Department of Computer Science Savitribai Phule University, Pune

Masters of Computer Science

A Project Report

On

Employee Management System

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ABSTRACT

In this world of growing technologies everything has been computerized. With large number of work opportunities the Human workforce has increased. Thus there is a need of a system which can handle the data of such a large number of Employees in an organization. This project simplifies the task of maintain records because of its user friendly nature.

The "EMPLOYEE MANAGEMENT SYSTEM" has been developed to override the problems prevailing in the practicing manual system. This software is supported to eliminate and in some cases reduce the hardships faced by this existing system. Moreover this system is designed for the particular need of the company to carry out operations in a smooth and effective manner.

The application is reduced as much as possible to avoid errors while entering the data. It also provides error message while entering invalid data. No formal knowledge is needed for the user to use this system. Thus by this all it proves it is user-friendly.information about the baseline perceptions, knowledge and prevalence of risk factors in defined populations.

to add new employees after proper This project will allow admin to add authentication. Admin can also add new departments and posts. It can allocate employees to different departments at different posts. Database should store all personal details of employees such as date of birth full name etc. and his educational background, work experience, skill sets, current and past projects in different tables with proper relations.

This system enables employees to perform their own profile. It enables the automation of work flow notifications and leave request. Work flow notification from administrator are stored in the backend and notified to employee, once employee log in to the system. Leave request made by the employee is placed for administrator approval, the administrator module checks up with the leave availability and approves or rejects the request.

INTRODUCTION

Every organization, whether big or small, has human challenges to overcome. every resource every organization has different employee management needs, therefore we design exclusive employee management systems that are adapted to your managerial requirements. This is designed to assist in strategic planning, and will help you ensure that your organization is equipped with the right level of human resources for your future goals. Also, for those busy executive who are always on the go, our systems come with remote access features, which will allow you to manage your workforce anytime, at all times. These systems will ultimately allow you to better manage resources. One of the main features in employee management system is time tracking for employees. Effective time tracking mechanism saves both time and money for the organization.

Proposed System / Scope of work

This project helps to create and stores information of employees in efficient manner. Employee Management System is a distributed application, developed to maintain the details of employees working in any organization. It maintains the information about the personal details of their employees, also the details about the payroll system which enable to generate the payslip.

Objectives

The objective of “Employee Management System” is designing a scheduling system for a work centre. Scheduling is such a tool with which the process of intimating activities and notifications will be easy and even online in the organization where it is installed.

Techniques

- Python-For Programming Logic
- Application:-Used in application for GUI

Hardware and software

Hardware:

- Intel Processor
- 4/8 GB RAM
- Min 2 GB Hard Disc

Any Operating System

Software:

- Anaconda, PyCharm, Visual Studio Code
- Python:

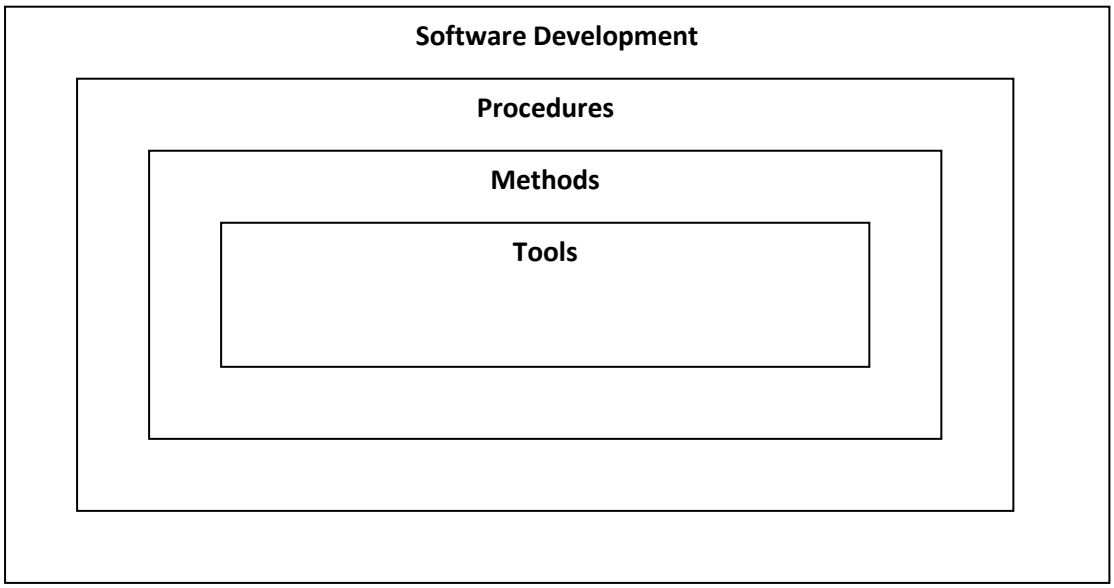
Python is a high-level programming language designed to be easy to read and simple to implement. It is open source, which means it is free to use, even for commercial applications. Python can run on Mac, Windows, and UNIX systems and has also been ported to Java and .NET virtual machines.

