Software Requirements Specification

for

Reservation of Facility and Equipment Inventory System

Version 2021

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Revision History

Name	Date	Reason For Changes	Version
Team	November 18, 2016	Initial Version of Document	1.0.
The TRIAD	March 13, 2017	Minor Revisions	1.1
The TRIAD	September 13, 2017	Major Revisions	2017
2D	December 14, 2017	Minor Revisions	2017.1
2D	October 09, 2018	Major Revisions	2018
TIRD Dev Team	August 29, 2021	Major Revisions	2021

1 Introduction

1.1 Purpose

The purpose of this document is to provide the Software Requirement Specification of the Reservation of Facility and Equipment Inventory System containing its functional and non-functional requirements. This document also helps to inform the readers about the specification of the system's specifications. Every detailed explanation of the system, its interfaces, the functionality of the system, and all the functions used in the system will be explained. This document is intended for the students as well as for the administration, including the device developers to be proposed in the Administrative Office.

1.2 Document Conventions

This document has its every main topic and subtopics formatted in bold to emphasize its title. The font-size used in this document for its main topic is 14 while for its subtopic is 12.

1.3 Intended Audience and Reading Suggestions

This document is intended for all the developers of the said system including the project manager, web designer, programmer and document analyst. It is also intended for the user and tester of the Reservation of Facility and Equipment Inventory System. This document is to help the readers to fully understand the flow of the system. It will serve as their guidelines and manual to understand more design and other specialization pertaining to the system.

This document can be read from the beginning starting with the overview of the system, where it provides description regarding the system's structure. The readers can read next the requirement specification section wherein the document provides the different requirement specification of the system. Afterwards, the reader can proceed to the last part of the document which provides other supporting information or documentation on the process of developing the system.

1.4 Product Scope

The system used a web application for the reservation process in the Polytechnic University of the Philippines – Taguig Branch. The system named Reservation of Facility and Equipment Inventory System allows the user to request an available facility and equipment under the school's premises. This system will be used by both students and admin for requesting available facilities and approving requests. This system was designed to minimize both student and admin's time in the process of manual reservation. With the help of this system, the user can be more productive and effective in doing their work.

In addition, the Reservation of Facility and Equipment Inventory System was also designed to enhance the reports generated by the system. It provides organized date and time for printing weekly reports for the reservation process. It shows a list of reservations done by the students. This function is helpful for informing the user to view the reserved facility and equipment.

1.5 References

*MySQL 5.6 Reference Manual.*Oracle. 24 July 2015. Retrieved 24 July 2015., PHP Manual: Preface, www.php.net,thefreedictionary.com/report

Old documentation, SRS and other files of Team 2D

2. Overall Description

2.1 Product Perspective

Reservation of Facility and Equipment Inventory System is a web application for the reservation process in PUP Taguig. The students and administrators are the stakeholders here. The role of the student is to request an available facility or equipment to be reserved. On the other hand, the administrator will review the student's request and decide to approve or reject it. The system has features that could help to make it simpler and easier to reserve a venue. There is a reservation for academic related events and organizational activities.

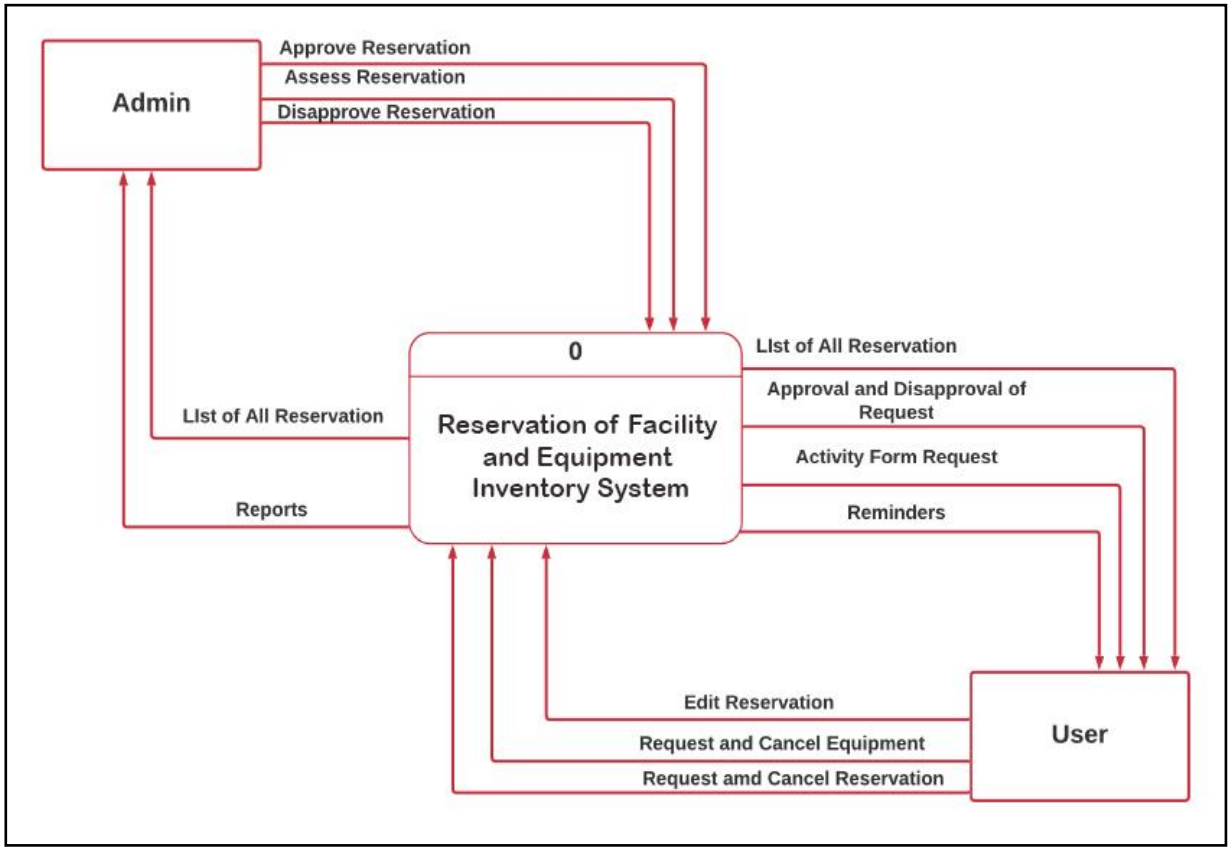

Figure 1.0 Context Diagram of Reservation of Facility and Equipment Inventory System

2.2 Product Functions

The figures below are the Entity Relationship Diagram of the database and simplest description of the function of Reservation of Facility and Equipment Inventory System. The whole process of the system will be explained further. The relationship between student and administrator will be fully discussed in the next chapters. Below are the lists of functions that are already done by the system.

