

UNIVERSITY DEVICE MANAGEMENT SYSTEM

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This Report Presented in Partial Fulfillment of the Requirements for the
Degree of Bachelor of Science in Computer Science and Engineering

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DAFFODIL INTERNATIONAL UNIVERSITY

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APPROVAL

This Project titled “**UNIVERSITY DEVICE MANAGEMENT SYSTEM**”, submitted by Tasmir Mahbub Shihab, ID No:151-15-5009; and Sumaya Akter Usrika, ID No:151-15-4839 to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 10-12-2018.

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We hereby declare that, this project has been done by us under the supervision of **Abdus Sattar, Senior Lecturer, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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ABSTRACT

The purpose of “**University Device Management System**” is to create a web based and user friendly system to maintain the devices used in university. The growing number of students in the university necessitates the increase in the number of faculty and staff to accommodate them. This increase in faculty/staff equates to more devices needed to facilitate the students learning, thus making the management of such devices more challenging. This project will help the authority to distribute devices to faculty/staff, classrooms and monitor those devices. Admin can add devices/classes and can activate, deactivate or cancel it staff or faculty persons’ account. It staff can assign device to faculty or classroom. It staff can approve or decline any request and generate report of all activities of faculty, can track owner of device, can update device information. Faculty can make request for new device or to replace or repair a device and can check the device status in classroom. To develop this system we used PHP and SQL for the back-end. And HTML, CSS, jQuery, JavaScript for front-end. After implementation of all functions, the system is tested multiple times and it works successfully as a prototype.

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CHAPTER 1

INTRODUCTION

“University Device Management System” is a web based application which helps the authorities to maintain devices information in a university. An asset is an item owned by a person or company or institution, regarded as having value [1]. Different electronic devices are assets to a university such as computers, smart board, printer, scanner, monitor, projector, mouse, and keyboard. These items need to be properly maintained, protected and accounted for at all times to ensure the viability of their operations. Also, property has to be properly monitored or managed to make certain that its use can be maximized and help ensure in providing the needs.

Universities employ the use of computers to do such type of management or monitoring. A university device management system is computerized systems that facilitate the management of devices including maintenance, legalities and personnel all through a single piece of web application. They have replaced old-fashioned, paper-based methods that tended to be both cumbersome and inefficient. Today, most next generation device management systems favor web and cloud technology.

The project will be completed going through the different steps of system analysis and design beginning with system investigation, analysis, design, implementation and ending with system review. The succeeding parts of the report will demonstrate how these steps are achieved in order to come up with the intended project.

1.1 Background of the Project

This project will facilitate the management of electronic devices, allocate devices to faculty/staff, classroom and keep track of faculty's or staff's devices to prevent them from getting lost and it will also generate reports. The project will be implemented for Daffodil International University. Since it will be deployed, the main user of the system will be the IT staff.

1.2 Motivation of the Project

The identification that an automated tool does not exist in the management of devices is the primary reason or motivation of developing the project. This prompted us to find

a solution to the following scenarios:

- When an IT staff needs to repair several computers, he/she needs to bring it to his/her office. It will be difficult to identify later on who are the owners of the computer or on what room does this computer belong to when she returns them.
- When a new faculty/staff arrives, the IT staff needs to know the available devices that he/she can give the new faculty. He/she will still have to go physically to the store to check the availability of devices.
- When a faculty member will conduct laboratory exam, he/she needs to know the actual status of the computers in the laboratory, so she can conduct his/her examination with ease. This will create problem if he/she is not aware of the current status of the computers.

1.3 Problem Statement

The absence of an automated tool in the management of devices has generated the following problems which the project intends to address:

- Data are not organized: There is no centralized repository of information about the devices as well as of the respective owners.
- No easy access to information: The records are kept in paper and email, so it is difficult to locate information needed.
- Monitoring of device is difficult: Currently, these devices are tracked manually which results in spending more time and effort to do so.

1.4 Expected Outcome

After a successful implementation of the project, it is expected to produce a web-based system to manage the devices, with the following components:

- An Interface accessed through a web browser as the front-end.
- The interface will be a user-friendly interface which will allow the user to send request for the different services the system provides. Also through the interface, the users will be able to see the results of processing done.
- A Database as back-end.
- The database contains all information about the devices as well as information whom it was assigned (faculty/staff) and where it is placed (laboratories/classroom). The database will provide the information needed in queries and report generation.

1.5 Report Layout

Chapter 2 discussed Related Works of the project.

Chapter 3 discussed Feasibility study of the project.

Chapter 4 System analysis of the project.

Chapter 5 System design of the project.

Chapter 6 Implementation and testing of the project.

Chapter 7 Conclusion.

CHAPTER 2

BACKGROUNDS

This section of the report presents related works to the project. The study of related works provided valuable inputs in further understanding the project.

2.1 Introduction

This paper answered the following questions regarding the measurement of the performance of asset management system and how this can be linked back to business performance [2]: (1) what is the state of play of performance measurement for asset management systems? (2) How to develop performance measures for organizations' asset management systems?

To answer the questions posted, the author conducted extensive literature review and interviews with asset management practitioners. This was conducted to reveal the industrial state of art in the field of performance measurement relating to asset management and to establish the links, if any, between business outcomes and asset management performance indicators.

The results as discussed by the author have revealed that few asset management performance measures are tracked, recorded and reported. Most companies focus on asset performance measurement, and even here whether these measures are purely down to tradition or more for monitoring performance of contractors depends on the sector and the circumstance. The performance measures did not appear to be linked to business performance. Moreover, most organizations focused on asset management maturity assessment, and not so much on asset management performance assessment.

It is important to know the areas in which an asset management is measured in terms of performance to have an idea on what should be considered in its development. This helped identify what are the functions to be included because this is where the performance of the system will be based. One limitation of the study is that the subjects are not universities or educational institutions, but still the understanding of the process has been helpful.

2.2 Related Works

The author studied and analyzed the existing problems of ASCMS (Asset Supply Chain Management System of Chinese Universities).

The author discussed how he conducted the study, as stated in his abstract “The feasibility of applying the technologies of IOT (Internet of Things) to ASCMS is discussed. The system target is described. And use case diagrams of administrator, user and supplier are used to system requirement analysis by using UML (Unified Modeling Language). And then the workflow charts of user and administrator are given to interpret the functional procedures. Moreover the state of asset is defined and illustrated by state diagram to describe the state transition of asset in its lifecycle. Finally the system architecture, system workflow and system module are studied. Analysis and study of ASCMS shows that applying the technologies of IOT to asset management system is feasible from both views of management rules and technology” [3]. This study helped in the understanding of the processes that is involved in the Asset Management System. This helped identify the scope of the project as well. The study was very appropriate because it was based on a university.

2.3 Comparative Studies

The author conducted the survey on implementation of Asset Management concepts in the Croatian companies on sample of nine companies. The result indicated that the Asset Management discipline is still in the early stage of development. The majority of companies set up organizational units, but integrated asset management activities are not present. Half of the surveyed companies designed their specific Asset Management strategies and policies but their implementation is at variable stage. Lastly, the author concluded that the challenges in physical asset management have been recognized by the Croatian government and partly addressed by setting up of an Agency for managing state owned facilities and assets. However, an institutional framework has not been established yet [3].

This study shows us that the development and use of Asset Management System is important in an enterprise. This study helped us to understand how Asset Management System is developed and gave us the motivation to do because it emphasized the role or importance. The limitation of this related work in relation to

our project is the nature of the organization; the survey was more on commercial organization.

2.4 Scope of the problem

1. ACCENTiS Enterprise Fixed Assets Module

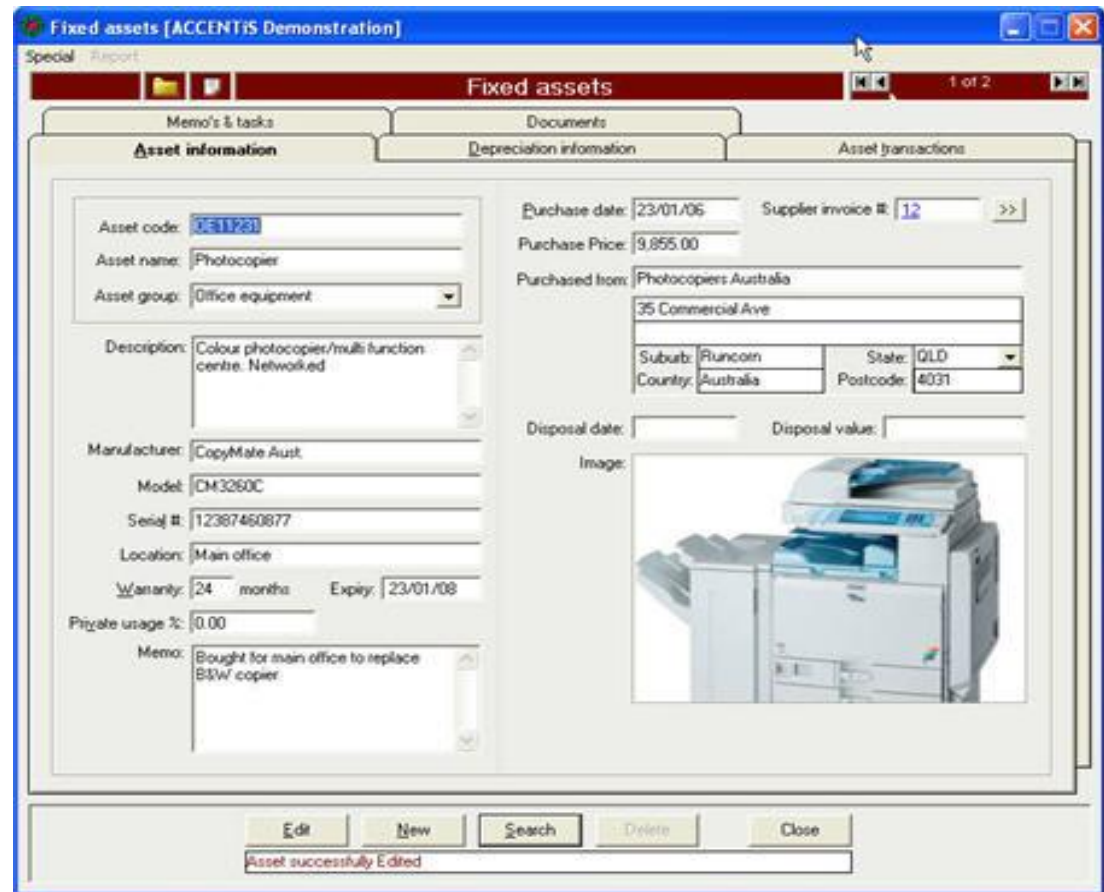


Figure 2.1: ACCENTiS Enterprise Fixed Assets Module

The ACCENTiS Enterprise Fixed Assets module gives complete control over assets by helping manage costs and maximize tax savings. It is a full-featured asset management and depreciation module that saves hours by streamlining organization, maintaining current fixed-asset records, maximizing tax deductions and generating up-to-date reports when required.

