HR PORTAL MANAGEMENT

A PROJECT REPORT

Submitted by

PATEL DIPKUMAR MUKESHBHAI

181210116023

In partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

in

Information Technology

Apollo Institute Of Engineering & Technology, Ahmedabad

Gujarat Technological University, Ahmedabad

May, 2022

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Apollo Institute of Engineering & Technology

Ahmedabad

CERTIFICATE

This is to certify that the project report submitted along with the project entitled HR PORTAL MANAGEMENT has been carried out by PATEL DIPKUMAR MUKESHBHAI under my guidance in partial fulfillment for the degree of Bachelor of Engineering in INFORMATION TECHNOLOGY, 8th Semester of Gujarat Technological University, Ahmadabad during the academic year 2021-22.

Prof. Nitesh Prajapati
Internal Guide

Prof. Radhika Raval
Head Of The Department

GUJARAT TECHNOLOGICAL UNIVERSITY

CERTIFICATE FOR COMPLETION OF ALL ACTIVITIES AT ONLINE PROJECT PORTAL

B.E. SEMESTER VIII, ACADEMIC YEAR 2021-2022

Date of certificate generation : 02 May 2022 (17:35:53)

This is to certify that, ***Patel Dipkumar Mukeshbhai*** (Enrolment Number - 181210116023) working on project entitled with ***HR Portal Management*** from ***Information Technology*** department of ***APOLLO INSTITUTE OF ENGINEERING & TECHNOLOGY, AHMEDABAD*** had submitted following details at online project portal.

Internship Project Report	**Completed**

Name of Student : Patel Dipkumar Mukeshbhai

Name of Guide : Mr. Nitesh Jagdishbhai Prajapati

Signature of Student : _____

*Signature of Guide : _____

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Date: - 8th April 2022

TO WHOM SO EVER IT MAY CONCERN

Project Title: HR_Portal

Work Period: Jan 2022 **To** April 2022

This is to certify that **Mr. Patel Dipkumar Mukeshbhai** has successfully completed Internship Project in **DJANGO.**

The work is completed on **April 2022** successfully.
Thanking you and assuring you for our best services always

With Regards,

Huzefa Shakir
(Authorised Signature)

306, Hir-Asha Arcade, Opp. SagarSangeet Apartment, Kargil, Ahmedabad-60
www.arthinfosoft.in,ai@arthinfosoft.in,9879310901

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Ahmedabad

DECLARATION

We hereby declare that the Internship / Project report submitted along with the Internship/ Project entitled HR PORTAL MANAGEMENT submitted in partial fulfillment for the degree of Bachelor of Engineering in INFORMATION TECHNOLOGY to Gujarat Technological University, Ahmedabad, is a bonafide record of original project work carried out by me at ARTH INFOSOFT PVT. LTD. under the supervision of HUZEFA SHAKIR and that no part of this report has been directly copied from any students' reports or taken from any other source, without providing due reference.

Name of the Student	Sign of Student
Patel Dipkumar Mukeshbhai	_____

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Patel Dipkumar Mukeshbhai

181210116023

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ABSTRACT

The HR module is basically a portal that helps in human resources management, integration and collaboration of different organizational elements that make administration and personalization easy.

Every enterprise with 50 or more employees can make a huge difference

to how they achieve goals and how they sustain business in the 21st century. Portals sound great on paper, and even better when implemented correctly.

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LIST OF ABBREVIATIONS

SDLC	: Software Development life cycle
HR Portal	: Human Resource Portal
PM	: Per Month
KLOC	: Thousand of Lines of Code
APP/app	: Application
Web page	: Website page
Webapp	: Website Application
VScode	: Visual Studio Code

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CHAPTER 1 OVERVIEW OF THE COMPANY

1.1 HISTORY

Arth Infosoft Pvt. Ltd. has Indian established IT growing company, aims to serve with affordable Graphic, Web and Software solutions. Arth specializes in particular, but not limited to graphic, website designing, web application and web portal development. Moreover, we are also ready to offer your business or services to a wider audience through our strong SEO (Search Engine Optimization) campaigns. Our online reputation is founded on the ability to deliver web services in Word press, Magento, PHP, Python and much more with custom solutions based on client's requirement. We make every effort the long run clientele and hence 24X7 supports are not only our strategy but our business value.

1.2 DIFFERENT PRODUCT

In addition to web design, they provide the following services:

- Android Application Development and Management: They provide services for Android application development and management.
- Open-Source Development: They offer stable and scalable online solutions that fit their clients' objectives.
- Website Development: To construct dynamic websites, they employ WordPress and the Python Django framework.
- Web hosting: They provide hosting services that safeguard servers and data while also making websites available 24 hours a day, seven days a week, 365 days a year.
- SEO Service: This is a procedure to make your website appropriate for major search engine and through off page work (SEM – Search Engine Marketing) increase your presence and make visible to search engines and end users.

1.3 ORGANIZATION CHART

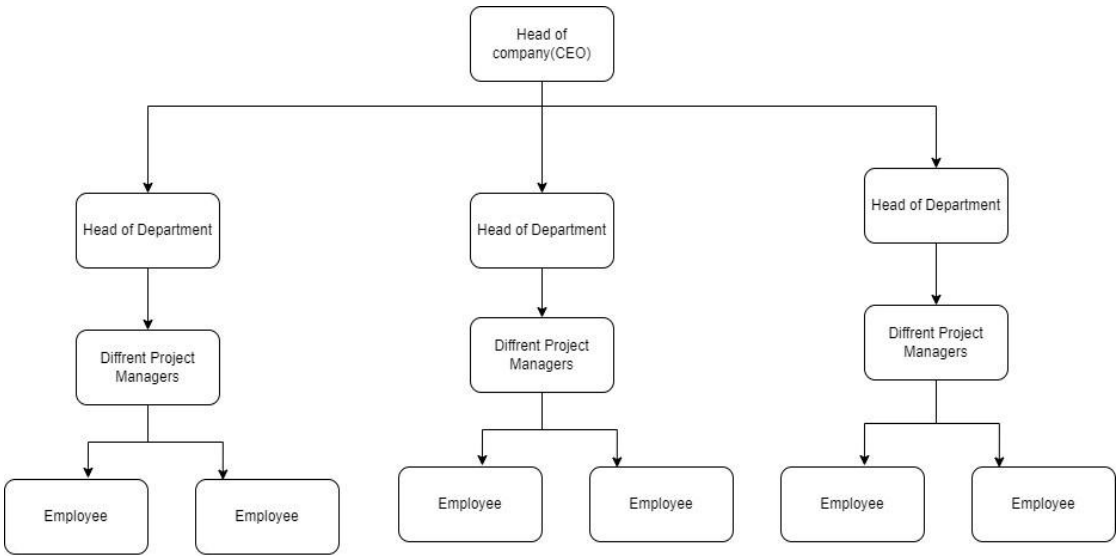

Fig 1.1 Organization Chart

1.4 Company Objective

- GLOBAL PLANNING
- PROFESSIONALISM
- RESULT-ORIENTED SERVICE
- SUPPORTING YOUR BUSINESS WORLDWIDE

CHAPTER 2

OVERVIEW OF PROCESS BEING CARRIED OUT IN COMPANY

2.1 DETAILS OF PROJECT IMPLEMENTATION PROCEDURE

- Planning
- Analysis
- Designing
- Implementation
- Testing
- Deployment
- Maintenance

2.2 TECHNICAL SPECIFICATIONS OF MAJOR SOFTWARE USED IN EACH DEPARTMENT

With more than 10 years of practical experience we bring the experts in Following Web Technologies as following: -

- PSD to HTML/CSS/XHTML/Any Conversation
- Adobe Illustrator/Photoshop Designers
- Custom Wordpress Designing & Wordpress Integration Development
- Python Django Development
- Logo Design
- PHP/ASP.NET Web Development
- SEO Expert Services
- Database Design, Programming, and Management

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- **GitHub**

GitHub provide various features like Access Controls/Permissions, Application Security, Authentication, Automated Testing, Collaboration Tools, Commenting/Notes, Data Import/Export, Debugging, Feedback Management, Integrated Development Environment, Milestone Tracking, Monitoring.

