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School of Commerce

Department of Business Administration and Information Systems

Fundamentals of System Analysis and Design Group Assignment

Advanced Employee Management System

Development Project plan

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**Submitted to Dr. Hailay B.
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Introduction

This paper is a project plan for Advanced Employee Management System development. It outlines the detail steps we planned to take in the development of the AEMS. Honestly most of the concepts we used to develop this project plan are new for us and we have started learning them in our Database and Computer programming course this semester. So that we have used online materials to help us develop this project development plan like YouTube, Google, Online Database designing tools, Online diagramming tools etc. In all this process we have done our best to make our project plan real and ready to be implemented and may be if we got the chance and knowledge we can make it reality in the future.

1. Initiating the Project

1.1 Why the System is needed to be developed?

Usually, large companies and organizations have a vast army of human resources working under them. In such scenarios where there's a significant number of human employees to manage, it becomes challenging to supervise and manage the activities of the human resources efficiently. Such companies/organizations need an advanced employee management system that can handle everything related to the company's human resources.

This project aims to build an employee management system that consolidates all the relevant information on a company's human resources. It has two major components Admin and Employee. The Admin is in charge of the company information, leave management and payroll, and can also add and tweak employee details. Likewise, employees can use the system to check their leave status, view salary details, yearly holiday list, and also for voicing grievances or resigning.

1.2 Importance of having an Advanced employee management system

- It helps in creating an open environment.
- Aligns the workforce to achieve the company goals.
- Brings transparency in the system.
- Helps in achieving work-life balance.
- Encourages productivity in the team.
- Helps in better tracking of employee performance.
- Remote access
- Time-saving
- Accurate
- Secure as the personal information cannot be accessed by anyone.

1.3 Deliverables

The system is deliverable as a web-based application for the organization(The Management) and for the Employees.

1.4 Project Team Members

Name	Position	Background Info
Bikila Ketema	Programmer	Bachelor's degree in BAIS and SE.
Abduba Peter	Database Analyst	Bachelors degree in CS and Certificate in Database managent
Bilal Jemal	UI/UX Designer	Bachelors degree in BAIS and Certiicate in Fronte-end development
Ashenafi Degefe	System Designer	Bachelors Degree in SE
Beamlak Girma	Financial Analyst	Bachelors Degree in Accounting and finance
Beniam Amito	Team Leader	Bachelors degree in CS and MS in Project management

1.5 The way of communication

The team usually meets online using Zoom or Microsoft team software's. But occasionally they might meet in person to clarify ambiguities and report the projects outcomes.

1.6 The Projects Funding

This project is fully funded by the Company Z(The company that ask for the development of AEMS).

2. Planning the Project

2.1 Feasibility study

2.1.1 Financial Feasibility

AEMS will incur hosting fees since it is a web application. The system doesn't involve any multimedia data transfer, hence the bandwidth needed to run this program is relatively little. The system will adhere to the standards for freeware software. Use of the software is free of charge. The expense of maintaining and fixing bugs will be involved.

AEMS will significantly lower the organization's costs because it eliminates the need for paper and pens for managing employees and makes managing tasks simple enough for a small group of employees to handle. This makes the system financially viable because it drives down the salaries that the company will pay for those employees who previously handled employee management.

2.1.2 Technical Feasibility

Project AEMS is a complete web based application. The main technologies and tools that are associated with it are

- HTML
- CSS
- MySQL
- C++
- JS
- NetBeans
- Diagram drawing tools
- NCLASS
- Microsoft Project
- Visio Draw.IO

Each of the technologies are freely available and the technical skills required are manageable. Time limitations of the product development and the ease of implementing using these technologies are synchronized. Initially the web site will be hosted in a free web hosting space, but for later implementations it will be hosted in a paid web hosting space with a sufficient bandwidth. Bandwidth required in this application is very low, since it doesn't incorporate any multimedia object. From these we can see that the project is technically feasible.