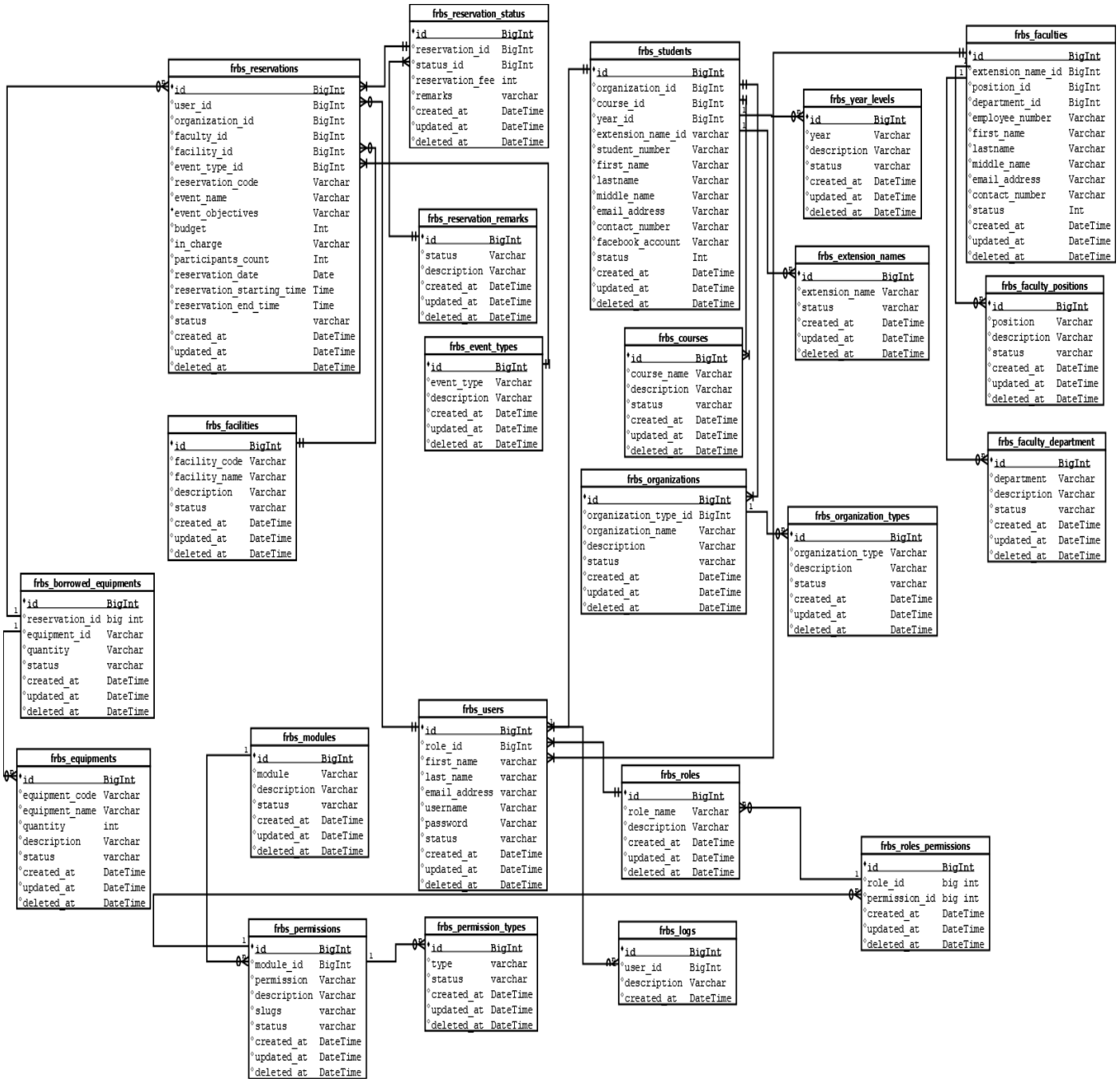

Figure 2.0 ERD of Reservation of Facility and Equipment Inventory System

2.3 User Classes and Characteristics

2.3.1 Student

The student plays an important role in Reservation of Facility and Equipment Inventory System. In the process, they have their own account. The student is the one who requests the venue or equipment under PUP-Taguig for reservation. They can also search for already reserved venues on their account and they can wait for their reservation process at the right time.

2.3.2 Administrative Officer

The Administrative Officer has a unique account in the system. He is responsible for the approval and disapproval of a reservation request from the student.

2.3.3 Super Administrator

The Super Administrator account in the system is responsible for maintaining the system function and data.

2.4 Operating Environment

OE-1: The developer of the system mostly used PHP as the system's language. The web designers used Bootstrap, CSS and Html for the system's template and interface.

OE-2: WAMP was used in running the system. This was helpful in testing the compatibility of the entire system.

OE-3: MySQL was used for the database of the system. It serves as the storage of all the

data that is being inputted in the system. This is where the system stores the account information of the user and all the reports generated by the administrative officer.

OE-4: In terms of hardware specifications, RFEIS does not require any computer units to run the system. The developer designed a web application for a system. Web applications can be mostly run-in web browsers like Google Chrome or Mozilla Firefox.

2.5 Design and Implementation Constraints

CO-1: Username and Password is required for the clarification and identification of student and admin's account.

CO-2: The system uses PHP scripting language utilizing the Code Igniter HMVC framework. It is mostly used in the main process of the system.

CO-3: The system used MySQL as the Database Engine. It is where the student and administrative officer store their account. It is also where the system stores all the reports generated by the admin.

CO-4: The system used Bootstrap, CSS and HTML for its template and interface.

CO-5: Reservation of Facility and Equipment Inventory System was developed within the development period of the project.

2.6 User Documentation

UD-1: Reservation of Facility and Equipment Inventory System will be developed using Code Igniter Framework, HTML, Bootstrap, Java Script, Composer, CSS, PHP for Web Application, and MySQL for the database.

UD-2: The system has how-to videos for all stakeholders.

2.7 Assumptions and Dependencies

AS-1: Student is responsible for providing appropriate information in requesting for a venue or equipment.

AS-2: The system provides an organize reports generated by the system.

DE-1: The approval of student's request depends on the Administrative Officer. It is based on his reviews about the student's inputted information.

3. External Interface Requirements

3.1 User Interfaces

UI-1: Reservation of Facility and Equipment Inventory System provided a user-friendly interface for the system. The system used a bootstrap 4 for its template and user interface.

UI-2: The system used CSS, Java script and HTML in the web design of the system.

3.1.1. The Administrator Account

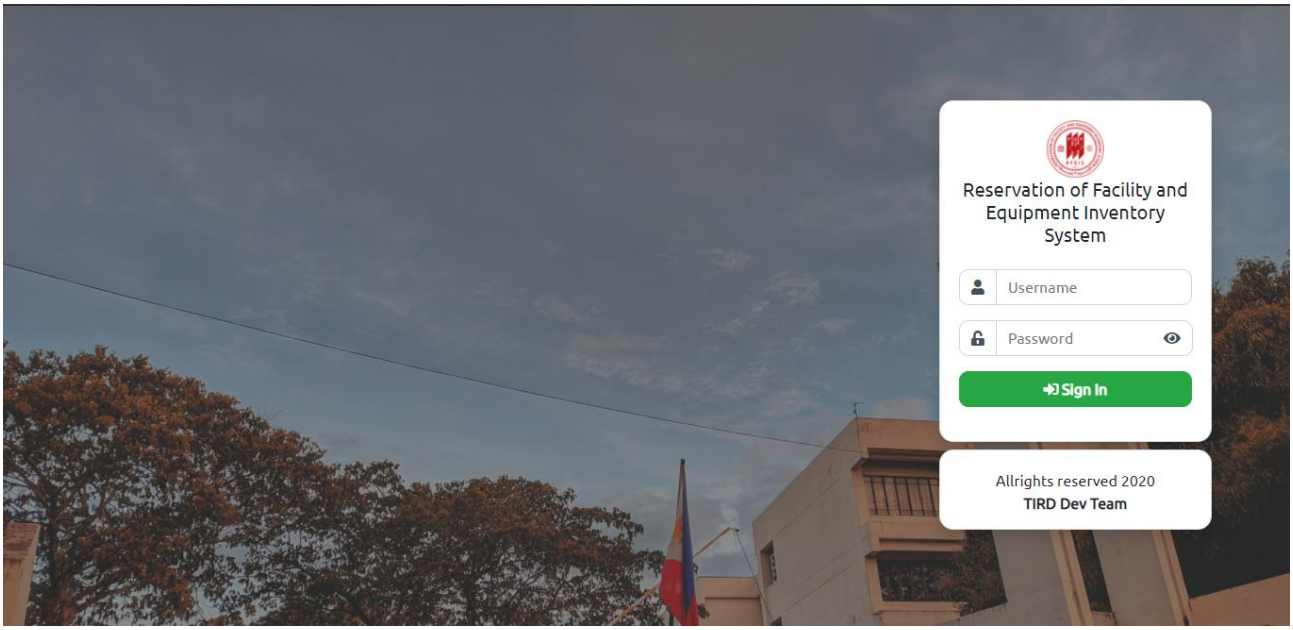

Figure 3.0: Login Page

Login Screen – This is the main page of the system. This is where the users input their account to protect the access to the whole system.

To login, the user must have an account then follow the steps below:

- Step 1: Load the home page of the system.
- Step 2: Log-in using your username code and password.

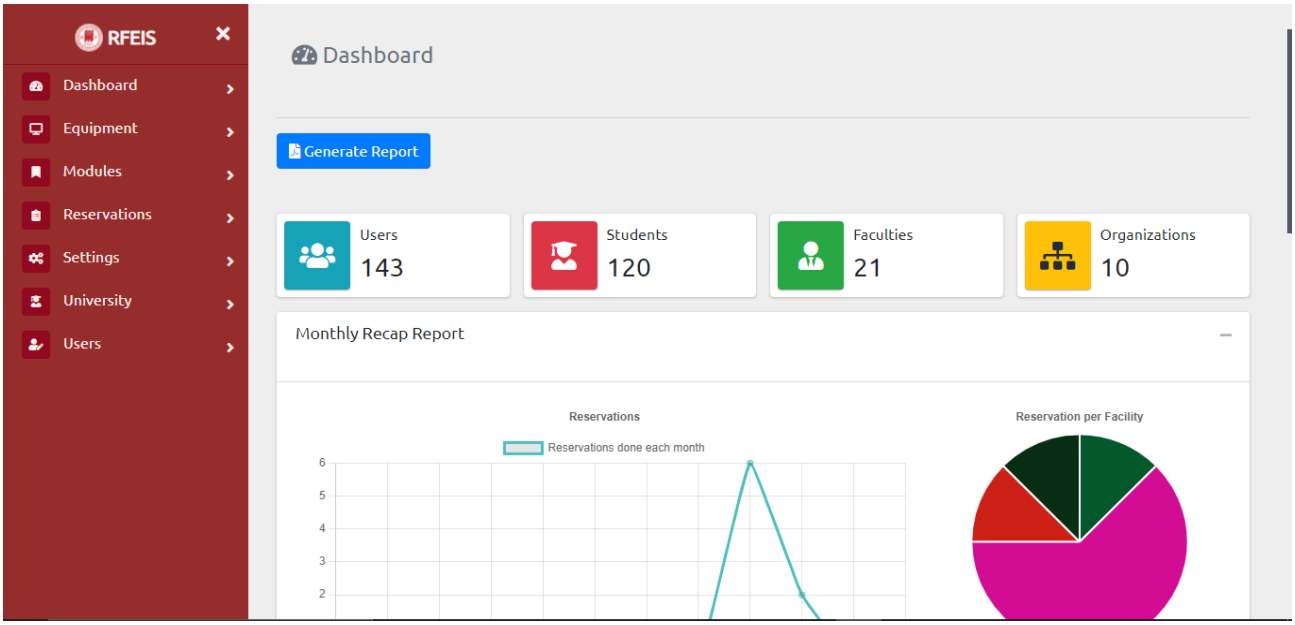

Figure 4.0: Home Screen

Home Screen – This is where the admin can view the system dashboard where the statistical data of the system can be seen.