2.3 SCHEMATIC LAYOUT OF OPERATION FOR MANUFACTURING OF END PRODUCT

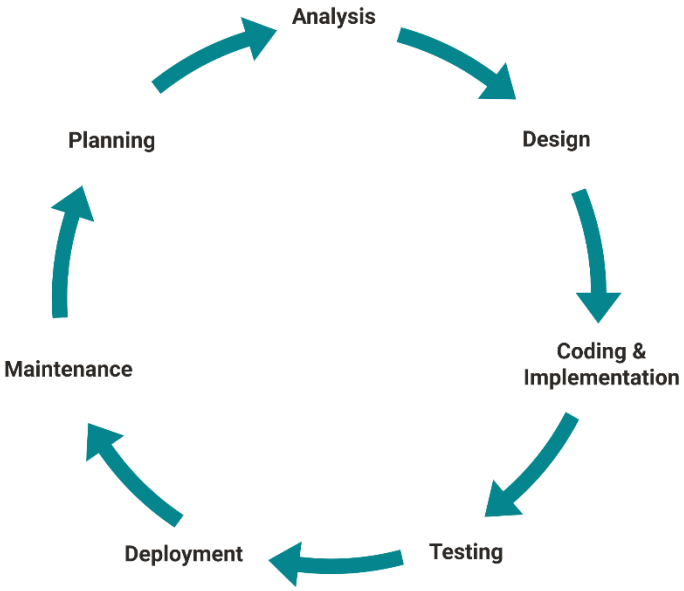

Fig 2.1 Operation of Software Development

2.4 DETAILS ABOUT EACH STAGE OF PRODUCTION

Planning

Planning for the quality assurance requirements and identification of the risks associated with the project is also done in the planning stage. The outcome of the technical feasibility study is to define the various technical approaches that can be followed to implement the project successfully with minimum risks.

R[illegible]age in SDLC. It is performed by the senior [illegible]rom the customer, the sales

department, market surveys and domain experts in the industry. This information is then used to plan the basic project approach and to conduct product feasibility study in the economical, operational and technical areas.

Designing

In this third phase, the system and software design documents are prepared as per the requirement specification document. This helps define overall system architecture.

This design phase serves as input for the next phase of the model.

There are two kinds of design documents developed in this phase:

High-Level Design (HLD)

- Brief description and name of each module
- An outline about the functionality of every module
- Interface relationship and dependencies between modules
- Database tables identified along with their key elements
- Complete architecture diagrams along with technology details

Low-Level Design (LLD)

- Functional logic of the modules
- Database tables, which include type and size
- Complete detail of the interface
- Addresses all types of dependency issues
- Listing of error messages
- Complete input and outputs for every module

Implementation / coding

Once the system design phase is over, the next phase is coding. In this phase, developers start build the entire system by writing code using the chosen programming language. In the coding phase, tasks are divided into units or modules and assigned to the various developers. It is the longest phase of the Software Development Life Cycle process. In this phase, Developer needs to follow certain predefined coding guidelines. They also need to use programming tools like compiler, interpreters, debugger to generate and implement the code .

Testing

Once the software is complete, and it is deployed in the testing environment. The testing team starts testing the functionality of the entire system. This is done to verify that the entire application works according to the customer requirement.

During this phase, QA and testing team may find some bugs/defects which they communicate to developers. The development team fixes the bug and send back to QA for a re-test. This process continues until the software is bug-free, stable, and working according to the business needs of that system.

stem then the

project manager,

the final software is released and sues if any.

Maintenance

Once the system is deployed, and customers start using the developed system, following 3 activities occur :

- Bug fixing – bugs are reported because of some scenarios which are not tested at all
- Upgrade – Upgrading the application to the newer versions of the Software
- Enhancement – Adding some new features into the existing software

The main focus of this SDLC phase is to ensure that needs continue to be met and that the system continues to perform as per the specification mentioned in the first phase.

CHAPTER 3

INTRODUCTION TO PROJECT

3.1 PROJECT SUMMARY

We are building an HR Portal, When Employee join company, HR can manage all the details of employee in this portal, use Django admin for HR, and create Django app for users.

Admin: - Who can control the main system and having the decision-making Authority.
User: - who uses this portal for see their leaves or salary Increment and Other Details .

3.2 PURPOSE

Manage all your HR functions by automating the manual, repetitive tasks. HR tools for HR are well-known for building better workplaces through simplified human interactions, enhanced business insights, and streamlined HR processes.

3.3 OBJECTIVE

The main objective of this project is to keep an eye on the employee details and track their progress.

We can also track the profile of any employee like them

past assigned projects, technology on which they worked, their progress report.

One of the main objectives of HR Portal management is to save all the employee

Details securely.

3.4 SCOPE

Scope of any project means is it scalable or a contender for further building of that particular project.

Project scope is the part of project planning that involves determining and documenting a list of specific project goals, deliverables, tasks, costs and deadlines.

3.5 TECHNOLOGY AND [illegible]

[illegible]vities in analysing his/her [illegible]ngning next project to

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the employee or to train him/her to enhance the skills – where lies with proper projection. He is not provided with the detailed project information done or to be assigned based on Application / Verticals.

The HR Portal System can dramatically increase the productivity and accountability of individual employees by providing a documented work flow and positive feedback for good performance.

3.6 PROJECT PLANNING

- First we will discuss the definition of project.
- Choose the technology.
- The define the software and hardware requirement of the system.
- Define the roles in the system
- Draw the ER diagram
- Plan the user interface of system
- Define the login entities
- Define database dictionaries

3.6.1 Project Development Approach

We will be using the incremental model of software development

- Planning the work or objectives.
- Analysis & Design of objectives.
- Accessing and controlling risk.
- Allocation of resources.
- Organizing the work.
- Database Designing.

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3.6.2 Project / Internship Effort and Time, Cost Estimation

To calculate the Cost, Effort, Time estimation we have used a COCOMO model

Cost required to develop project=effort*Rs/Month

Table 3.1 Estimate line of code

Page	Estimated line of code
Login	100
Registration	200
Home	950
company	150
product	250
Report	450
Designation	200
Employee	200
logout	150
Profile	150
Admin	250
Review	250
User	500
	3800

Total line of code=3800

KLOC=3.8

We are using Organic Project Type,

Effort Estimation (E):

$=2.4\ (KLOC)^{1.05}$ PM

Duration Estimation (D):

$= 2.5(effort)^{0.38}$ months

$=2.5(9.74)^{0.38}$ months

=5.9 months

Project Cost:

=effort*RS/month

=9.74*12000

=1,16,880 Rupees

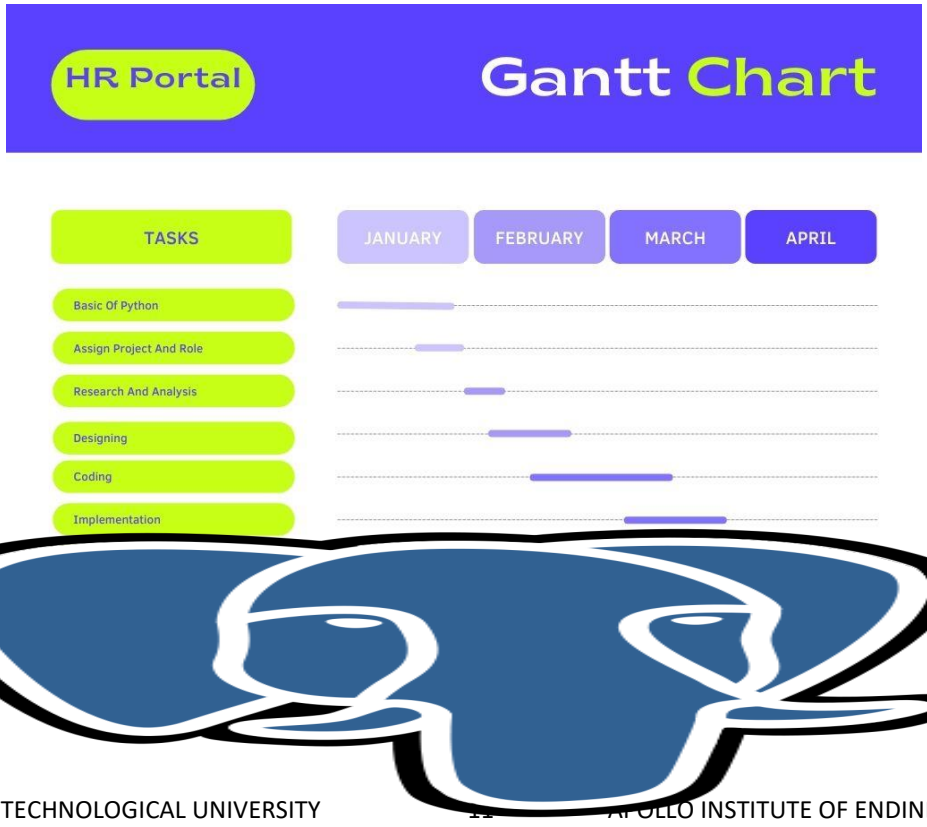
3.6.3 Roles and Responsibilities

This project has to done by individual so all responsibilities of project is on myself only

I have to conduct all things by my self

- Investigation
- Requirement Analysis
- DB Design
- Coding
- Testing

3.7 PROJECT SCHEDULING (GANTT CHART)



CHAPTER 4 SYSTEM ANALYSIS

4.1 STUDY OF CURRENT SYSTEM

Existing system

The present system in the different companies is working on the offline paper-based system. This system becomes much more difficult to use when the number of employee increases.

- Thus, we created an online system control for official work.
- Our system consists of web-based management system which includes many functionalities and can be accessed at any time.

4.2 PROBLEM AND WEAKNESSES OF CURRENT SYSTEM

- Information retrieval is a very big process.
- No security because the files are visible to the users.
- Report generation will be a big task.

Most of the work is done by humans with minimum to no intervention by machines. Humans are subjected to other factors like stress, emotions etc. that may reduce their work efficiency which is not the case with the machines, hence prolonged and maintained efficiency.

4.3 PROPOSED SYSTEM REQUIREMENT

Functional Requirement:

The system must recognize the user while logging in to website

The system must display the status of any employee.

The system must allow new employee to see their details and for further usages.

Non-Functional Requirement:

4.4 SYSTEM FEASIBILITY

Technical feasibility means does the model is technically possible to build or not?
i.e., does it really sound technical to build the model.
So, talking about our project, we assure you that it sounds really good to build this type of project because the software industry needs to manage all data.

4.4.1 Does The System Contribute To The Overall Objectives Of The Organization?

The HR Portal management system is to be developed for any user who wants to use it. We want our system user friendly and easy to use.
The administrator also may be non-technical, so the user interface will be designed in such a way that it gets comfortable for non-technical person to operate easily.

4.4.2 Can The System Be Integrated With Other Systems Which Are Already In Place?

Currently, all firms are automating the repetitive and tedious tasks that individuals perform. The primary process areas of the existing system are well suited to automation, proving the technological capability without a shadow of a doubt. Python-Django is being used to create this project. It has a lot of features that make it user-friendly. The login/signup process is also quite straightforward. Data may be easily added, modified, and deleted from the database. Because it is an online project, it may be accessed from any location and on any platform.

4.5 FUNCTION OF THE SYSTEM

- Users Can Log In To Our Website.
- User Will See Their Profile.
- Admin Can Coordinate The Employee On How To Approach To Any Given Task And Proceed According To Predefined Techniques And Standards Provided By The Administration Group.
- User Can See Their Status.
- Admin Can Register The Joining Date Of The Employee.
- Admin Can Take An Attendance Of Employee.
- Admin Can Manage All Department In Company.

4.6 MODULES OF PROPOSED SYSTEM

Recruitment

A recruitment module should provide a centralized and streamlined process for creating job requisitions, customization of job-specific questions, and an out-of-the-box recruiting portal.

Attendance

Attendance tracking, manager approval access and time clock management are the most common features of a time and attendance module.

Payroll

The payroll module handles all requirements relating to accounting and management of an employee's payroll. Ability to process payroll for a single employee or a batch of employees.

Department

The department module processes all information about the various departments in the

4.7 SELECTION OF HARDWARE AND SOFTWARE

Software Characteristics :

Designing frontend	: Django templates and html , CSS, JavaScript
Framework	: Django framework
IDE	: Vs code
Database	: sqlite 3
Version control	: Git
Backend	: Django
Core language	: Python

Hardware Characteristics :

Processor	: Intel i3 or up
RAM	: 512 MB
Hard disk	: 5 GB

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CHAPTER 5 SYSTEM DESIGN

5.1 SYSTEM DESIGN

Admin side

Step 1: enter the URL to open the system

Step 2: provide user name and password

Step 3: if username and password both is correct then it will login successfully.

Step 4: it shows home page

Step 5: admin can able to perform many operations.

Step 6: close the system.

User side(Employee)

Step 1: enter the URL to open the system

Step 2: provide user name and password

Step 3: if username and password both is correct then it will login successfully.

Step 4: It will redirect user to homepage.

Step 5: this page contains user profile and different functions.

Step 6: user can view and edit there information.

Step 7: close the systems.

5.2 DATABASE DESIGN/DATABASE STRUCTURE DESIGN

Table: hrms_employee

id	thumb	first_name	last_name	mobile	email	address	emergency	gender	joined	language	nuban	bank	salary	irtmer	emp_id
1	media/fbac685e-...	Deep	p	1212121212	Deep@gmail.com	dp	12	male	2022-05-01 16:37:26	english	0123456789	First Bank Plc	40000	1	1
2	media/DSC_4443-01.jpg	sahil	patel	9985648215	sahil072@gmail.com		9984123367	male	2022-05-08 05:41:57.759726	english	4100650002	bank of baroda	25000	1	emp537

Table: hrms_user

id	password	last_login	is_superuser	username	last_name	email	is_staff	is_active	date_joined	thumb
1	pbkdf2_sha256$320000$eBxeytPN3EuFmtZbFQsP...	2022-05-08 05:40:22.612464	1	admin		admin@gmail.com	1	1	2022-05-01 16:34:54.160748	
2									2022-05-07 07:13:06.642618	PicsArt_02-09-1...