Functional Capabilities:

- Seamless Integration
- Simple transactions

- Asset transactions can be removed and re-done
- Picture of each asset
- Warranty information and expiry dates
- All asset transactions viewed at any time
- Optional automatic asset codes
- Link supplier invoice number of asset acquisition

2. Computer Asset Management System [5]

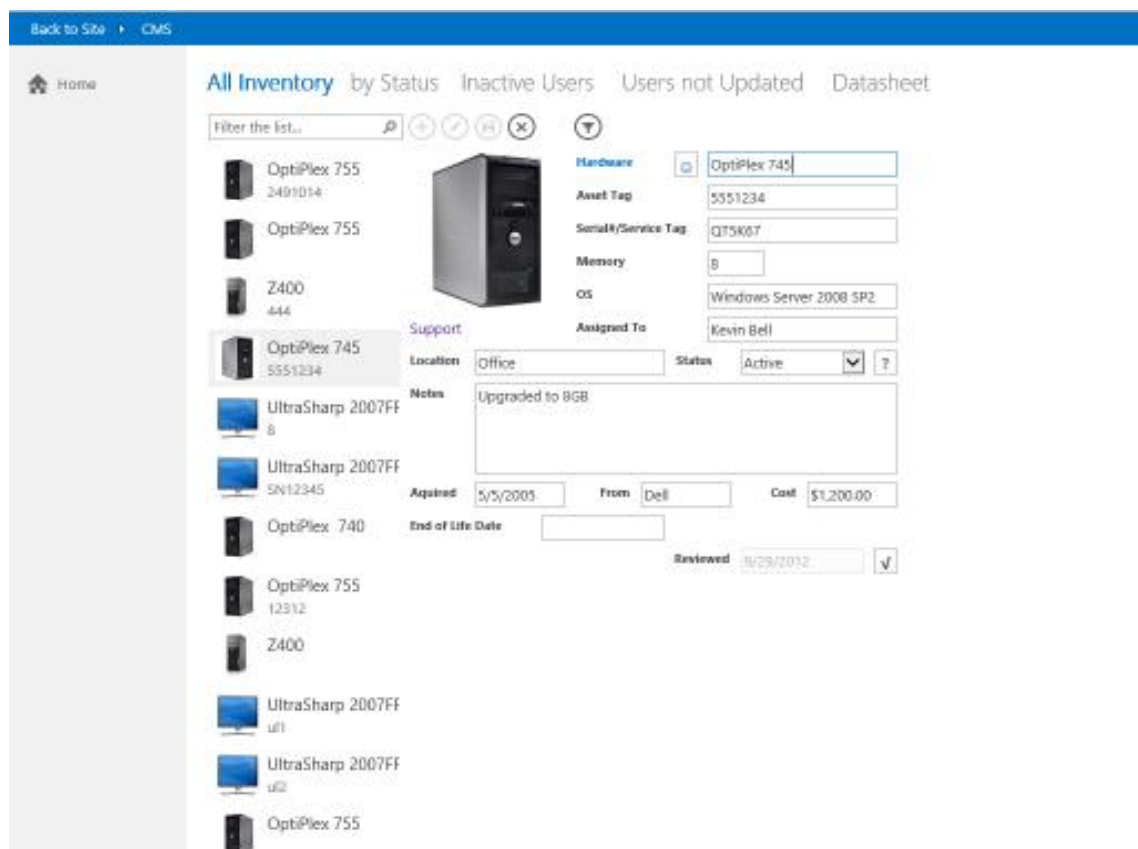


Figure 2.2: Computer Asset Management Systems

The Computer Asset Management System lets the hardware administrator or manager to quickly create an application that allows the end user to enter and update their assigned computer hardware. The admin controls what different types and models of hardware the user can select to provide simplified and consistent data entry. The end user simply select types a few characters from the name or model of the item they wish to enter, then enters a few optional details such as serial number, asset tag, OS

and installed memory. Once the users have entered their assets, the administrator will then have a central location to manage company's or department's computer hardware.

2.5 Challenges

- Search by serial number/service tag
- View hardware by status
- See inactive user that are still assigned hardware
- View hardware with unsupported Operating Systems
- Browse hardware by type
- Browse hardware by department
- Audit of user that have not updated their assets after a given date
- History of who has been assigned to a given asset

Comparison of Characteristics

The following table shows the comparison of characteristics among the related works studied and what are the features similar to the project.

Table 2.1 Table of Comparison among Related Works

Function	ACCENTiS Enterprise Fixed Assets Module	Computer Asset Management System	University Device Management System
User management	Yes	Yes	Yes
Lifecycle activities	Yes	Yes	Yes
Lifecycle manage	Yes	Yes	Yes
Equipment info	Yes	Yes	Yes
Others	With depreciation model	Focus is on hardward	Request Management

All the related works studied share the common characteristics in terms of user management, lifecycle activities of assets or properties, managing the lifecycle of the

assets or properties, and storing of equipment information. Furthermore, each of them had added a feature which makes each of them different in a way.

The project is intended to adopt the common characteristics or functionalities mentioned above in terms of user management, managing the lifecycle activities of the assets or devices, and storing of equipment information. In addition, it will provide the feature of allowing the user to make a request of a device and allowing them to track such request, which will be the added functionality in the project. Also, the status of the devices in the classrooms and laboratories can be viewed to allow the faculty to maximize the use of the devices.

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Use Case Modeling

The proposed website is web-based that help IT staff/faculty to manage electronic devices and motoring labs/classes. The proposed system should do the following:

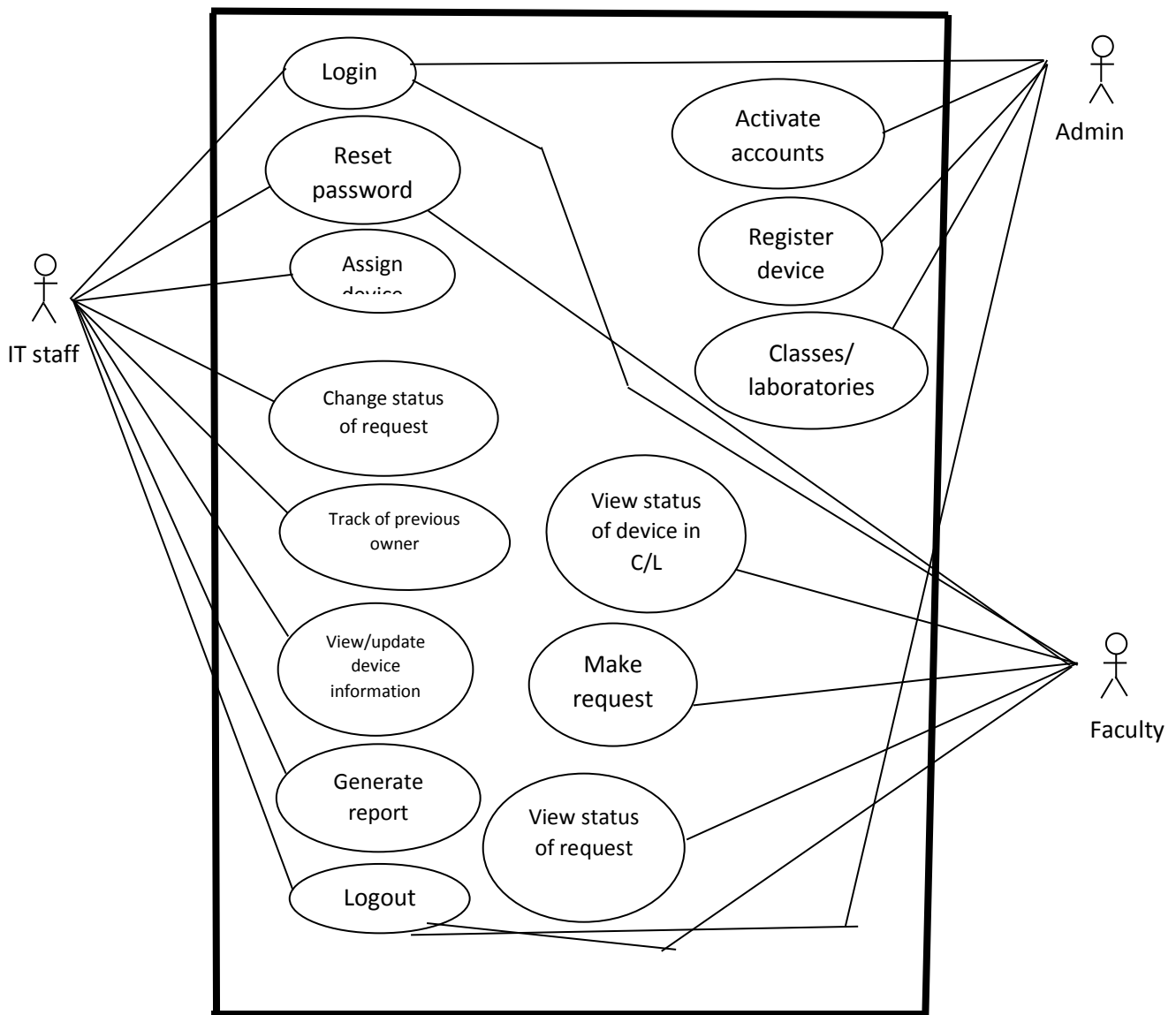


Figure 3.1: Use case diagrams which represent our user with their functions

Table 3.1: Use Case Specification for Log in Function

Use Case Name:	Login
Pre-condition:	
Actors:	Admin, IT Stuff, Faculty
Purpose:	To access the system
Main Flow:	<p>1-Homepage will direct show login form.</p> <p>2-System will require Username, Password and User type</p> <p>3-User enters required information.</p> <p>4-Click on login</p>

Table 3.2: Use Case Specification for Activate accounts Function

Use Case Name:	activate accounts
Pre-condition:	log in
Actors:	Admin
Purpose:	Admin can activate accounts.
Main Flow:	<p>1-Click on Activate accounts</p> <p>2-Select accounts and then select active/inactive/cancellation.</p> <p>3-Click on Update account</p>