Python is considered a scripting language, like Ruby or Perl and is often used for creating Web applications and dynamic Web content. It is also supported by a number of 2D and 3D imaging programs, enabling users to create custom plugins and extensions with Python.

Method Of Project Implementation:

SYSTEM SPECIFICATIONS

Software Engineers have been trying various tools, methods and procedures to control the process of software development in order to build high quality software with high productivity. This method provides “how it is” for building the software while the tools provide automated or semi-automated support for the methods. They are used in all stages of software development process, namely, planning, analysis, design, development and maintenance. The software development procedure integrates the methods and tools together and enables rational and timely development of the software system.



They provide the guidelines as how to apply these methods and tools, how to produce the deliverable at each stage, what controls to apply, and what milestones to use to assess the performance of the program. There exist several software development paradigms each using a different set of methods and tools. The selection of a particular paradigm depends on the nature of application of the programming language used for the controls and the deliverables required. The development of such successful systems depends not only on the use of appropriate methods and techniques but also the developers' commitment to the objective of the system**.**

A successful system must: -

1. Satisfy the user requirements
2. Be easy to understand by user and operator
3. Be easy to operate
4. Have a good user interface
5. Be easy to modify
6. Be expandable
7. Have adequate security control against the misuse of data
8. Handle the errors and exceptions satisfactorily

Be delivered on schedule within the budget

Some of the common benefits of having an Employee Management System in your organization are –

- Efficiency And Better Accuracy
- Fewer Compliance Risks
- Boosted Profitability
- Very Few Manual Errors
- Higher Productivity
- Higher Motivation
- Lower Costs

Implementing an EMS framework for workers is equivalent to pushing mountains for a company and that is really important when it comes to handling a remote workforce.

Implementation of security mechanisms at various levels

Data Security System: The data security system will allow data to be securely transmitted between the various components of the e-commerce portal. This includes transmission of product, merchant, and customer information from the content management system to the website, and also the transmission of data from the website to the content management system.

Prevent Directory Browsing: Protecting directories from being listed is, at best, security by obscurity. That is, its hiding your stuff from view, preventing meddling visitors from browsing through your directories. Really, its the web equivalent of hiding your cash under your mattress. Still, its good practice to prevent directory browsing, along with implementing other measures to secure your site.

Restrict Access to Your Admin Area : A simple way to restrict access if your internet has a fixed IP address and you always access your site form

System Design

In this phase, a logical system is built which fulfils the given requirements. Design phase of software development deals with transforming the customer's requirements into a logically working system. Normally, design is performed in the following in the following two steps:

1) **Primary Design Phase:** In this phase, the system is designed at block level. The blocks are created on the basis of analysis done in the problem identification phase. Different blocks are created for different functions emphasis is put on minimising the information flow between blocks. Thus, all activities which require more interaction are kept in one block.
2) **Secondary Design Phase:** In the secondary phase the detailed design of every block is performed.

The general tasks involved in the design process are the following:

I. Design various blocks for overall system processes.

II. Design smaller, compact, and workable modules in each block.

III. Design various database structures.

IV. Specify details of programs to achieve desired functionality.

V. Design the form of inputs, and outputs of the system.

VI. Perform documentation of the design.

VII. System reviews.

User Interface Design

User Interface Design is concerned with the dialogue between a user and the computer. It is concerned with everything from starting the system or logging into the system to the eventually presentation of desired inputs and outputs. The overall flow of screens and messages is called a dialogue.

The following steps are various guidelines for User Interface Design:

1) The system user should always be aware of what to do next.

2) The screen should be formatted so that various types of information,

3) Message, instructions, or information should be displayed long enough to allow the system user to read them.

4) Use display attributes sparingly.

5) Default values for fields and answers to be entered by the user should be specified.

6) A user should not be allowed to proceed without correcting an error.

7) The system user should never get an operating system message or

Fetal error.

TESTING

Testing is the process in which the system is run on manually created input so that the system is correctly working as desired or not.

During systems testing, the system is used experimentally to ensure that the software does not fail. In other words, we can say that it will run according to its specifications and in the way users expect. Special test data are input for processing, and the results examined.

