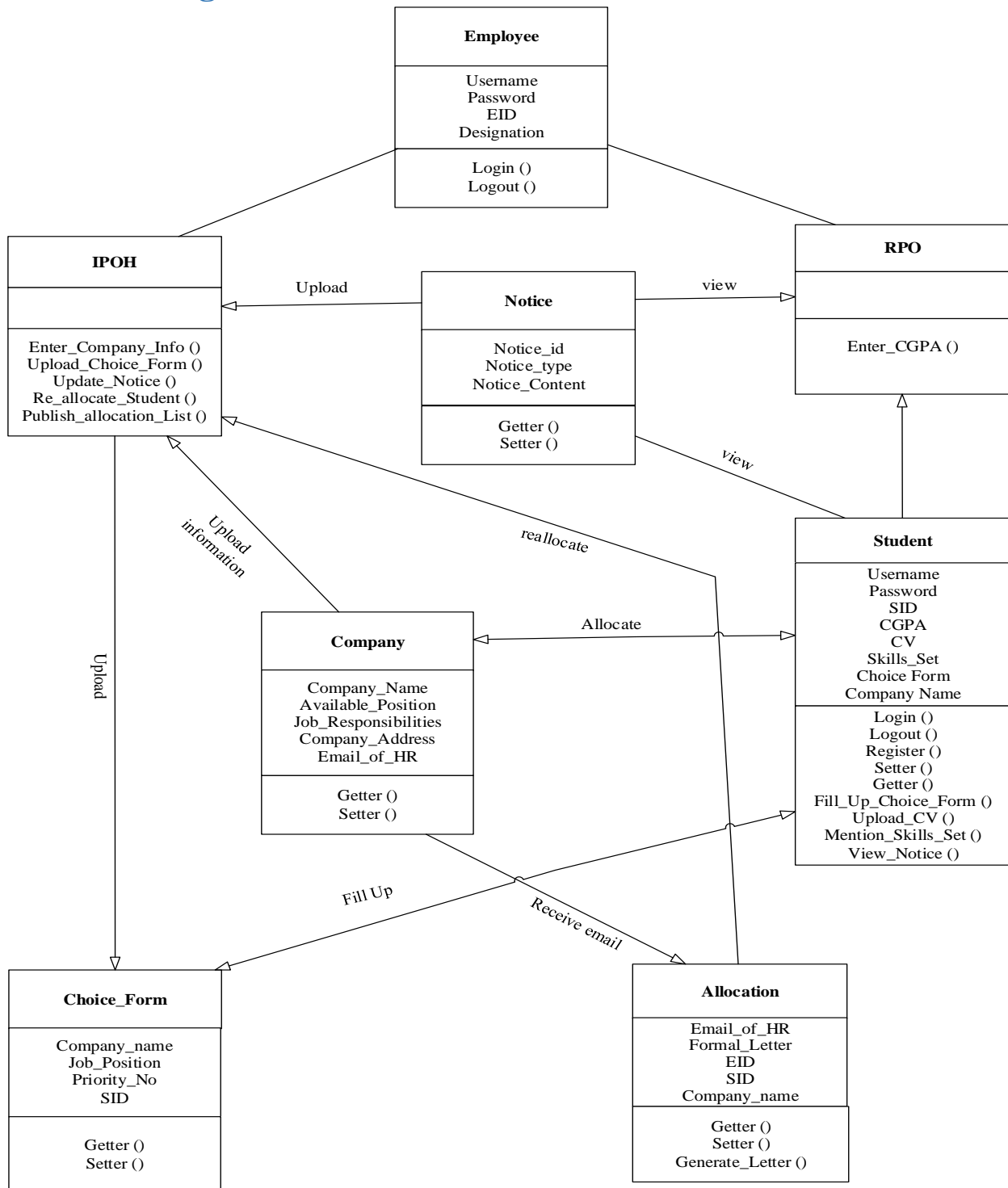


Figure 20 : CRC Diagram

Chapter 7 Flow Oriented Model

7.1 Introduction

Although data flow-oriented modeling is perceived as an outdated technique by some software engineers, it continues to be one of the most widely used requirements analysis notations in use today.

