ONLINE EXAMINATION REPOSITORY SYSTEM

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A software project submitted in partial fulfilment for the requirement of the award of Bachelor of Science in computer science degree of Laikipia University

APRIL, 2015.

DECLARATION

This software project is our original work, except where otherwise stated and has not been presented for a degree in any other university or any other award.

…….. ……

Patrick Muyani Letina. Date.

N11/30998/13.

CERTIFICATION

The undersigned certifies that he has read and hereby recommend for acceptance of Laikipia University a software project entitled: “Online Examination Repository System for Laikipia University”

_____ _____

Dr. Simon M Karume. Date.

Department of Computer Science and IT.

Laikipia University.

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DEDICATION

We dedicate this system to our beloved and supportive parents who has seen us through the course of our study.

ACKNOWLEDGEMENT

We express our gratitude to everyone who has supported us throughout the course of our software project. We are thankful for their aspiring guidance, invaluably constructive criticism and friendly advice during the project work. We are sincerely grateful to them for sharing their truthful and illuminating views on a number of issues related to the project.

We express our warm thanks to Dr. Karume for his guidance and support. Guidance on: how to meet our system objectives, choice of development tools, how to document our project and most of all how to beat time in software development life cycle. Support on: access of laboratory time, permission to interview students, librarian, school administration and most of all consistent motivational words that he gave us at Laikipia University.

We would also like to thank Laikipia University as a whole and all the people who provided us with the facilities being required and conducive conditions for our software project. We had a lot of supportive friends who shared open source software like the PHP parsers and gave us answers to questions on topics we weren't well aware of.

ABSTRACT

Since the development of the short loan section of the library in Laikipia University, students have been experiencing problems. The process of preparing materials such as examination past papers is expensive since it entails photocopying, binding and maintenance. Through a series of interviews, students complain about the scarcity of materials especially during examination time when demand is high. The proposed system entails automating the manual process of accessing revision materials at the university library. This will ensure that the past examination materials can be accessed online. Automation will also ensure that the materials are available to all students of Laikipia University. It will be a fast process since all the students need is internet access. It will also save the school a lot of money which it spends on paper work. A student will be expected to login to the website using the account they created using their unique registration number which is usually provided by the school upon admission then they can access the materials they need.

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CHAPTER ONE

INTRODUCTION

The Online Examination Repository System is developed by Laikipia University students to fulfill the dire need for revision materials .The revision materials are currently accessed by a manual system in the school's library (short loan section) but the problem is most of the students cannot access this materials and if they do, they only access them for a limited amount of time. There arises the need to develop a system whereby students can access these past examination materials without having to go to the library and for unlimited amount of time.

1.1 Background information

Examination in university are a measure of student performance. It's through this examination that university students are awarded degrees. Students therefore need to get good grades in order to earn the award. Good grades can only come with exhaustive revision work and going through past revision materials. Revision materials are essential because they make students grasp the idea of what they expect in an examination room. Therefore there is need to make the revision materials available for an unlimited time, scope and capacity.

1.2 Problem Statement.

There is inefficiency in the workflow of the short loan section of the library because there is a lot of time wastage in retrieval and issuance of materials and are scarce thus only available at a very short time (mostly one hour). Compiling and binding the papers also takes a lot of time and is costly.

1.3 Description of the Current System.

1.3.1 How Current System Works.

The procedure of getting revision papers from the current system involves the students visiting the short loan section of the library. They request for a particular exam past paper by writing the name and reference number of the material in a piece of paper then issuing it to the library assistant. The library assistant then goes through the catalogue to look for the paper. If it is available then, the student produces his/her student identification card and gives the library short loan borrowing card. Then he/she is issued with the paper for a limited time of one hour. Once the allocated time is over the student returns the paper(s) to the librarian and gets back their borrowing card.

If the paper is not available maybe because it is not there or it is currently being used by another student, the librarian communicates to the student appropriately or puts the student in a queue and urges him/her to wait for the paper after the other student finishes up with it.

1.3.2 Weaknesses of the Current System

Students spend a lot of time queuing for revision materials since the process of borrowing a past paper is done manually.

There is also limited time span given to a student to use the paper hence the name “short loan” (not exceeding one hour).

The revision materials are inadequate for all the students especially near exam time when the demand is high.

The past papers also wear and tear as time goes by, hence some parts of the booklets are not clearly visible and need constant repair.

The process of compiling and binding the past papers is time consuming and tiresome since they have to do the binding for all the exams done after every exam time. They also have to re-bind the already bound booklets to include the new exams.

The papers wear and tear with time hence the booklets they are compiled in are rendered damaged.

Some students misplace the papers hence the librarian is given the task of re-binding the exams again.

The librarian also gets fatigued due to serving long queues of students when the demand is high.

It is expensive for the school to print, bind and compile the past exams papers.

Some students pluck out some past papers hence making the materials unavailable for other students.

1.4 Proposed solution.

1.4.1 Justification.

Students will access the past exam papers online hence there will be no queuing for papers in the library. The papers will be available to every student registered in the system and no limit to the time one can use a particular paper. Once an exam is done the lecturer uploads the exam to the system so no need of binding the papers which will save time and the cost of photocopying the papers and binding them. The papers being online are safe from undisciplined students and they don't wear out or tear.

1.4.2 Objectives

a) General objectives

1. Reduce time wasted while queuing to get the revision materials in the library which could be used to attend to other useful tasks.
2. Increase efficiency of accessing revision materials by automating the search process .Human is to error and so the library assistant can render a material unavailable while it is available .However use of a search algorithm in a computer system, a paper available will always be available provided there is correct input.
3. Reduce the cost of binding, rebinding and photocopying the past paper materials.
4. Make the papers available to all the students since the online papers are distributed in nature (can serve more than one user at a go).
5. Enable students to access the exam materials at their own convenient time since they only need a computer and internet connection. Materials hence can be available to those who stay far from the school.

b) Specific objectives.

1. Enable student to login into the system using his/her unique registration number and password. This thus ensures personalized browsing.
2. Enable student to Sign up and get registered to the system. These registration sends and saves information about the student in the system's database.

3. Enable admin to log in to system. The system only have one admin with super user rights of uploading paper, viewing database and delete the repository papers.
4. View students and their respective courses. This will help a student to track another student of his/her own course for discussion purposes.
5. Students can view past examination papers in a list form.
6. Admin to upload exam papers.
7. Students can download exam paper to use for reading later.

1.5 Project Schedule.

Table 1:online exam repository system project schedule.

Task Number	Task description	Duration
1	Preliminary work submission	14th-21st January
2	Concept writing	20th-30th January
3	Proposal writing	25th January-4th February
4	Requirement analysis	4th-12th February
5	System analysis and design	12th-25th February
6	System implementation	18th February-25th March

7	System testing	4th March-1st April
8	Documentation	21st January-8th March
9	Printing, binding and submission of documentation	8th-15th April

1.6 Project Budget.

Table 2:project budget

Item	Cost
Software (adobe Dreamweaver)	1500.
Modem	2000.
Data bundles (1gb)	1000.
Printing and binding	750.
Miscellaneous	1000
Stationery	500
Total	8500

1.7 Development Tools

Adobe Dreamweaver.

Php.

HTML.

MySQL.

APACHE server 2.5.7(that contains PHP and MySQL).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Revision is an important aspect in a student's road to success. In most cases a student who revises well may it be for cats, assignments or even the final exams, passes very well. Now the problem comes in when a student wants to study and revise but cannot get access to the revision materials. There have been several attempts by the government of Kenya to solve the issue of disposal of past KCPE and KCSE exam materials and at the same time a strategy in which future candidates can benefit from the materials for revision purposes. There is a repository system powered by the Government (kenyaplex;, 2008) that creates a pool of revision materials for use in high school and primary school for revision. The online exam repository system tries to solve these problems by digitizing past exam papers at universities level specifically or starting with Laikipia University. The literature that is related to our system's general objectives is as described below:

2.2 Efficiency to access past revision materials.

Locally, university body usually have to submit a copy of every exam paper to the short loan section for binding in order to be available to coming students. This attempt has been good but it is labor intensive.

The Kenya national examination council (KNEC) leave copies of question papers to the respective schools to be used for revision materials in the oncoming years (Franchise.com, 2015) The papers are prone to wear and tear though and so does not last for long.

The online examination repository system allows students to access the past revision materials more easily. This is achieved by making this system to be web based that anybody who has access to the internet can get revision materials.

Many students have mobile phones which can access the internet according to our research. Also all the students have an active email account that can be used to access them for example sending them revision papers. The Kenya Examination Council also makes their materials accessible by mostly schools administration by enabling downloads of exams timetables and also registering for examinations [http/www.knec.co.ke.].

2.3 Review for reduction of time wastage

Online examination repository makes use of the internet as a way of improving speed in the access of exam papers by students. In the library students queue in order to get revision materials and sometimes also wait for other students to finish up with the materials before accessing them. This is a tremendous time wastage and use of internet eliminates students who can access the internet to look for the revision materials in their mobile phones and avoid queuing. The Kenya National Examination Council also has its materials in the various offices. Many people try to access the materials but due to the time wasted visiting their office and queuing, one can just visit their website and access the revision materials. Kenyaplex has much of their revision materials online and thus one does not have to visit their offices and access hard materials (kenyaplex;, 2008). All you have to do is download and print the paper.

2.4 Review for reduction of cost of binding and photocopying

There is a lot of expenses in the process of photocopying and binding when you want to supply hardcopies to many students. Also it's easily prone to getting spoilt due to

carelessness of some students or concerned personnel. Keeping papers in the soft form is easier and lower cost since they even occupy a lot of space. The Kenya National Examinations Council gives out most of their documents to students and other concerned personnel through downloads except very confidential documents like certificates. A lot of expenses would be encountered if the body would decide to print for students and any other person whenever he/she needs it.

The Kenya national examination council spends a lot on binding and photocopying rather than keeping only online (ouma, 2015).

2.5 Review for standing the high demand for revision materials

During exam periods the demand for revision materials tend to be very high in that all students try to access at least a past paper to revise. This actually apart from causing a big jam in the library, some students can't access because the materials run out. Students are much many, more than the revision materials and some may not access since it's about first come first serve technique to access [head librarian Laikipia University, 2015]

CHAPTER THREE

METHODOLOGY.

3.1 Introduction

Software development methodology or system development methodology in software engineering is a framework that is used to structure, plan and control the process of developing an information system. Online examination repository system is a software developed by different developers who have different styles of programming and so development is modular and a bottom up approach is dominant.

3.2 Software process model adopted

The process model used to develop the online examination repository system is Evolutionary Process model. (Ian , 2010)

3.2.1 Strengths

The evolutionary process model is chosen because:

It is suitable for medium sized interactive systems. The online exam repository system is interactive in nature and so because interaction involves users (human beings) in this case, students have to participate in every development stage and at every stage, there is an improvement.

It is suitable to implement parts of a large system. Since the system is an amalgamation of modules evolutionary process model is vital because the developers can improves parts of the system without affecting the whole system.

It is suitable for non-safety critical systems. The system is not very critical when it comes to security matters since there is no any monetary transactions. However, the admin has to

be authorized. This model is chosen because it is the best model for use when the system does not require a higher level of security.

3.2.2 Weaknesses.

There is lack of process visibility. The system functionalities are only realized when the system is complete.

Special skills may be required like the use of rapid tools. The developers have no steady knowledge and experience of rapid tools development (RADs).

3.3 Requirement gathering tools

We used questionnaires to gather information from the various users. Samples of the questionnaires used are included in the appendix 1.