2.1.3 Resource Feasibility

Resources that are required for the AEMS project includes,

- Programming device (Laptop)

- Hosting space (freely available)
- Programming tools (freely available)
- Programming individuals

So it's clear that the project AEMS has the required resource feasibility.

2.1.4 Time Feasibility

Our project is planned to be finished in 75 days. This schedule is somehow the same with the schedule that the company has given us to develop the system and this makes it Timely feasible to develop.

2.1.5 Operational feasibility

The system is desirable and reliable services to those who need it and also whether the system is flexible and expandable or not, the proposed system is very much flexible for better efficiency and performance of the organization. Currently the Organization is managing employees manually which is very tire some and difficult. AEMS will make this system Automatic and makes all this work easy. The new system will provide a high level of flexibility and simplicity. Thus, this system is operationally feasible.

2.2 Activities involved in this project and their duration

Activities	Duration	Assigned Team Member
Over-all	85 Days	Beniam Amito
Planning	10 Days	The Whole team Members
Requirements collection	10 Days	Bilal Jemal
System analysis	15 Days	Ashenafi Degefe
System Design	20 Days	Bikila Ketema
System Implementation	20 Days	Bikila Ketema, Bilala Jemal, Ashenafi Degefe
System testing	20 Days	Abduba Peter, Ashenafi Degefe, Bilal Jemal
System Maintenance	-	

We have modified the standard SDLC as the above table to make it compatible with our project plan.

2.3 Scope

The scope of Library Management System includes:

- Authenticate users and Admin at their Login page.
- Facility to participate and register for events that held in the Company.
- A status page for all users to view their status in the company.
- Facility to cancel the reservation for events that held in the Company.
- A status page for all employees to view their basic info's, their individual contributions to the compnay and their individual penalties

if any.

- An interface to view and edit the own profile.
- Provide method for adjusting account settings such as passwords.
- Mechanism to reset the password in case user forgets it.
- Providing interface to add or delete Employees(Exclusive to Administrators).

2.4 Documentation Styles

Documentation standards in projects are important because documents are the only tangible way of representing the software and the software process . Following standards we are going to follow for the entire documentation are:

- Font-style: times new roman ,font-size:12
- Margin: 1 inch from all sides
- Indentation :1 tab for all sub-heading and their sub parts.
- Line spacing: line spacing between each line will be 1.5 .

2.4.1 Tools used to develop this system are:

- Notepad++- for designing the Form
- Lucid visual collaboration suite-for designing DFD, ER-diagram
- Microsoft access – required for large database maintenance
- Visual Studio - for coding(IDE)