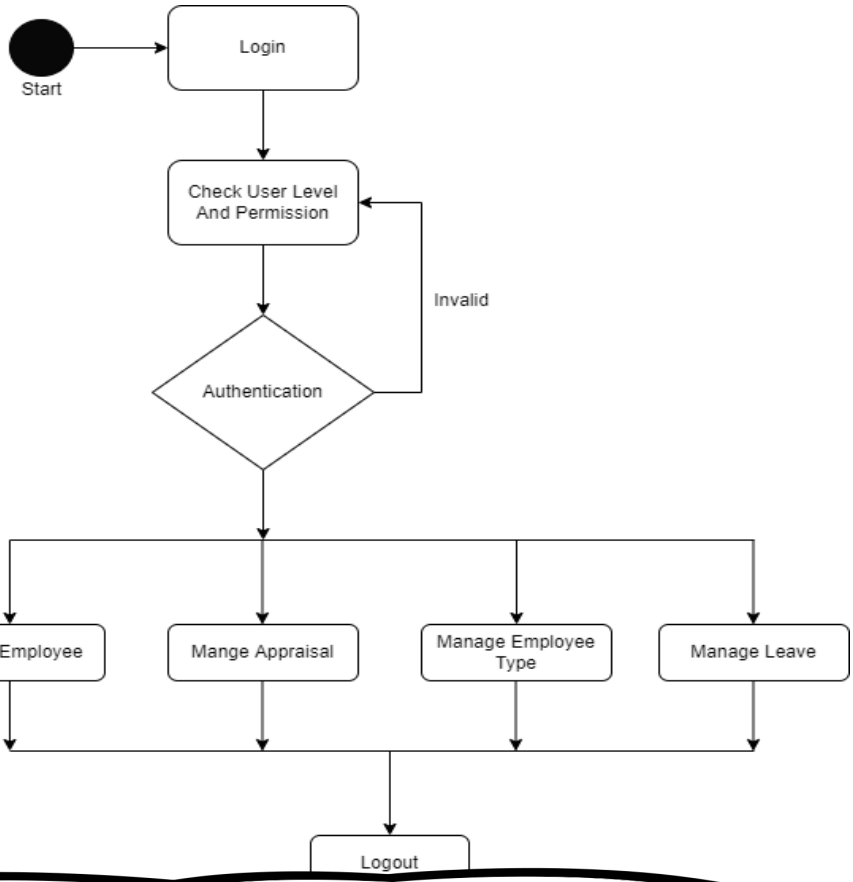
Table: hrms_attendance

	id	date	first_in	last_out	status	staff_id
	Filter	Filter	Filter	Filter	Filter	Filter
1	1	2022-05-02	12:26:17.520176	12:26:17.520176	PRESENT	1
2	2	2022-05-08	05:44:11.981557	NULL	PRESENT	2

Table: hrms_department

	id	name	history
	Filter	Filter	Filter
1	1	Python	A Python Web Developer is responsible for writing server-side web applicati...
2	2	Java	A Java Developer is responsible for the design, development, and ...