3.4 System requirement

Functional requirements:

i. User Interface

The user interface requirements are concerned with the user interface and how information is presented to the user.

Usability

Interface is a critical class of component within the system that will provide the means by which users interact with the system. As such, the interface should provide easy access to help as well as clearly indicate the current state of the user's transaction when the user isn't idle. The system shall use a graphic user interface which allows choosing actions including removing, changing and adding user account and account information.

Administrative

Administrative interfaces will assist the examiners in building/maintaining exam collections and controlling access to them.

Logging

Within the system, logging will be used to provide a trail of transactions that have taken place. This might either be for developer debugging purposes, administrative checks on usage, or research on the usability of interfaces.

The system should allow examiners to log in and upload exam papers to the system.

Transaction logs MUST be kept for each service provided.

Sufficiently detailed client session logs MUST be generated to support analysis of user activities.

ii. Exam paper download.

- When downloading exam paper, the system shall show all the exam paper information.
- The system should provide to search, and download from any place through the Internet.

iii. Search exam paper record.

- The system shall display a list of exams which are matching the search criteria sorted by year of examination.
- The system shall allow searching items by degree program, year, and semester and course code.

iv. Data Entry

The data entry requirements are concerned with how data is entered and validated.

- The system shall allow a user to enter his/her data via a keyboard
- The system shall allow a user to enter his/her data via choose an item via a mouse.
- Whenever the "date" data is needed, it shall be entered only by choose date from an online calendar.
- The system shall allow the user to enter the library card number and by typing.
- The system shall allow the user to take part in an online discussion forum.t
- The system shall allow the user to delete an entire account.
- The system should allow the web admin to add, delete and modify items in database, and check availability of the items.
- The system should store all information about the school, degree programs and course units their access keys and priority.

v. Display

- The system shall display the user account information including user ID, last and first name, and user position, privileges.

vi. Security and Privacy Requirements

- The system shall not allow the user to change information in an account such as last name, user ID, user position, and user privilege.
- The account management system shall only be used by users with defined privileges.
- The examination papers shall only be accessed by registered users.
- The examination papers shall only be uploaded by users with defined privileges.
- Database update data shall be committed to the database only after the managers have approved.
- The user's password MUST never be exposed to compromise.
- User session logs stored for usability and other research MUST be anonymous.

vii. Reliability

- The system shall be recovered without intervention at user terminal if it is down.
- The system should support 500 students and 1000 requests/min simultaneously.

viii. Extensibility

- System must be able to extend to store and deliver new content types in later versions.
- System MUST be able to extend to support data sharing between records in later versions.

Non-functional requirements

i. Look and Feel Requirements

According to the user requirements, the online examination repository system should include a Web interface. This interface will provide search, view and download procedures. The Web interface should work correctly in different browsers.

ii. Usability Requirements

- Ergonomically clear interface.
- The interface should contain prompts and help to avoid making mistakes
- The product should be used by people with no training

iii. Performance Requirements

The interface between a user and the system should have a maximum response time of 5 seconds

The response should be fast enough to avoid users' response collisions

The system should be available for use 24 hours per day, 365 days per year.

The system should support 500 users and 1000 requests/min simultaneously.

iv. Operational Requirements

The system should be correctly implemented in different Internet browsers.

v. Maintainability and Portability Requirements

The system is expected to be accessible on any device with an internet browser and internet connection.

vi. Security Requirements

Access to the system is permitted only to university students and staff after authorization procedures.

vii. Legal Requirements

Personal information should be protected

The system should comply with quality assurance standards

3.4.1 Hardware requirements

- PC/Mobile phone.

This enables the user to access the internet and be able to use the system.

- Scanner

Enables the admin and lecturers to scan materials which will in turn be uploaded into the system.

- Printer

Enables users to print materials uploaded into the system.

3.5 Software requirement

- Adobe Dreamweaver.

It is a web design and development application that provides a visual editor.

- WAMP server.

Windows Apache MySQL PHP is a virtual server for the windows platform.it allows user to manage website and all its components.

CHAPTER FOUR

SYSTEM ANALYSIS AND DESIGN

4.1 Introduction

Systems development can generally be thought of as having two major Components: Systems analysis and Systems design. *System design* is the process of planning a new business system or one to replace or complement an existing system. But before this planning can be done, we must thoroughly understand the old system and determine how computers can best be used to make its operation more effective. *System analysis,* then, is the process of gathering and interpreting facts, diagnosing problems, and using the information to recommend improvements to the system.

4.2 Architectural design:

The Online Examination Repository System uses a Client - Server Architecture. The data processing is split into distinct parts. A part is either requester (client) or provider (server). The client sends during the data processing one or more requests to the servers to perform specified tasks. The server part provide services for the clients.

This kind of architecture is an Internet-based 3-tier architecture

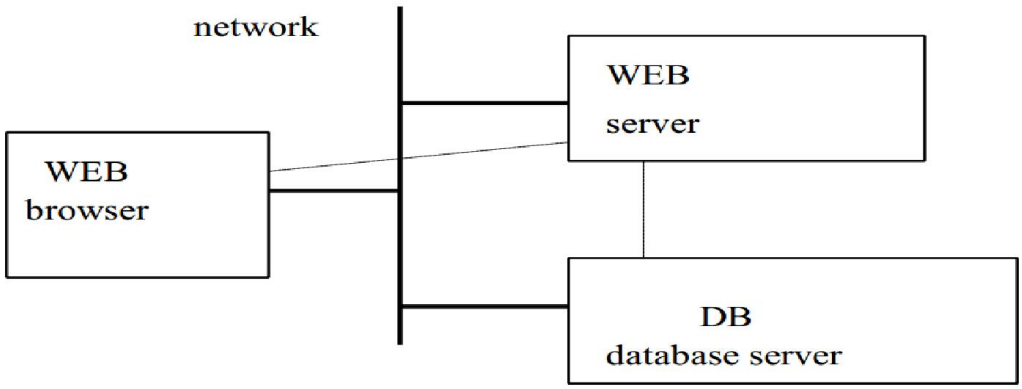


Figure 1:system architecture framework

The WEB servers can access the databases through CGI interface.

In order to couple the server and client parts from heterogeneous environments in an efficient way, the basic client server architecture is extended by a new component called Middleware which in our case is the network. This is an integrating resource between the clients and servers. It performs the following main activities:

- Translation between the different protocols.
- Optimization of the load-balancing.
- Security control
- Management of the connections

Communication protocols

The application and database are separated into two parts: a front-end or client portion and a database portion. The client executes the database application through hypertext transfer protocol (HTTP) that accesses database information and interacts with the user through the keyboard, screen and pointing device such as a mouse.

4.3 System analysis

The system adopted an object oriented analysis and design technique. The system is analyzed as follows:

4.3.1 Context diagram

The following is the context diagram of the online examination repository system.

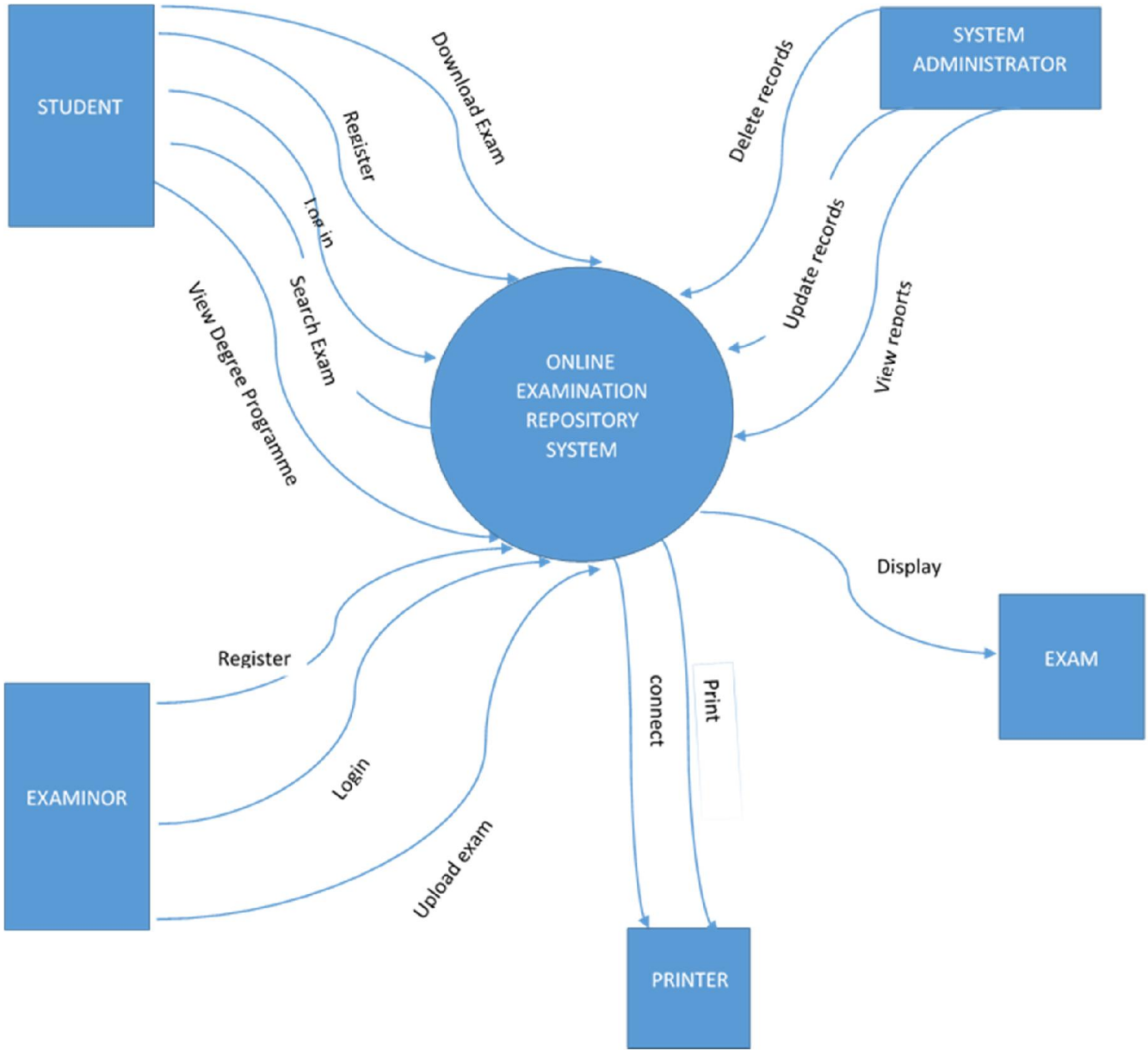


Figure 2:context diagram

4.3.2 Domain analysis

The motivation for choosing online examination Repository Systems as the domain was the need to find a relatively small, well-understood domain with a large degree of variability on which a serious evaluation of the approach could be performed. In addition, Online Examination Repository Systems will form an important part of many Universities as they expand their presence to the Internet; this is guaranteed applicability of the research, which was another reason why the domain was an attractive choice.

Initial research indicated there were different types of academic resources sites. It also suggested that the domain was too large to model in its entirety given the research time frame; therefore, the research project was scoped to focus on an Online Examination Repository System solution with one type of academic material only. The initial research suggested that there was a significant amount of material available, including the ability to do field research in the libraries.

Based on the research the following system narration was developed to identify the various objects/entities and their relationship.

The Online Examination Repository System Narration

A student with a computing device such as a laptop or smart phone with an internet connection, visits the online examination repository system and registers by keying in his/her details. After registration the student logs in by providing a username and a password. The student then searches for a particular examination past paper he/she is interested in and read it online or may wish to download it and later print

it ,the student may also search any degree program and display all the course units done under that degree program. The examination past papers are uploaded only by users with authorized privileges which in this case are examiners. The system is managed by a system administrator who is responsible for updating the records and generating reports.