Table 3.3: Use Case Specification for Register devices Function

Use Case Name:	register devices
Pre-condition:	log in
Actors:	Admin
Purpose:	View all devices register and add new devices
Main Flow:	<p>1-Click on register device</p> <p>2-Device register form will be displayed with option for (Device ID, Device type, Device model, Serial number)</p> <p>3-Admin fills all information about devices.</p>

	4-Click on Submit
--	-------------------

Table 3.4:Use Case Specification for Classes/Laboratories Function

Use Case Name:	classes/laboratories
Pre-condition:	log in
Actors:	Admin
Purpose:	Add classroom/Laboratories.
Main Flow:	1-Click on Classes/Laboratories 2-Enters Room ID and Room Type 3-Click on Submit

Table 3.5:Use Case Specification for Assign Device Function

Use Case Name:	assign device
Pre-condition:	log in
Actors:	IT Staff
Purpose:	Assigning device to faculty/staff or classes/laboratories
Main Flow:	1-Click on Assign Device 2-Assign device form will displays which consist of (Device ID, Room ID/Faculty ID, Date) 3-IT Staff enters all information 4-Click on Submit

Table 3.6:Use Case Specification for Reset Password Function

Use Case Name:	reset password
Pre-condition:	log in
Actors:	IT Staff, faculty

Purpose:	To reset password
Main Flow:	1-Click on Reset Password 2- Reset Password form will displays which consist of (Current Password, New Password, Confirm Password) 3-Click on save

Table 3.7:Use Case Specification for Change status of request Function

Use Case Name:	change status of request
Pre-condition:	log in
Actors:	IT Staff
Purpose:	To change request status
Main Flow:	1-Click on Change Status of Request 2-Select request no. and then select waiting/approve/rejected. 3-Click on update status

Table 3.8:Use Case Specification for Track of Previous Owner Function

Use Case Name:	track of previous owner
Pre-condition:	log in
Actors:	IT Staff
Purpose:	To know about the owner of devices.
Main Flow:	1-Click on Track of Previous Owner 2- Enter Device ID 3- Click submit

Table 3.9:Use Case Specification for View/Update Device Information Function

Use Case Name:	view/update device Information
Pre-condition:	log in
Actors:	IT Staff
Purpose:	To make some changes on device information

Main Flow:	1-Click on View/Update Device Information 2-Update some information 3-Click on Update
------------	---

Table 3.10:Use Case Specification for Generate Report Function

Use Case Name:	generate report
Pre-condition:	log in
Actors:	IT Staff
Purpose:	To generate report for devices need to replace/repair, assigned to faculty/classes and status.
Main Flow:	1-Click on Generate Report 2-Click on either one of them : Devices need to repair, Devices need to replace, Devices assigned to faculty, Devices assigned to classes/laboratories 3-Click on Print

Table 3.11:Use Case Specification for View Status of Device in Classes/Laboratories Function

Use Case Name:	view status of device in C/L
Pre-condition:	log in
Actors:	Faculty
Purpose:	To know the status of device in classes/laboratories
Main Flow:	1-Click on View Status of Device in C/L

Table 3.12:Use Case Specification for Make Request Function

Use Case Name:	make request
Pre-condition:	log in
Actors:	Faculty
Purpose:	Faculty staff can request for new device, to replace, for maintenance by sending the service request form

Main Flow:	1-Click on Make Request 2- Make Request form will displays with options (Type of service, Device type, comment) 3-Click on Submit
------------	---

Table 3.13:Use Case Specification for View Status of Request Function

Use Case Name:	view status of request
Pre-condition:	log in
Actors:	Faculty
Purpose:	To know the status of request weather it is approved or waiting or rejected
Main Flow:	1-Click on View Status of Request

Table 3.14:Use Case Specification for Logout Function

Use Case Name:	Logout
Pre-condition:	Login
Actors:	Admin, IT Stuff, Faculty
Purpose:	To logout from the system
Main Flow:	1-Click on Logout

3.2 Logical Data Model

- Security: Only authorized user can use the system by providing unique user ID and password.
- Availability: System will be available 24/7 since it is web-based.
- Usability: The interface for our system will be user-friendly and easy to use.

3.3 Business process modeling

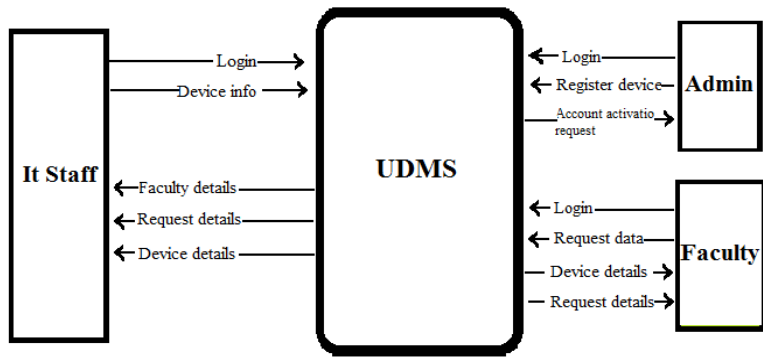


Figure 3.2: Context Diagram

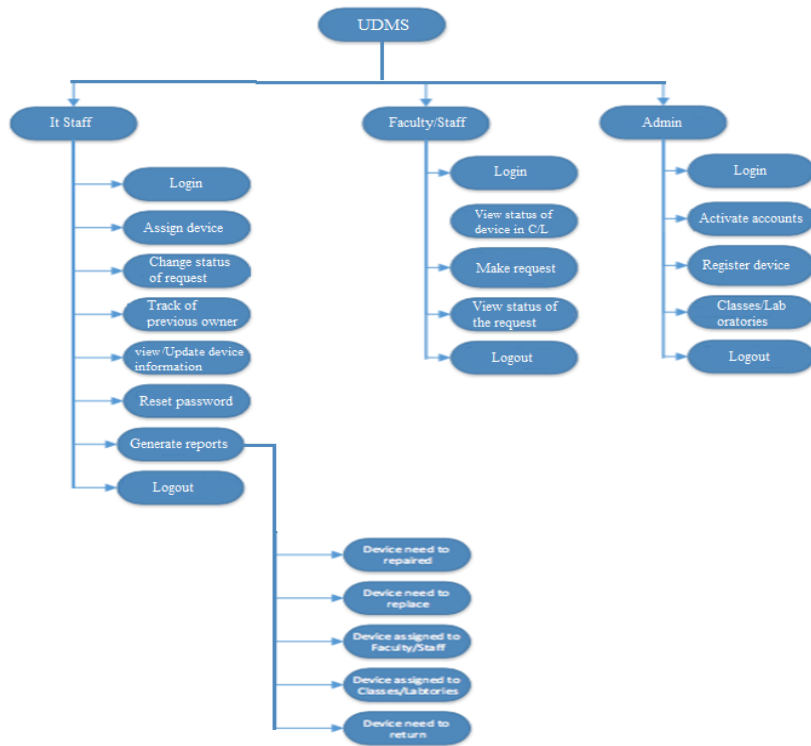


Figure 3.3: Decomposition Diagram

3.4 Requirement Collection and Analysis

The System Development Methodology to be used in the development of the project is the Waterfall Model. It is a linear-sequential life cycle model. It is very simple to understand and use.

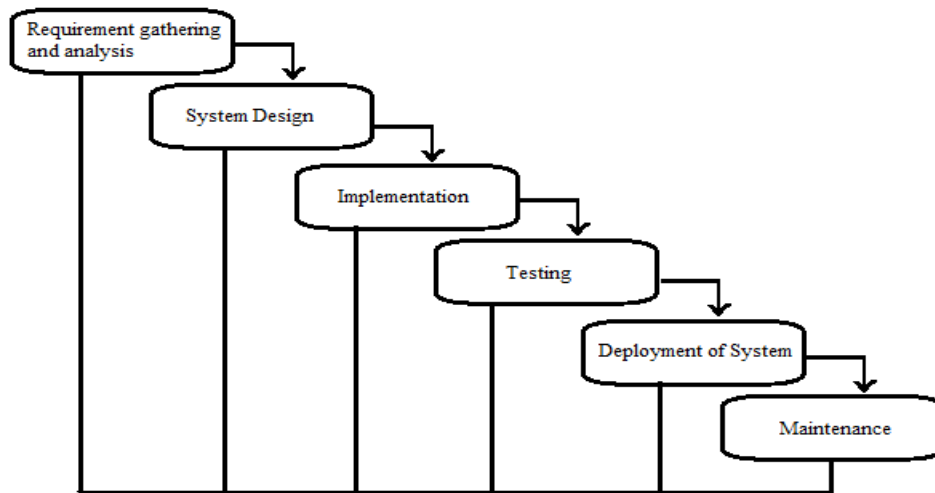


Figure 3.4: Waterfall Model Diagram

In a waterfall model, each phase must be completed fully before the next phase can begin as shown in the figure above. This type of model is basically used for the project which is small and there are no uncertain requirements. At the end of each phase, a review takes place to determine if the project is on the right path and whether or not to continue or discard the project. The milestone presentation helps review the project. In this model the testing starts only after the development is complete [6].

In the requirements gathering and analysis, we have conducted interviews and research to gather enough information to understand the problem. In the system design, we will use different tools to represent the flow of the system as well as the design of the database. During the implementation, we will be coding the program which will be followed by testing.

We have chosen the Waterfall model because of its advantages as follows.

- It is simple and easy to understand.
- It is easy to manage because each phase has a specific deliverables and a review process.
- The phases are processed and completed one at a time.
- It works well for smaller projects where the requirements are very well understood.

3.5 Design Requirements

This section discusses the rationale behind the implementation of the project as a web-based system as opposed to a local area network application or a desktop application.

The project will be deployed as a web-based system running on the Microsoft Windows environment. A web based application is a software package that can be accessed through the web browser. The software and database reside on a central server rather than being installed on the desktop system and is accessed over a network [7]. Web based applications have many advantages that allowed us to consider this type of development. Web based application gives us an opportunity to access our information from anywhere in the world at any time. It also facilitates us to save time & money and improve the interactivity among users, productivity and efficiency. Web-based applications are easy to use and can be implemented without interrupting existing work process.

CHAPTER 4

DESIGN SPECIFICATION

4.1 Front-end Design

The figure shown below is the Relational Schema which is a set of tuples, where each element is a member of data domain.