7.2 Data Flow Diagram (DFD)

The Data Flow Diagram (DFD) takes an input-process-output view of a system. Data objects flow into the software, are transformed by processing elements and resultant data objects flow out of the software. Data objects are represented by labeled arrows and transformations are represented by circles.

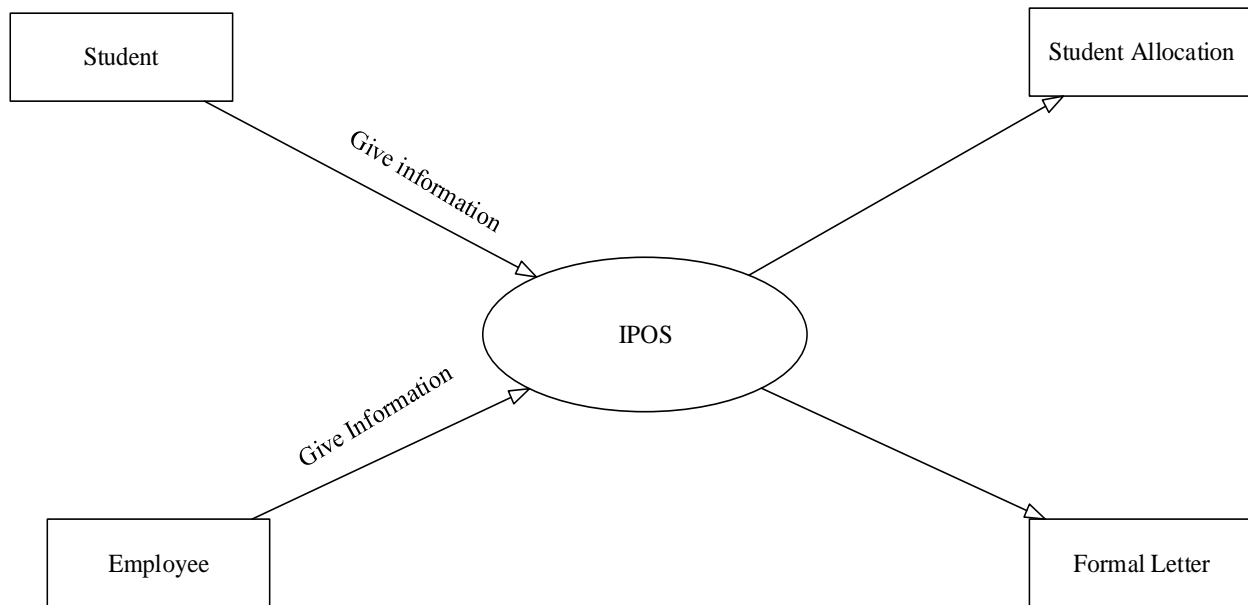


Figure 21 : Level 0 DFD

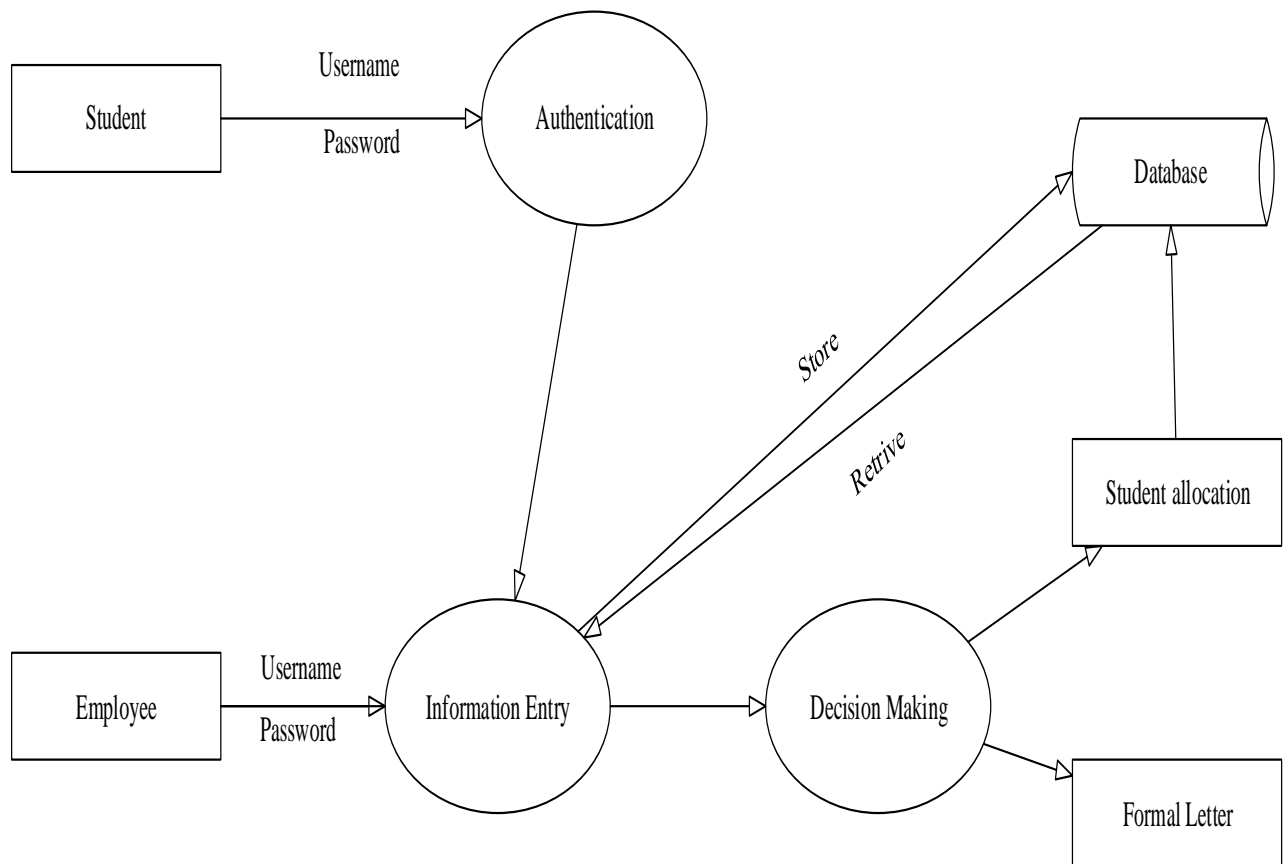


Figure 22 : Level 1 DFD

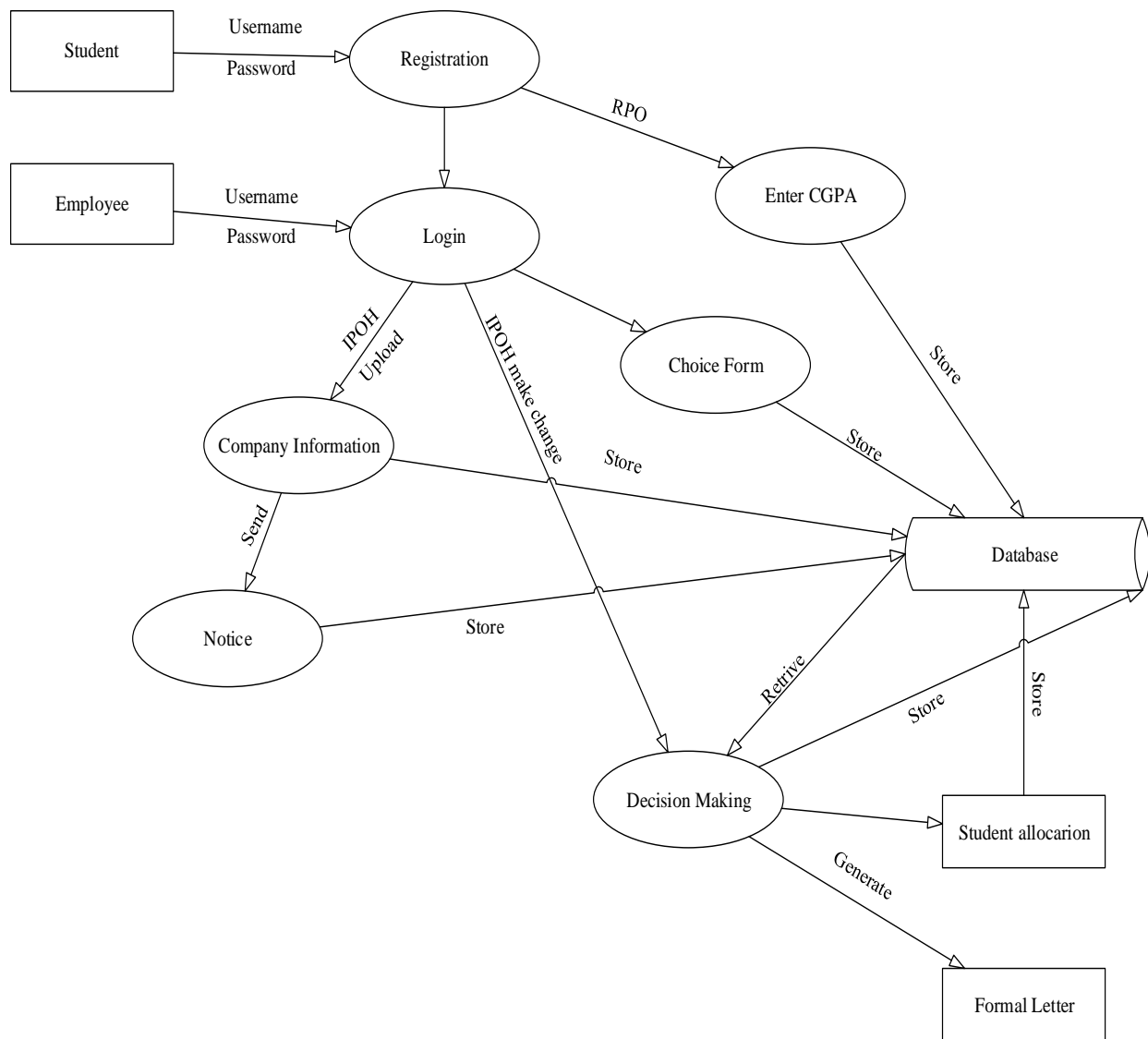


Figure 23 : Level 2 DFD

Chapter 8 Behavioral Model

8.1 Introduction

Behavior modeling is also referred to as State modeling, State machines and State transition matrix. Behavior modeling is when one thinks of his ideas in terms of states and transitions. This requires both identifying all of the interesting states of being that software or its components are likely to be in. And also, at a high level abstracting what events are likely to cause software or its components to change between states of being.

8.2 Identifying Events

Event	Initiator	Collaborator
Entering intern taking company info	Employee	Company
Sending Notice	Employee	Notice
Filling up choice form	Student	Choice_Form
Upload CV and skills set	Student	Null
Enters CGPA of students	Employee	Student
Allocate Company for student	System	Null
Reallocate students	Employee	Null
Generate formal letter	System	Null

8.3 State Transition Diagram

State Transition Diagram represents active states for each class and the events (triggers) that cause changes between these active states. Here we have provided diagram for each of the actors.

