Project title: Emerald International College Human Resource Information System

Project proposal Documentation submitted to Data Science Department

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CHAPTER ONE

Abstract

Emerald International College is established by highly educated professionals (More than 10 PhD holders) aimed to improve the quality of education in Ethiopia. To launch masters programs, the college conducted national curriculum validation workshop on….

Human Resource Management System Project is an essentially software designed to keep track of employee information in Emerald International College .

It stores data such as their employees' personal information.

The goal of "Human Resource Management System" is to create a work center scheduling system.

The Human Resource management system project gives managers a better idea of their employees and helps them plan and manage their work hours in order to cut costs and boost productivity. It gives appropriate directions and supervisions for employees.

It also secures and manages information that are important to the employees including personal and work-related information

1.1 Statement of the problem

As we have observed the existing system which is currently working manually has a number of problems. Some of these are:-

- ✓ Dissatisfaction of the users on the current system

- ✓ The users are dissatisfied by current system because of its slow response time

- ✓ Because the existing system has no automated database, it is recorded manually

- ✓ It take long time to generate a reports and the report also in accurate

- ✓ The is lack of organized data or data organization in current existing system

- ✓ Data or files loss due to improper of handling

1.2 Objective

General objective

The major goal of new system is to develop a Emeraled International College Human Resource Management System.

Specific objective

- ✓ To create fast and consistent automated system.

    This can be achieved by automating the existing system. This enables the end user to get all advantages of automated system including consistency and speed.

- ✓ To secure users profile handling system.

    The project can secure users personal information by implementing security protection and authentication mechanisms.

- ✓ To create efficient working environment

    Efficiency can be increased by minimizing errors per execution and maximizing availability.

- ✓ To create recoverable, maintainable and flexible computerized system.
- ✓ To design User interfaces

We can achieve this by taking continuous back up of data, specifying huge amount of storage place for the system data base.

1.3 Scope of the Project

The new web based system will be an automation of Emeraled International College Human Resource Management System The proposed system will cover the following main tasks:

In scope of project

- ✓ Employee Information Management

- ✓ Employee Schedule Monitoring
- ✓ Monitor Working Days and Holidays

- ✓ Set Leave Processing

Out scop of project

- ✓ Employee Online Recruitment system

- ✓ Employees Performance Appraisal

1.4 Methodology

Data collection

The main data source for our project is the general service office. Method of data collection we use during data collection are:-

Interviews: We use interview method to gather information from different workers in different levels in the office and users of the current system.

Observation: to analyze the organization work processes.

Document analysis: to get information about background of the Organization.

Development methodology

We use Object oriented approach because of its more acceptable due to its greater advantage of polymorphism, abstraction, encapsulation, modularity, hierarchy, concurrency, persistence in terms of its

- ➢ Increased extensibility

- ➢ Increased reusability

- ➢ Improved quality

- ➢ Increase chance of project success

Tools to use

The tools we use for document preparation or documentation:

- Microsoft office

- Enterprises Architecture for UML Enterprise Edition
- Git Hub for collaboration Purposes
- Any Desk for online Support
- Zoom and whatsApp for communication

During Implementation, we use;

For front end:

- JavaScript
- Visual Studio Code Editor   for webpage design
- HTML
- CSS
- Flask
- Bootstraps

For back end:

- **Postgres SQL Database**

  Python
-

1.5 Feasibility Analysis

In this phase we have seen different feasibility measures such as, operational feasibility, technical feasibility, and economical feasibility and schedule feasibilities of the new system.

Operational feasibility

It might not be possible to see fully operational system within the given limit of time for SW development. However with great cooperation of the project team the system can address over all problems of the current system.

Technical feasibility

Usually new systems established in order to overcome the technical illness of the previous system. In the same way, this system is technically big enough to be applied easily to the problem identified in the existing system. In addition; the both hardware's and software's for this system are highly available and can be owned with small cost. Therefore, it can be concluded that the system is technically feasible.