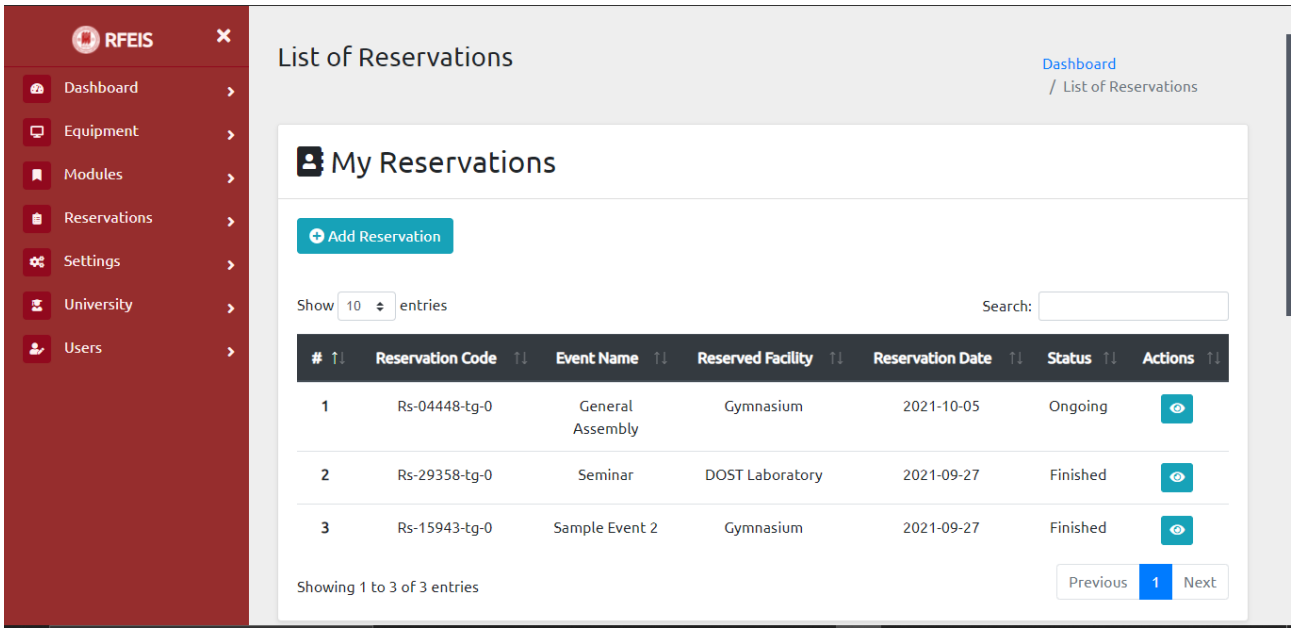

Figure 5.0: Reservation screen

Reservation screen – This screen allows the admin to make changes on a particular reservation on the system. The admin can add, edit, view and delete reservations on the table.