A limited number of users may be allowed to use the system so that analyst can see whether they try to use it in unforeseen ways. It is desirable to discover any surprises before the organization implements the system and depends on it.

Testing of a system is generally done in two phases - One is Unit Testing which is done for each module independently on its completion and the other one is System Testing which is done at the end of a project.

VALIDATION CRITERIA

The validation criteria in this project are as follows...

In System also, the user inputs are validated before storing them, and then further for displaying etc. The main validations that are done System are as follows

All the screens have a similar look and feel. They all have the almost same color combinations in its background. This provides a better user interface to the users.

1) The primary key values cannot be duplicated.

2) All the entries in any combo box have been sorted in alphabetical order. This helps a user while selecting a value from the combo box.

IMPORTANCE OF TESTING

During systems testing, the system is used experimentally to ensure that the software does not fail. In other words, we can say that it will run according to its specifications and in the way users expect. Special test data are input for processing, and the results examined.

The importance of system testing is that the system is expected to run according to member's requirement before delivering it to the customer.

Implementation and Testing

Implementation

Detailed Design of Implementation - This phase of the systems development life cycle refines hardware and software specifications, establishes programming plans, trains users and implements extensive testing procedures, to evaluate design and operating specifications and/or provide the basis for further modification.

Technical Design - This activity builds upon specifications produced during new system documentation. design, adding detailed technical specifications and documentation

Test Specifications and Planning - This activity prepares detailed test specifications for individual modules and programs, job streams, subsystems, and for the system.

Programming and Testing - This activity encompasses actual development, writing, and testing of program units or modules.

User Training - This activity encompasses writing user procedure manuals, preparation of user training materials, conducting training programs, and testing Procedures.

Acceptance Test - A final procedural review to demonstrate a system and secure user approval before a system becomes operational.

Installation Phase - In this phase the new Computerized system is installed, the conversion to new procedures is fully implemented, and the potential of the new system is explored.

System Installation: The process of starting the actual use of a system and training user personnel in its operation.

Review Phase - This phase evaluates the successes and failures during a systems development project, and to measure the results of a new Computerized Transystem in terms of benefits and savings projected at the start of the project

Development Recap - A review of a project immediately after completion to find successes and potential problems in future work.

Post-Implementation Review - A review, conducted after a new system has been in operation for some time, to evaluate actual system performance against original expectations and projections for cost-benefit improvements.

Also identifies maintenance projects to enhance or improve the system.

COST ESTIMATION OF THE PROJECT

Software cost comprises a small percentage of overall computer-based system cost. There are several factors, which are considered, that can affect the ultimate cost of the software such as human, technical, Hardware and Software availability etc.

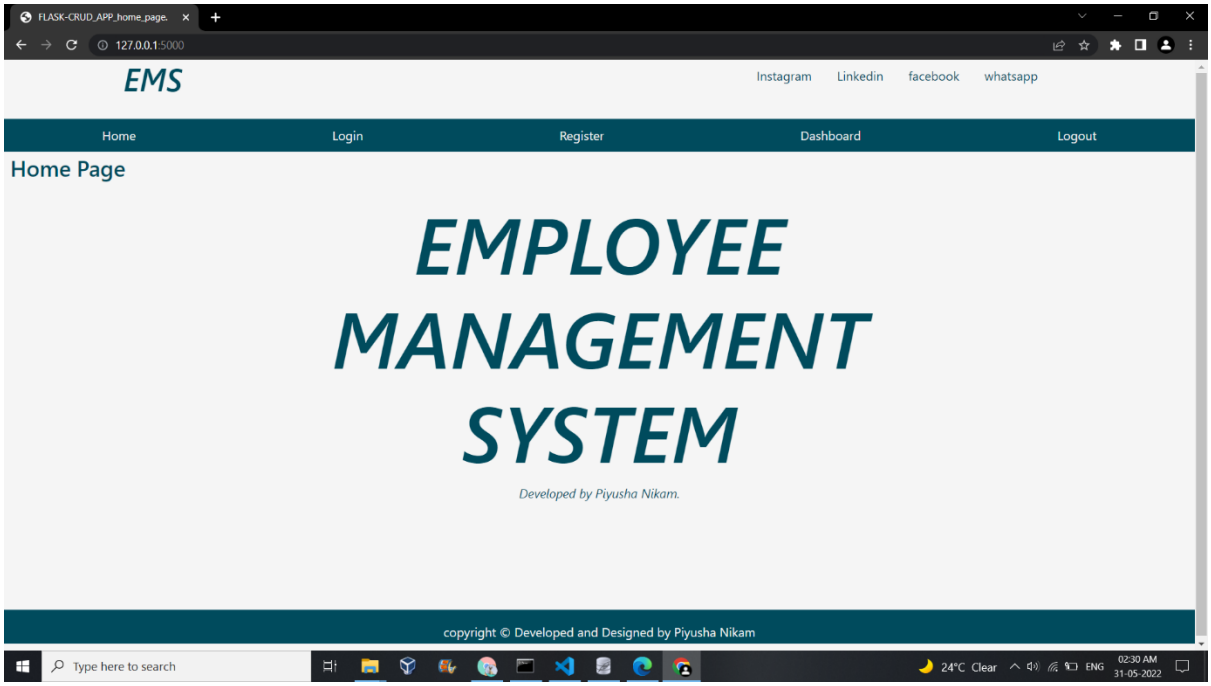
The main point that was considered during the cost estimation of project was its sizing. Despite complete software sizing, function point and approximate lines of code were also used to "size" each element of the Software and their costing.