The following are identified in the system

Actors

Student.

System administrator

Printer.

Download manager.

Use Cases

Student to download exam paper using the download manager.

Admin uploads exam paper.

Student to register into the system using registration number as the primary username.

Student logs in to system using registration number as username.

Print exam paper using a printer. This can only happen after downloading the paper.

Admin to update, alter, add or delete rows to database.

4.3.3 Use case model

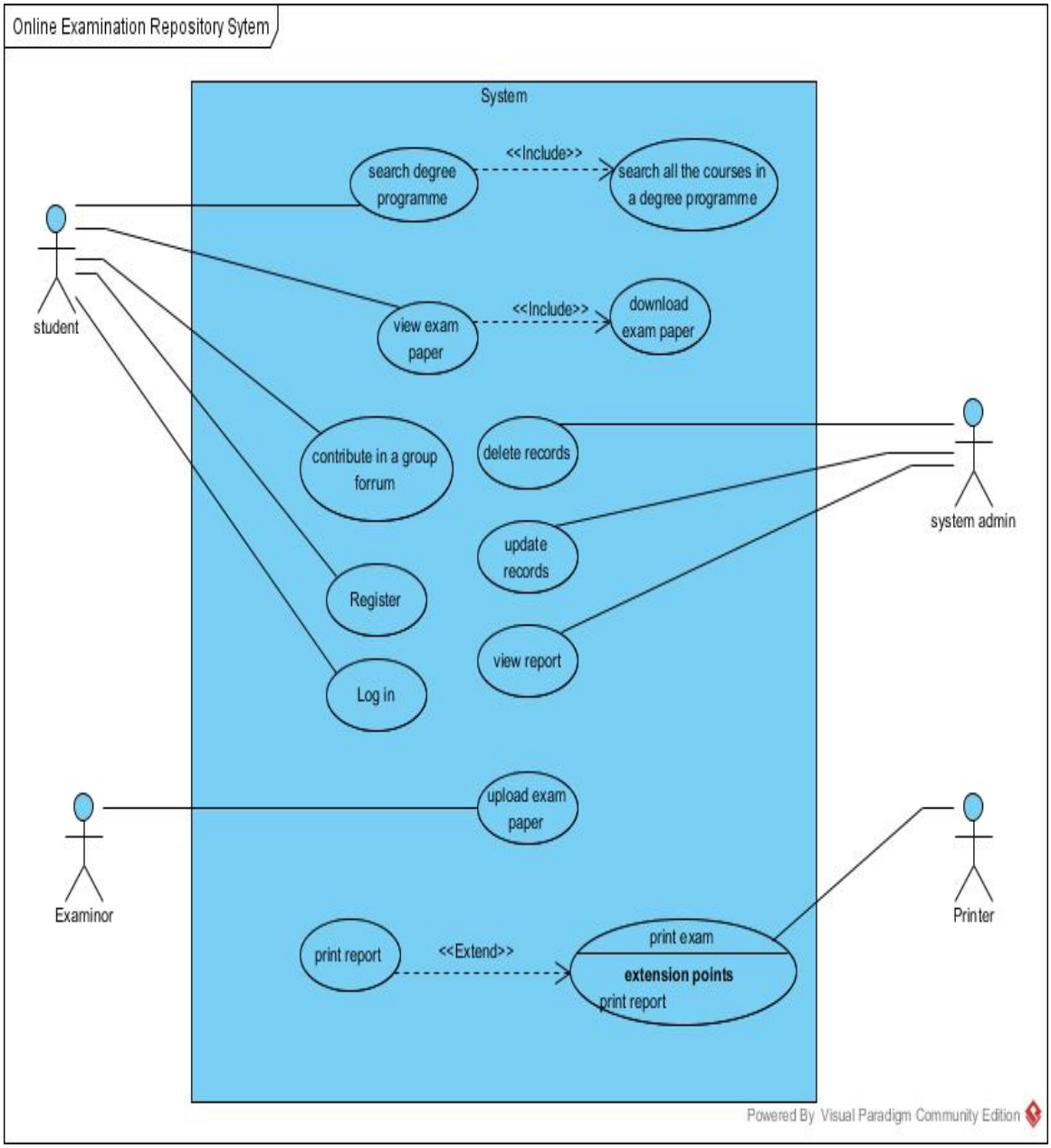
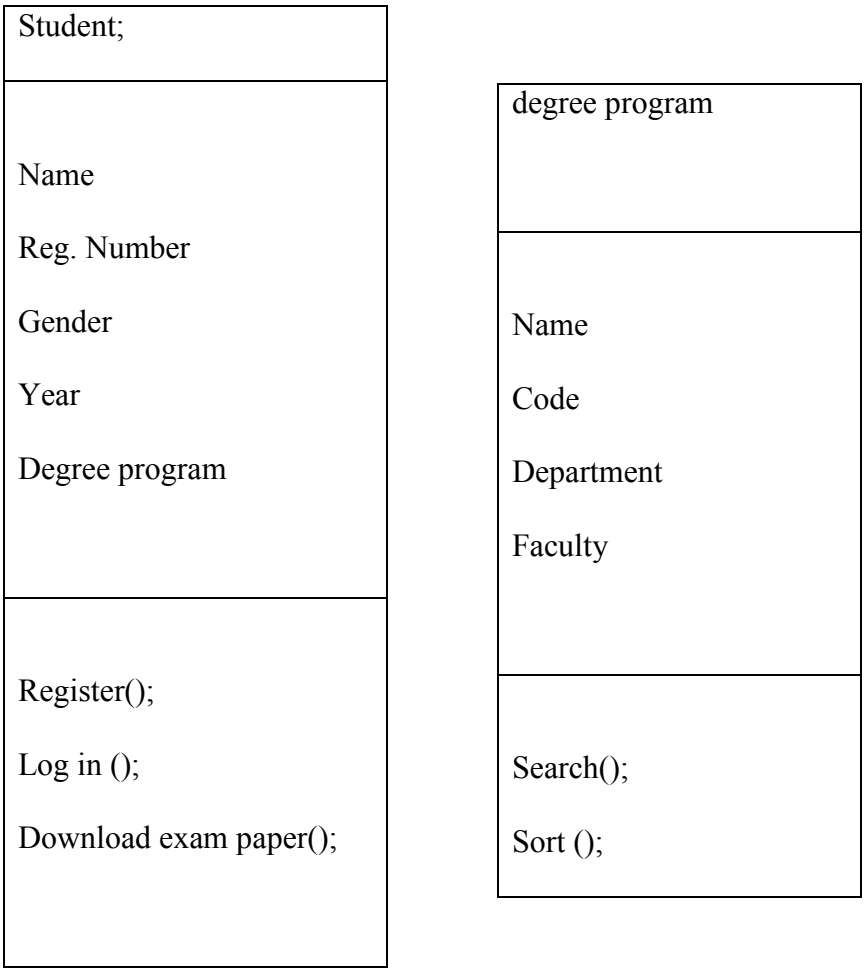


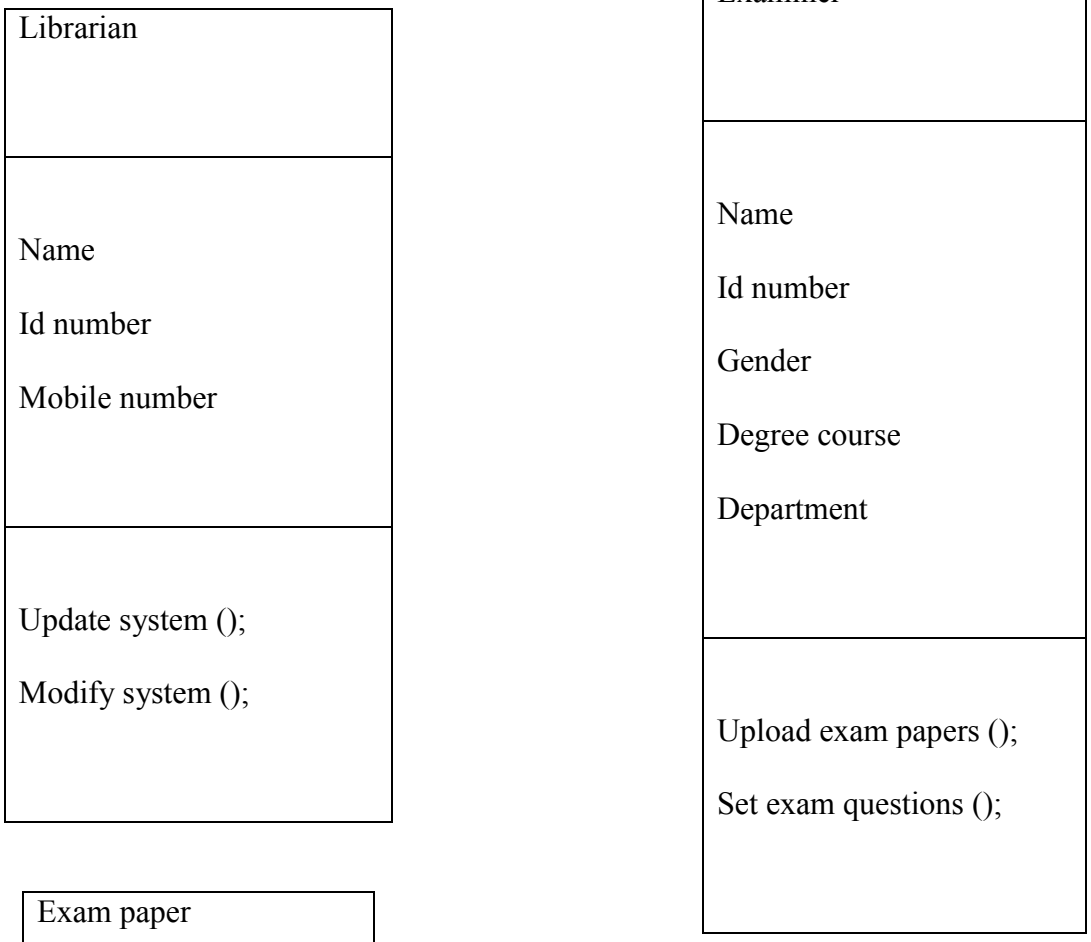
Figure 3:use case diagram

4.4 System design

4.4.1 Class diagrams

Below are the classes identified for online examination repository system.