Economic feasibility

The new system is economically feasible but its benefit should observe later in the long run working environment, in this study cannot be approved in deepness because in the beginning of the project. Some of the benefit and cost that are estimated to be show in 3short and long run are:-

Benefits - can be expressed as money or not. Benefit that are considered as money is called tangible benefit and benefit which resulted from the design of the new system which cannot be considered as money called intangible benefit. The following are tangible and intangible benefit.

Tangible benefits:

- ✓ Improved processing speed
- ✓ Avoid mistake/error
- ✓ Reduce cost for manual data management

Intangible benefits:-the four mentioned benefits are intangible benefits of the new system

- ✓ Increased consistency and correctness
- ✓ Enable to make fast decision

✓ To get well organized information in short period of time

✓ Avoiding routing activities

Cost:-costs are also describe as benefit in terms of money

Tangible cost-are cost resulted from the design of a new system that can be considered as money. The following are tangible benefits.

✓ Wage for system installation and maintenance

✓ Machine

Intangible cost-are cost resulted from the design of a new system that cannot be

Considered by money

Time requirement for discovering new system

Requiring or giving train for who operate and use the new system

Organizing the board with the new organization that way system requires

Project Cost

This refers to the cost of the proposed system regarding to their benefits to the institution and to the user. Our project can have both tangible and intangible cost.

Hardware cost

Material	Quantity	Unit Price
Printing	100 pages	1 Birr
Pen	8	3 Birr
Paper (A4)	1	85Birr
Flash disk (4GB)	2	400Birr
DVD RW	2	25 birr
Total		20,634Birr

Software cost

Software Description	Price
WINDOW 7	Free download
Microsoft office 2010	Free Download
Enterprise Architecture for UML Enterprise Edition	Free Download
Visual Studio Code Editor	Free download
Total	*Free*

1.6: Management Plan

The management plan is to deal with the entire management plan, structure and assign all groups into their specific tasks to done work efficiently and effectively.

Team configuration and management

This technique is used for managing the project team for effective team performance. The team configuration refers to the members of the team which is determined by the active and passive languages of the meeting and participation of the group often referred to as managing strength, team configuration in the narrow sense refers to the team strength that is the number of interpreters required for a given team depending on the language used. We are three team members that do this proposal.

Name of Project Group	Responsibilities of the group	Id no
Getnet Mulat	Project Manager and Programmer	
Girma Worku	Front End Developer	
Amanuel Feyissa	Backend Developer	
Sintayehu Workineh	Data Base Design and Modeling	
Biruk Getachew	System Requirement Specification (SRS)	
Wondu Wagaye	UI/Ux Designer	

Communication plan

While developing software or doing projects in group it is common to have a group norm and agreements which will lead the group to the successful accomplishment of the project. We are trying to work in team with one heart and soul so that we can accomplish our project on time with the expected quality. Based on the schedule suggested by the department together with our schedule we will contact our advisor in every phase and take correction and guideline for our project.

Change management

It includes to identifying, assessing and managing the risks and day-to-day changes that occur during a project

CHAPTER TWO

System Designing

Actors
- ✓ Staff
- ✓ Admin

2.1 System Use Case Modeling

A system model is the conceptual model that describes and represents a system. A system comprises multiple views such as planning, requirement (analysis), design, implementation, deployment, structure, behavior, input data, and output data views. A system model is required to describe and represent all those multiple views.

The system modeling deals with analyzing the proposed system. It includes the system use case diagrams, the use case descriptions (scenarios), sequence diagrams, object model, dynamic model and activity diagrams.