5.3 INTERFACE DESIGN



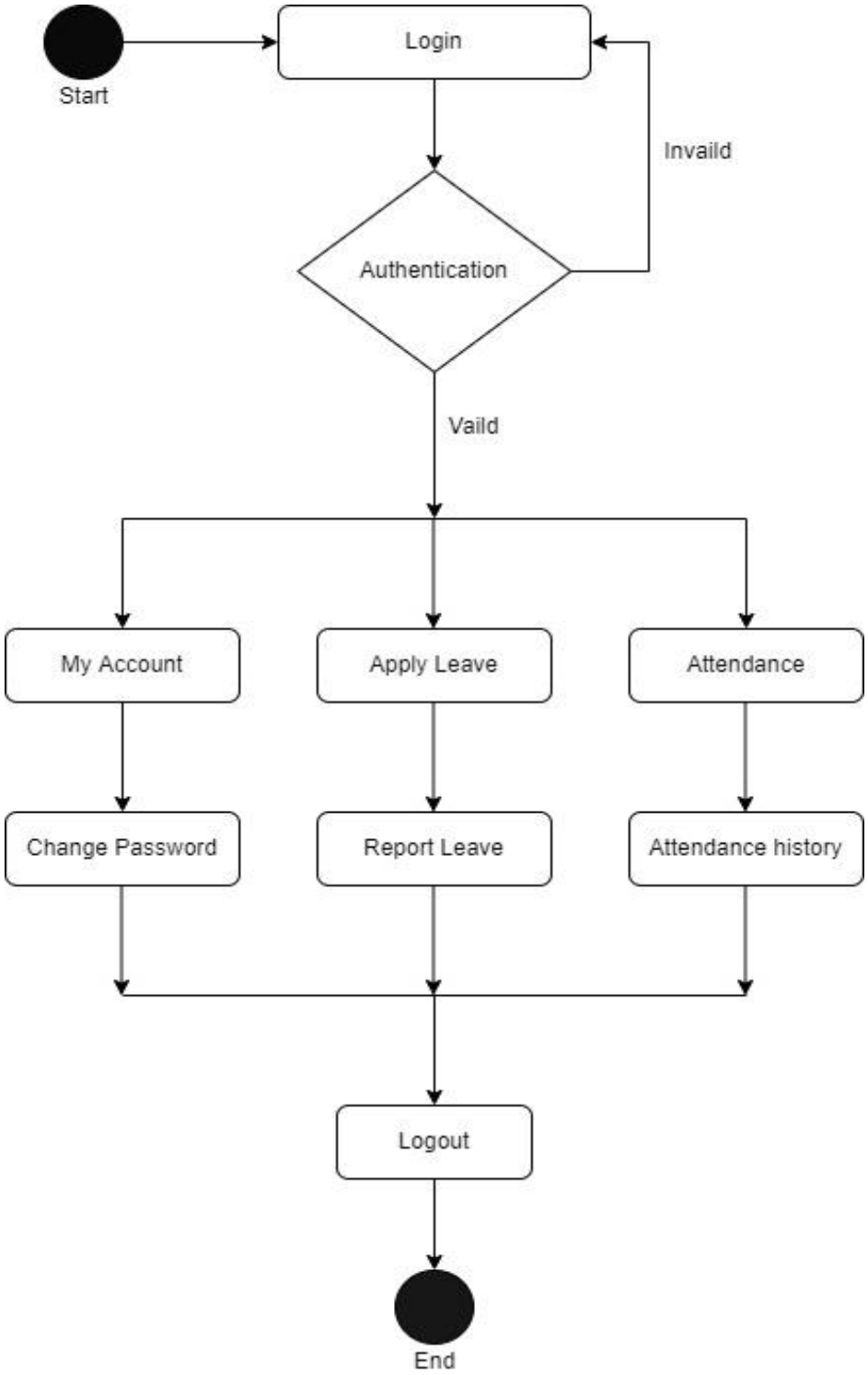


Fig 5.3(B) flowchart of employee login

Fig 5.3(C) Use Case Diagram

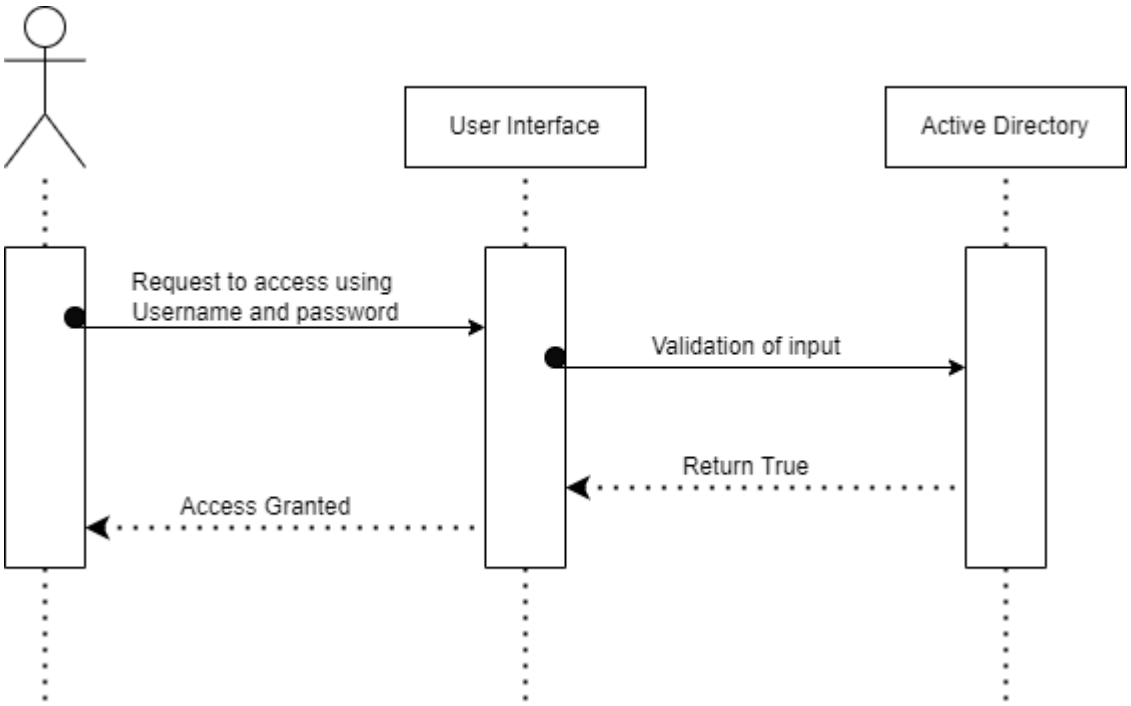
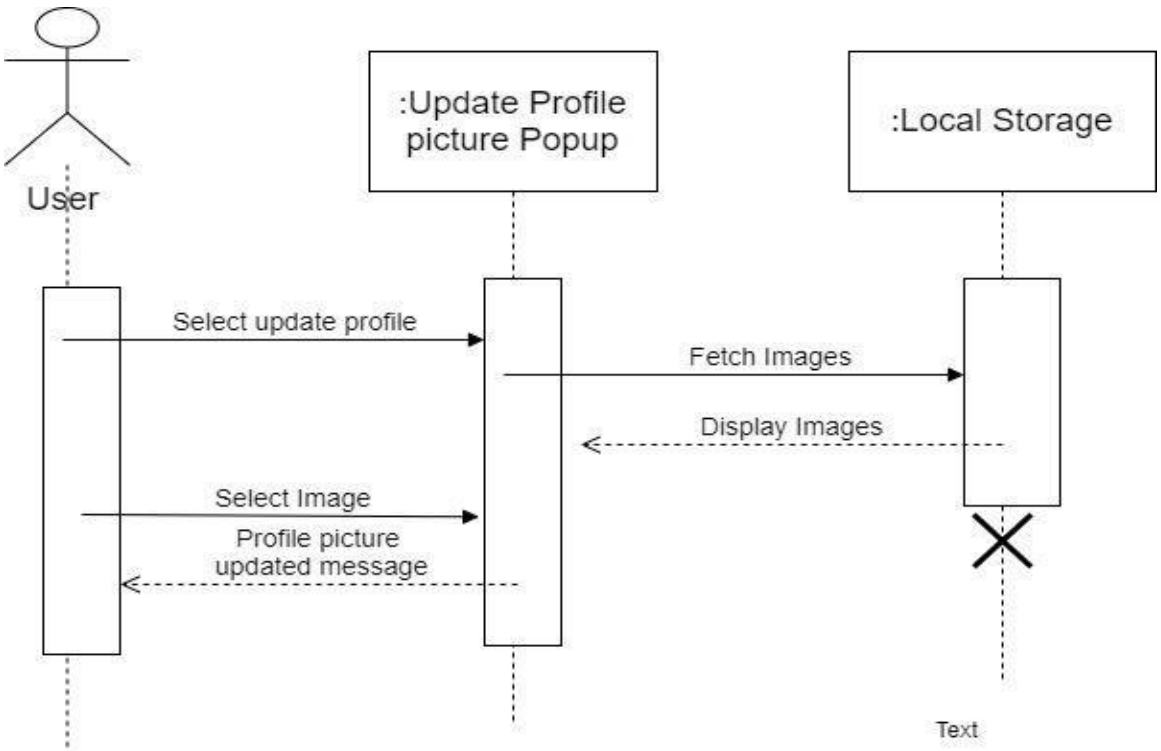