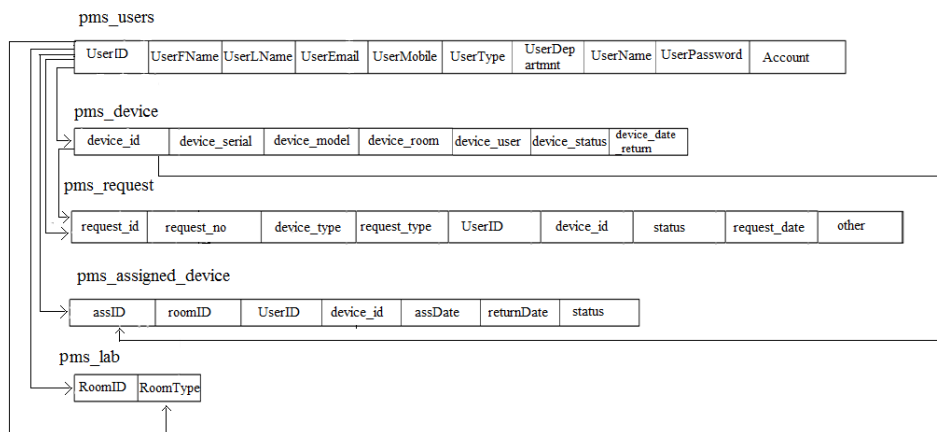


Figure 4.1: Relational Schema

4.2 Back-end Design

The figure shown below is the Entity Relationship Diagram (ERD), a data modeling technique that graphically illustrates an information system's entities and the relationships between those entities.

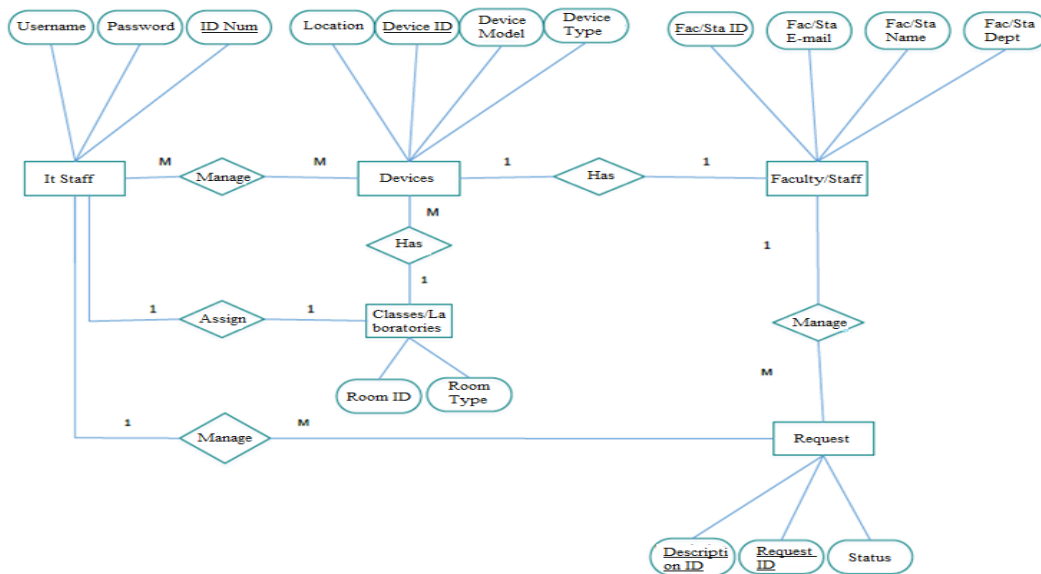


Figure 4.2: Entity Relationship Diagram

The figure shown below is the Database Schema which is a way to logically group objects such as tables, views, stored procedures etc.

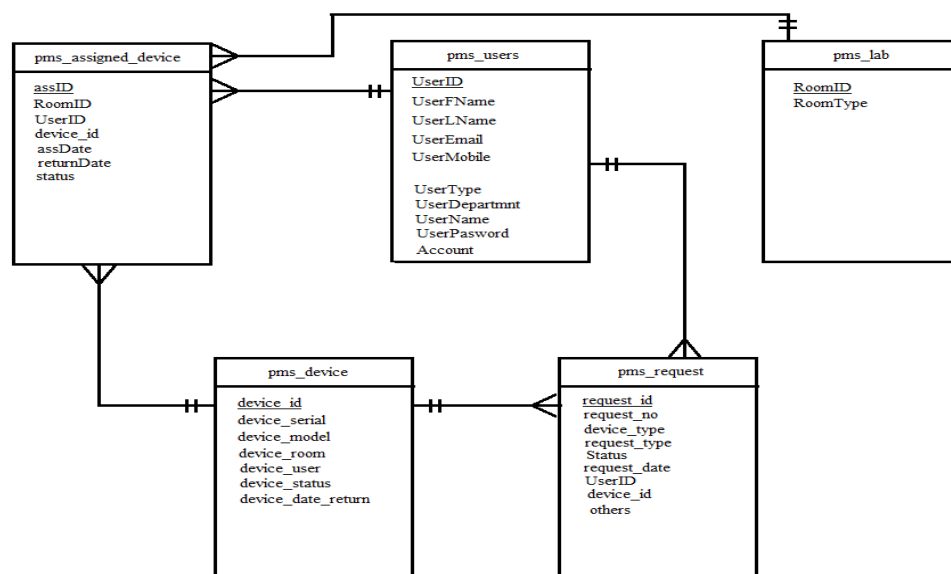


Figure 4.3: Database Schema

4.3 Interaction Design and UX

We used Microsoft paint create Data Flow Diagram (DFD), Context Diagram and Decomposition Diagram.

DFD may show a number of processes with data flowing into and out of each process. If there is a need to show more detail within a particular process, the process is decomposed into a number of smaller processes in a lower level DFD.

Context Diagrams and Data-Flow Diagrams were created for systems analysis and design. But like many analysis tools they have been leveraged for other purposes. For example, they can also be leveraged to capture and communicate the interactions and flow of data between business processes. So, they don't have to be restricted to systems analysis.

We used Lucidchart Online to create Database Schema and Relational Schema.

Database Schema described in a formal language supported by the database management system (DBMS) and provides to the organization of data as a blueprint

of how the database is constructed (divided into database tables in the case of Relational Databases).

Relational Schema are represented by tables, where each row of a table represents a single tuple, and where the values of each attribute form a column.

4.4 Implementation Requirement

The project will be developed using the NetBeans Integrated Development Environment (IDE). An IDE is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger [8]. NetBeans is a software development platform written in Java. The NetBeans Platform allows applications to be developed from a set of modular software components called modules. The NetBeans IDE provides support for several languages (PHP, JavaFX, C/C++, JavaScript, etc.) and frameworks [9].

MySQL, will be used to develop and manage the database of the project. It is the most popular Open Source SQL database management system. It is developed, distributed, and supported by Oracle Corporation. MySQL is easy to use, yet extremely powerful, secure, and scalable. And because of its small size and speed, it is the ideal database solution for Web sites.

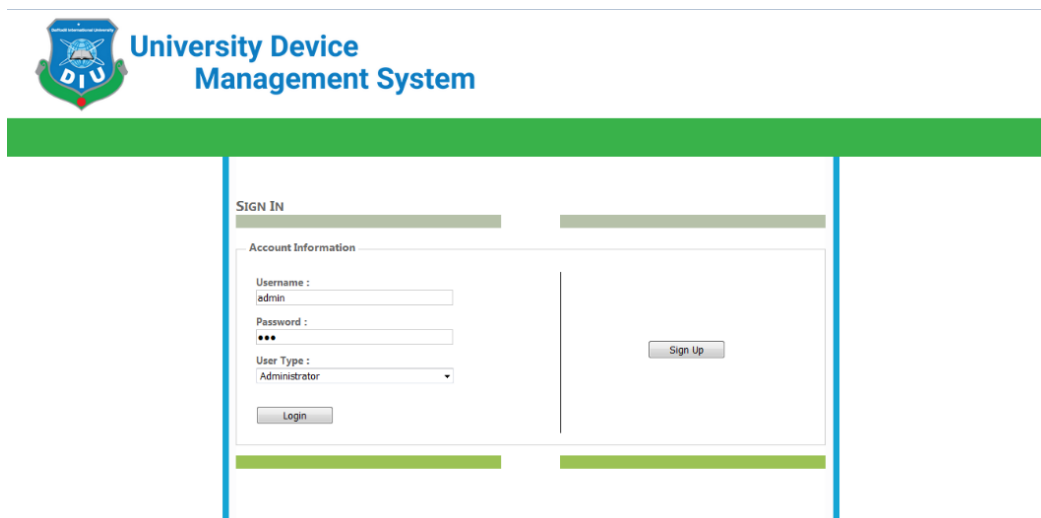
HTML and PHP are the scripting languages that we will use to design the website. The website then can be viewed by anyone else connected to the Internet. HTML is easy to learn and quite powerful in what it allows you to create. PHP on the other hand is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML [10], [11].

CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation of Database

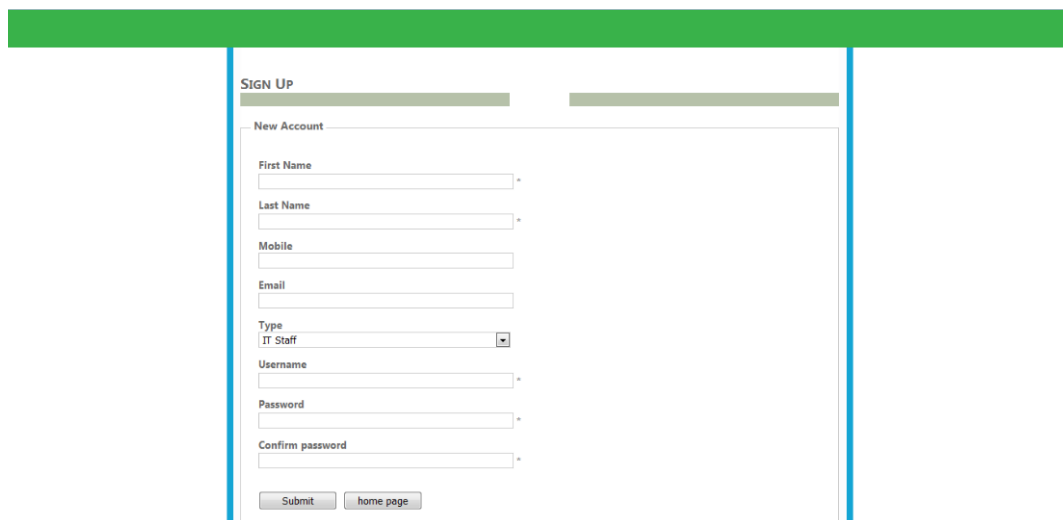
The figure below shows the login page which is also the login page. User has to enter username, password and type. If user doesn't have an account then user has to sign up first.