Librarian
Name
Id number
Mobile number
Update system ();
Modify system ();
Examiner
Name
Id number
Gender
Degree course
Department
Upload exam papers ();
Set exam questions ();
Exam paper
Year
Course unit
Department
Faculty
Search();
Delete ();
Upload ();
Download ();

4.4.2 Sequence diagram

Lecturer sequence diagram

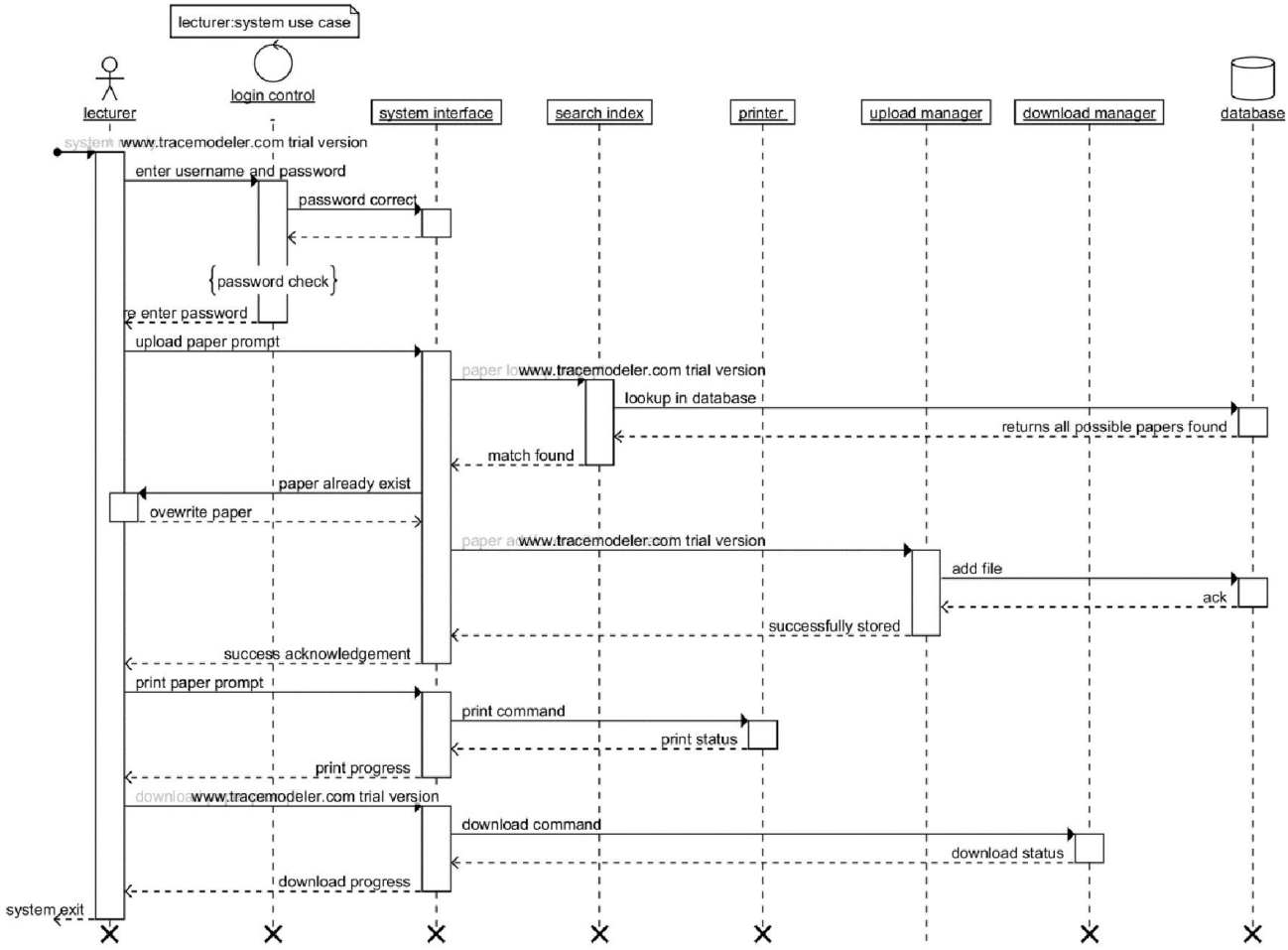


Figure 4:sequence diagram for lecturer

Students sequence diagram

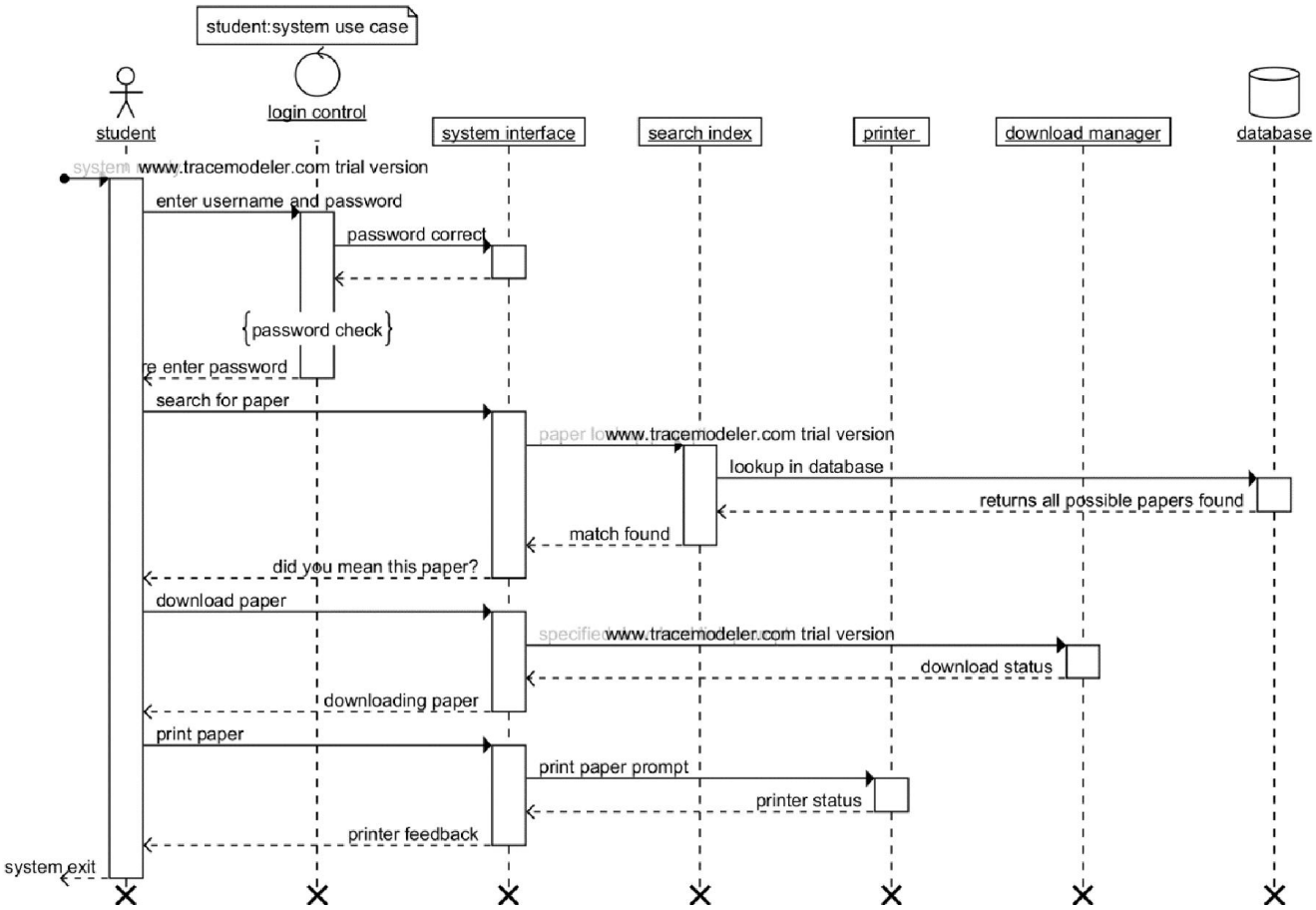


Figure 5:sequence diagram for student

4.5 Database Design

The online exam paper repository system adopted a relational data model. In the database design, entity-relational diagrams are drawn and then mapped into relational databases. The entities identified for the system are listed below

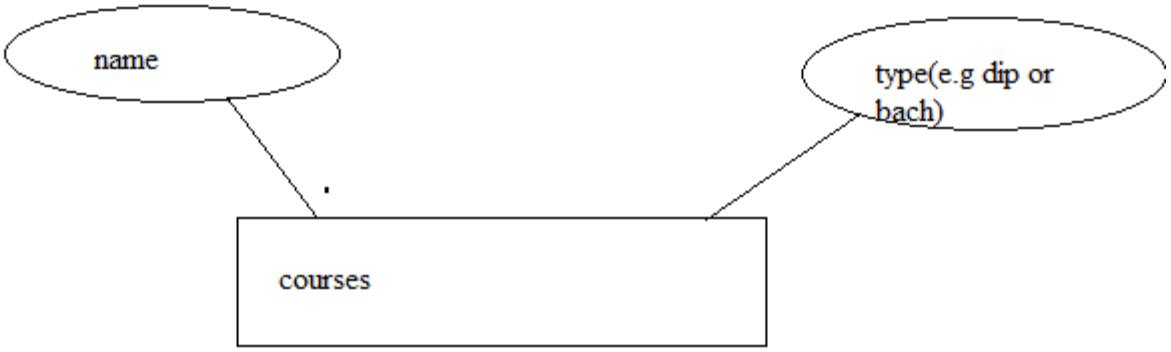
- Student
- School
- Course
- Unit
- Exam paper.
- Admin.

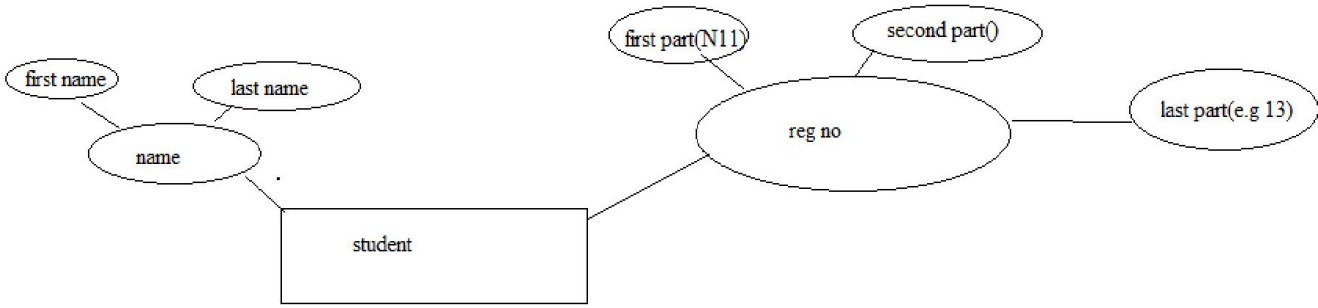
Then the following diagrams are developed to further illustrate the simple, composite and/or derived attributes of the entities.