Fig 5.3(d) Sequence Diagram of login



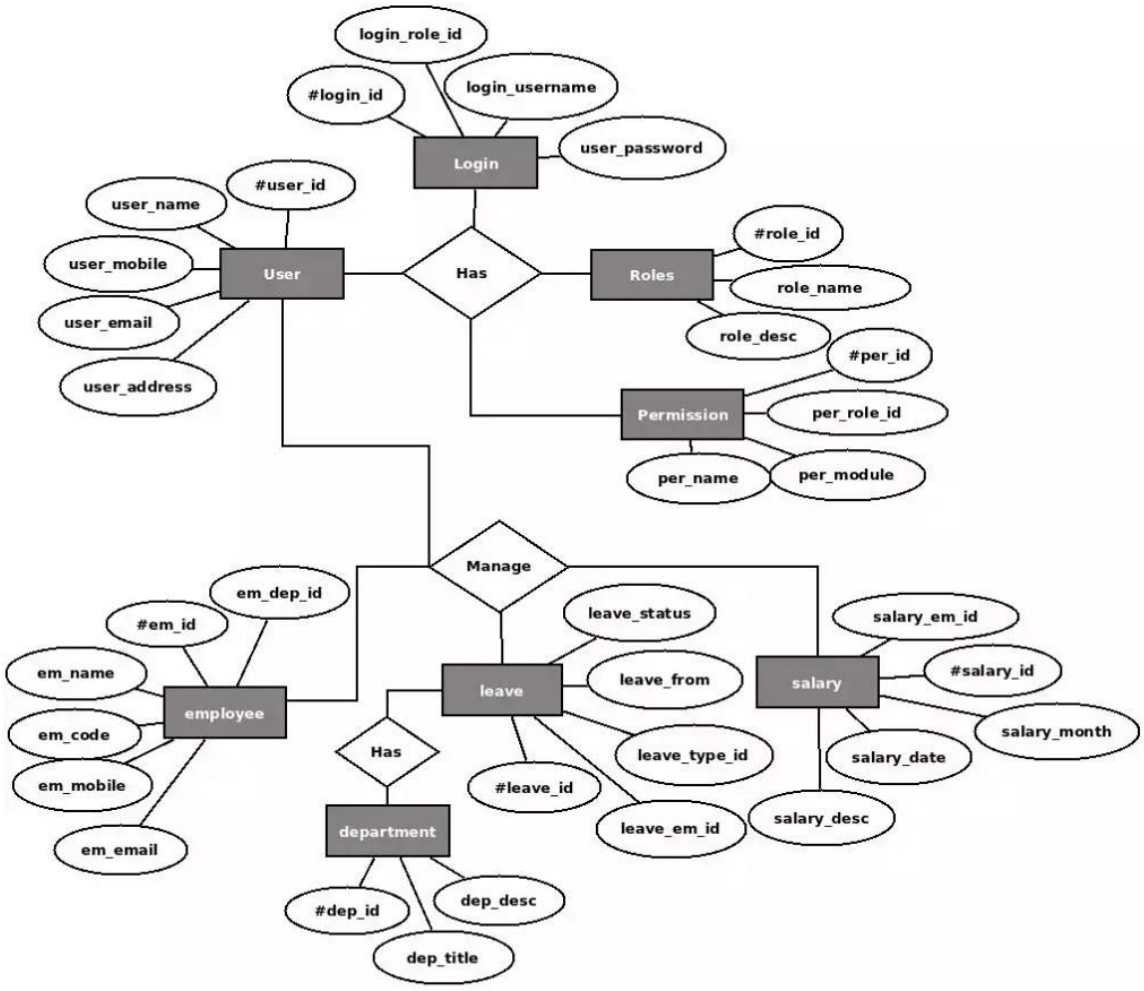


Fig 5.3(F) ER Diagram

CHAPTER 6

IMPLEMENTATION PLANNING AND DETAILS

6.1 TECHNOLOGIES & IMPLEMENTATION ENVIRONMENT

Designing frontend	: Django templates and html , CSS, JavaScript
Framework	: Django framework
IDE	: Vs code
Database	: sqlite 3
Version control	: Git
Backend	: Django
Core language	: Python

The Integrated Development Environment (IDE) vs code is used in computer programming. It comes with a basic workspace as well as a plug-in framework for customizing the environment. Eclipse is primarily written in Java and is intended for the development of Java applications; however, it can also be used to develop applications in other programming languages via plug-ins such as Ada, ABAP, C, C++, C#, COBOL, D, Erlang, JavaScript, Perl, PHP, Prolog, Python, R, Ruby, Rust, Scala, and Scheme. Eclipse may be used to develop for Tomcat, Glass Fish, and a variety of other servers, and it can frequently be used to install the appropriate server (for development) directly from the IDE. It has remote debugging capabilities, allowing a user to monitor variables and walk through the code of an application running on the associated server.

Implementation Environment

- Our project is suitable to all type of users like single and multi-users.
- Multi users are allowed to operate the website at the same time.
- We provide the interface which is user friendly.
- We have GUI (graphical user interface) by which all type of users can easily access the application
- If we don't provide the GUI in the website then user won't like our website.
- [illegible] the website

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6.2 SECURITY FEATURES

User authentication

- Identification and authentication are used to establish a user's identity.
- Each user is required to log in to the system.

Password Protection:

- Every user who is to be allowed to access the portal is given his own username and password and given his own access rights so that only authorized and authenticated users can access the project.

Confidentiality:

- We provide confidentiality to all the users.
- In that one user cannot access the data of the other users.
- For that we provide one key to each user to secure its data.

Scalability:

- We provide the scalable website to make sure that every user can access the website in a proper order.
- User likes those type of website which are in one particular order that user cannot wait for the usage of the services.

6.3 CODING STANDARDS

- Every company follows a different coding standard based on their best practices.
- Coding standard is required because there may be many developers working on different modules so if they will start inventing their own standards then the source will become very unmanageable and it will become difficult to maintain that source code in the future.
- Here are several reasons why to use coding specifications:
- Your peer programmers have to understand the code you produce.
- A coding standard acts as the blueprint for all the team to decipher the code.

n common

o understand code.

- There are few guidelines that can be followed while coding in python-Django. **Python Tags :** One must use the Python standard tags(), rather than the shorthand tags() to delimit the Python-Django code.

Commenting :

Use of standard python commenting style i.e., (#) – for single line and (“”” “””) – for multi- line is highly encouraged.

Line length and Indentation :

It is a standard recommendation to not exceed more than 75-85 characters per line of code. One must not use tabs for indentation instead use 4 spaces as it is the standard indenting method in most of the programming languages.

Structuring the control flow statements:

The control flow or conditional statements must be written in such a way so that it could be differentiated from function call statements. While writing if, for, while, switch and other control flow statements there must be one space between the keyword and the opening parenthesis.

Function Calls :

While writing a function call statement, there must be no space between the function name and the opening parenthesis and use ‘_’ to separate if there is a two words in function name.

Block alignment:

Every block of code and curly braces must be aligned.

Short Functions:

All functions and methods must limit themselves to a single page and must not be lengthy