2.1.1 Emeraled International College Human Resource Management System ER Diagram

The *EICHRMS ER diagram* shows the relationships of the system's entities that build its **database design**. ER diagram describes the logical structure of the system's database or data storage. It is done by identifying the employee management process entities, their properties, and the interactions between them.
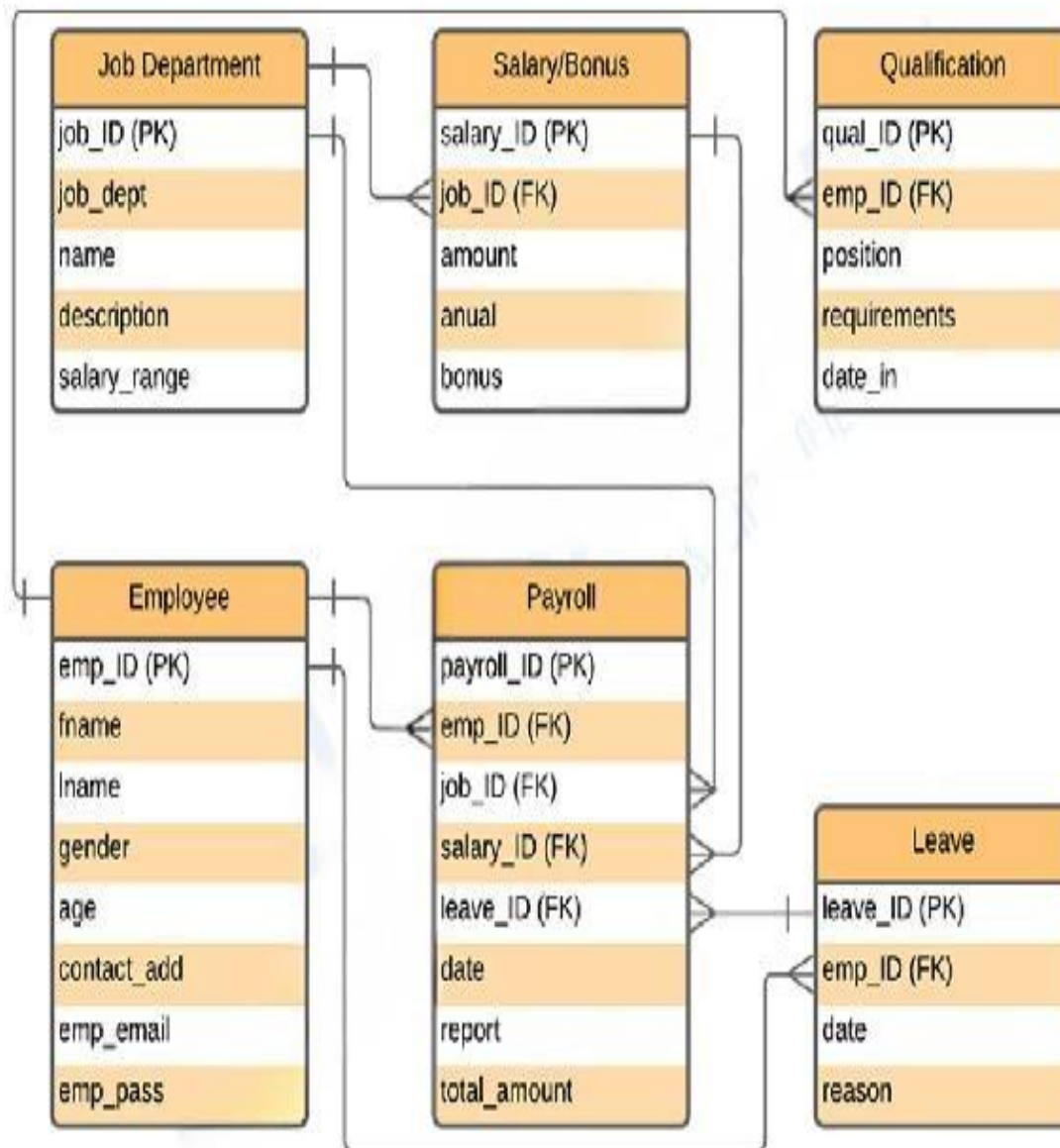
Fig1 ER diagram