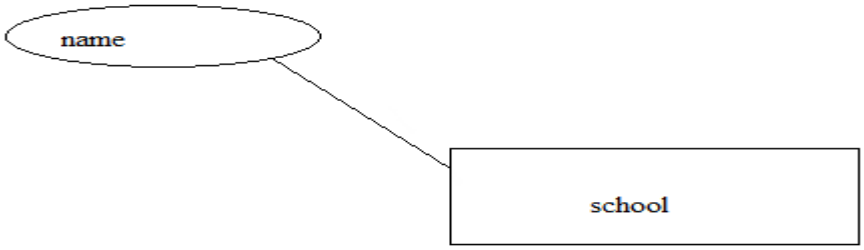
Note that:

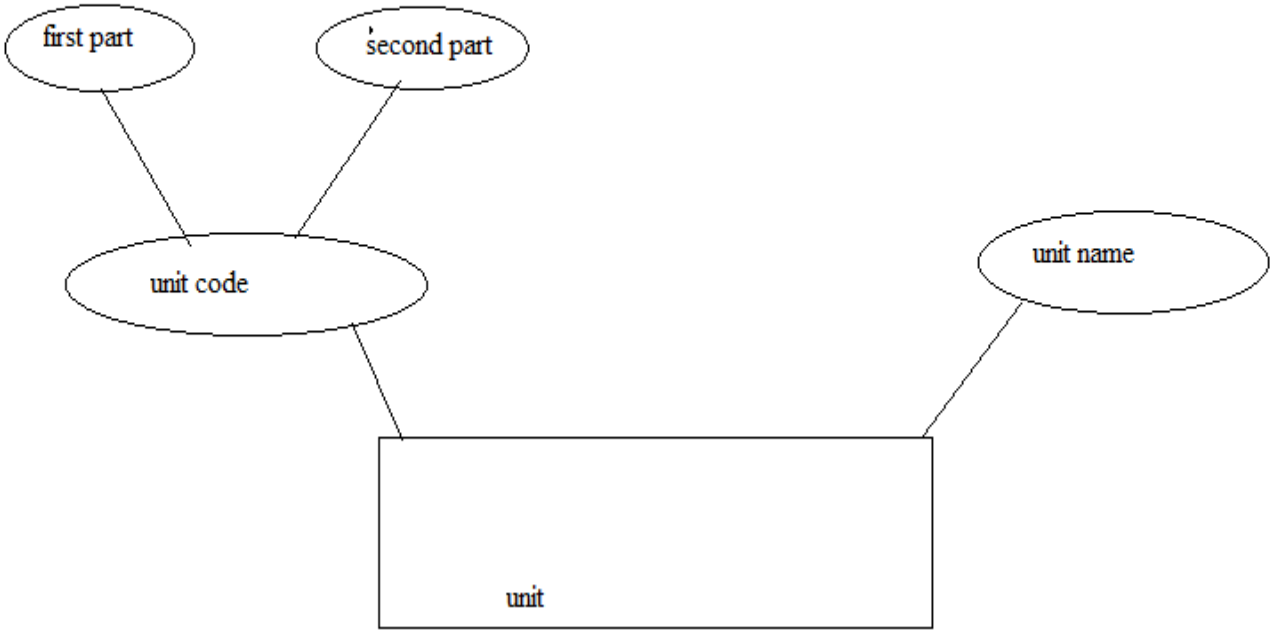
Rectangle means entities.

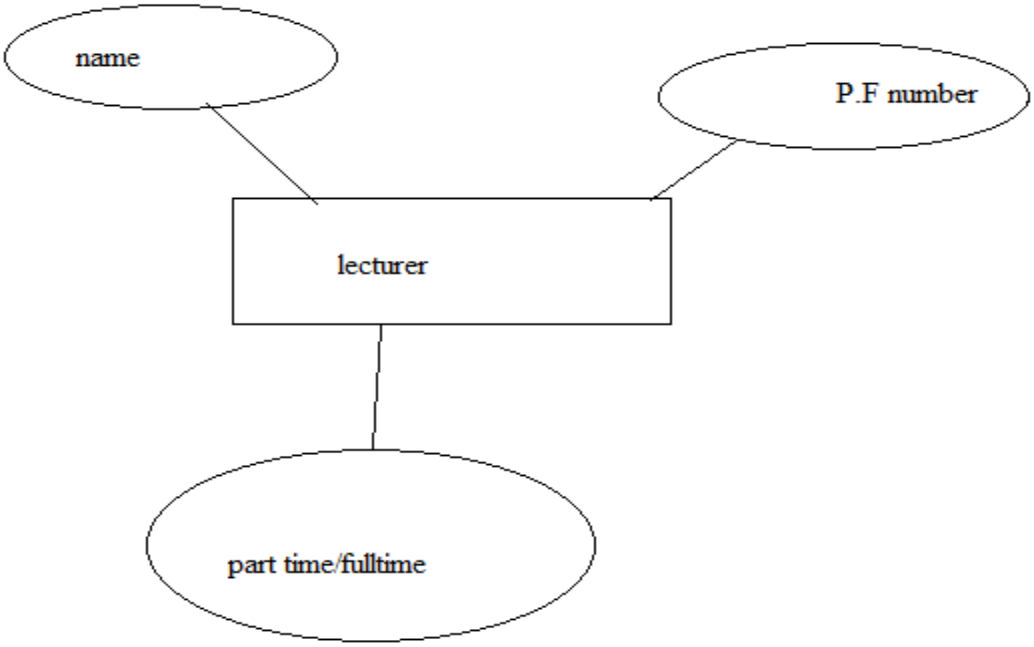
Oval shape means attributes

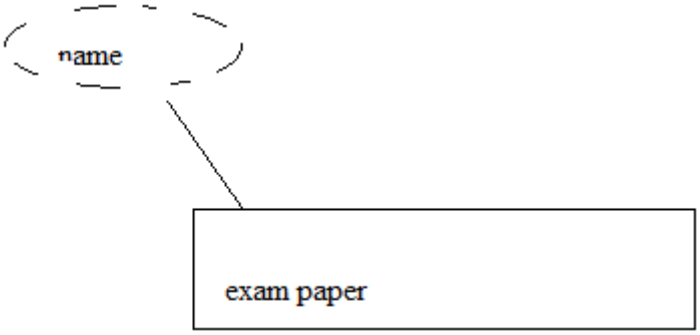

name
type(e.g dip or bach)
courses


first part(N11)
second part()
first name
last name
reg no
last part(e.g 13)
name
student


name
school

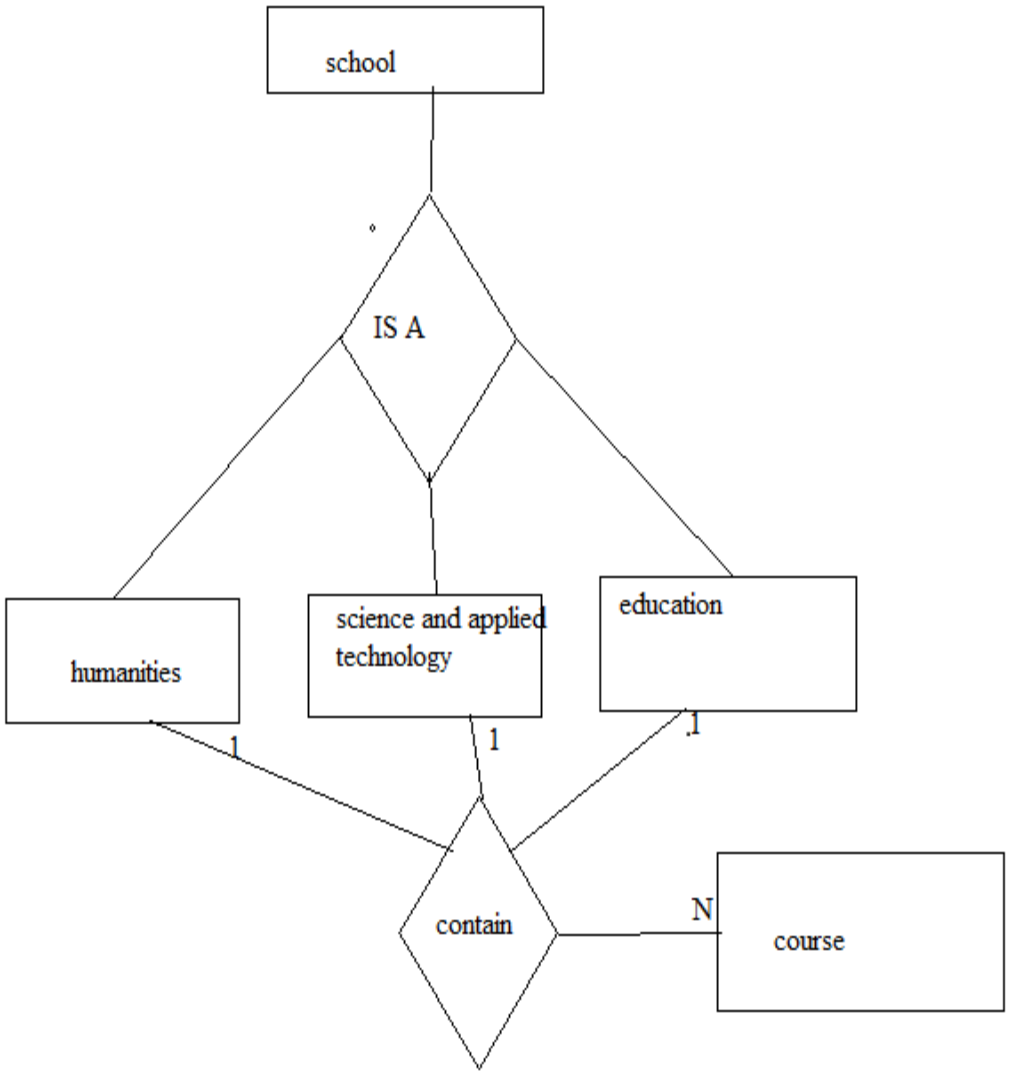

first part
second part
unit code
unit name
unit

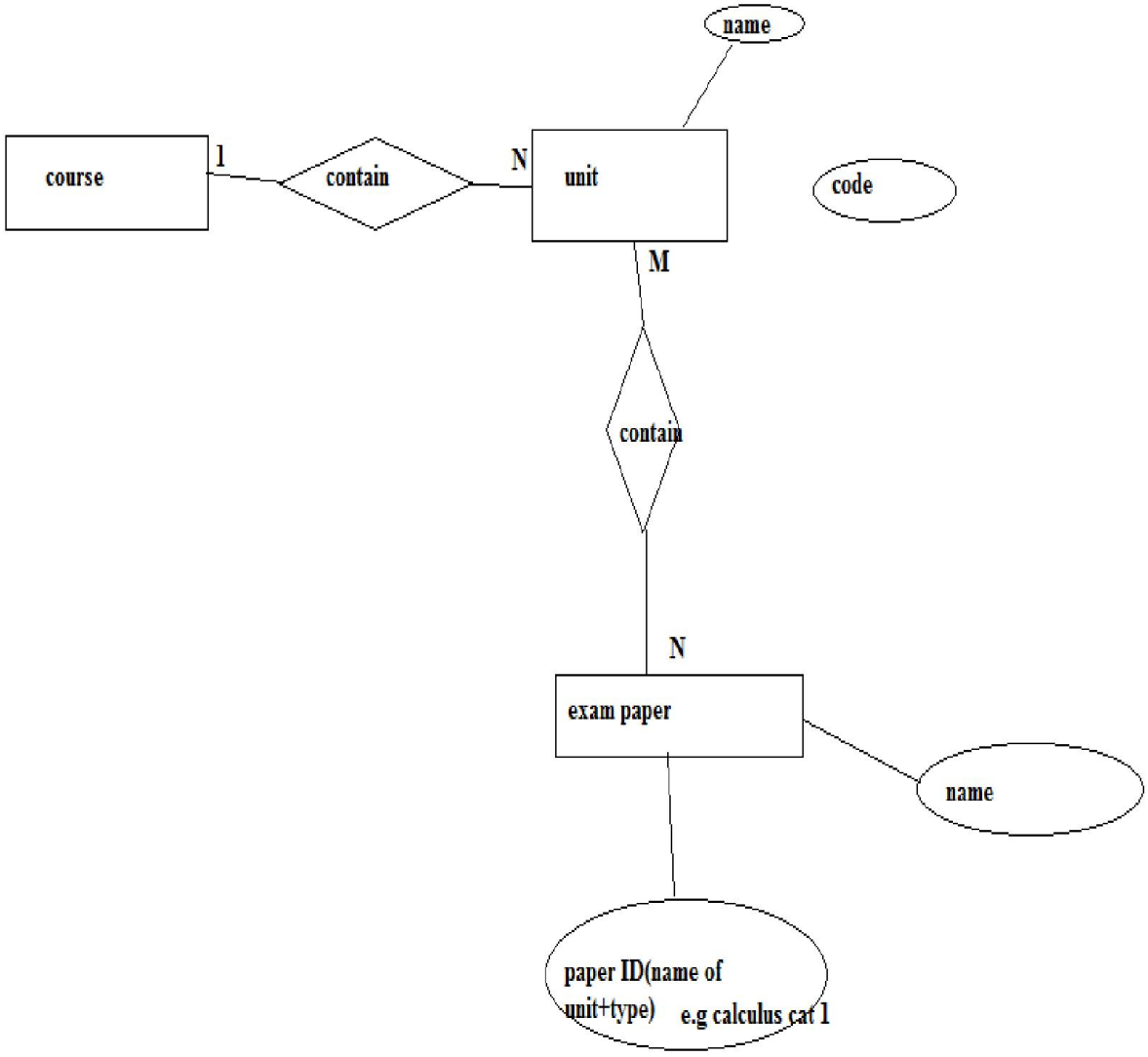




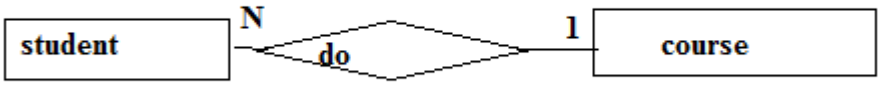
The above diagrams show the entity set of our database.