The screenshot shows the login page for the University Device Management System. At the top left is the DIU logo. The page title is "University Device Management System". Below the title is a green horizontal bar. The main content area is titled "SIGN IN" and contains a form with the following fields: "Account Information", "Username:" (with "admin" entered), "Password:" (with "●●●" entered), "User Type:" (with "Administrator" selected in a dropdown), and "Login" and "Sign Up" buttons.

Figure 5.1: Homepage and login page

The figure below shows the signup page. User has to enter all required information to sign up and has to wait till admin approve it.



The screenshot shows the signup page for the University Device Management System. At the top left is the DIU logo. The page title is "University Device Management System". Below the title is a green horizontal bar. The main content area is titled "SIGN UP" and contains a form with the following fields: "New Account", "First Name", "Last Name", "Mobile", "Email", "Type" (with "IT Staff" selected in a dropdown), "Username", "Password", "Confirm password", and "Submit" and "home page" buttons.

Figure 5.2: Signup page

The figure below shows the control panel of admin.

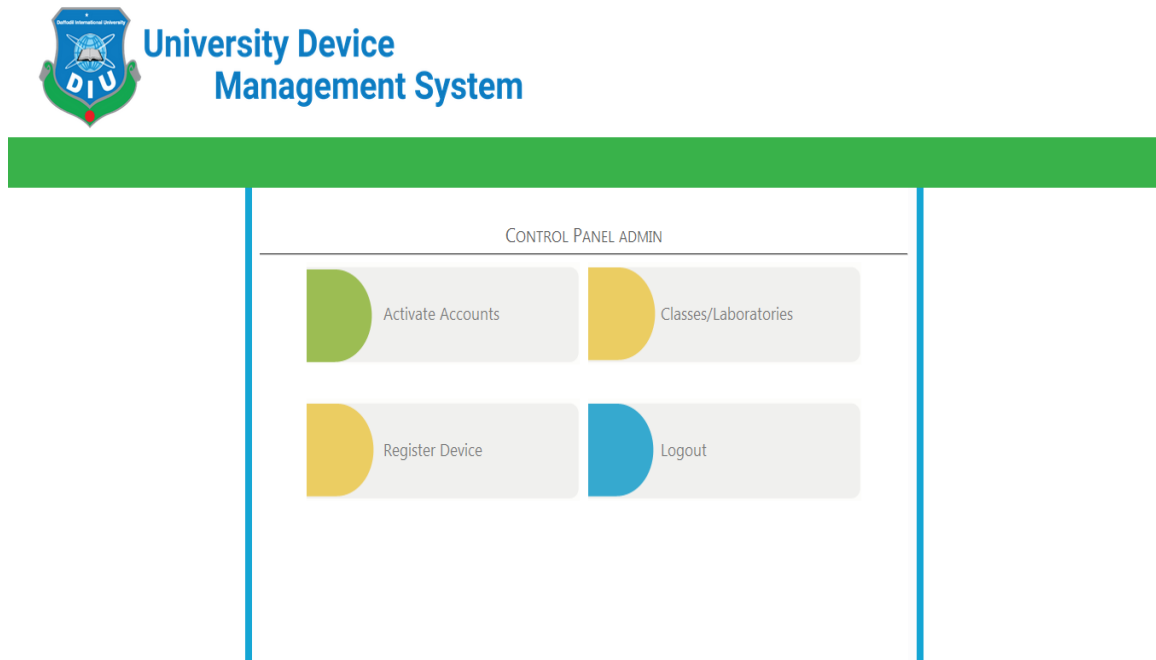


Figure 5.3: Control panel of admin

From here admin can activate, deactivate or cancel accounts.

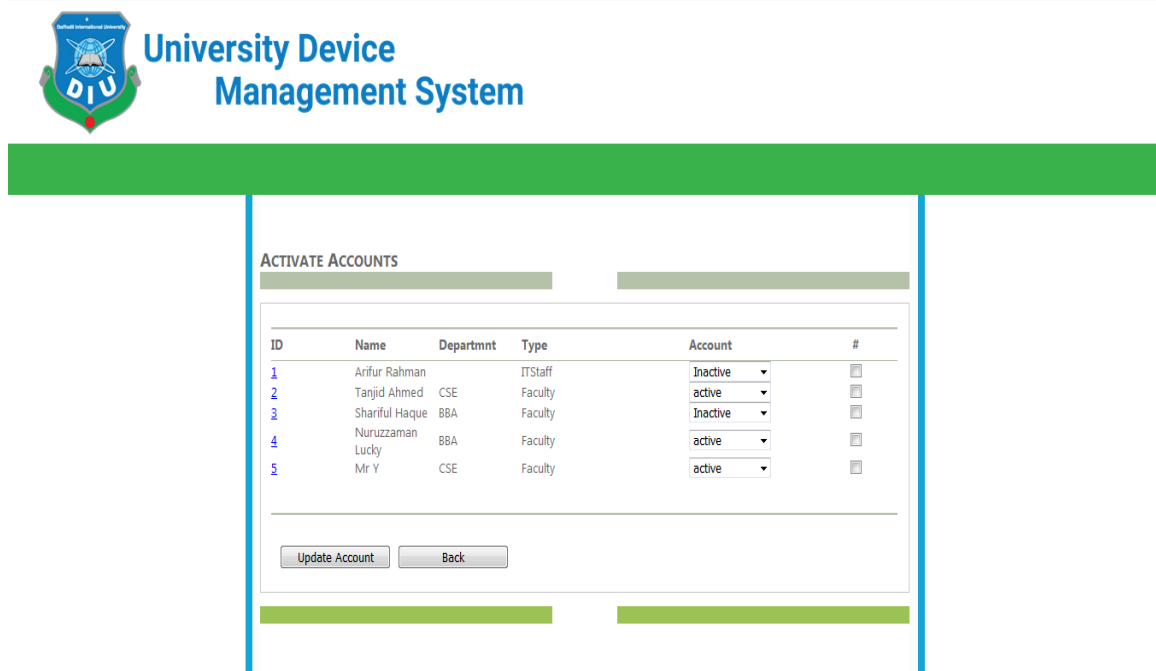
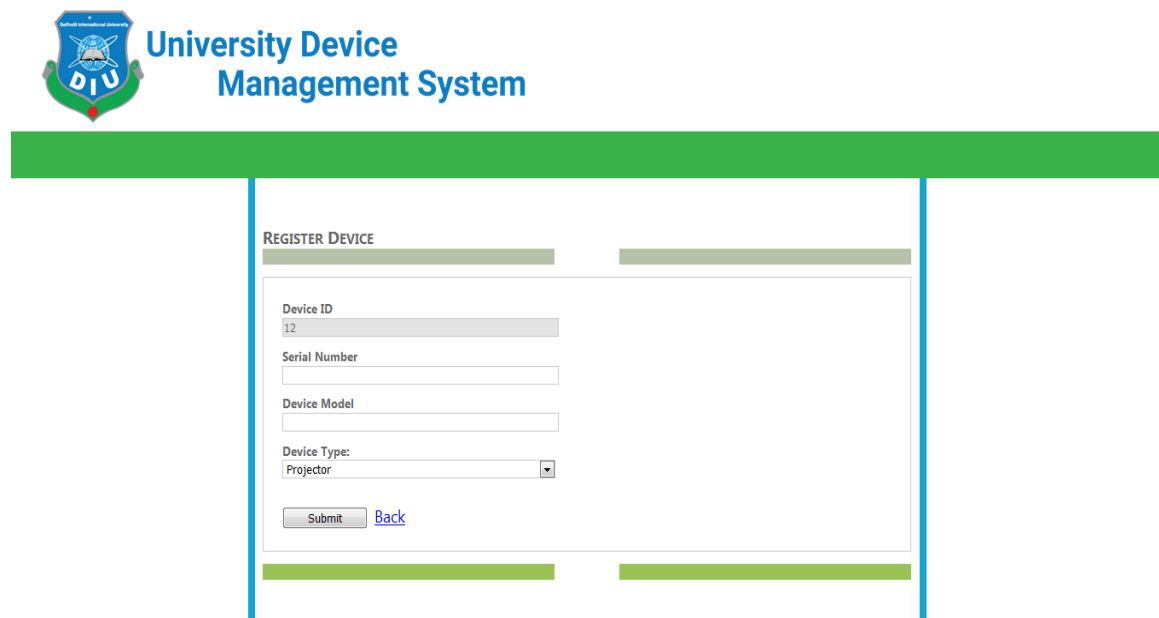


Figure 5.4: Activation/Deactivation/Cancellation of account page

5.2 Implementation of Front-end Design

The figure below shows register device page. Admin can add new devices through here.



University Device Management System

REGISTER DEVICE

Device ID
12

Serial Number

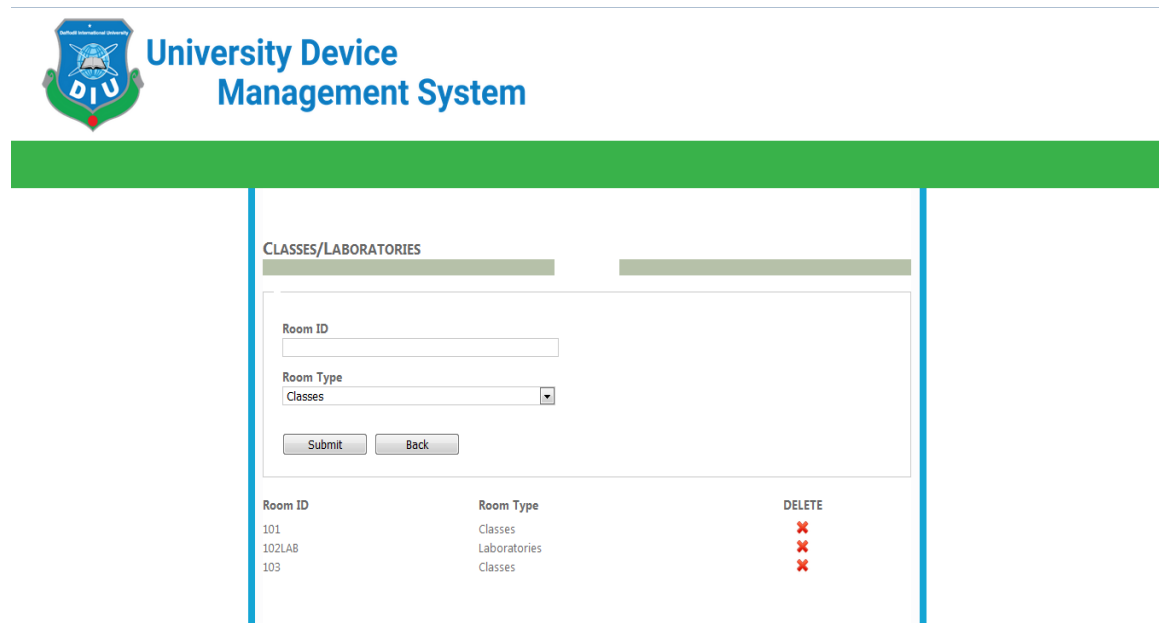
Device Model

Device Type:
Projector

Submit Back

Figure 5.5: Register Device page

The figure below shows classes/laboratories page. Admin can add new classes/laboratories.