The cost estimation done by me for Project also depend upon the baseline metrics collected from past projects and these were used in conjunction with estimation variables to develop cost and effort projections.

We have basically estimated this project mainly on two bases –

1) Effort Estimation - This refers to the total man-hours required for the development of the project. It even includes the time required for doing documentation and user manual.

2) Hardware Required Estimation - This includes the cost of the PCs and the hardware cost required for development of this project.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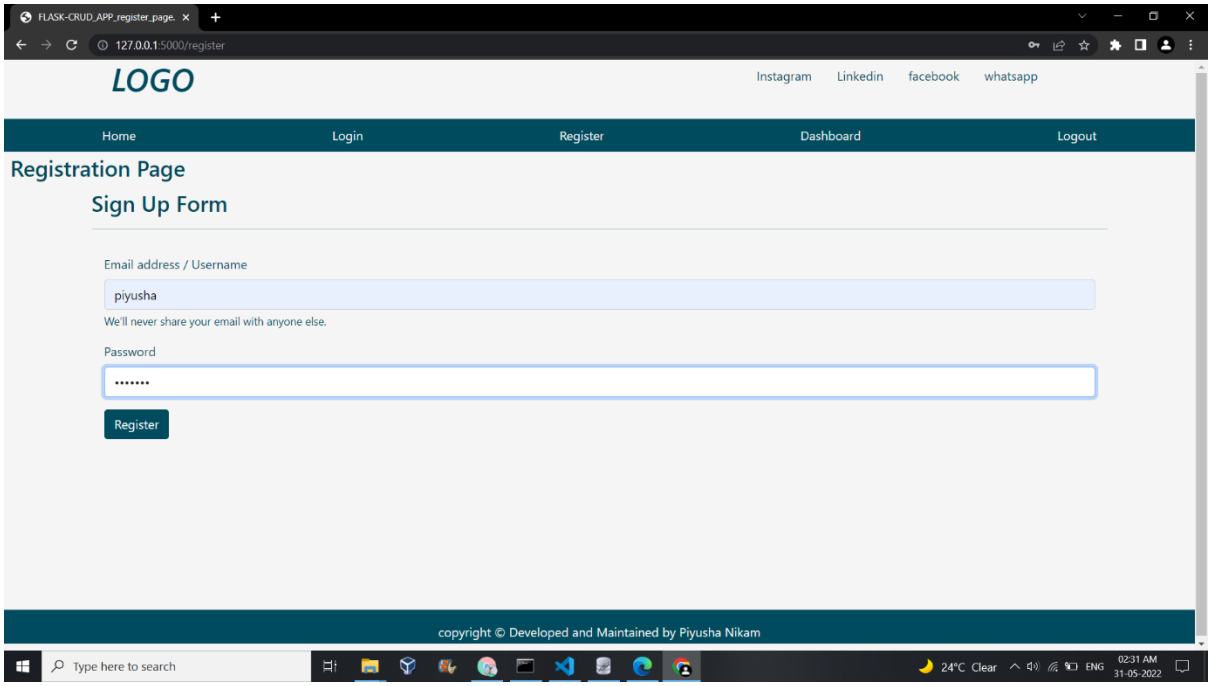
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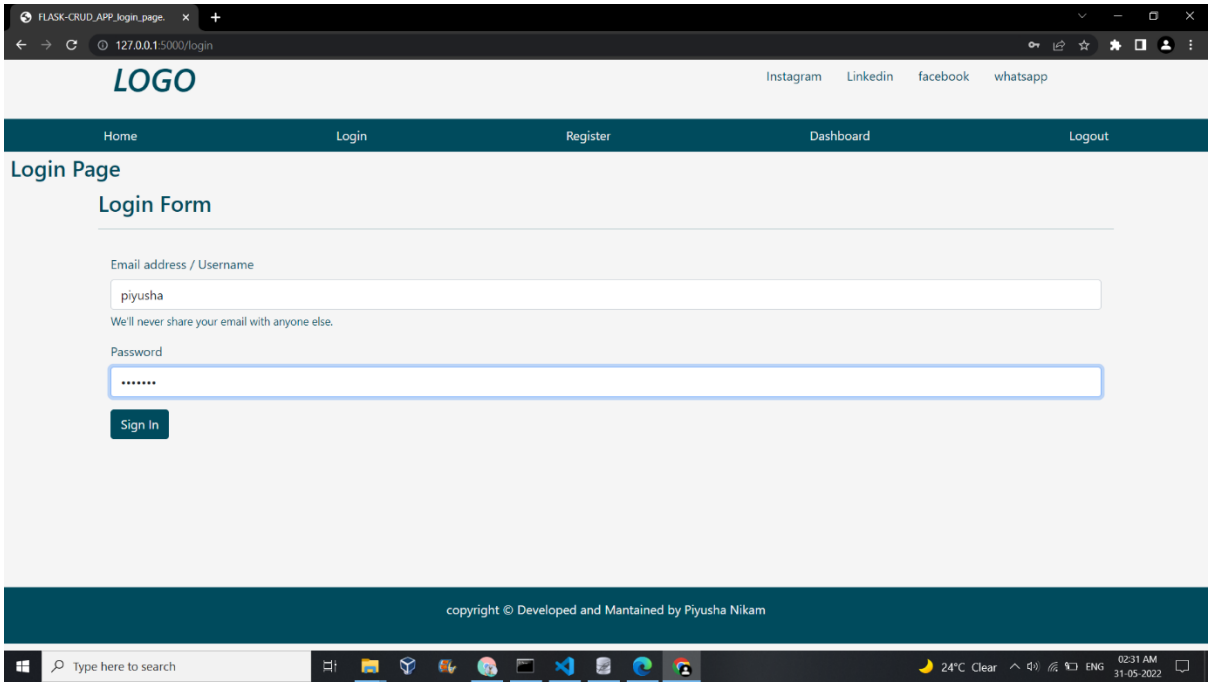
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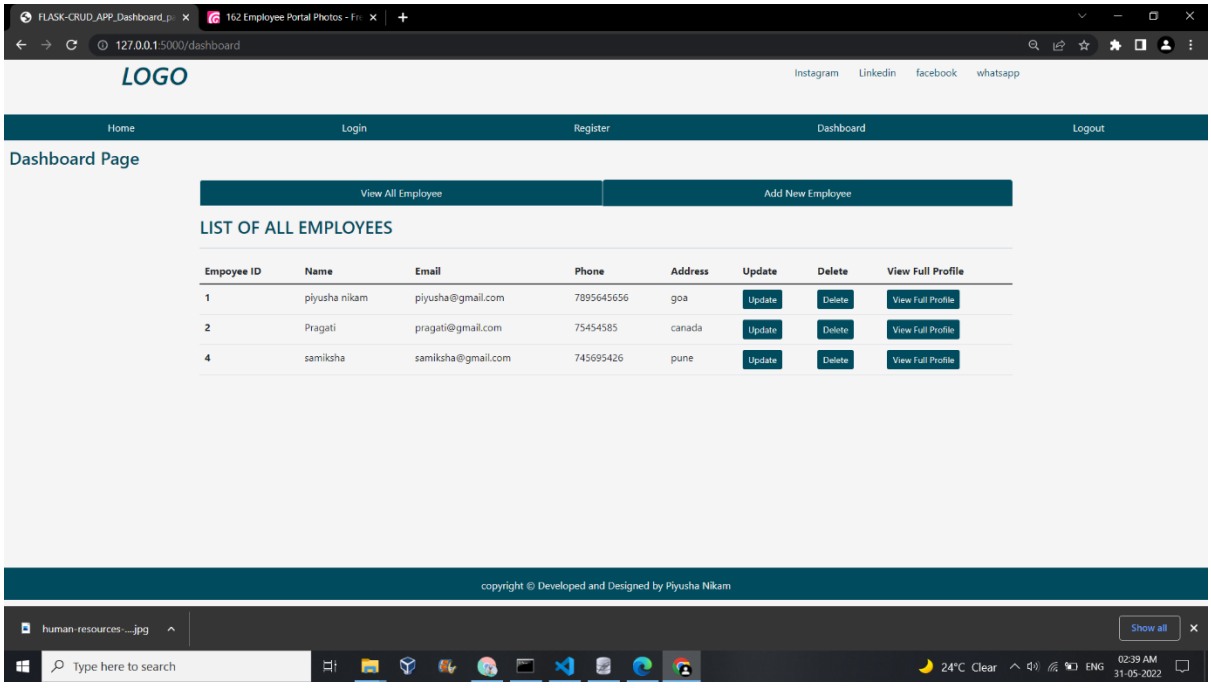
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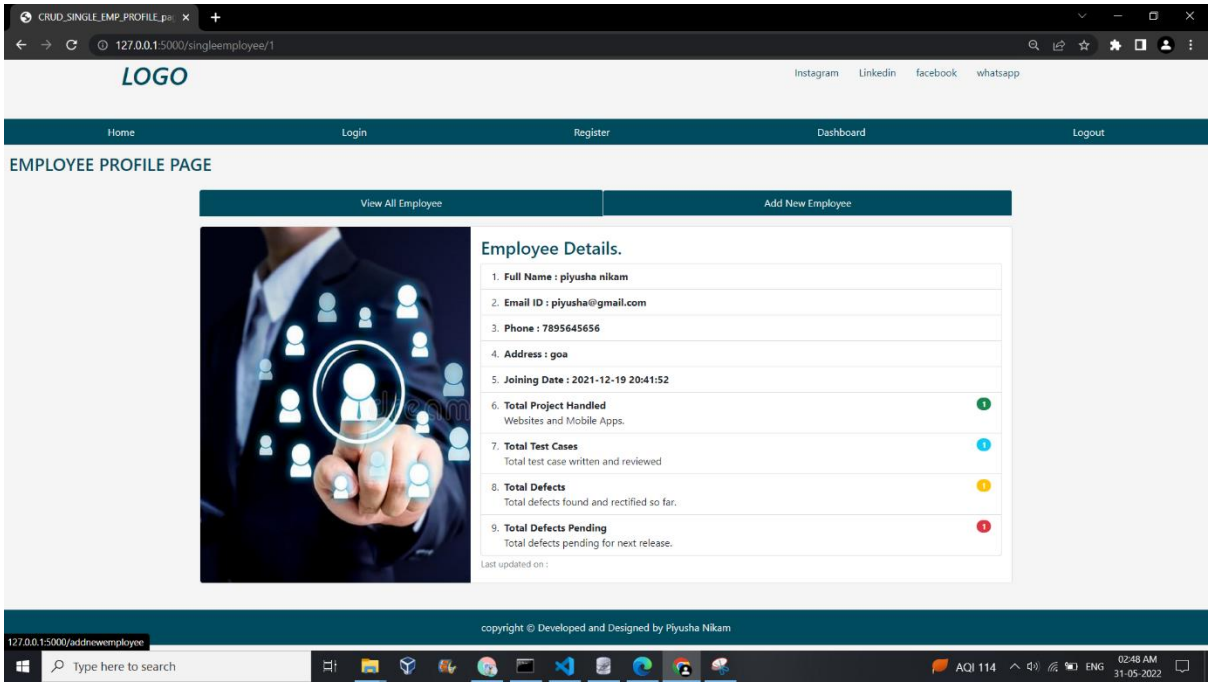
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Add New Employee