The relationships are represented in the diagrams below.


school
IS A
humanities
science and applied technology
education
1
1
1
contain
N
course


name
course
1
contain
N
unit
code
M
contain
N
exam paper
name
paper ID(name of unit+type) e.g calculus cat 1


exam paper
M
upload
N
lecturer



In the diagram below .the whole database entities are connected by creation of relation tables and a primary key taking into consideration the foreign constraints.

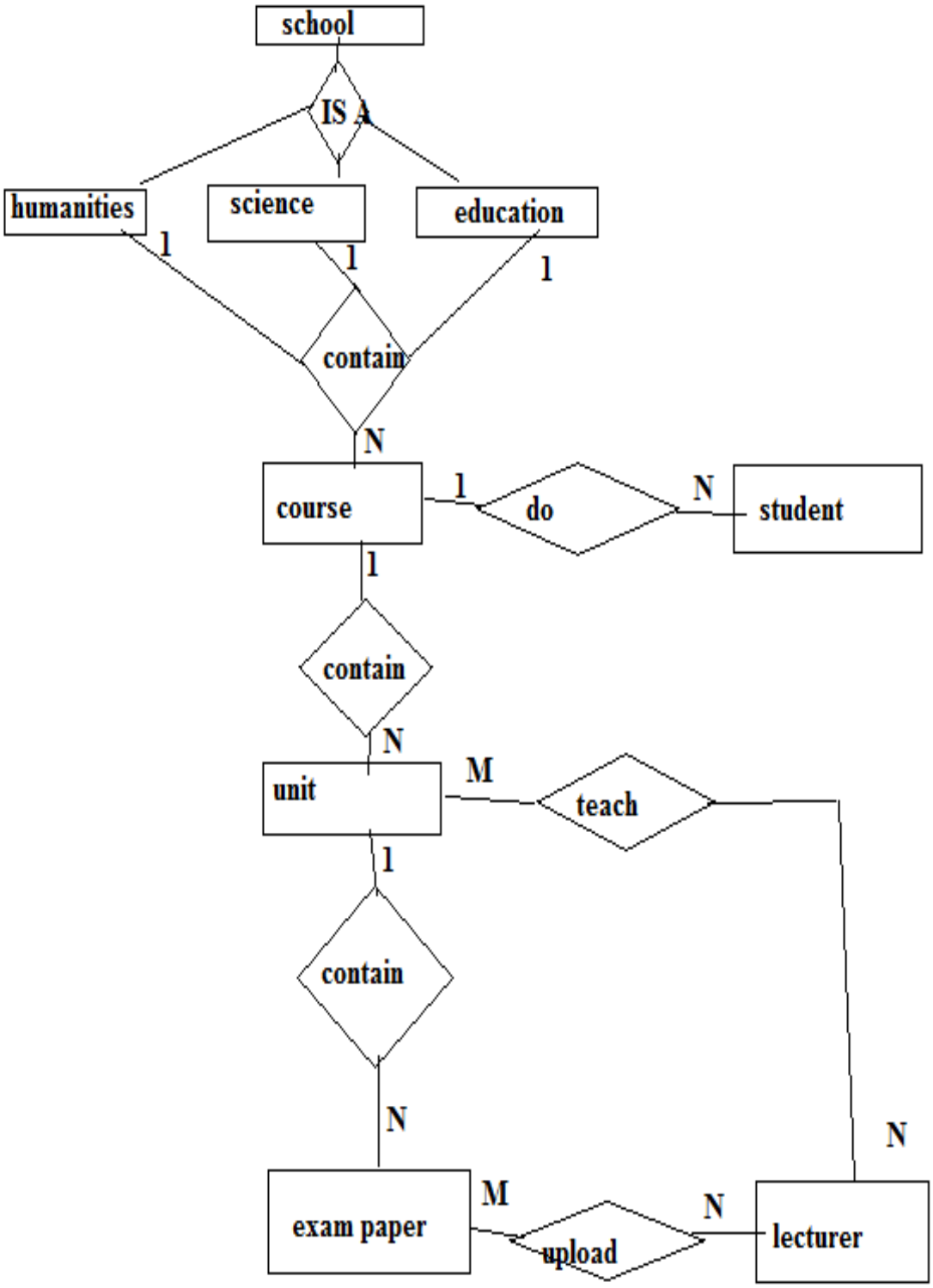


Figure 6:entity relation diagram.

In the next section, the entities are represented in tables.

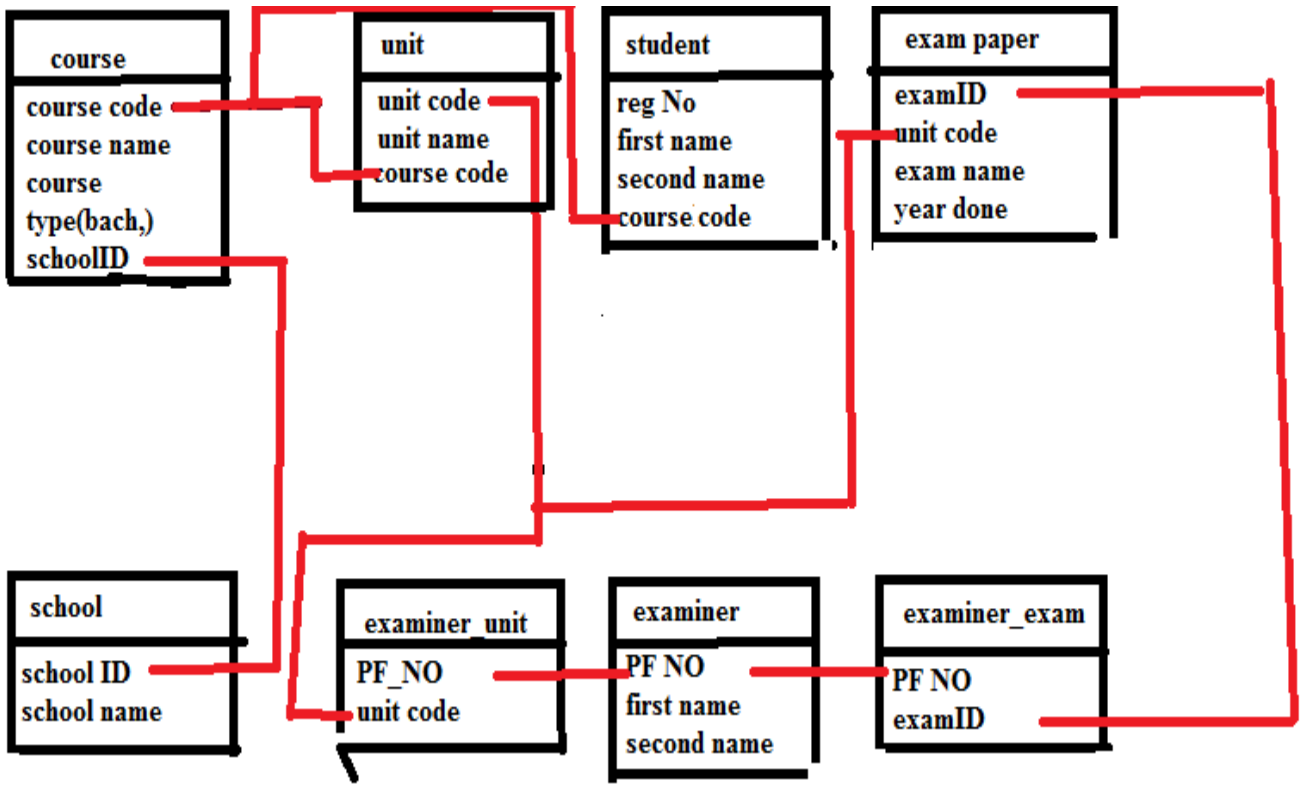


Figure 7:class diagrams

CHAPTER 5

SYSTEM IMPLEMENTATION AND TESTING

5.1 Introduction

Online Examination Repository System is a system developed by Laikipia university students. Its aim is to enhance and make it easy for students to access revision materials especially during exam periods. The tools used during the implementation of the system are: Adobe Dreamweaver used for web design, WAMP server used to test the pages and MySQL as the main database. Online Examination Repository System is developed using Php and HTML programing languages.

5.2 Summary of the modules

Login using registration number as username and a valid password.

This allows students to log into the online Examination repository system. Ensures that only Laikipia university students can log in and therefore Username and password are only known to students from Laikipia University and any other authorized user.

Upload examination paper

Examiners/admin can upload past papers. This module allows for authorized users to add revision materials.

Download examination paper using default download manager.

Students can download past revision papers and store them for later use.

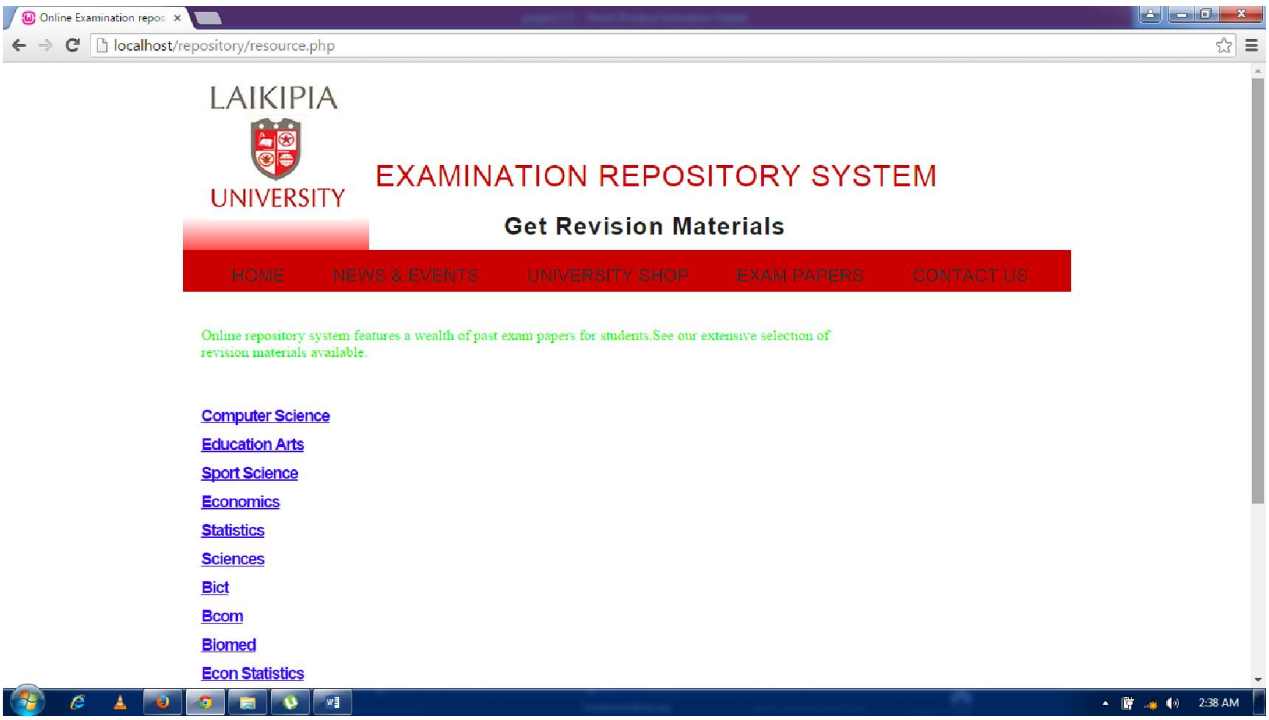
Print after downloading.