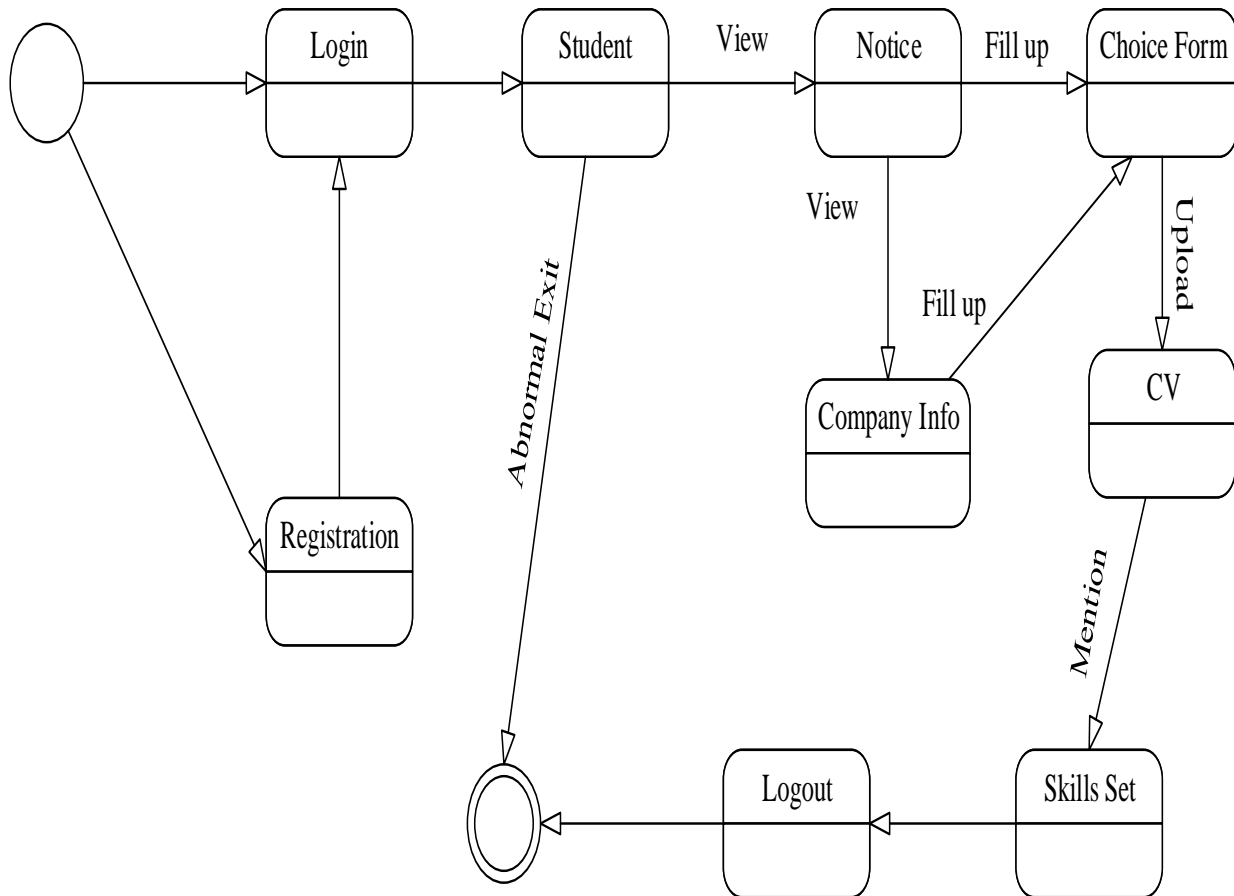


Figure 24 : State Diagram for Student Class

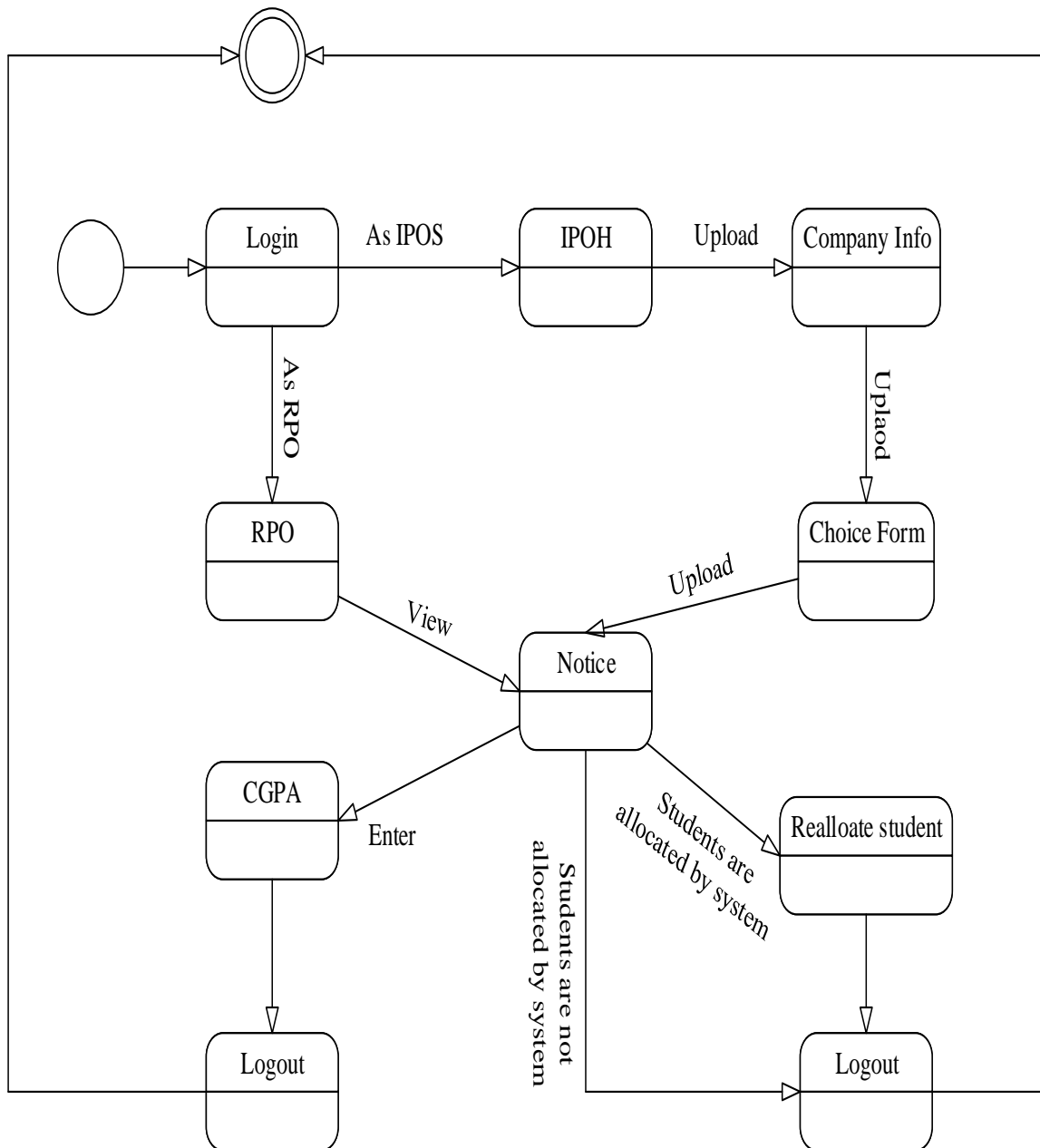


Figure 25 : State Diagram for Employee Class

8.4 Sequence Diagram

Sequence Diagram indicates how events cause transitions from object to object. It is actually a representation of how events cause flow from one object to another as a function of time.