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2. Email ID : piyusha@gmail.com
3. Phone : 7895645656
4. Address : goa
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6. Total Project Handled
Websites and Mobile Apps.
7. Total Test Cases
Total test case written and reviewed
8. Total Defects
Total defects found and rectified so far.
9. Total Defects Pending
Total defects pending for next release.
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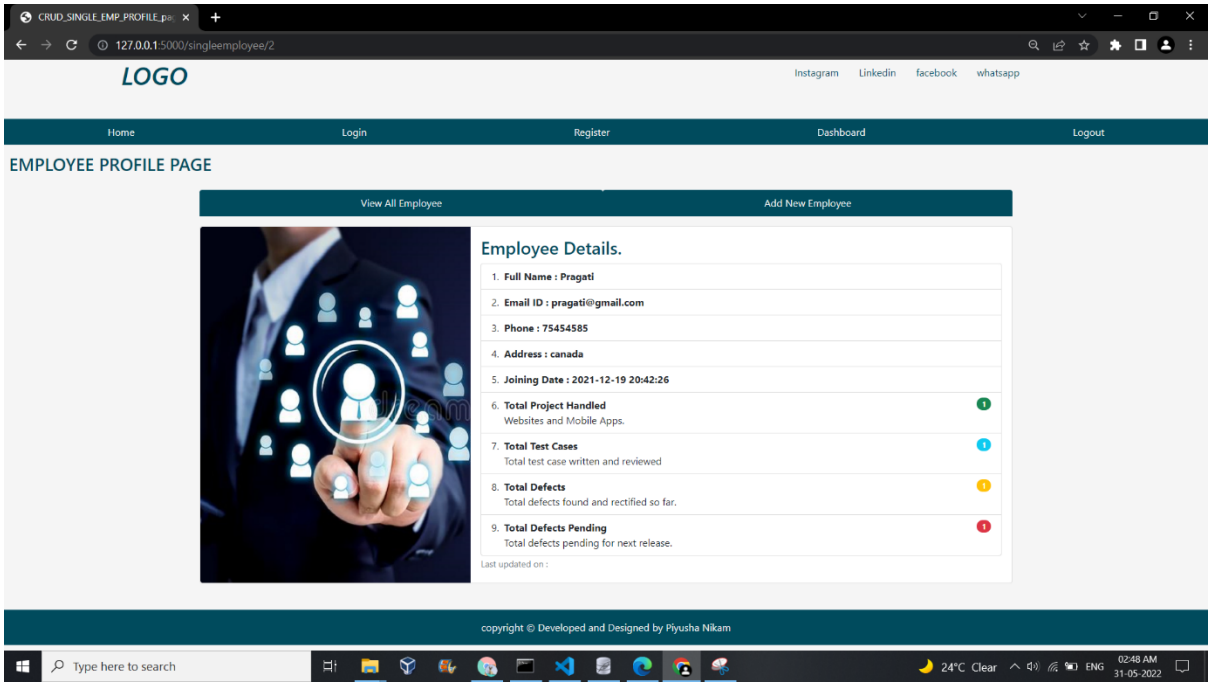