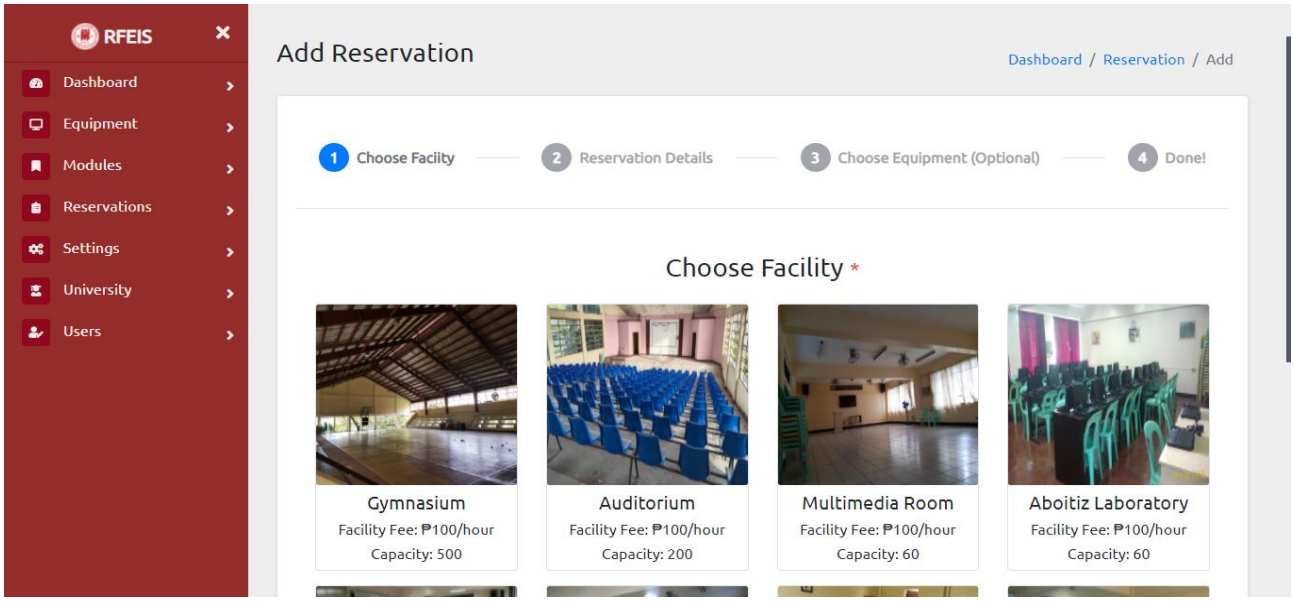

Figure 6.0: Reserve a Venue

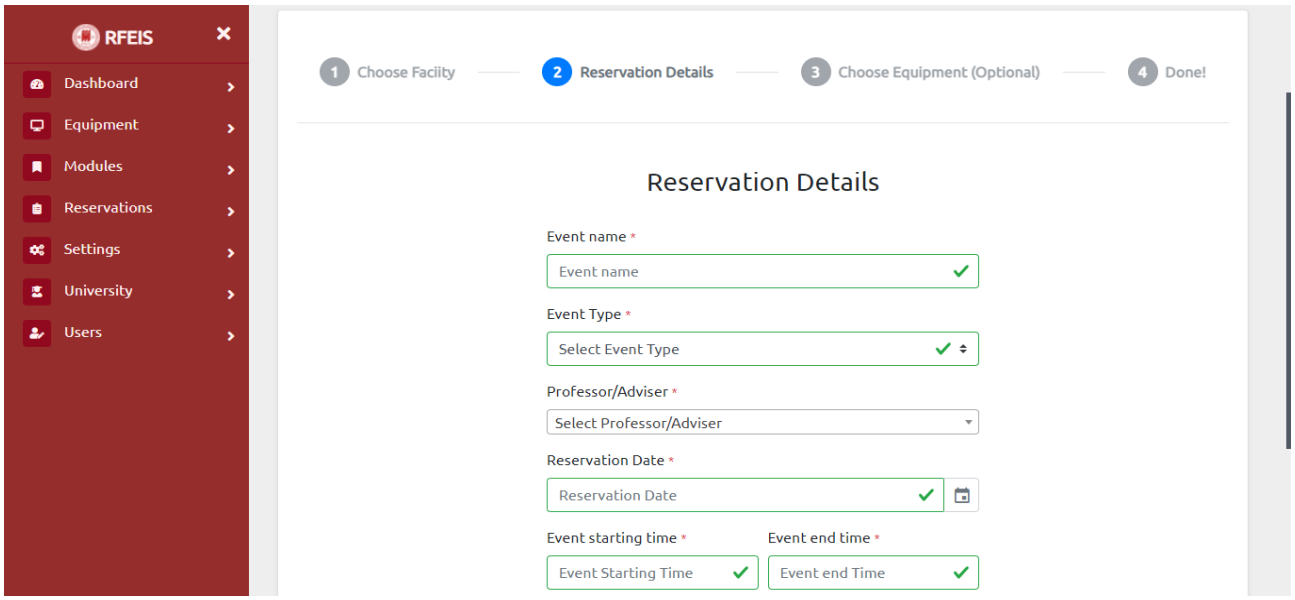

Figure 6.1: Reserve a Venue

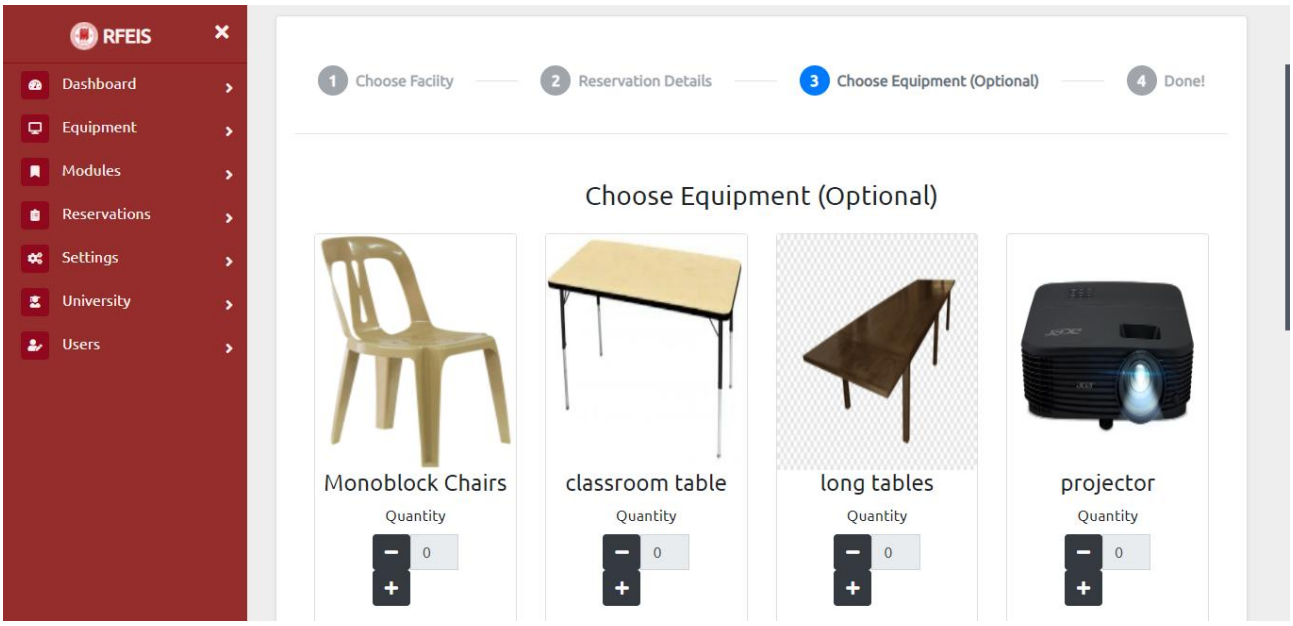

Figure 6.2: Reserve a Venue

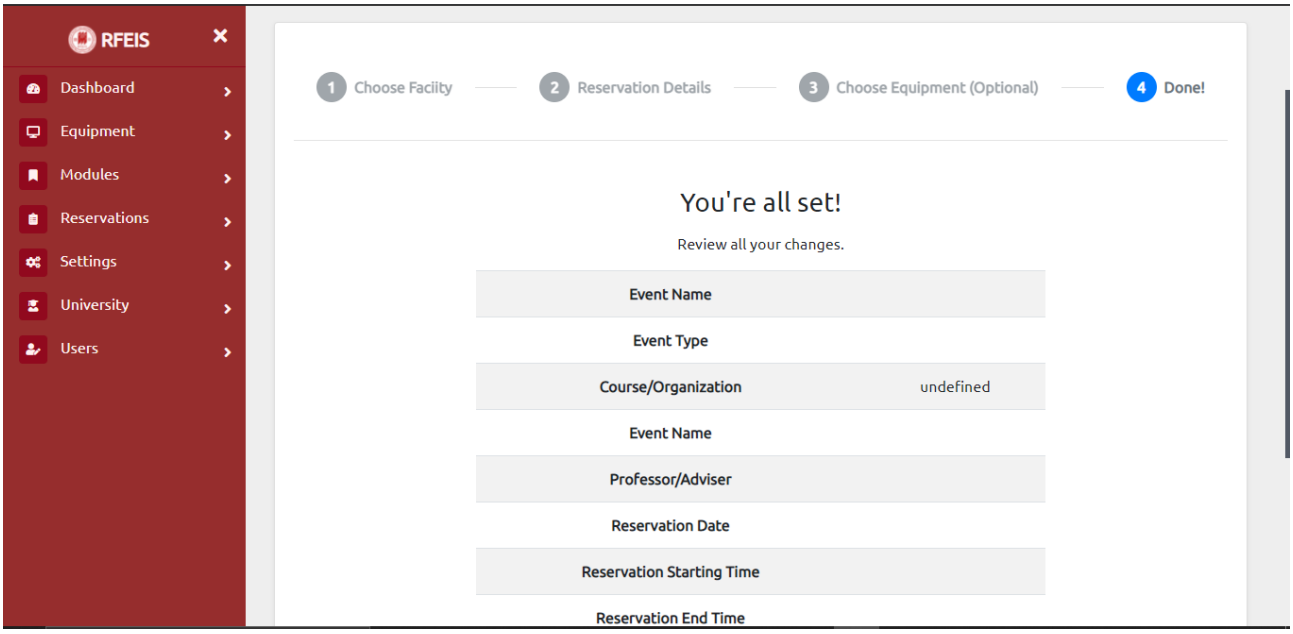

Figure 6.3: Reserve a Venue

Reserve a Venue Screen - This screen allows the admin and users to create/add a reservation request on the system.

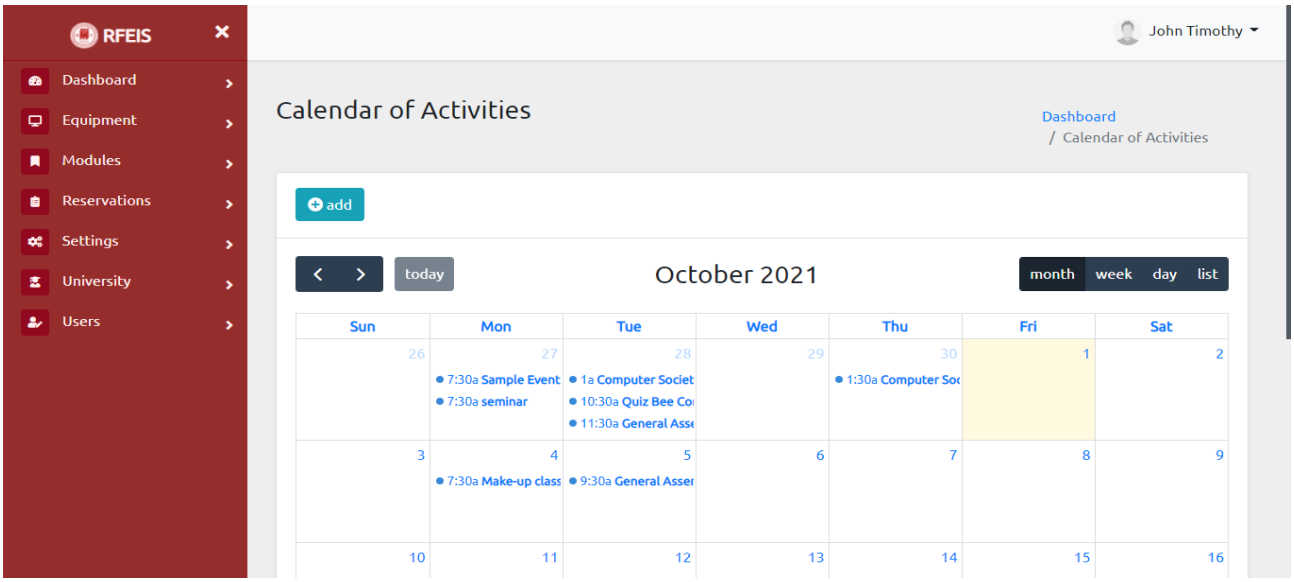

Figure 7.0: Calendar of events screen

Calendar of events screen - This screen allows the admin to view the approved reservation in a calendar.