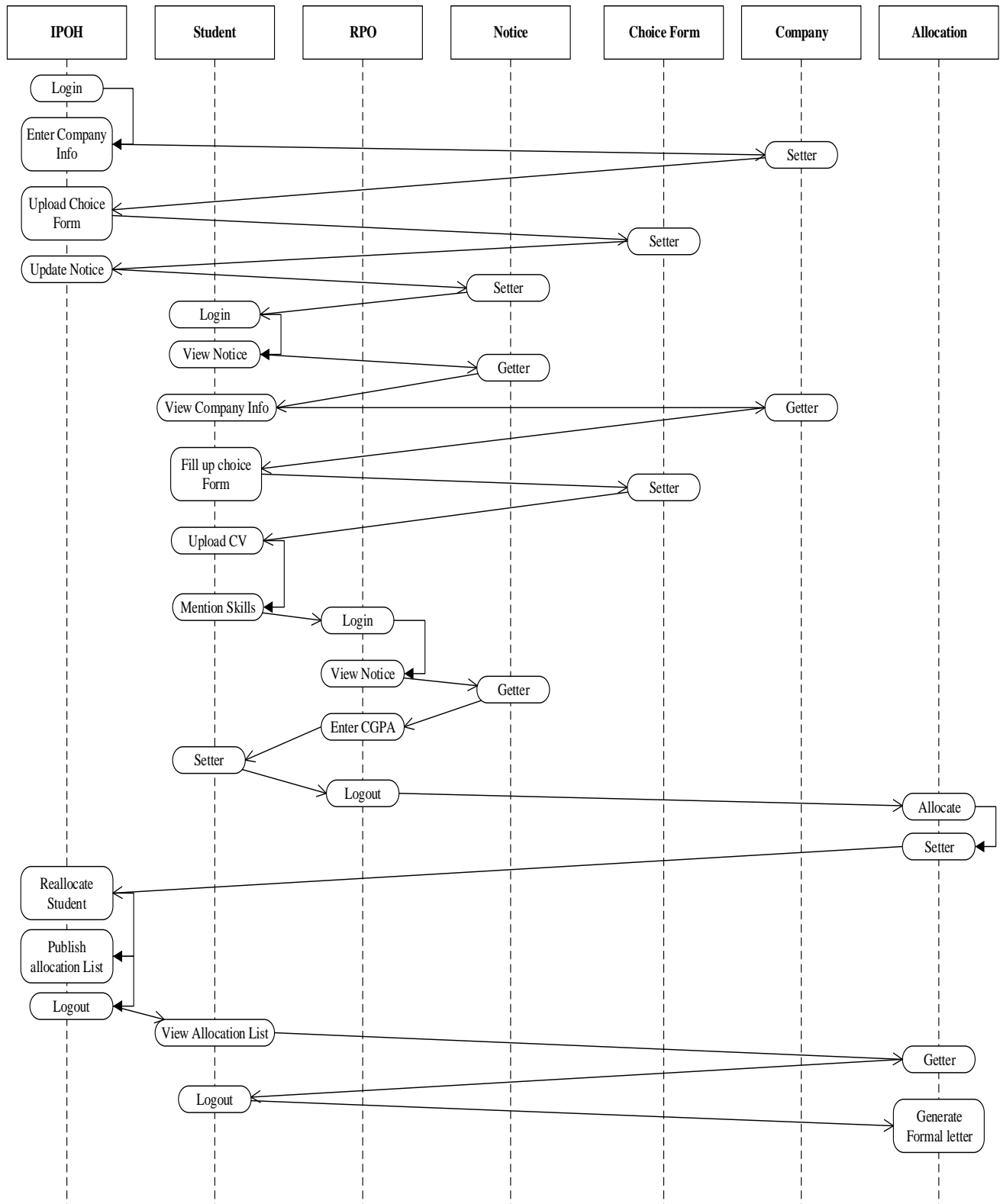


Figure 26 : Sequence Diagram

Chapter 9 Conclusion

I am pleased to submit the final SRS report on Intern Placement Office System. From this, the readers will get a clear and easy view of Intern Placement Office System of IIT, DU. This SRS document can be used effectively to maintain software development cycle. It will be very easy to conduct the whole project using this SRS. I tried my best to remove all dependencies and make effective and fully designed SRS. I believe that reader will find it in order.

References:

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2. Ralph, Paul (2012). "The Illusion of Requirements in Software Development". Requirements Engineering
3. Sommerville, I. Software Engineering, 7th ed. Harlow, UK: Addison Wesley, 2006
4. http://www.tutorialspoint.com/dbms/er_diagram_representation.htm