Users of the online examination repository system can print the past papers and use them as hard copy.

5.3 How the system works

A student goes to the online examination repository web site. He/ she logs into the system. If the password is correct the student is taken to the main page of the system. A student then clicks on the menu for exam papers. This redirects the student to a page which contain all the courses offered in Laikipia University. For instance if a students does computer science he/she will then click on computer science link. This then directs the student to a page where he/she will choose the academic year he/she needs the exam papers for. Let's take for instance the student choses first year, he/she will be directed to all the units offered for computer science for first year. A student then choses the unit and all the available past exam papers for that unit will be displayed.

Screenshot of the main screen



Screenshot of exam papers

The full code of online examination repository system is indicated in the appendix 2.

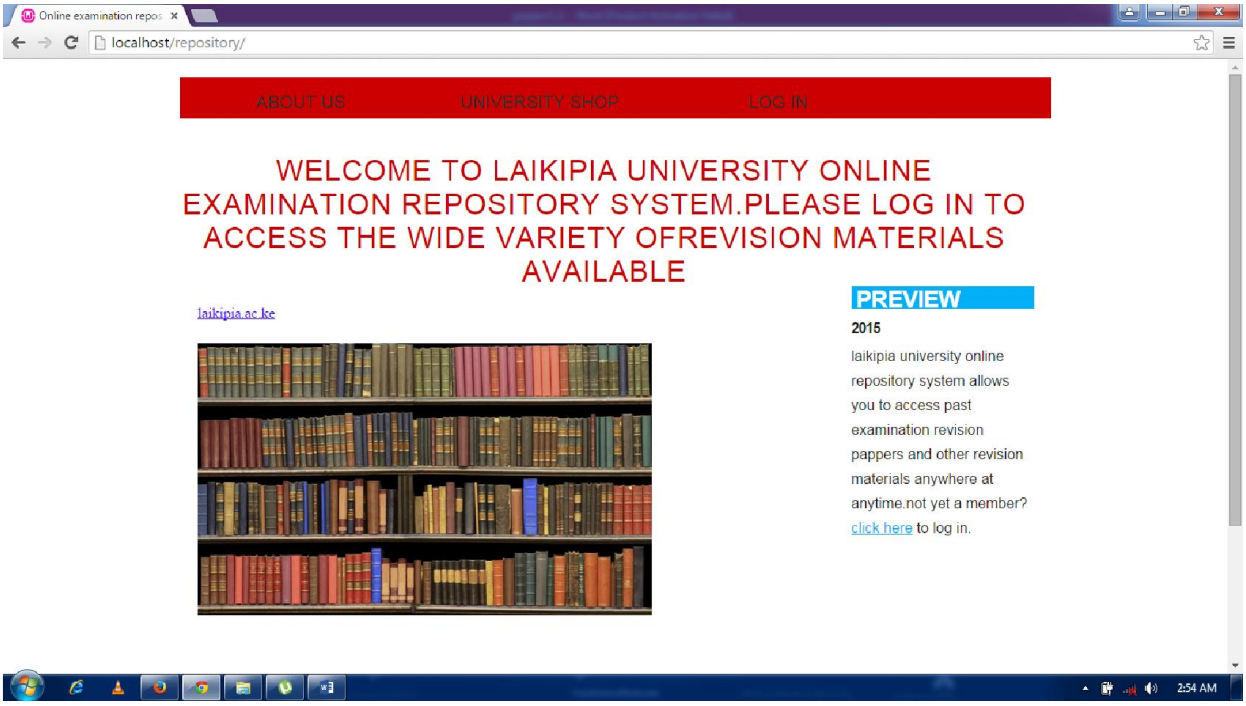
5.4 Test Regime

Table 3:test regime

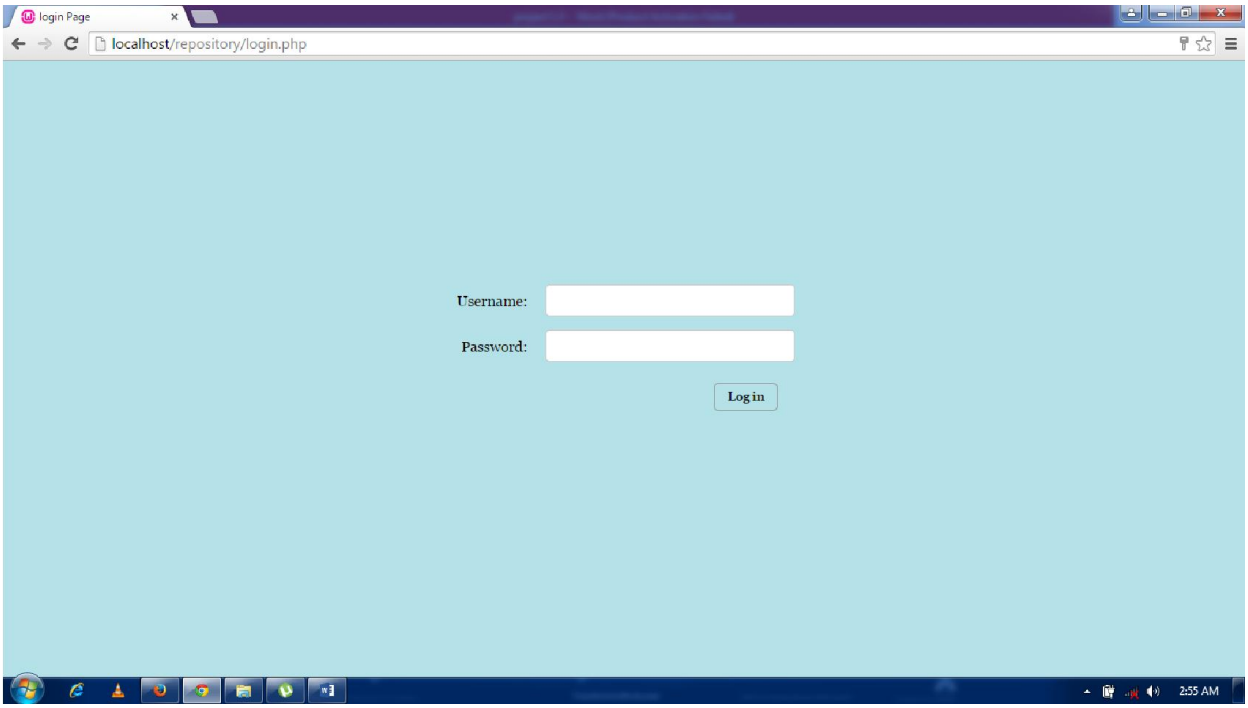
Test id	Description	Test data	Expected results	Actual results
1	Login	Username and password	Allow access	Directs user to home page

2	Exam papers	Exam papers	Show exam papers	Show a list of all courses offered
3	Download		Download exam paper	Download exam paper

5.4.1 Screenshots of selected tests:

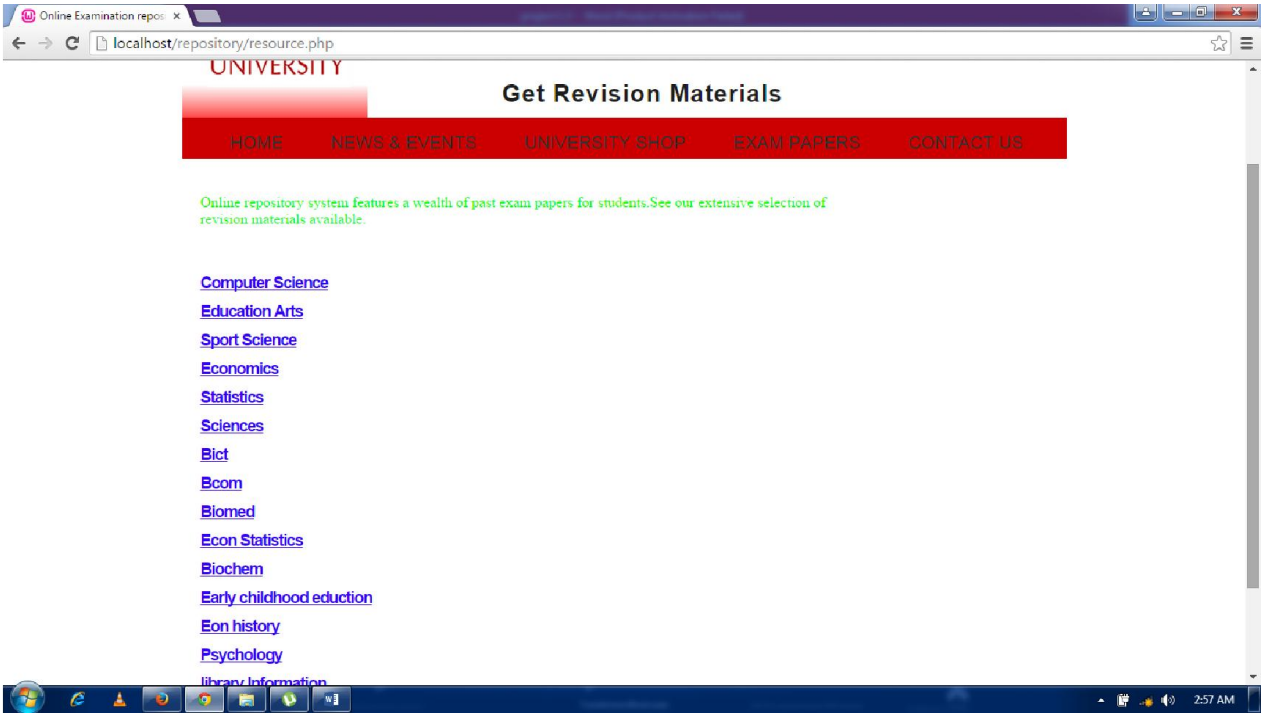


Online examination repository system index



Online examination repository system login page

Screen shot of home page



Screenshot of courses whose exam papers are available

5.5 Conclusion.

Online examination paper repository system is developed by amalgamation of different codes developed in different environments at different platforms by different programmers. Since the runtime speed of the modules were tested in different processors, integration becomes a bit exhaustive and time consuming. Thus, the system resulted in deep integration testing. Integration testing becomes the core job of the developers.

5.6 Recommendations.

For a university-level software project development we recommend the PHP solutions dynamic web design made easy second edition by David powers to students (David, 2010) as a complementary reading.it applies the concepts trough examples throughout the

book and is relatively easy to use. We also recommend the use of the following development tools:

PHP as the best web development language with a little more detailed functionality than the use of plain HTML alone.