2.5 Gant chart and Network diagram for the Project

time schedule

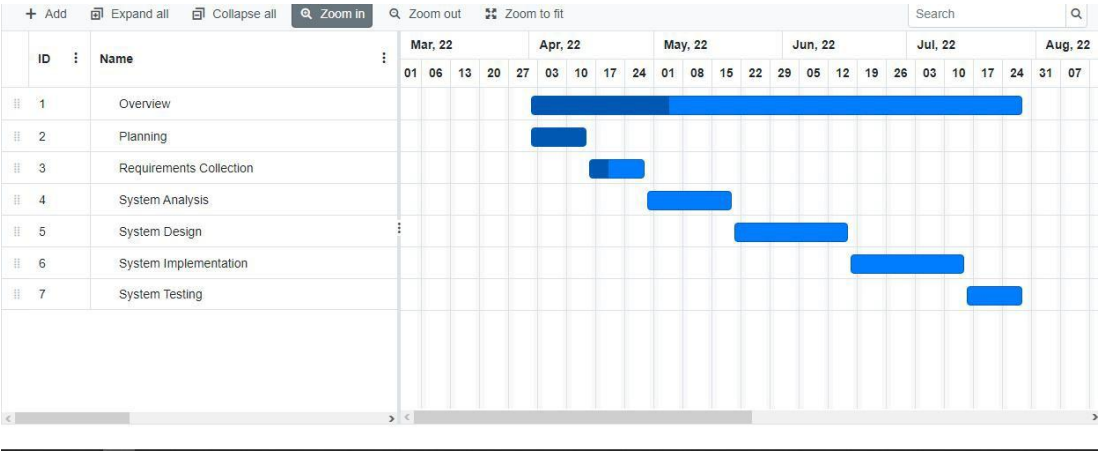


Figure 1: Gant Chart of the Plan

2.6 Network Diagram

Activities	Expected Time
Over-all	85 Days
1. Planning	10 Days
1. Requirements collection	10 Days
2. System analysis	15 Days
3. System Design	20 Days
4. System Implementation	20 Days
5. System testing	20 Days
5. System Maintenance	-