University Device Management System

CLASSES/LABORATORIES

Room ID

Room Type
Classes

Submit Back

Room ID	Room Type	DELETE
101	Classes	✘
102LAB	Laboratories	✘
103	Classes	✘

Figure 5.6: Classes/Laboratories page

The figure below shows the control panel of IT staff.



Figure 5.7: Control panel of IT staff page

The figure below shows assign device page. IT staff can assign devices to faculty/staff or classes/laboratories.

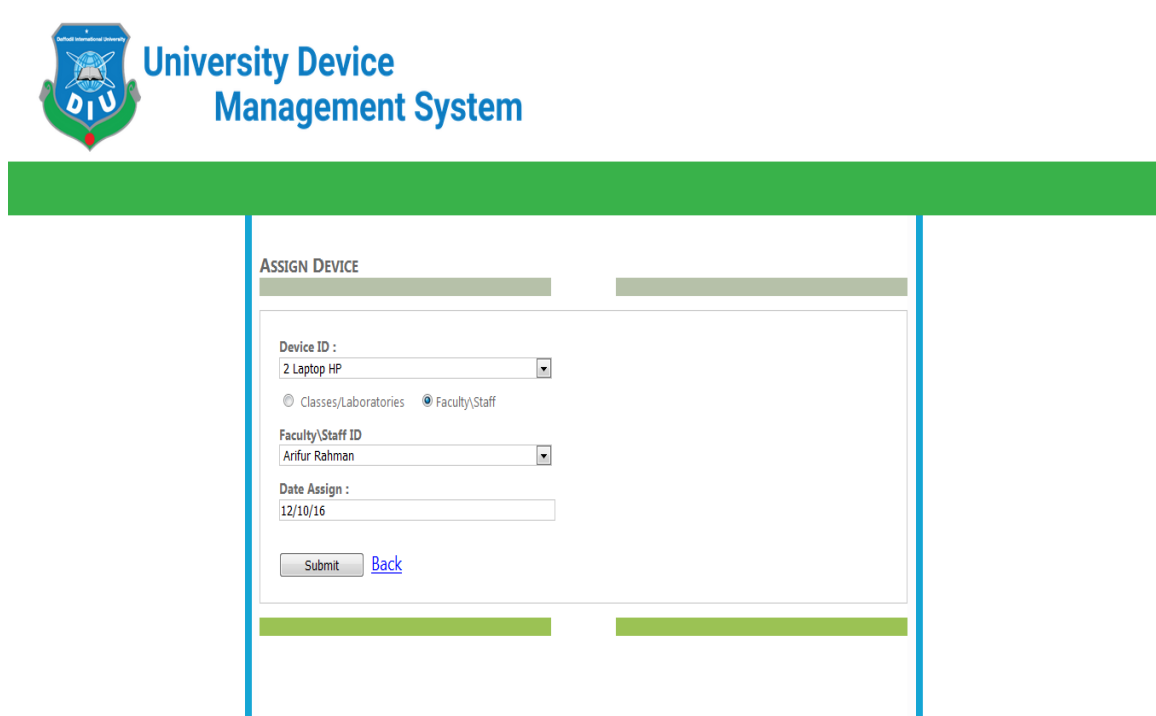


Figure 5.8: Assign device page

The figure below shows change status of request page. IT staff can change status of request from waiting to approve or decline.

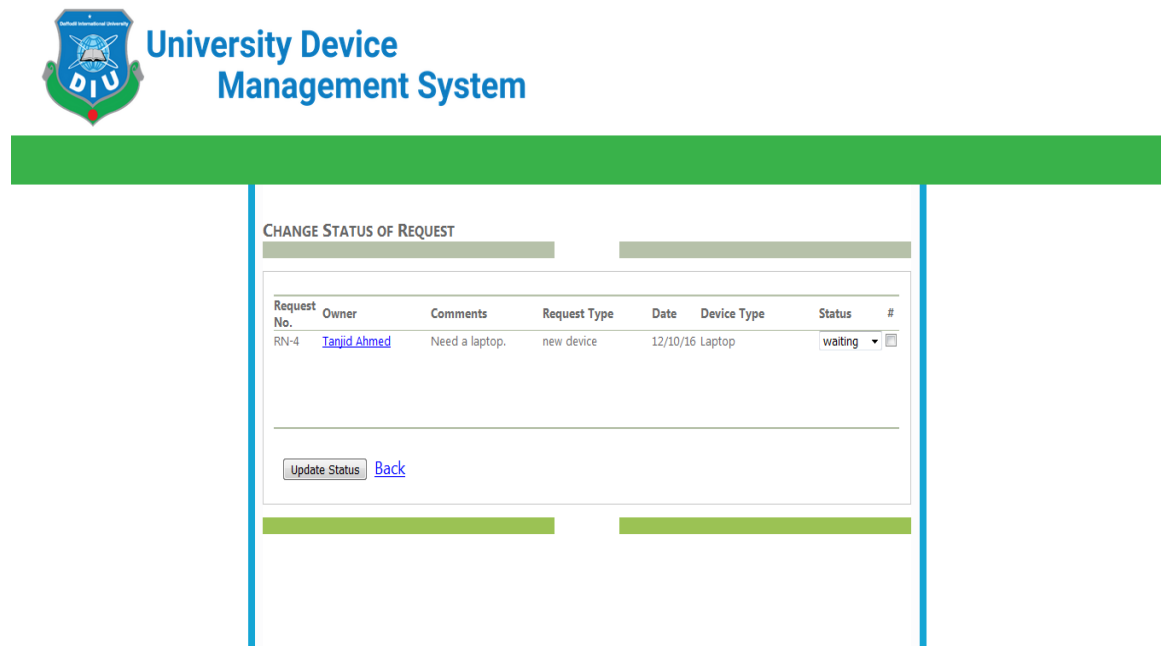


Figure 5.9: Status of request page

The figure below shows track previous owner page. IT staff can see the owner of any device.

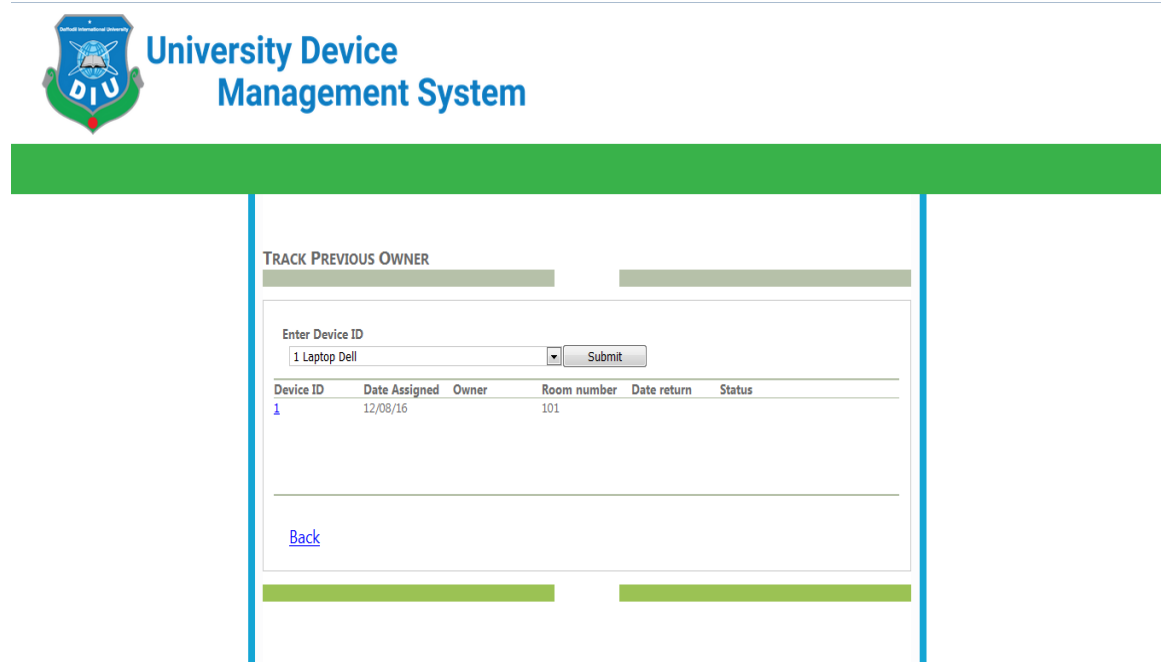


Figure 5.10: Track previous owner page

The figure below shows view/update device information page. IT staff can view or update existing device information.