EICHRMS **ERD Details**

Name:	Emerald International College Human Resource Management System

Abstract:	EICHRMS ER Diagram depicts the relationship between various entities. It can be thought of as a blueprint for your system (project) structure.
Diagram:	**ER Diagram** (Entity-Relationship Diagram/ERD)
Users:	**College or Other company**
Tools Used:	Diagraming tools that provide ER diagram symbols.
Designer:	Group Member

Benefits of using an Human Resource management system ERD

The following benefits come from developing your staff management system utilizing the diagramming features offered:

- You will have quicker access to all the data because it will be saved in one location, whether it be about personnel, projects, or general business information.
- You'll save time and stay organized if you have all the information in one location, which will make it simpler to concentrate on jobs that are more urgent.
- No matter where you are, you can view your template and collaborate with your team members online in real time.
- Create an EICHRMS ERD template that works for you and your department using the ERD model stencils.

This diagram presents the Entities' Relational Model for Human Resource Management System. It is used to enlighten you on how the back end of the database of the project works. The tables are made to meet the required specification of the system and provide much more specific details of each entity within the system.

Human Resource Management System Database Design

The *Human Resource Management System database design* was made based on managing employees' information requirements. Its database design can store and secure employees' information. Admin can have access to the employees' status and information to see their performances and salaries. They can handle the data needed in managing employees and their job departments.

The features included in the system ER diagram were the security and monitoring of the employees' jobs and the range of service records, job information, and status. These features were also listed and recorded in reports that served as the history of transactions done in the system.

Human Resource Management System ER Diagram Tables

These tables below provide the complete database design details such as **Field Name**, data **types**, and **character lengths** for Human Resource Management System.

Table Name: Employee

Field	Description	Type	Length	Field
emp_ID (PK)	Employee ID	Int	11	emp_ID (PK)
Fname	Employee First Name	Varchar	255	fname
Lname	Employee Last Name	Varchar	255	lname
Gender	Employee Gender	Int	11	gender
Age	Employee Age	Int	11	age
contact_add	Contact Address	Int	11	contact_add
emp_email	Employee Email	Varchar	255	emp_email
emp_pass	Employee Password	Varchar	255	emp_pass

Table Name: Employee

Table Name: Users

Field	Description	Type	Length
admin_ID (PK)	Admin ID	Int	11
Fname	Instructor First Name	Varchar	255
Lname	Instructor Last Name	Varchar	255
Gender	Instructor Gender	Int	11
Age	Instructor Age	Int	11
contact_add	Contact Address	Int	11
admin_email	Admin Email	Varchar	255
admin_pass	Admin Password	Varchar	255

Table Name: Users

Table Name: Job Department

Field	Description	Type	Length
job_ID (PK)	Job ID	Int	11
job_dept	Job Department	Varchar	30
Name	Job Name	Varchar	30
Description	Job Description	Varchar	30
salary_range	Salary Range	Varchar	30

Table Name: Job Department

Table Name: Salary or Bonus

Field	Description	Type	Length
salary_ID (PK)	Salary ID	Int	11
job_ID (FK)	Job ID	Int	11
Amount	Amount	Int	11
Annual	Annual Expense	Date	
Bonus	Bonus	Date	bonus