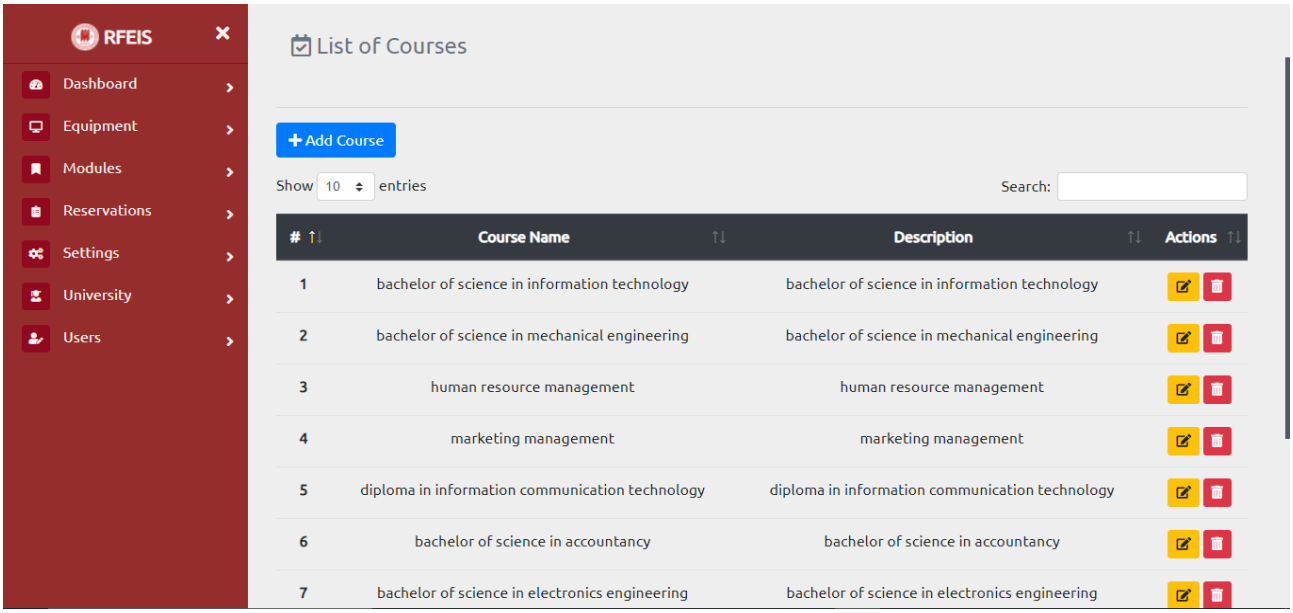

Figure 8.0: List of courses screen

List of courses screen - This screen allows the admin to make changes on a particular course on the system. The admin can add, edit, view and delete courses on the table.

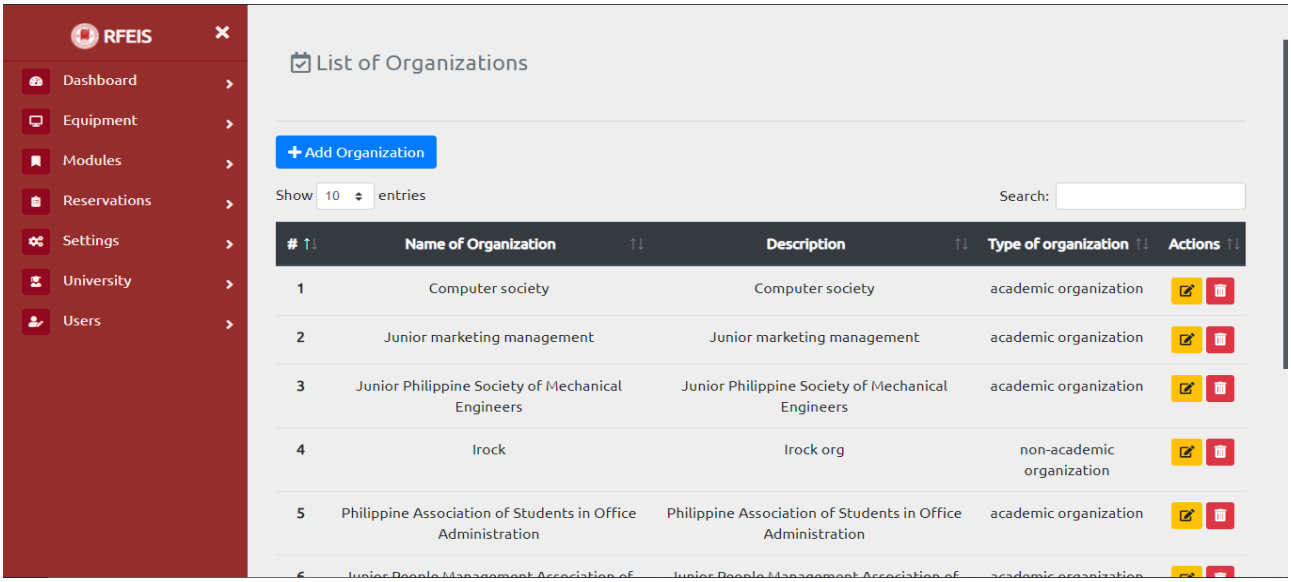

Figure 9.0: List of organizations screen

List of organizations screen - This screen allows the admin to make changes on a particular organization on the system. The admin can add, edit, view and delete organization on the table.

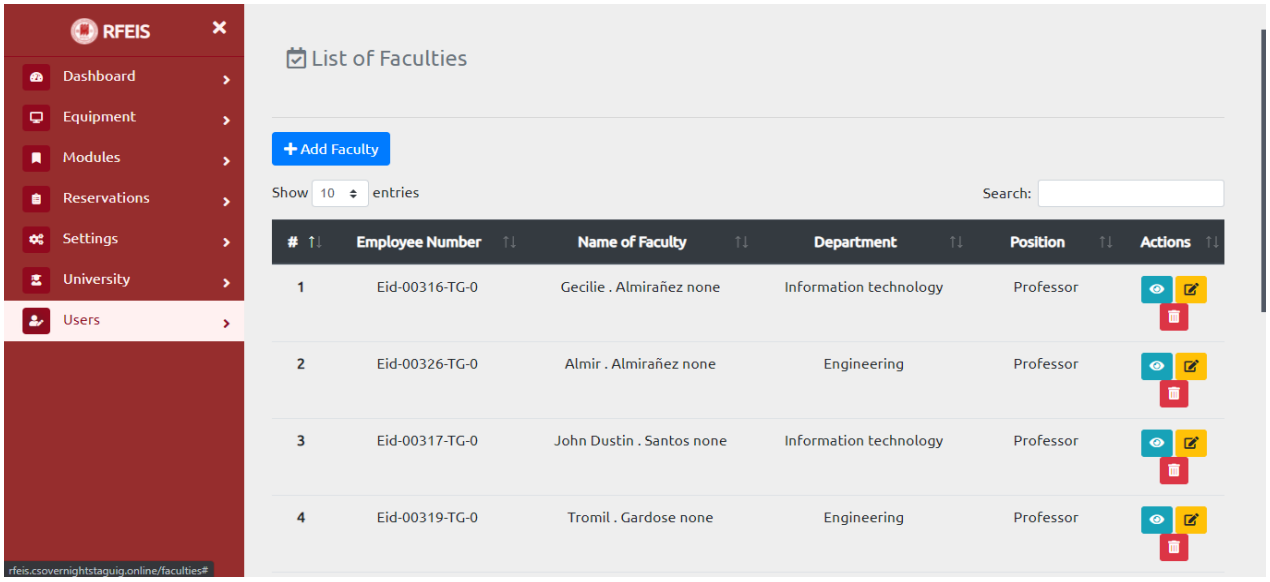

Figure 10.0: List of faculties screen

List of faculties screen - This screen allows the admin to make changes on a particular faculty on the system. The admin can add, edit, view and delete faculty on the table.

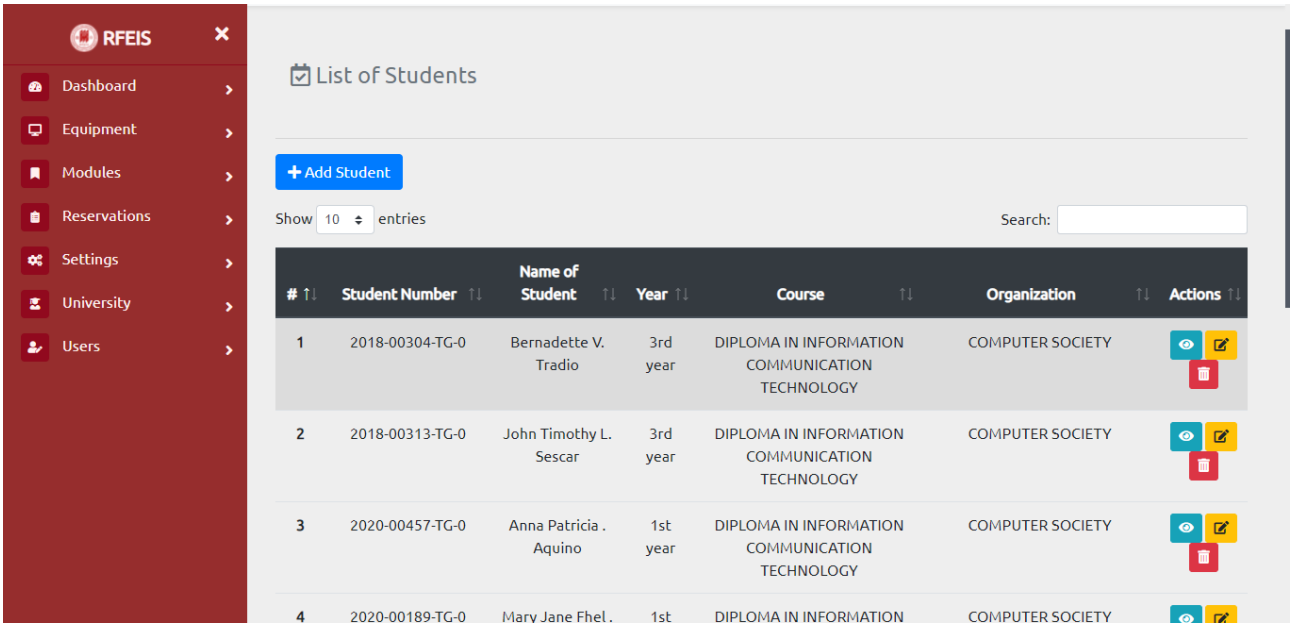

Figure 11.0: List of students screen

List of student's screen - This screen allows the admin to make changes on a particular student on the system. The admin can add, edit, view and delete students on the table.