PostgreSQL

6.4 IMPLEMENTATION

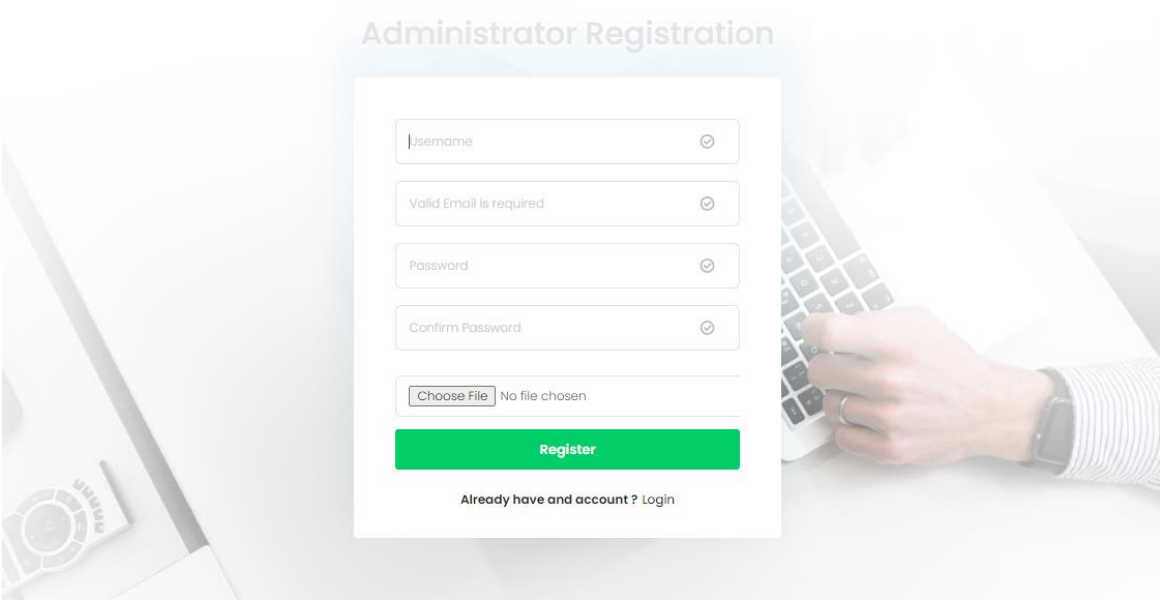

Fig 6.4(A) Admin Registration

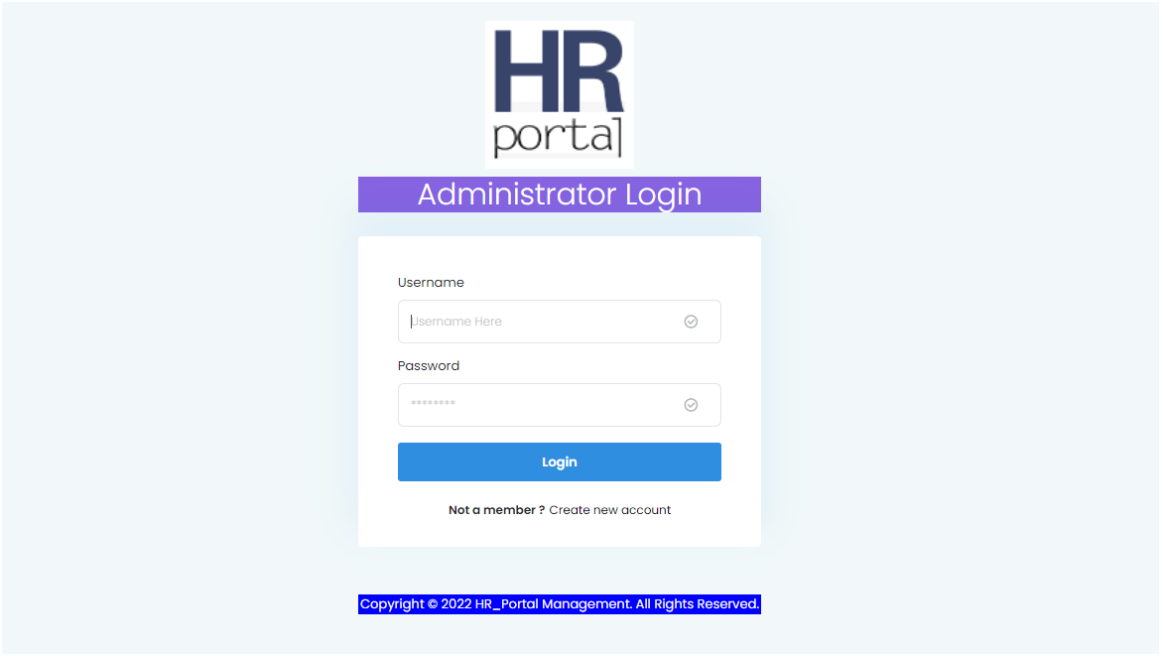

Fig 6.4(B) Admin Login

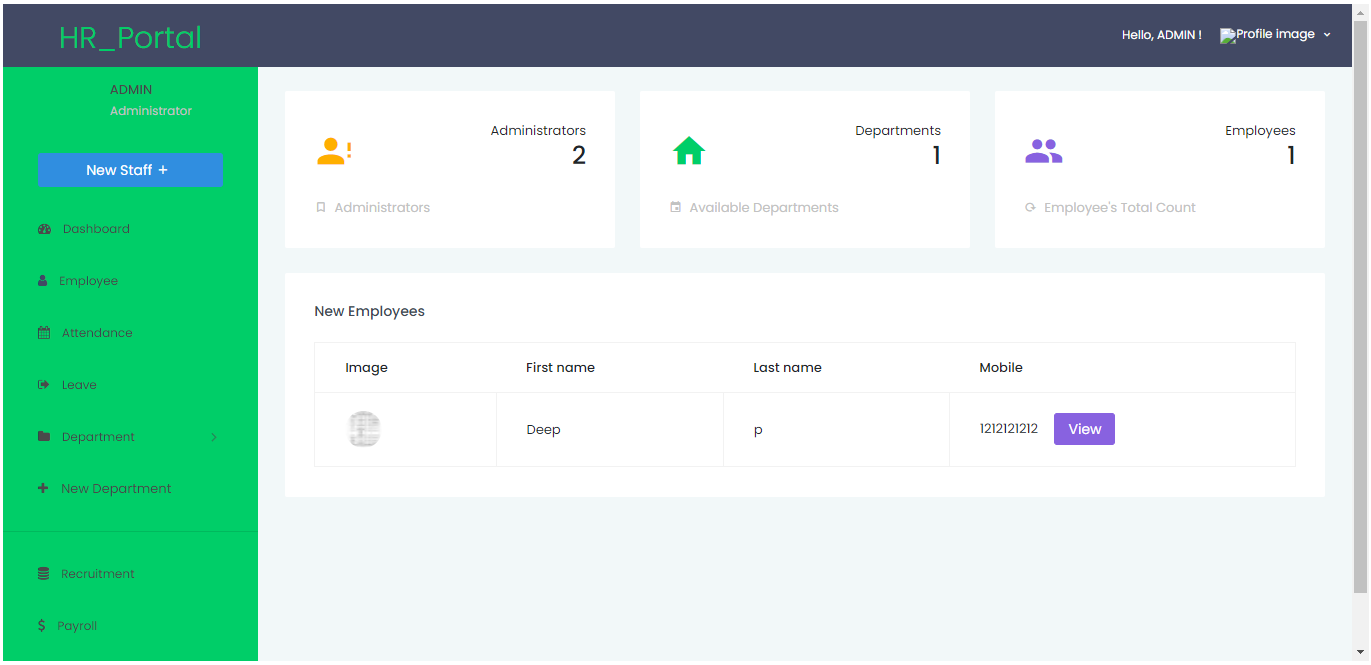

Fig 6.4(C) Admin Dashboard

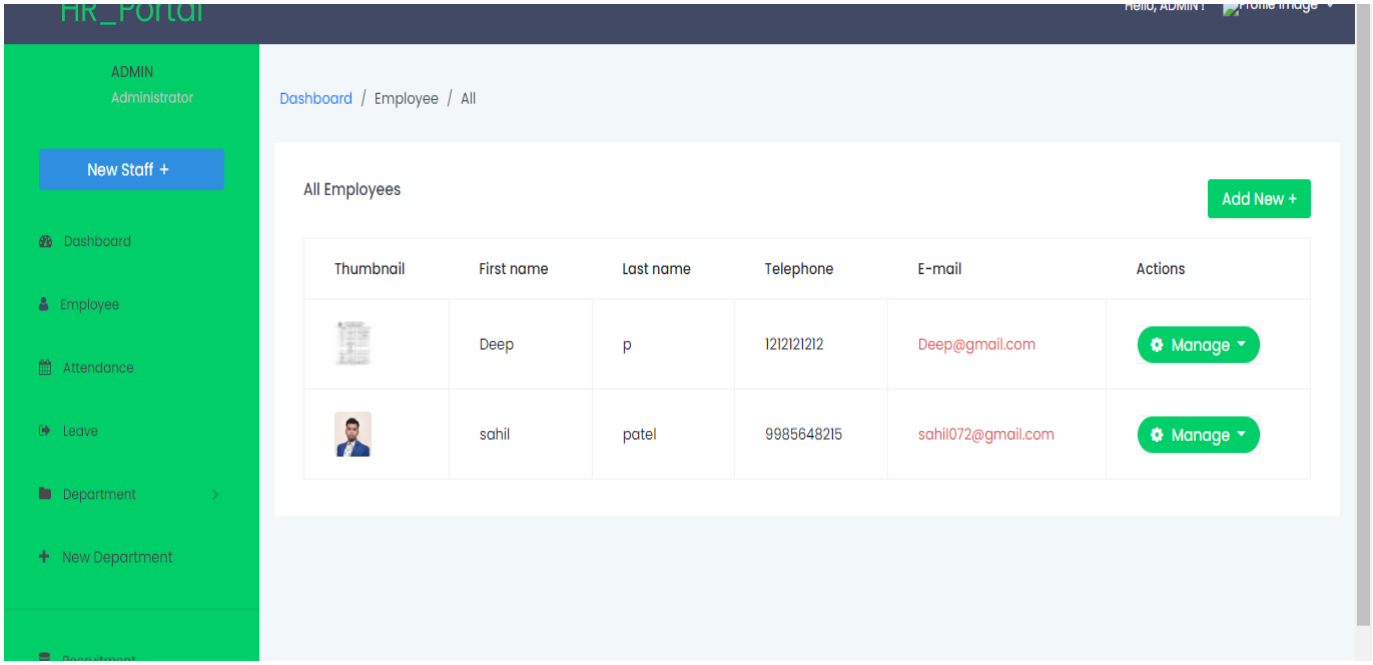

Fig 6.4(D) Employee List

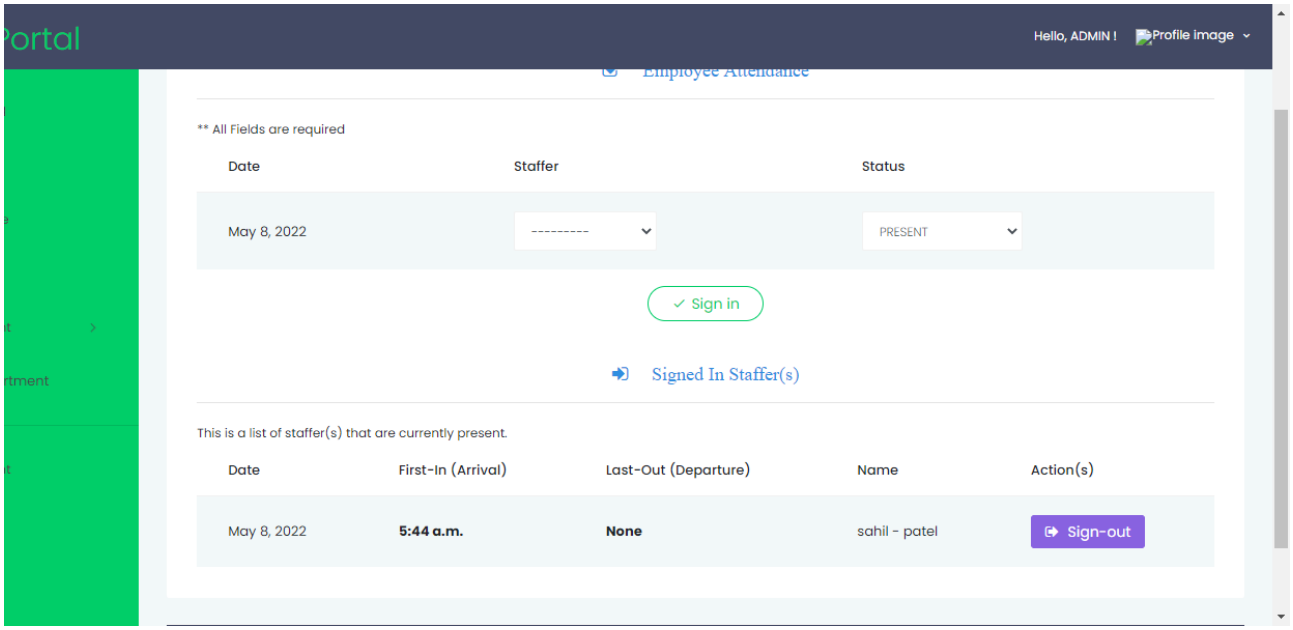

Fig 6.4(E) Employee Attendance

CHAPTER 7 TESTING

7.1 TESTING STRATEGY

- The testing strategy followed by the company is unique in its own way.
- The developer first takes into account the UNIT Testing.
- Then the Integration testing is conducted to check the over functionality of the system.
- Then the Validation Testing is performed once the whole project is done. Alpha and Beta testing are done once by the testing team and the clients respectively.
- Then the over System testing is done and after that Acceptance testing is done.

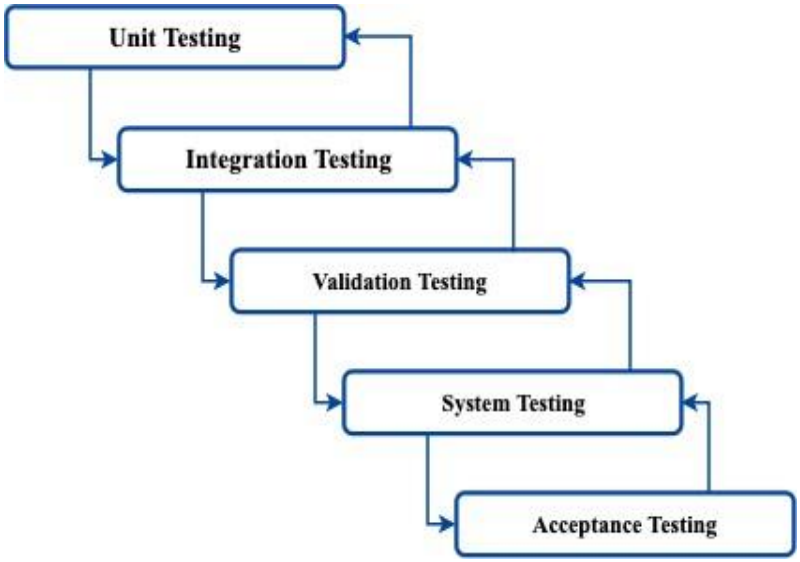

Fig 7.1 Testing Strategy

Unit Testing

- Black Box Testing - Whether the particular class meets the requirements mentioned in the specification.
- White Box Testing - The tester looks inside that class and checks if there is error in the code which is not found while testing the class as a black box.

Integration Testing

and every menu

ssing, Interaction

Validation Testing

- For Validation Testing stage, we have performed functional test cases and the result share compared in the form of actual and expected outcomes.
- The testing proved that the Validation was compliant with the requirements as specified in the Use Case and SRS (Software Requirement Specification).

System Testing

- It is carried to see that functionality related sets of units used together function as designed.
- The system test specifications, incorrect operation of the system is narrowed down to incorrect operation of unit(s) and is taken care of by filing the units.
- Test data covers the possible values of each parameter based on the requirements.

Acceptance Testing

- After each module completion, the system tester tested the system to check user acceptance and changes are made accordingly as per requirements.

7.2 TEST RESULTS AND ANALYSIS

Test ID	Description	Expected value	Actual value	Remark
