**EGERTON UNIVERSITY**



**FACULTY OF SCIENCE**

**COMPUTER SCIENCE DEPARTMENT**

**SYSTEM DESIGN DOCUMENT (SDD)**

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COMP 390 TEAMWORK PROJECT

ASSET MANAGEMENT SYSTEM

**PRESENTED TO:**

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FOR THE PARTIAL FULFILMENT OF DEGREE IN COMPUTER SCIENCE OF EGERTON UNIVERSITY

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# Introduction

## Purpose

* The system will be designed in a way that allows the Lecturer to login in and book the equipment.
* They have their user ID and the password which is not known to anyone else apart from him.
* The System is designed to a form that it will tell when an equipment is under maintenance and if the equipment is borrowed by another lecturer.
* The system will also allow the lab technician to login,create the database, update it and even update it when need be.
* The lab technician will allow the lecturers to book equipment and add an equipment into the list of available equipment.
* The system will retrieve a list of borrowed equipment and a list of lost equipment.

The system will highly make sure that all equipment in the lab are accounted for, if lost the people who are responsible are fined.

## System Overview

* The System will give a list of unavailable equipment and the available equipment. The unavailable equipment will be as a result of being borrowed or been lost.
* The laboratory Technician will show the equipment borrowed, the name of the person who borrowed, the time it was borrowed and the quantity of the remaining Equipment.
* The system will help the institution to maintain the number of the equipment available in the laboratories, since the ones who misplace the equipment will be fined and a new one is bought.
* The system will also promote equal allocation of the equipment since the lab technician will know where the equipment are allocated, if lecturers claim to borrow a single equipment and the equipment are few, he will allocate equally since he knows the number of that asset available.
* The System will keep on providing a list of available assets.
* The System will also help the lecturers when distributing students into different groups.
* The more the equipment is, in amount the more the groups to be created. If there are so many assets the few the members of a given group making it learning effective.

# Design Considerations

All design considerations be included here;

## Assumptions and Dependencies

* In this system we assume that all the users are computer literate and will be able to login by themselves and navigate through the system without anyone’s assistance.
* This is because the use of the system is dependence on the user’s ability of computer literacy.
* There is assumption that the laboratory technician is conversant with the knowledge of the database manipulation.
* The lecturers are assumed to know the asset available in the institution before they log in the system to book an equipment.

## General Constraints

* In this System the main requirement is that any user trying to log into the system must have a user account with the username and the password.
* The system administrator must ensure that the system is working with no faults and the results are being displayed as required and the response time being as minimum as possible.

## Development Methods

* The development of this asset Management system the development method applied was the waterfall method.
* This method involves the collection of the requirement which includes both the functional and non-functional requirement.
* After the requirements are known they are then designed. By designing the requirement tries to visualize the system requirements and make them more realistic to apply and solve using the system.
* After design the, there is implementation of the design.
* The implementation is then tested to make sure that the results yield area accurate and correct with no errors.
* After confirming that no errors are present, the system is presented for assurance that it is working as expected.

The engineering of the requirement is the most crucial stage since the system highly depends on them and make sure it meets every user and system requirements.

## System Environment

* The database used to store the data will be MySQL.
* Operation System which it runs best on is windows .
* A laptop which has quad processor and speed of 2.7 GHz
* A memory space of 2 GB RAM
* Language of implementation is java which is a good object oriented language.

# Architecture

The architecture of the system is composed of two components

* Client
* Server

The client must not be accessing internet since its is not hosted online.

The client must know how to use the services such as use of database

**The Server**

Refers to the MySQL database server that stores users’ data in a database.

Lecture login

Books an asset

Lab Technician login

Checks available asset

Allocates the asset

The system Boundary

## Overview

* In the structural view of the System is that there are several prototypes which combines together to form a full system.one prototypes keep record of the available assets, when a new asset is added in the database its details are filled and the lecturer seeking for a given equipment can easily see its characteristics.
* The characteristics includes its name, last time it was borrowed, the personnel who was allocated the asset, the manufacturing date and the number of such equipment available.
* The system has different functionalities such as showing the list of available equipment in the laboratory. It is by the help of this system that the lab Technician will be accountable of who lost certain equipment.
* This system will also help the lectures to easily allocate the students into their respective groups depending on the number of a certain asset that is required for the experiments. It is upon the lecturers to return the borrowed item in time if that is not the case the system will mark them a late borrowers who ought to pay a fine.
* The system will also be storing the recent updates about the information of the asset which includes the updated number of equipment available and the people borrowing certain equipment and are waiting for a certain asset to be returned so that they can be allocated by lab technician.

# SYSTEM INTERFACE

Hardware

The machine in which the system is running should have the following requirement

* Minimum 500GB hard disk
* 2GB RAM
* 2.7 GHz cpu speed

Software

The following software should be installed in the

MySQL server

**COMMUNICATION INTERFACE**

The client should have the MySQL installed in the computer so as they can easily manipulate the database and have deep knowledge of the working with the in

## Tables, Fields and Relationships

Provide a description of any new tables, fields and relationships that need to be created for the design.

List any new tables that will be needed, for each one including table name, table description, and related tables.

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*For each field change (such as data types, required/not required, or renaming), please complete a row of the following table. (Insert additional rows as needed.)*

|  |  |  |
| --- | --- | --- |
| **Table Name** | **Field Name** | **What to change?** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# High Level Design

Provide screen shots of the forms you will need

## User Interface Modifications

# User Interface Design

This section provides user interface design descriptions that directly support construction of user interface screens.

## Application Controls

Detail the common behavior that all screens will have. Common look and feel details such as menus, popup menus, toolbars, status bar, title bars, drag and drop mouse behavior should be described here.

## Screen 1… N

Illustrate all major user interface screens and describe the behavior and state changes that the user will experience.

A screen transition diagram or table can optionally be created to illustrate the flow of control through the various screens.