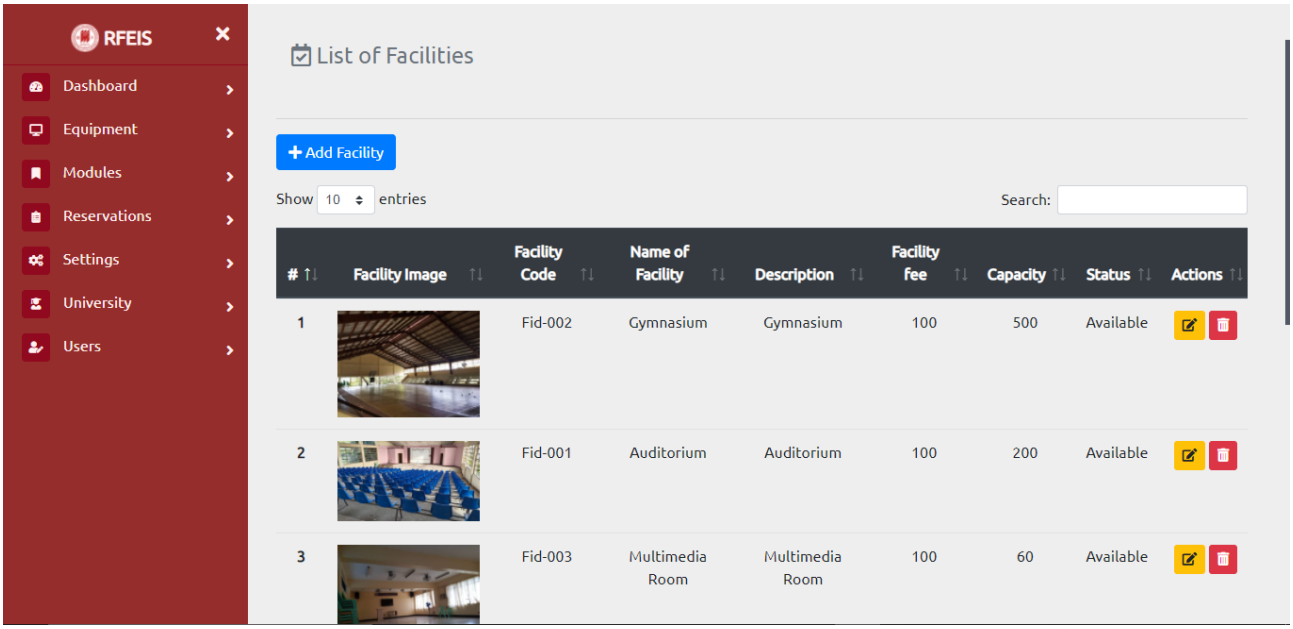

Figure 12.0: List of facilities screen

List of facilities screen - This screen allows the admin to make changes on a particular facility on the system. The admin can add, edit, view and delete facilities on the table.

3.2 Hardware Interfaces

The web application of RFEIS can run on computer devices with following specifications:

	Minimum	**Recommended**
Processor	Pentium-class processor	Intel Core 13/15
RAM	1GB	2GB
System Type	32-Bit Operating System	64-Bit Operating System
Operating System	Windows XP	Windows 7,8, 8.1, or 10

3.3 Software Interfaces

SI-1: The system will develop using Code Igniter Framework, SQL Server, Notepad++, WAMP.

3.4 Communications Interfaces

CI-1: Client (customer) on Internet will be using HTTP/HTTPS protocol.

CI-2: Client (system user) on Internet will be using HTTP/HTTPS protocol.

4. System Features

4.1 Reservation of a Venue

This document covers the detailed function of what the system can do. It will evaluate the functional requirement of Reservation of Facility and Equipment Inventory System.

4.1.1 Description and Priority

The Reservation of Facility and Equipment Inventory System is a web application designed for students of PUP-Taguig as well as the administrative officer for the reservation process of venue and equipment. It was developed for the necessity of students for fast and reliable transactions with the admin of the system. The priority of this system was to be make it all available online, so that students can still request even when outside the campus.

Initial Step-By-Step Description

1. The Student and Admin would first open any browser he/she desires.
2. After choosing a browser, the both student and admin should enter this url: Computersociety.net/ors
3. Upon entering the URL, the system would go to its login page.
4. Lastly, after entering username and password, the system would display the homepage of the user.

Use Case

Use Case Name	Request for a Venue
Trigger	Log in as Student
Precondition	Type of reservation and other information will be displayed and asked by the system.
Basic Path	1. The Student should correctly fill-up the information needed in requesting a venue. Date of request and time of reservation is most important requirement for reservation. 2. After filling up the information, the student can click submit button to direct his request to the administrator.
Post condition	The request done by the student can already be displayed.
Exception Paths	Student can also cancel edit his requests by clicking the button view request.

Use Case Name	Student's Request
Trigger	Log in as Administrator
Precondition	The Administrator can see all pending requests done by the students and have the authority to can cancel or delete the request or the student.
Basic Path	1. Click button Student's Request to see all request done by

	the student. 2. View request of the student to see if the venue and time are available.
Post condition	The Administrator can decide whether to approve or cancel the request of the student.
Exception Paths	The Administrator can cancel request if not reasonable.

Use Case Name	Add, Edit and Delete Venue
Trigger	Login as Administrator
Precondition	The list of venues in PUP Taguig is displayed.
Basic Path	1. Admin has the right to add or update the venue. 2. Click save button after doing some changes.
Post condition	The venue is now updated.
Exception Paths	The Admin can do some changes in this section anytime.

Use Case Name	Generate Reports
Trigger	Login as Administrator
Precondition	The dropdown of venue and date are displayed.
Basic Path	1. Input the required fields.

	2. After selecting venue and date time, admin can already generate reports.
Post condition	After clicking submit, the page will direct into a pdf file that displays the monthly or yearly reports of reservation done by the system.
Exception Paths	The client may abandoned the module anytime or reset the inputted data.

4.1.2 Stimulus/Response Sequence

Stimulus	Response
• The Reservation and Transactions in PUP Taguig is manually done by the students and administrator.	• Reservation of Facility and Equipment Inventory System is developed by TIRD Dev Team to improve the current operations of facility reservation in the university from manual to automated
• Writing of a letter is required for requesting a reservation.	• The system will provide a request form to be filled up by a user.
• Manually checking of available venue and equipment.	• The system displays the available place and time that can be reserved by the student.

• Unorganized reports of monthly reservation transactions.	• The system has an organized reports that is computer generated and is helpful for having a systematic way of compiling the yearly report in that specific office.

4.1.3 Functional Requirements

REQ-1: The system shall let student, faculty, guest and administrator login in the Reservation of Facility and Equipment Inventory System to allow the reservation process in PUP-Taguig.

REQ-2: Once the student requested a venue in their own account, the system will direct the request of every student in the administrator's account.

REQ-3: The system allows only the admin to approve every request of the student.

REQ-4: The system will show the list of all reservations once the admin approves it.

REQ-5: The system will only display a receipt and a letter once the admin approves the request of the student.

REQ-6: The system can print reports according to its desired date of the reservations that are approved by the admin.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

PE-1: The reports produced by the system can download as a pdf file within a minimum of 10 seconds.

PE-2: It takes 2 minutes to load the system's interfaces to see the full content of the system.

PE-3: The button works much faster and takes just 5-10 seconds to display the system's content.

5.2 Safety Requirements

Any safety specifications are not required by the system.

5.3 Security Requirements

SE-1: To access the System home page, the student and administrative officer should register and log in.

SE-2: Administrative officer has a different account on the system. He has only the ability to approve/disapprove the request of the student.

SE-3: The system should log out after use. The system can automatically log out when the browser is closed if ever the user forgets to logout.

5.4 Software Quality Attributes

Availabilty-1: Reservation of Facility and Equipment Inventory System is available for students, faculty members, alumni, and outsiders with an associate with the PUP-Taguig that can access through the internet. It can be done on any computer or mobile device.

Robustness-1: If ever the connection is lost, the system automatically saves the last thing that the student does.

5.5 Business Rules

Anything which captures and implements business policies and practices in business law. A rule can implement business strategy, make a decision, or infer from existing data fresh information. This includes the laws and regulations that should be followed by users of the system. This involves the project costs and the discount deals offered. Illegal rules and protocols should be avoided by users. The rules and regulations should not be crossed by any administrator or user.

5.6 Accuracy

AC-1: Every account must have a unique identification.

AC-2: The system should provide and organize reports correctly.

AC-3: Reservations must first be reviewed by the administrator before acceptance.

5.7 Adaptability

AD-1: The scheme needs to be versatile.

AD-2: The system must be adaptable.

5.8 Aesthetics

AE-1: The text must all be readable.

AE-2: The user must be satisfied with the appearance of the interface.