Table Name: Salary or Bonus

Table Name: Qualification

Field	Description	Type	Length
qual_ID (PK)	Qualification ID	Int	11
emp_ID (FK)	Employee ID	Int	11
Position	Position of Application	Varchar	30
Requirements	Requirements	Varchar	30
date_in	Date In	Date	
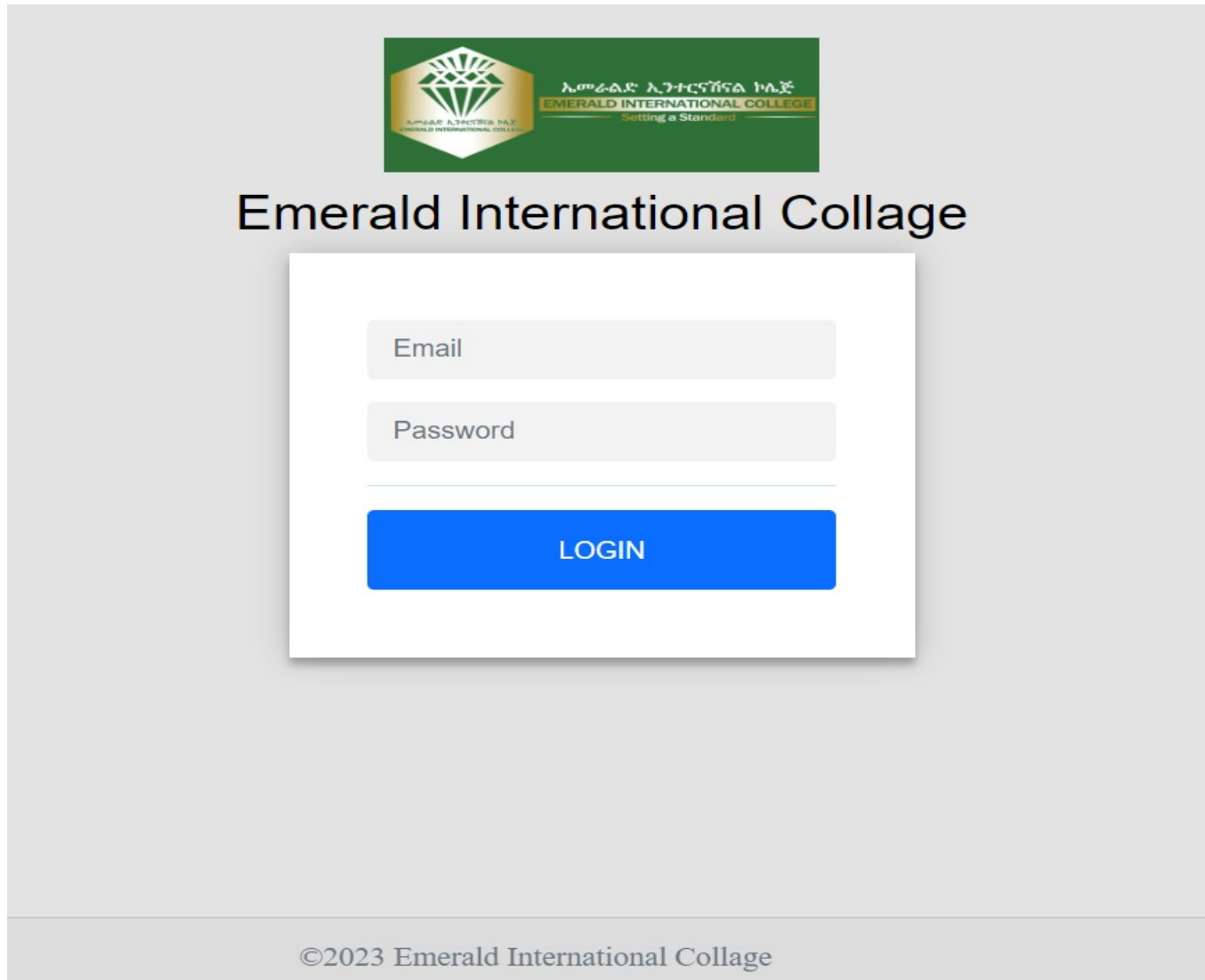
Table Name: Qualification

Table Name: Payroll

Field	Description	Type	Length
payroll_ID (PK)	Payroll ID	Int	11
emp_ID (FK)	Employee ID	Int	11
job_ID (FK)	Job ID	Int	11
salary_ID (FK)	Salary ID	Int	11
leave_ID (FK)	Leave ID	Int	11
Date	Date of Payroll Report	Date	

Report	Report	Text	
total amount	Total Amount	Int	11

System User Interfaces and Tools used.