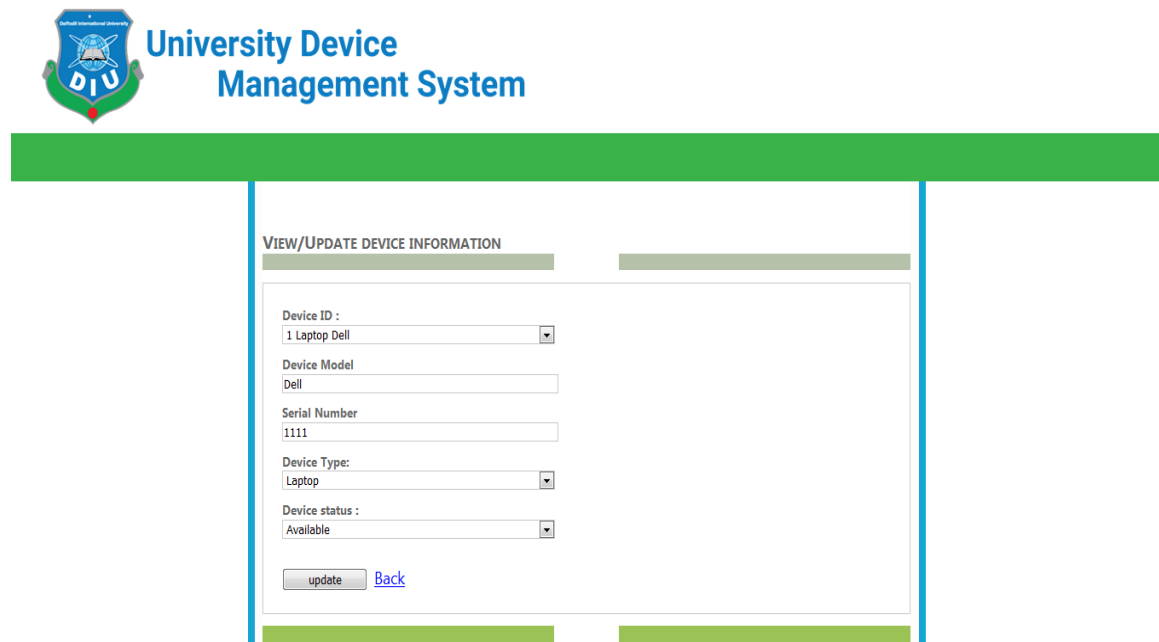


Figure 5.11: View/Update device information page

The figure below shows the generate report page. IT staff can generate report of device need to repair, device need to replace, device assigned to faculty/staff, device assigned to classes/laboratories.

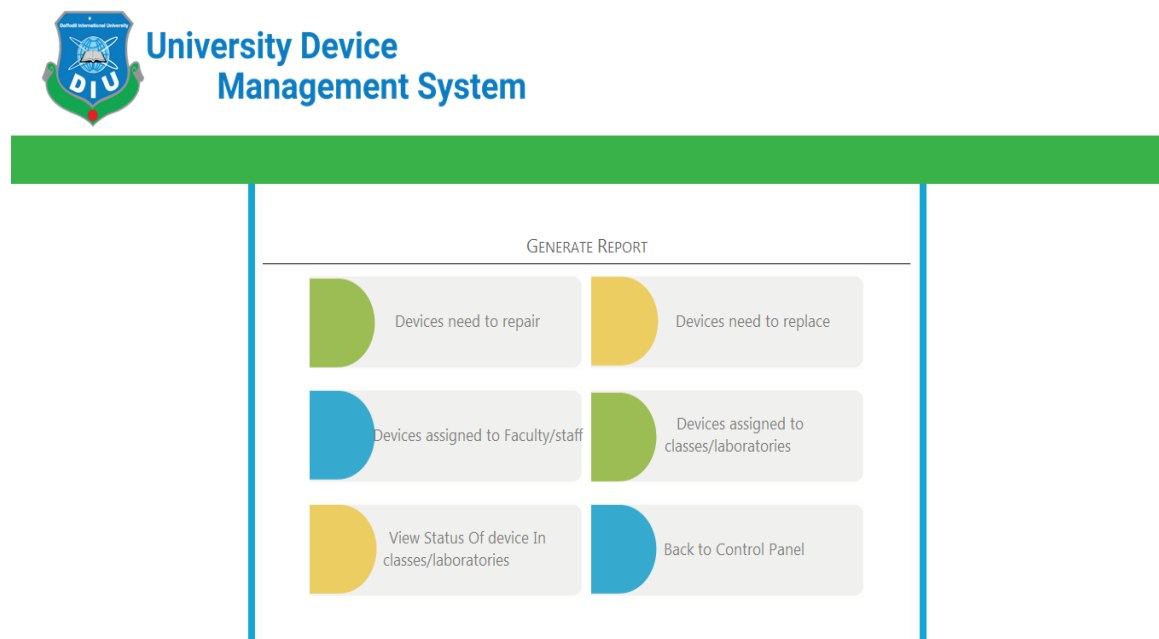


Figure 5.12: Generate report page

The figure below shows device assigned to faculty/staff. IT staff can see device assigned to faculty.

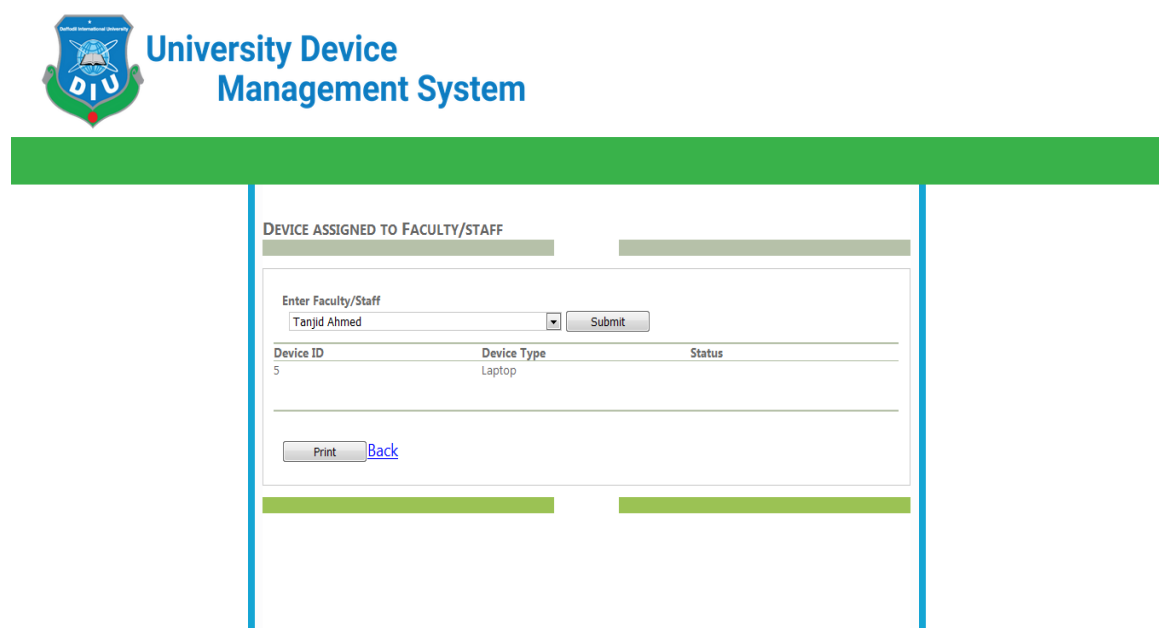


Figure 5.13: Device assigned to faculty/staff

The figure below shows device assigned to classes/laboratories. IT staff can see device assigned to classes/laboratories.

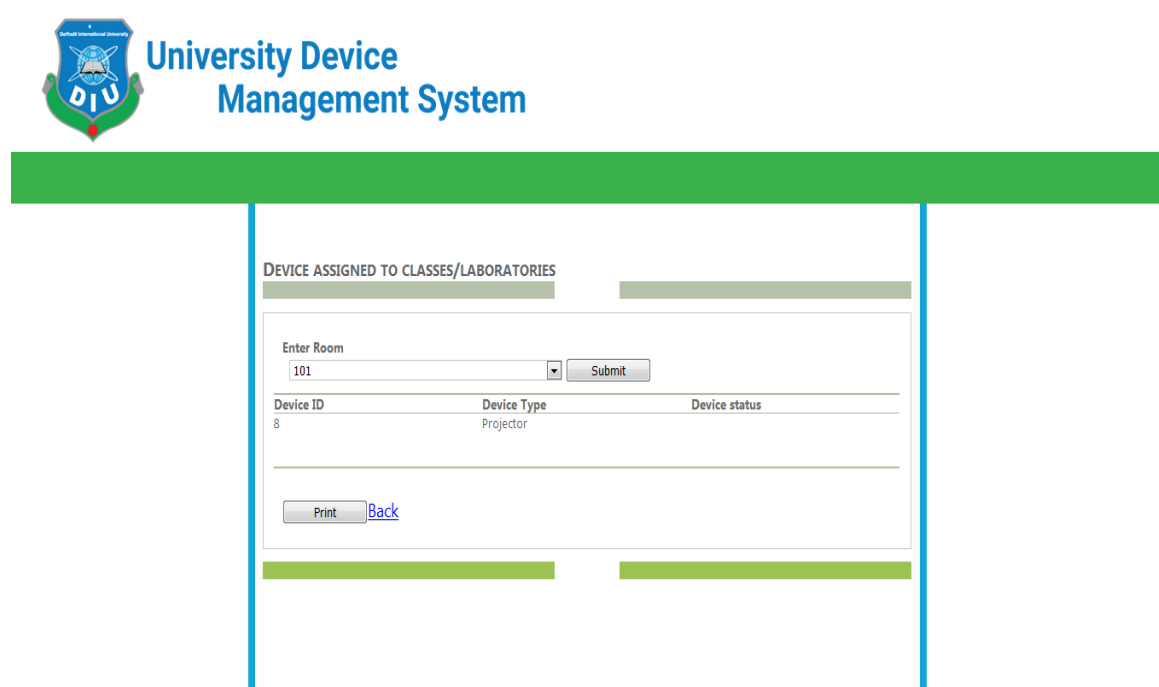


Figure 5.14: Device assigned to classes/laboratories

IT staff can see device status in classes/laboratories with device information.

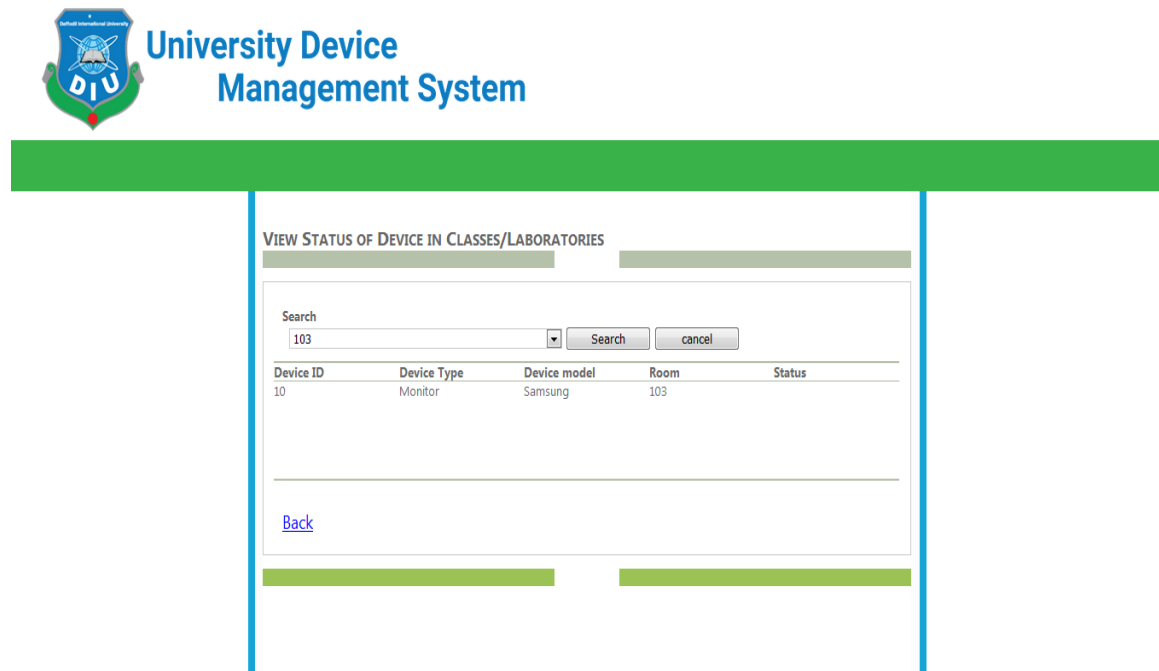


Figure 5.15: Views status of device in classes/laboratories

The figure below shows control panel of faculty.