5.9 Compatibility

COM-1: WAMP was useful for checking the compatibility of the whole system because it was used to operate the system.

COM-2: A system is a type of web application, so web browsers such as Google Chrome or Mozilla Firefox will mostly run it.

5.10 Configurability

CON-1: A.php file has to be used by the framework.

CON-2: The system must adjust to the modifications of any record format input.

5.11 Consistency

CONS-1: A consistent interface format was essential for the framework.

5.12 Correctness

COR-1: The defects must be below 3.

5.13 Documentation

DOC-1: In the source code, all machine documentation must be embedded.

DOC-2: The source code shall be self-documented.

DOC-3: The entire document should be justified.

DOC-4: It must have a title and body convention, and to emphasize its title, any key subject and subtopic must be formatted in bold.

DOC-5: For its main subject, the font-size used for the documentation must be 14, while for its subtopic, 12.

5.14 Extensibility

EX-1: The developer would be able to make the necessary changes in a matter of hours if the input data format changes.

5.15 Frequency/Severity of Failure

SF-1: No unhandled exceptions can be made from incorrect user input.

5.16 Human Factors

HF-1: The system's user interface must be user-friendly and intuitive.

HF-2: The system must be efficient and reliable.

HF-3: All menus must have a consistent format.

5.17 Localizability

LO-1: It must only be in the English language to run the system.

LO-2: Both elements of the user interface must support the system's locale.

5.18 Maintainability

MA-1: Maintenance group must be able to maintain the system.

5.19 Portability

PO-1: To store data, the device must use a MySQL database server.

PO-2: The system will run on a Pentium-class processor, a device with a minimum of 1 GB of RAM, a 32-bit operating system, and a Windows XP operating system.

PO-3: The system is not portable.

PO-4: The system will run on any java-enabled browser with an internet connection.

5.20 Predictability

PR-1: The system can never crash.

PR-2: The system must produce predictable results.

5.21 Recoverability

RE-1: The system will return to its functioning state when the system restarts.

5.22 Reliability

REL-1: The system will be accessible 24/7.

REL-2: The system can never crash.

5.23 Resource Consumption

RES-1: A maximum of 32 MB of memory must be consumed by the system.

RES-2: No more than 25 percent of system resources can be used by the system.

5.24 Response Time

RT-1: Response time for queries must be short.

RT-2: All queries must return a response in less than 10 seconds.

5.25 Reusability

REU-1: Only the admin can modify any system changes.

5.26 Serviceability

SER-1: The system can be programmed by a qualified individual.

SER-2: The system can be programmed by a support person.

5.27 Testability

TE-1: 100 percent of the demand for quality must be measurable.

5.28 Understandability

UN-1: Without any assistance from the administrator, 90% of inexperienced users can learn to use the PUPT Online Reservation system.

UN-2: From the top screen, the key use cases must be accessible.

5.29 Usability

US-1: The UI would need to be user-friendly.

US-2: The system's user interface must satisfy the users.

6. Other Requirements

The following below are the requirements specified in this document. These sets of documents are required for the completion of the software requirement specification.

Appendix A: Glossary

Term	Definition
Web application/Web App	Any program that runs in a web browser. It is created in a browser-supported programming language such as the combination of JavaScript, HTML, and CSS and relies on a web browser to render the application.
Database	Is a collection of information organized in such a way that a computer program can quickly select desired pieces of data.
Reports	Any informational work made with the specific intention of relaying information or recounting certain events in a widely presentable form.
PHP	Is a server-side scripting language designed for web development but also used as a general purpose programming language.
My SQL	Is a relational database management system. It is a popular choice of database mostly used for web applications.
PUPT Online Reservation System	An online reservation system developed by Team JEClee.
Mobile Application	Application that runs in an android phone. Created using Android Studio and Java.