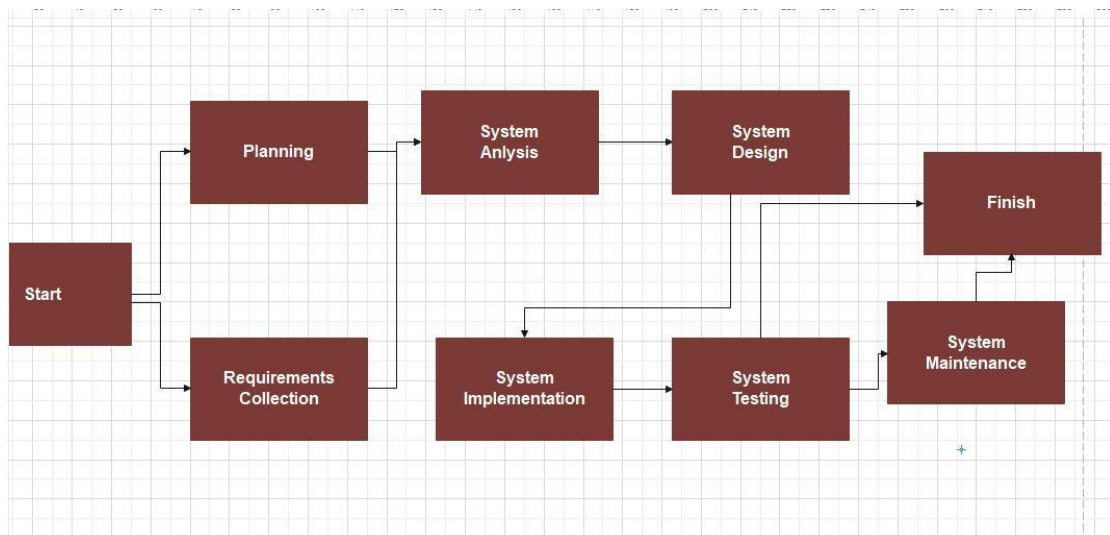


Figure 2: Network Diagram for AEMS

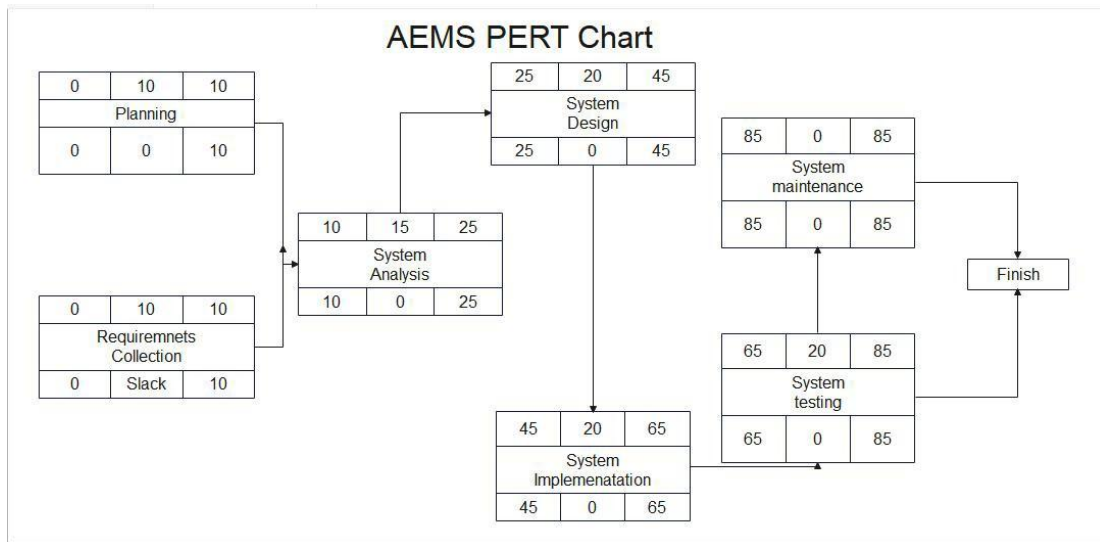


Figure 3: PERT Chart for AEMS

3. Executing the Project

System Analysis

3.1 Requirements collection

3.1.1 Users Requirements

The users require the system to be User friendly and easy to use. Also they want the AEMS to be secure. Because if the security of the system is under question their data is going to be stolen and they are going to loose their privacy to the public.

3.1.2 Functional Requirements

1 USER LOGIN

Description of feature

This feature used by the user to login into system. They are required to enter user id and password before they are allowed to enter the system .The user id and password will be verified and if invalid id is there user is allowed to not enter the system.

2 REGISTER NEW EMPLOYEE OR ADMIN

Description of feature

This feature can be performed by all users to register new user to create account. Functional requirements System must be able to verify information System must be able to delete information if information is wrong.

4 SEARCH AN EMPLOYEE

Description of Feature

This feature is found in employee management. We can search for a specific employee using their ID(Primary Key).

➤ System must be able to search the database based on select search type.

- System must be able to filter Employees based on keyword entered.
- System must be able to show the filtered employees in table view.
- System should be able to add detailed information about events .

- System should be able to display information on notice board available in the homepage of site.

3.2 Non Functional Requirements

Efficiency Requirement

When the Advanced employee management system will be implemented the managers and the employees can easily access their information.

Reliability Requirement

The system should accurately performs new employee registration ,member validation, report generation, employee transaction from branch to branch or from department to department and search.

Usability Requirement

The system is designed for a user friendly environment so that student and staff of library can perform the various tasks easily and in an effective way.

Implementation Requirements

In implementing whole system it uses html in front end with php as server side scripting language which will be used for database connectivity and the backend ie the database part is developed using mysql.

Delivery Requirements


The whole system is expected to be delivered in 75 days of time with a weekly evaluation by the project guide.

3.3 System Design


Our system is expected to be easy to use or user friendly. To design such kind User interface we have combined our team of professionals and planned to work on it efficiently.


Input forms design

The data input form for our AEMS will look like the picture shown below. The forms color has been to be match with the Z company's color brand.

 Z Company

HOME SERVICES ABOUT SIGN UP CONTACT

LAYOUT  BACKGROUND




High performance.
Delivered.


Digital. Business. Solutions.


Submit

Figure 4: AEMS Sign up page

 Z Company

HOME SERVICES ABOUT SIGN UP CONTACT

LAYOUT  BACKGROUND



High performance.
Delivered.

Digital. Business. Solutions.

Log in

Figure 5: AEMS Log in page

Full Name *

Email *

Phone *

Message *

Department

Address

Street Address

City

State/Province

ZIP/Postal

Select country/region ▼

Experience

Salary

Submit

?

Welcome to Z Company

Employees Portal

Please enter your deatils

Full Name *

Email *

Phone *

Message *

Department

Address

Street Address

City

State/Province

ZIP/Postal

Select country/region ▼

Experience

Salary

?