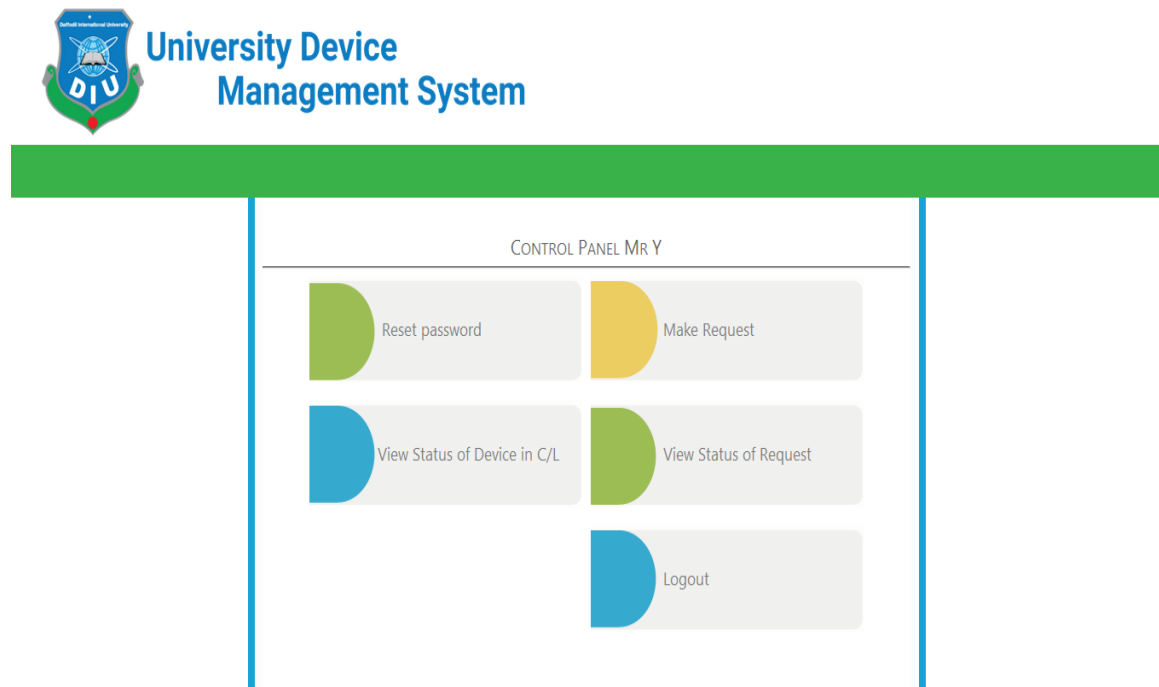



Figure 5.16: Control panel of faculty page

The figure below shows make request page. Faculty can make a request for new device or to replace or repair an existing device.



University Device Management System

MAKE REQUEST

TYPE OF SERVICE

New Device


Device Type:
Scanner

Comments
Need a scanner immediately.

[Back](#)

Figure 5.17: Make request page

Through this page faculty can check device status in classes/laboratories.



University Device Management System

VIEW STATUS OF DEVICE IN CLASSES/LABORATORIES

Search
101

Device ID	Device Type	Device model	Room	Status
1	Laptop	Dell	101	

[Back](#)

Figure 5.18: View status of device in classes/laboratories

The figure below shows view status of request page. Faculty can check request status.

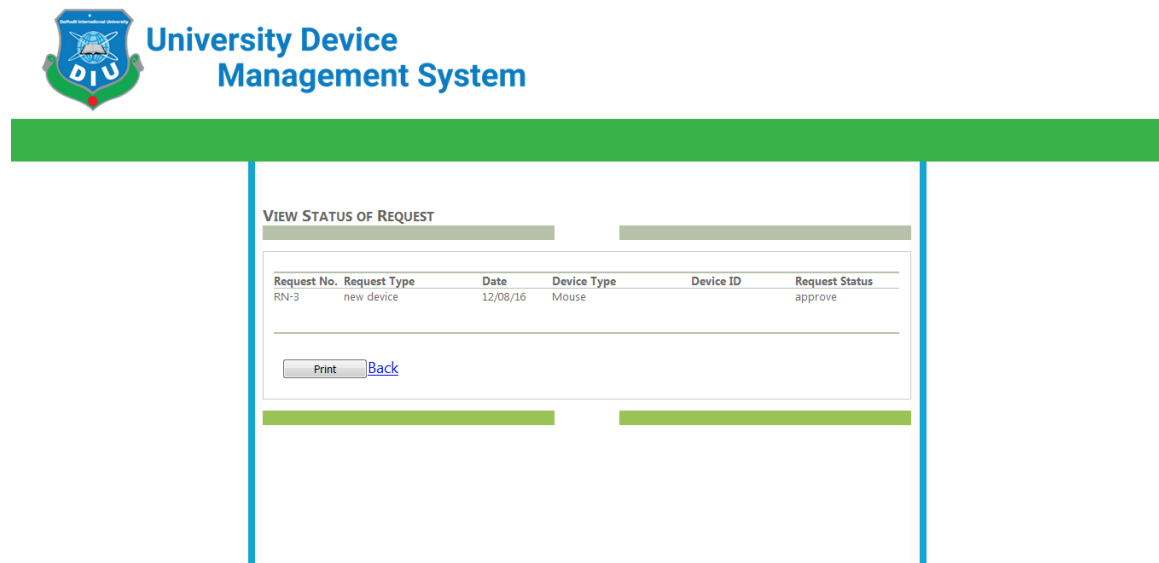


Figure 5.19: View status of request

5.3 Implementation of Interaction

We used Microsoft paint create Data Flow Diagram (DFD), Context Diagram and Decomposition Diagram.

DFD may show a number of processes with data flowing into and out of each process. If there is a need to show more detail within a particular process, the process is decomposed into a number of smaller processes in a lower level DFD.

Context Diagrams and Data-Flow Diagrams were created for systems analysis and design. But like many analysis tools they have been leveraged for other purposes. For example, they can also be leveraged to capture and communicate the interactions and flow of data between business processes. So, they don't have to be restricted to systems analysis.

We used Lucidchart Online to create Database Schema and Relational Schema.

Database Schema described in a formal language supported by the database management system (DBMS) and provides to the organization of data as a blueprint of how the database is constructed (divided into database tables in the case of Relational Databases).

Relational Schema are represented by tables, where each row of a table represents a single tuple, and where the values of each attribute form a column.

5.4 Testing Implementation

The project will be developed using the NetBeans Integrated Development Environment (IDE). An IDE is a software application that provides comprehensive facilities to computer programmers for software development. An IDE normally consists of a source code editor, build automation tools and a debugger [8]. NetBeans is a software development platform written in Java. The NetBeans Platform allows applications to be developed from a set of modular software components called modules. The NetBeans IDE provides support for several languages (PHP, JavaFX, C/C++, JavaScript, etc.) and frameworks [9].

MySQL, will be used to develop and manage the database of the project. It is the most popular Open Source SQL database management system. It is developed, distributed, and supported by Oracle Corporation. MySQL is easy to use, yet extremely powerful, secure, and scalable. And because of its small size and speed, it is the ideal database solution for Web sites.

5.5 Test Result and Reports

HTML and PHP are the scripting languages that we will use to design the website. The website then can be viewed by anyone else connected to the Internet. HTML is easy to learn and quite powerful in what it allows you to create. PHP on the other hand is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML [10], [11].

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion

The application has been successfully implemented. After connecting with the application through the local host its overall features and functionalities just works fine. This application's workflow and responsive design is user friendly and efficient enough to work with. We have encouraged and took initiatives to develop this application because right now our university doesn't have any automated device management system. This system will help the authority to assign devices to faculty or classes/laboratories. All the operations can be performed by verified IT staff which saves a lots of time. And IT staff can generate report if authority needs hardcopy. This project is meant for describing all the features and procedures that were followed while developing the application. This document specially mentions the details of the project how it was developed, the primary requirement, as well as various features and functionalities of the project and the procedures followed in achieving these objectives.

- Only developed for web application.
- We implemented this application through local host, it should have a domain to access the website.
- It's not possible to track devices' physical condition.

6.2 Future Scope

- We can develop apps for this project in different platform like android, ios etc.
- Right now admin has to add device information manually. We will use bar code system for all devices, then admin can just read the bar code through the application and all information will be automatically updated.

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APPENDICES

Appendix A: Project Reflection

We started our journey from fall 2017 to implement this web application. We tried to make a user friendly interface of our project. The main feature of our project is to fill the device information to the management system authority through the device registrar. Our app will give the better service to maintain security and manage crime in a city area. It's very essential to keep the information of the device registrar and the bridegroom/bride to the government. Now-a-days people are more likely to use the Smartphone in their practical life. This app provides them a service in practical Life. To implement this application first we build a model of our application then we implement our app step by step. After a long journey and hard work finally we able to reach our goal. We believe that our application will be a positive and effective for user.

Appendix B: Related Works

To implement our proposed application at first we build a model of our app. We use some diagrams and use case model to analyze how we can implement our app. The first diagram we create the use case diagram. From the use case diagram we can know about user of our app and what is their activity in the app. In our UDMS app there are three users. They are it staff, faculty and the Admin panel. Authority acts as the admin. We also use business process model which acts a flow chart. In this section we describe the activity of the user and how they interact with the system. We implement our application using web platform and MySQL. In this section we add some diagrams from the user interface and back-end. Figure A.1 shows the use case diagram.