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Add New Employee
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2. Email ID : pragati@gmail.com
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4. Address : canada
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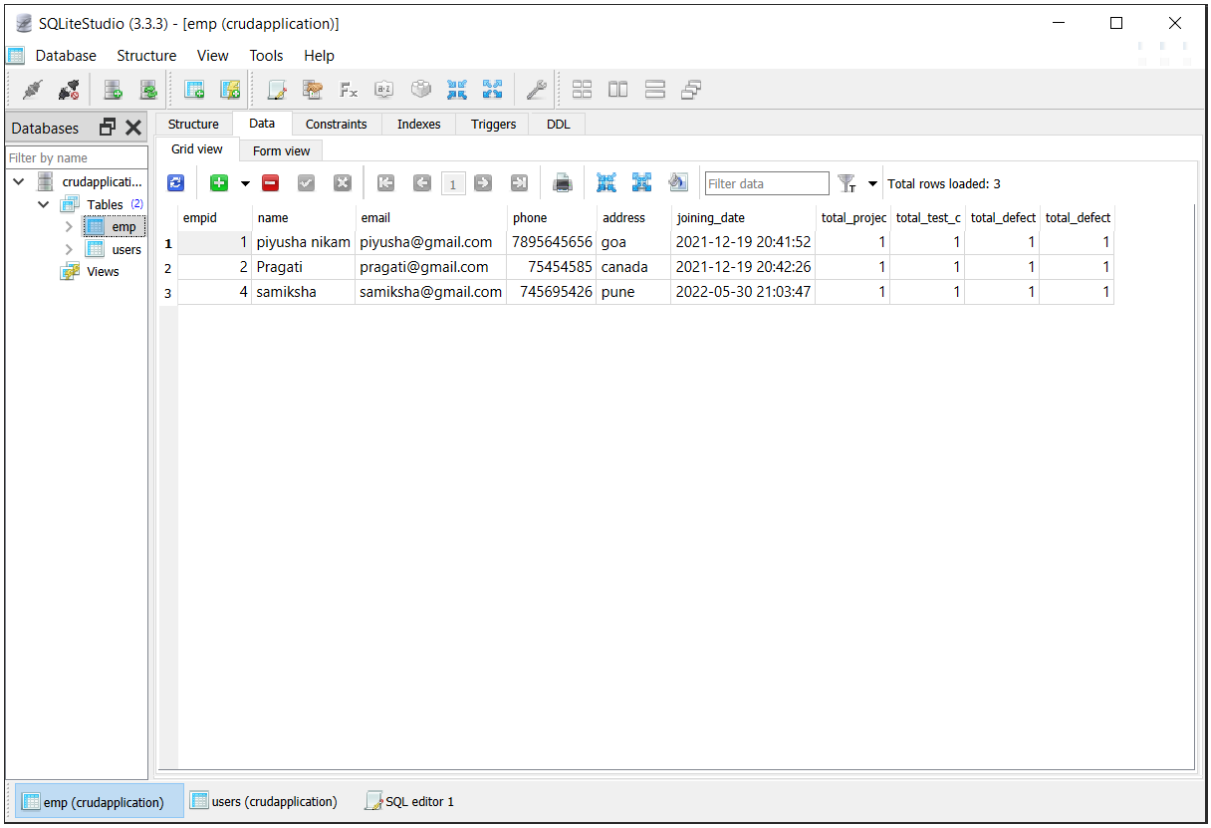
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Structure Data Constraints Indexes Triggers DDL
Grid view Form view