1	Check for all the feature in the screen	The screen must contain all the features	As expected Values	No changes to be made
2	Check for the alignment of the objects as per the validations	The alignment Should be in proper way	All objects are at aligned place	No changes to be made
3	Enter the valid user id into the user id field	It should accept	It accept values as defined	No changes to be made
4	Try to modify the information	Modification should not be allow	Modification is not	

Chapter 8 CONCLUSION AND FUTURE WORK

8.1 CONCLUSION

A lot of work that was previously done manually by the HR teams will be automated as a result of this HR Portal. The HR staff is no longer required to keep an excel sheet (Leave Tracker) for all workers' leaves. Employees may apply for leaves, and the DM can approve/reject them directly from HR Portal, as well as follow the progress of the leaves. Using the Bulk Modify module, HR may change the grade, classification, department, and so on for a large number of workers at once. The most important aspect is that the HR Portal is administered and maintained by itself, which saves money on outsourcing the software and allows the firm to make all necessary adjustments based on their needs. Using the filter tool in the personnel directory, HR teams may find the people they need based on abilities, past experience, and a variety of other criteria.

8.2 FUTURE ENHANCEMENT

It Is Not Possible To Develop A System That Makes All The Requirements Of The User.

User Requirements Keep Changing As The System Is Being Used. Some Of The Future Enhancements That Can Be Done To This System Are:

- As The Technology Emerges, It Is Possible To Upgrade The System And Can Be Adaptable To Desired Environment.
- Because It Is Based On Object-Oriented Design, Any Further Changes Can Be Easily Adaptable. Based On The Future Security Issues, Security Can Be Improved Using Emerging Technologies.
- Sub Admin Module Can Be Added
- At Present, There Is No Live Chat Feature For Helping Developer Which Can Be Added In Future.

Chapter 9 REFERENCES

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- https://www.w3schools.com/html/html_symbols.asp

  https://www.w3schools.com/js/js_output.asp
- https://app.diagrams.net/

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