Figure 6: New employees Registration form

Output Forms Design

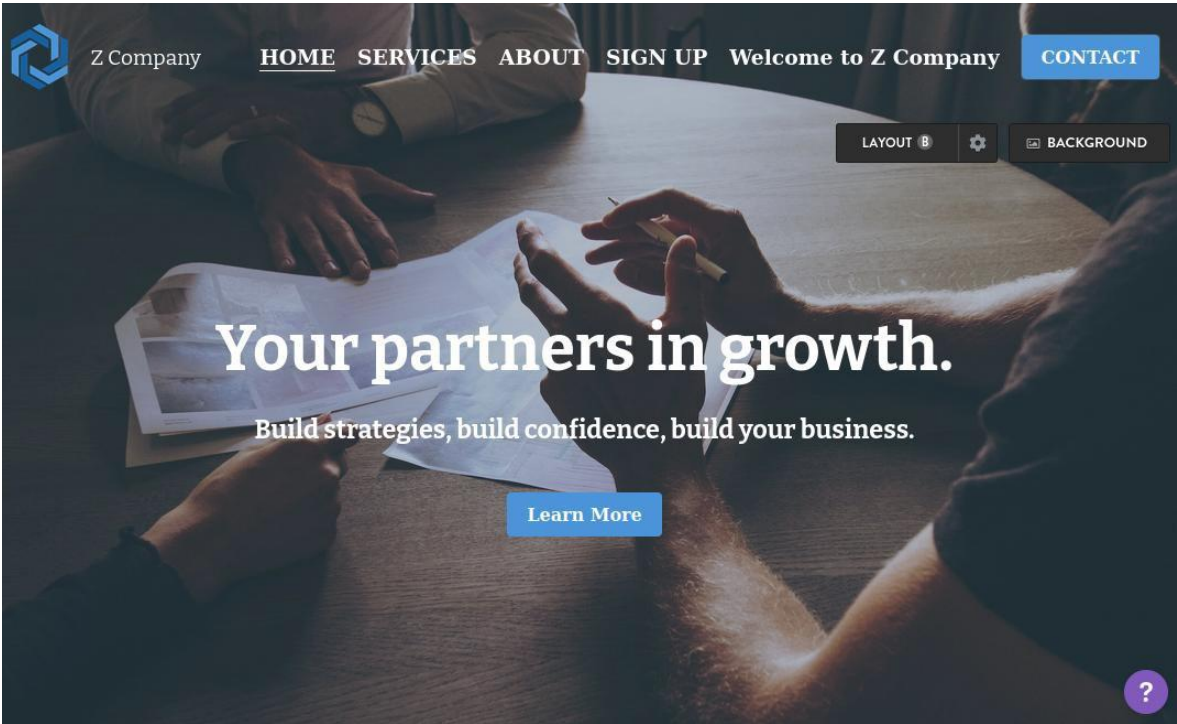


Figure 4: AEMS Homepage

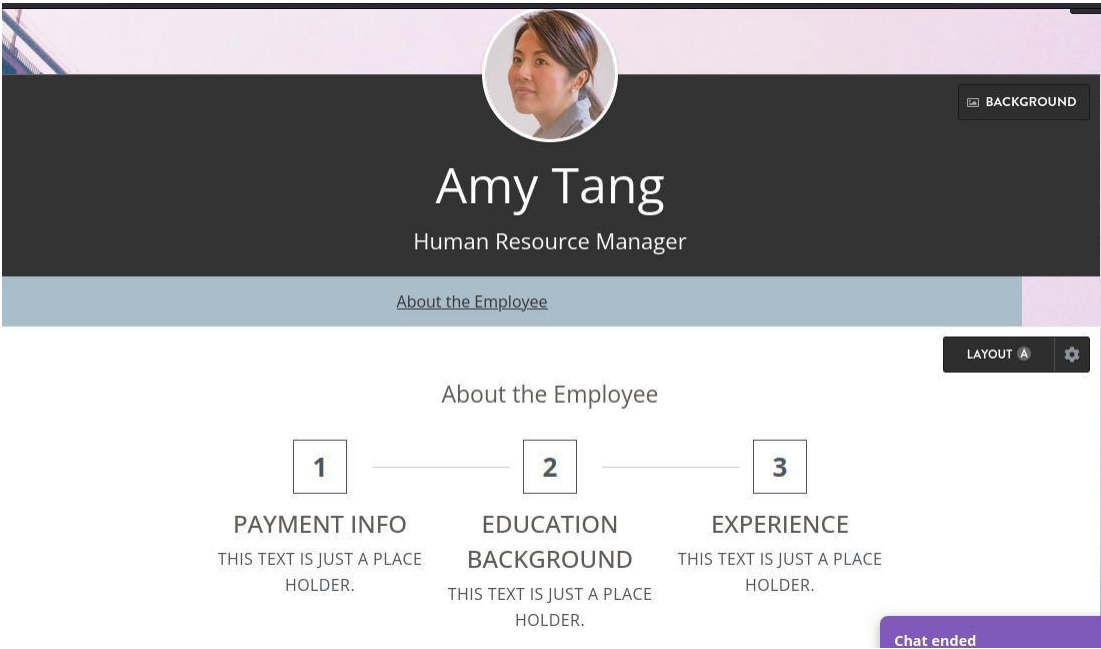


Figure 7: Employee profile Page

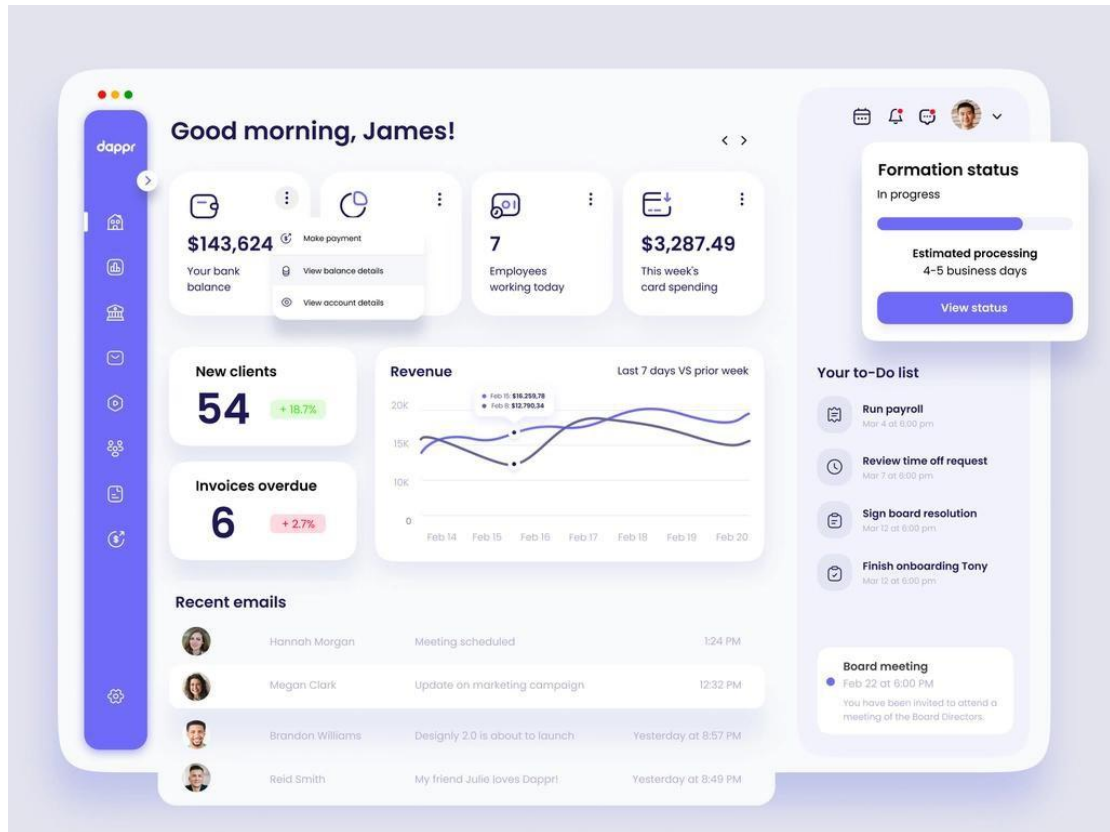


Figure 8: Admin Panel/Page

Database Design

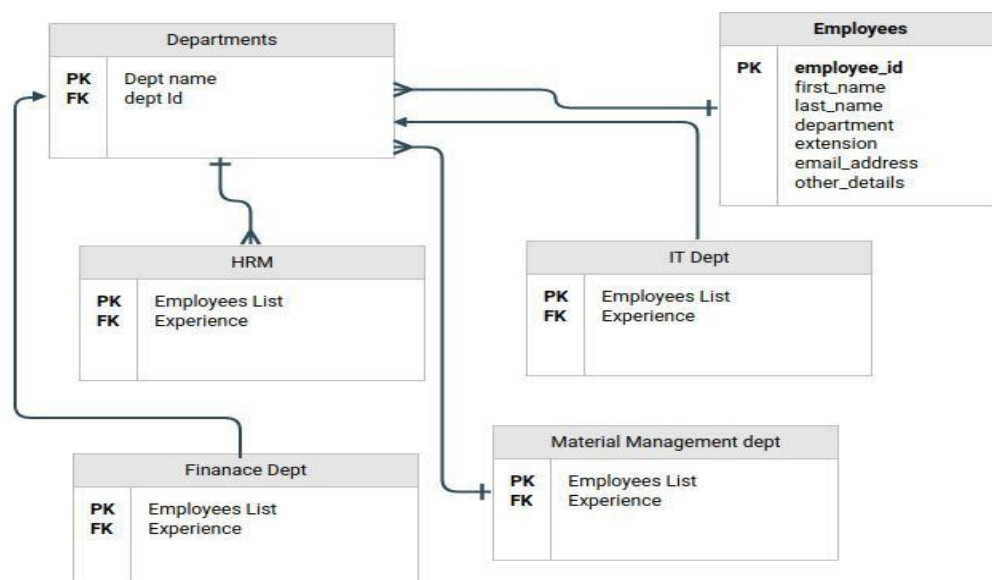


Figure 9: Database Design

Those are the designs that we planned to implement to the System.

3.4 System Implementation

Coding

The Systems front end will be coded using HTML and CSS and to some extent JS. The backend will be coded using C++ and PHP. The Database will be coded using MySql. The task of coding is performed by the Programming team. The team will combine their skills and finish the coding task in the mentioned time.

Deployment Environment

The system will be operating in windows environment means that our servers will run on windows environment for the time being. But in the future we have planned to move it to a Linux server. The AEMS is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer, Google Chrome, and Mozilla Firefox. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 . The only requirement to use this online product would be the internet connection. The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

Data Entry (Conversion)

Currently the company is using the Manual system to control it’s employees. Then all it’s data is not digital. So that in this step we have to convert all the data we need into the digital form and feed it to our system. Those data’s are mainly Employees data and Departments data.

System Testing

After developing the System there will be testing. We will test the System using automated system by providing Test cases. We will use both the Static and Dynamic methods of Testing to make sure that the system we developed is Robust and Secure. The Approach we use to Test the system again will be Grey box testing to minimize the cost and the time we incur on the testing phase.

Our system will be tested again using all the four steps of Software testing process.

1. Unit Testing

2. Integration Testing
3. System Testing
4. Acceptance Testing.

Training Users

The users of our system are assumed to be new to computerized system. Because of that we need to train them to use the system properly by giving them Users and Administrators training. The Users training will be conducted including all the Employees and all the Management(Admins). But the training for the Admins will be conducted just for the Administrators exclusively. The Administrators training will be given more attention because they have to be confidential with handling the employees data.

3.5 System Maintenance

This phase is a phase that will continue to occur as long as the system is on work. So that we agreed with the company that they are going to hire a IT professional for maintenance purpose over the life time of the system. Means that we have agreed that further work is either the company's responsibility or covered under another System Service Request or contract.