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2 Pragati pragati@gmail.com 75454585 canada 2021-12-19 20:42:26 1 1 1 1
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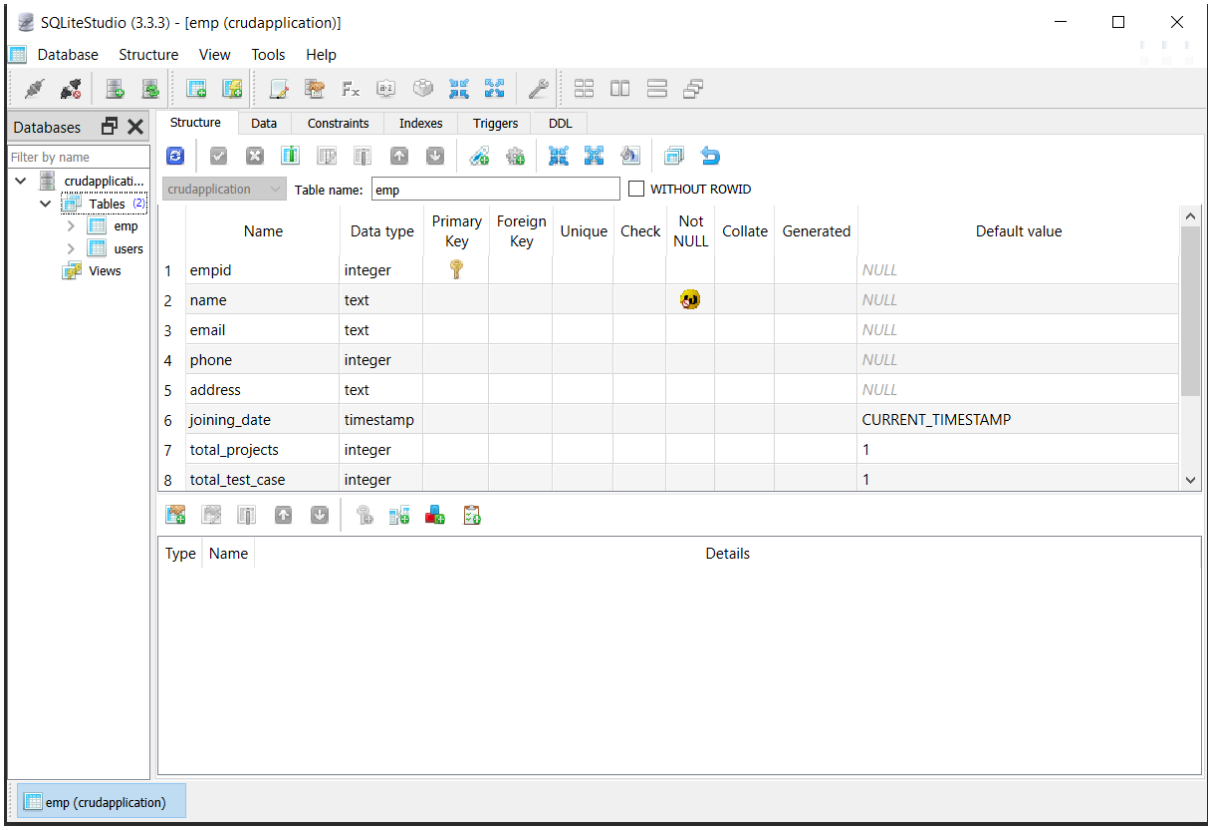
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3 email text NULL
4 phone integer NULL
5 address text NULL
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7 total_projects integer 1
8 total_test_case integer 1
Type Name Details
emp (crudapplication)

GitHub Link:

https://github.com/Piyusha14/Employee-Database-Management-System