Appendix B: Glossary

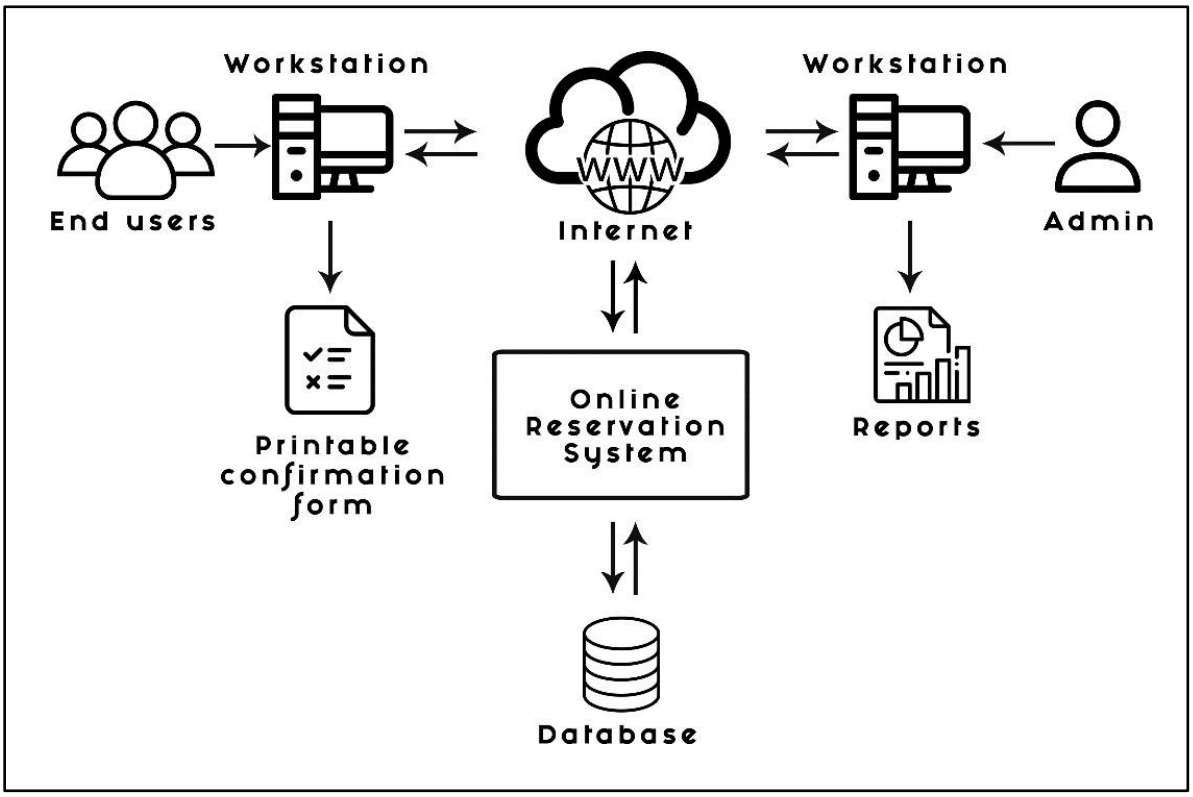

Figure 13.0: Architectural Diagram of Reservation of Facility

and Equipment Inventory System

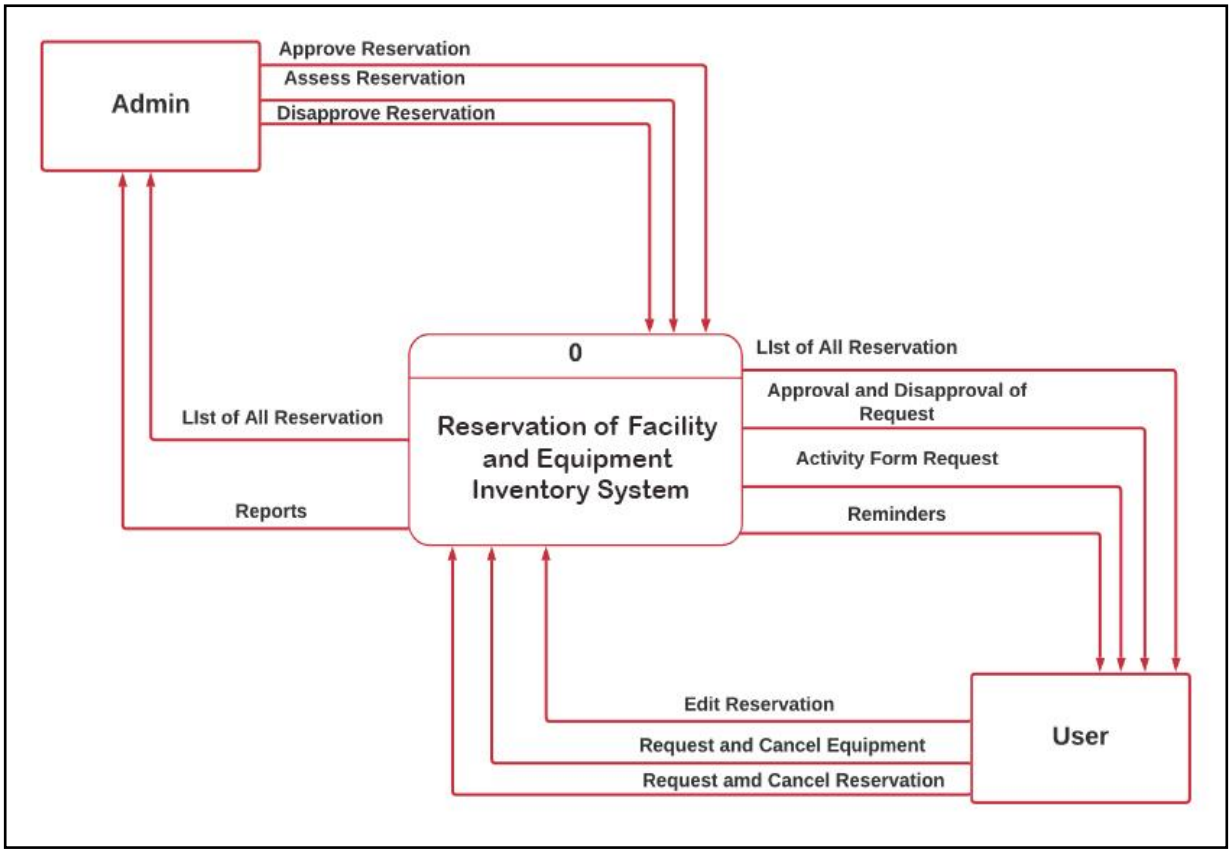

Figure 14.0: Context Diagram of Reservation of Facility

and Equipment Inventory System

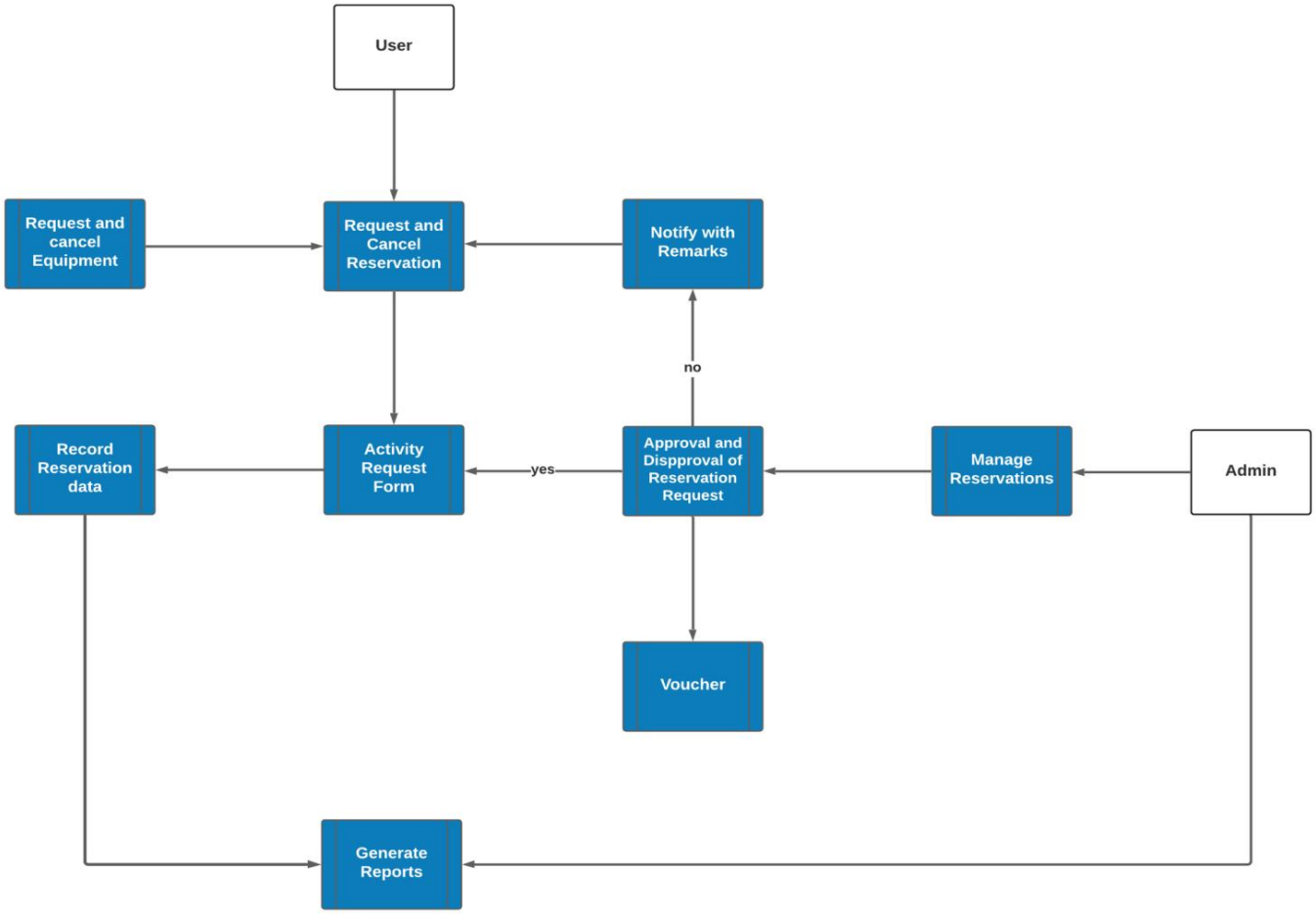

Figure 15.0: Data Flow Diagram of Online Reservation System

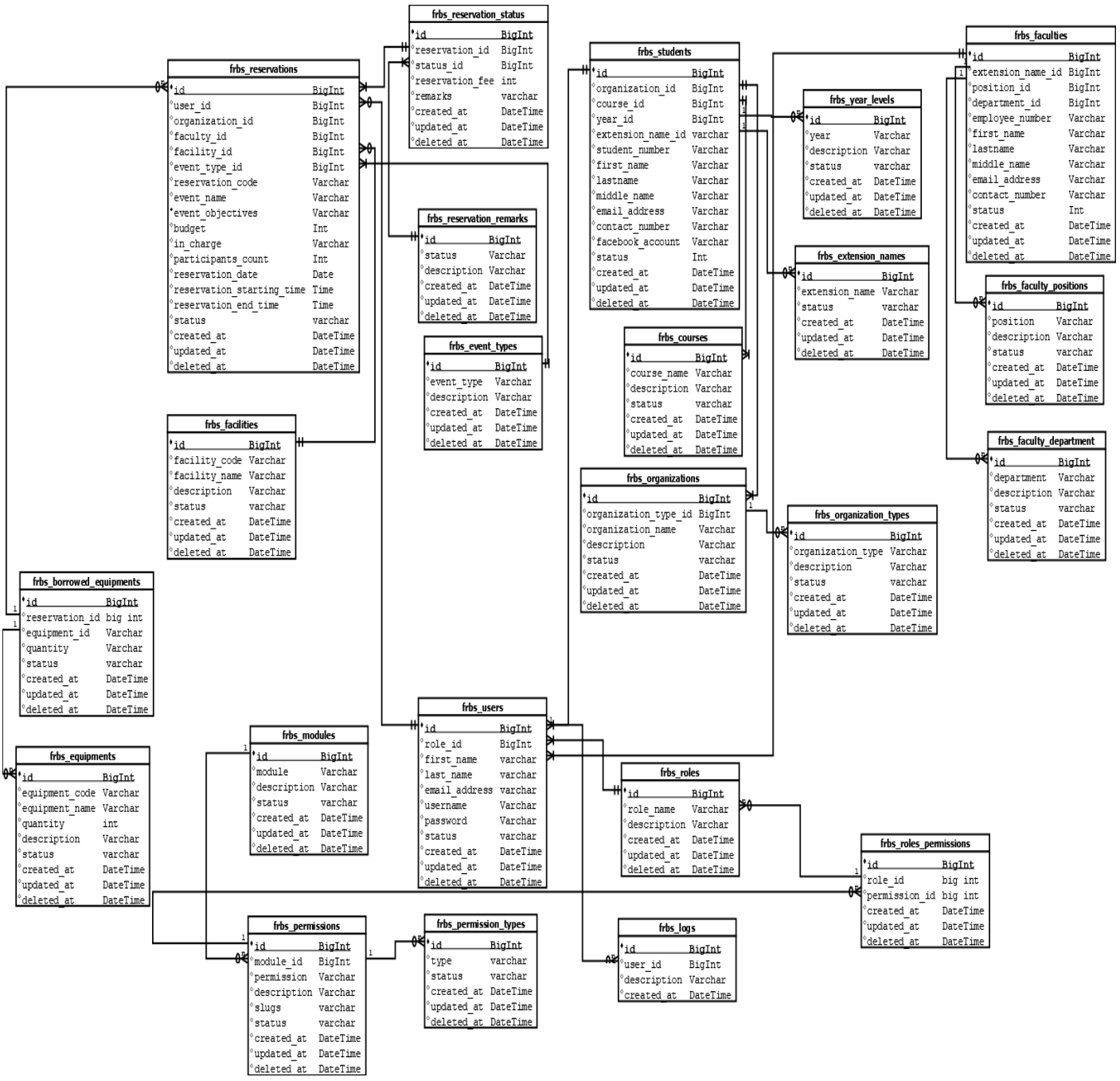

Figure 16.0: Entity Relationship Diagram of Online Reservation System