1. Admin Login Page

2. Dashboard Page
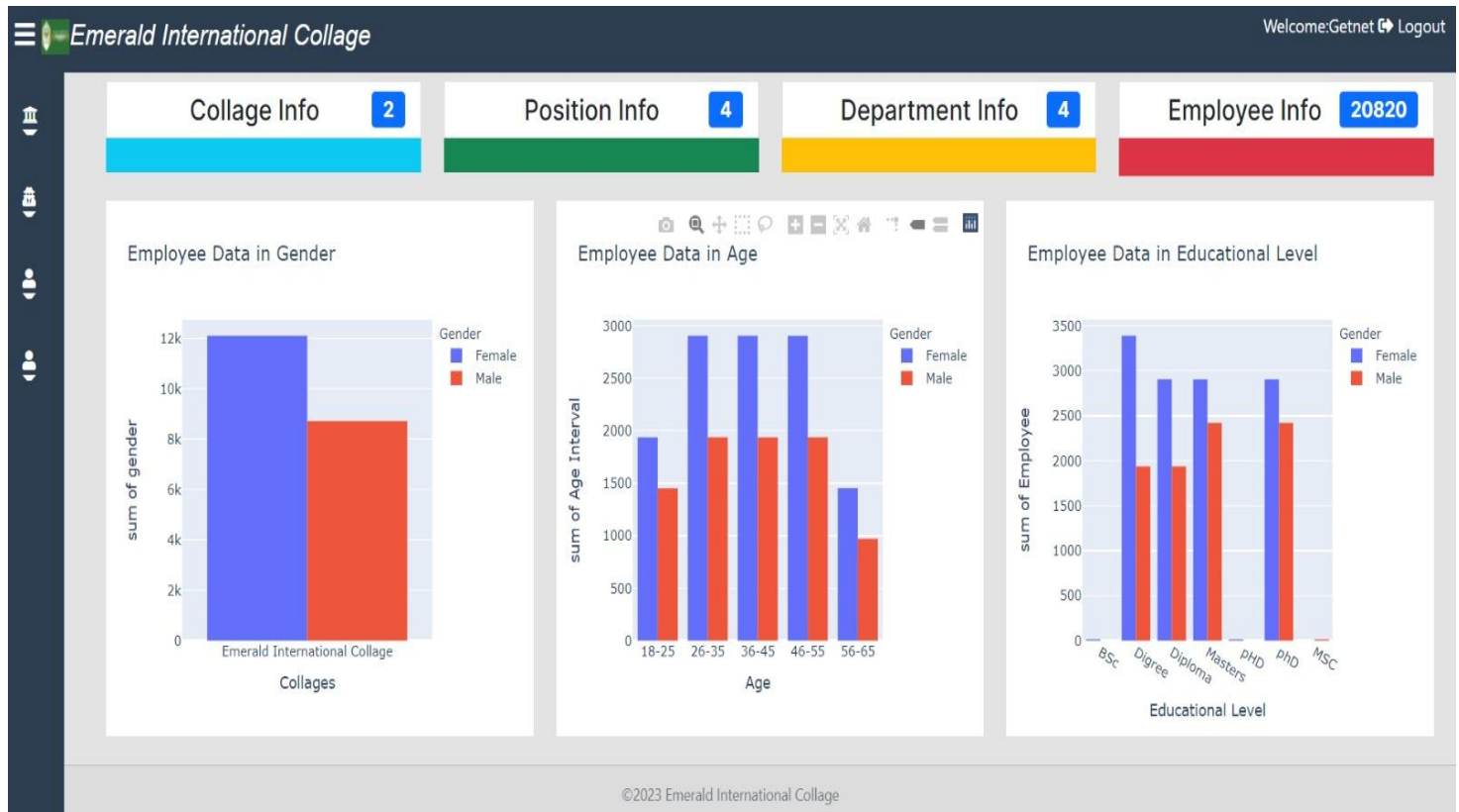
3. College Registration and List