The use of WOW slider helps to make the website more appealing and selling to the user.

REFERENCES

David, P. (2010). *PHP solutions:dynamic web design made easy.* New york: Apress and ED books.

Franchise.com. (2015). Kenya National Examination Council Papers. *www.myfranchise.com*.

Ian , S. (2010). *Software Engineering(9th edition).* New York: Addison-Wesley.

kenyaplex;. (2008). *Education in Kenya.* Nairobi.

ouma, w. (2015). *knec links E to kenyans big appetite.* nairobi: digital nation.co.ke.

APPENDICES.

Appendix 1: Questionnaires.

Online exam paper repository system

Questionnaire for lecturer as a stakeholder

Introduction

The following are closed ended questions which we kindly request you to help us answer them because it will help us identify new features, functions and challenges of our pilot system. We hope you will be sincere to your best since your response will be highly influential in the feasibility study of our program.

1. **Details about the lecturer**
   - Course units you lecture in Laikipia university

   - Are you a part time lecturer or full time?

☐ Fulltime ☐ part-time

2. Do you think revision materials are necessary for students? (*By revision materials I mean past papers of the same unit you lecture*).

Very necessary  necessary  quite necessary  not necessary 

3. Do you think students in Laikipia get enough past papers (skip if your response for number two was "not necessary")

- Yes 
- quite yes {but something needs to be done } 
- not at all {something need to be done like seriously} 

4. The short loan section of the library is not enough for the whole lot of students .do you think coming up with a system where you will share exam paper materials with students will help?

Yes  no 

Thank you for your response, we have our last request

5. Can you briefly describe how you would like to access this system as a lecturer and features you would like to see? (*You can narrate it to the interviewer or write it below.*
Narration.

e.g.

Start with: I would like to log in into…

Features (you can provide your name after this.)

Questionnaire for student as a stake holder

QUESTIONAIRE ONLINE EXAMINATIONS REPOSITORY SYSTEM

I am a student of Laikipia University from department of mathematics and computer science taking part in a project on developing an ONLINE EXAMINATION REPOSITORY PAPERS SYSTEM.I request you to kindly fill in the questionnaire below. I guarantee the confidentiality of the data gathered.

PART

I. Personal data

Name _____

Department _____

Contacts _____

Reg. No. _____

II. Questions

a) Have you ever used a digital library system (online)?.....If yes:

i. How did you access it.....

ii. How convenient was it?

……

iii. Identify the features you found interesting…….....

.....

.....

.....

.....

iv. Identify the features you found boring……

……

……

b) Do you own any electronic computing device? ……If yes please identify.....

c) How do you revise for your exams?.....

.....

.....

.....

.....

d) What materials do you

use?.....

.....

.....

e) At what kind of environment do you prefer and find comfortable when doing your personal studies...

f) Do you normally take part in group discursions?..... If yes how do you find it useful? Tick where appropriate.

- Very useful……..
- Fairly useful…….
- Not useful…….

Questionnaire for university administration as a stakeholder.

Introduction

We, computer science students third year have come up with an idea of automating the short loan section of the library since that is an issue that has been affecting us since first year. We have decided to use this as our software project which is in our course outline this semester.

In requirements analysis, we identified the administration as our stakeholder since he/she will be highly influential in our feasibility study. Below are some questions we prepared

for you to help us in requirements gathering .Kindly answer them to the best of your knowledge and thanks in advance?

1. Details of administration.

- Institution (university).

- Name of the office attended.

2. Is there complaints by students about too much time spent retrieving past papers in the library especially during exams?

Yes no

3. If yes, is there any plan to curb the problem outlined above?

Yes no

4. If it's possible we request a rough estimate of the cost incurred in the manual system (*printing the past papers, binding them and maintaining them etc.)*

Activity in the short loan section of library	**Cost**

5. Do you think online exam repository system will be financially feasible?(*will it reduce the cost of the current system)*

- Yes by far
- Yes but not necessary for now
- No it will even make it worse.

Thank you for all your responses .now on our last part.

6. Assuming our system is ready and running, what are administrative privileges you would like to get from this system?(*give this answer as a written narration or narrate it to the interviewer, maybe I give you a starting line)*

Narration

E.g. I would like to open this system and the first thing I see is a prompt to log in into the system…

Features

(*Write the features you would like to have as a user of system here e.g. where I can view the discussion forums such that no incitement goes through.*

Appendix II: System Code.

Code used for log in

```
<?php
error_reporting(0);
	session_start();

	require_once("connect.php");


	$msg="";
	if(isset($_POST['reg_no'])){
		$username=$_POST['reg_no'];
		$password=$_POST['password'];
		$forgotpass=$_POST['forgotpass'];
		$sql=mysql_query("SELECT * FROM `student` WHERE reg_no='$username' AND
password='$password'");

		$cout=mysql_num_rows($sql);
			if($cout>0){
				$row=mysql_fetch_array($sql);
					if($row['type']=='admin')
						$msg="Login Fail!.....";
					else
						header("location: project 1.3.php");

			}

			else
					$msg="Login Fail!<br>you are not a registered user...";


}
?>
```

Code used for sign up

```
?php
require("connecti.php");
$msg="";

  // Escape user inputs for security
  $firstname = mysqli_real_escape_string($link, $_POST['firstname']);
  $secondname = mysqli_real_escape_string($link, $_POST['secondname']);
  $regno= mysqli_real_escape_string($link, $_POST['reg_no']);
  $email=mysqli_real_escape_string($link,$_POST['emailadress']);
  $phonenumber=mysqli_real_escape_string($link,$_POST['phonenumber']);
  $password = mysqli_real_escape_string($link,$_POST['password']);
```

```
   $password2=mysqli_real_escape_string($link,$_POST['password']);
   $courses=mysqli_real_escape_string($link,$_POST['coursecode']);

    $sql= "INSERT INTO `online exam repository system`.`student` (`first name`,

`second name`, `reg_no`, `email adress`, `phone number`, `course code`,

`password`) VALUES ('$firstname', '$secondname', '$regno', '$email',

'$phonenumber', '$courses',

'$password')";

   if(mysqli_query($link, $sql)){

      echo "You have sucessfully registered to online examination repository system.";

header('location:welcome.php');
}
    else{
  $msg="registrtion failed.please make sure all fields are completed with correct information...";
header('location:invalidform.php');

  }

   // close connection

   mysqli_close($link);

   ?>
```

Code used for download

```
<?php
   // Make sure an ID was passed
   if(isset($_GET['id'])) {
   // Get the ID
      $id = intval($_GET['id']);

      // Make sure the ID is in fact a valid ID
      if($id <= 0) {
         die('The ID is invalid!');
      }
      else {
         // Connect to the database
         $dbLink = new mysqli('127.0.0.1', 'root', '', 'online exam repository system');
         if(mysqli_connect_errno()) {
            die("MySQL connection failed: ". mysqli_connect_error());
         }
```

```
        // Fetch the file information
        $query = "
          SELECT `mime`, `name`, `size`, `data`
          FROM `file`
          WHERE `id` = {$id}";
        $result = $dbLink->query($query);

        if($result) {
          // Make sure the result is valid
          if($result->num_rows == 1) {
          // Get the row
            $row = mysqli_fetch_assoc($result);

            // Print headers
            header("Content-Type: ". $row['mime']);
            header("Content-Length: ". $row['size']);
            header("Content-Disposition: attachment; filename=". $row['name']);

            // Print data
            echo $row['data'];
          }
          else {
            echo 'Error! No image exists with that ID.';
          }

          // Free the mysqli resources
          @mysqli_free_result($result);
        }
        else {
          echo "Error! Query failed: <pre>{$dbLink->error}</pre>";
        }
        @mysqli_close($dbLink);
      }
    }
    else {
      echo 'Error! No ID was passed.';
    }
    ?>
```

Code for upload

```
<?php
// set the maximum upload size in bytes
$max = 5120000;
if (isset($_POST['upload'])) {
// define the path to the upload folder
$destination = 'C:/wamp/www/repository/class/uploads/';
require_once('C:/wamp/www/repository/class/uploads/Upload.php');
try {
```

```
$upload = new Ps2_Upload($destination);
$upload->setMaxSize($max);
$upload->addPermittedTypes(array('application/pdf','application/msword',
'application/vnd.ms-powerpoint',
'application/vnd.oasis.opendocument.text','text/plain'));
$upload->move();
$result = $upload->getMessages();
} catch (Exception $e) {
echo $e->getMessage();
}
}
?>
```

Appendix III: Test Data

User Login

The following is the data used to log in a registered user

Username:*N11/30998/13*

Password:*123*

The following data generated a login error”

Since the user was not a registered user

Any data used will generate the above error if the user is not a registered member.

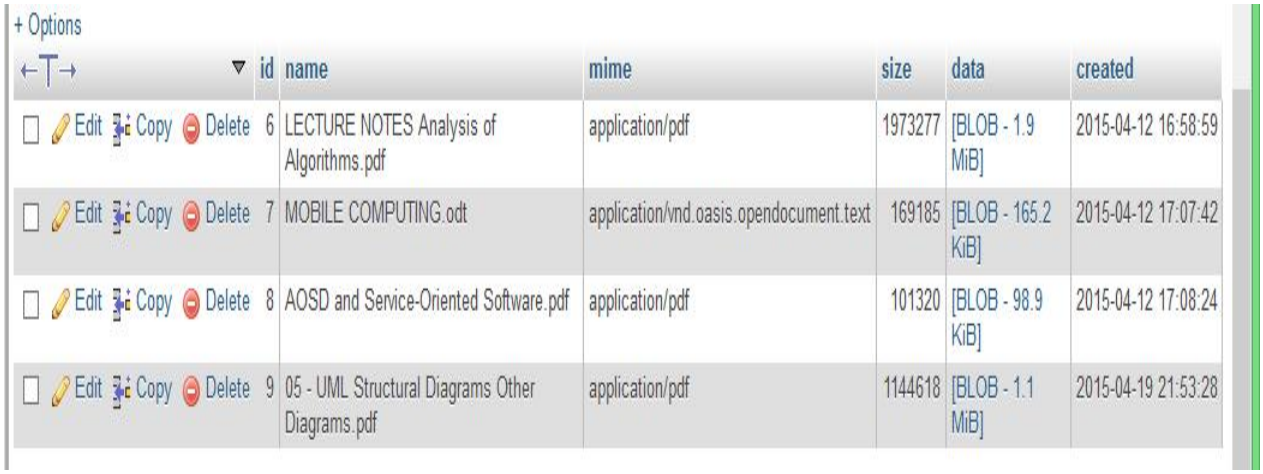
Administrator login

The following data was used.

Username: *root.*

Password: *Laikipia.*

The following Pdf files were used were used to simulate how the system works.



+ Options

	id	name	mime	size	data	created
Edit Copy Delete	6	LECTURE NOTES Analysis of Algorithms.pdf	application/pdf	1973277	[BLOB - 1.9 MiB]	2015-04-12 16:58:59
Edit Copy Delete	7	MOBILE COMPUTING.odt	application/vnd.oasis.opendocument.text	169185	[BLOB - 165.2 KiB]	2015-04-12 17:07:42
Edit Copy Delete	8	AOSD and Service-Oriented Software.pdf	application/pdf	101320	[BLOB - 98.9 KiB]	2015-04-12 17:08:24
Edit Copy Delete	9	05 - UML Structural Diagrams Other Diagrams.pdf	application/pdf	1144618	[BLOB - 1.1 MiB]	2015-04-19 21:53:28