Comprehensive Management System for a Multi-Branch Company using Django framework

A PROJECT REPORT

Submitted by

PRAVEENA B
(Registration no: 21352227)

in partial fulfillment for the award of the degree

of

MASTER OF COMPUTER APPLICATION

DEPARTMENT OF COMPUTER SCIENCE

SCHOOL OF ENGINEERING AND TECHNOLOGY

PONDICHERRY UNIVERSITY

PUDUCHERRY 609 605

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BONAFIDE CERTIFICATE

This is to certify that the project work entitled as "**Comprehensive Management System for a Multi-Branch Company using Django framework**" is a bonafide record of work done by **Praveena B** in partial fulfillment for the degree of Master of Computer Applications, Department of Computer Science, School of Engineering and Technology, Pondicherry University, Karaikal Campus, Karaikal. This work has not been submitted elsewhere for the award of any other degree to the best of our knowledge.

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INTERNAL EXAMINER **EXTERNAL EXAMINER**

InESS Global Solutions
INTEGRATED ENGINEERING & SUPPLYCHAIN SOLUTIONS

Date: 8th May 2023

TO WHOMSOEVER IT MAY CONCERN

This is to certify that B. PRAVEENA - 21352227 a student of II- MCA Pondicherry University has successfully completed 3 months of internship from 23-01-2023 to 28-04-2023 with **InESS GLOBAL SOLUTIONS PVT LTD**.

They have worked on the VCONNECT Project under the supervision and guidance of the IT Manager. During the internship, She has gained several learnings, developed considerable skills and completed the task assigned.

Besides showing high comprehension capacity, managing assignments with the utmost expertise, and exhibiting maximal efficiency, She has also maintained an outstanding professional demeanour and showcased excellent moral character throughout the internship period.

I hereby certify her overall work as excellent to the best of my knowledge.

Wishing her the best of luck in her future endeavours.

Sivaguru V

Vice President - Operations,

InESS Global Solutions Pvt LTD

ABSTRACT

The Comprehensive Management System (CMS) is a web-based platform developed using the Django framework and languages like HTML, CSS, JavaScript, Bootstrap, Python, and PostgreSQL. The CMS is designed to manage a multi-branch company, and includes a login module with access levels for different users, including CEO, VP, employee, HR, TL, admin, and others.

The CMS offers various modules for attendance management, leave management, work from home requests, employee profiles, payslips, appraisals, reports, and more. The attendance module includes attendance entry, tracking, and reporting. The leave management module includes leave request, approval, waiting, rejected, and details. The work from home module includes WFH request, approval, and details. The employee profile module includes details about employees, such as personal information, job details, and performance metrics. The payslip module includes details about salary, taxes, and deductions. The appraisal module includes setting goals, tracking progress, and evaluating employee performance.

In addition to these features, the CMS also offers a support desk, knowledge base, HR policy, calendar, staffing, customer feedback, project management, issue tracker, reimbursement, and expense tracker modules.

The CMS is developed using the Django web framework, which is a high-level Python web framework that allows for rapid development and clean, pragmatic design. HTML, CSS, JavaScript, and Bootstrap are used for the frontend development, while Python and PostgreSQL are used for the backend development.

ACKNOWLEDGEMENTS

First of all, I thank the Almighty for blessing, wisdom and everything

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I would like to express my sincere gratitude to **Iness Global Solutions Private limited.** for providing me with the opportunity to work on this project and for their guidance and support throughout the duration of the internship.

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Praveena B

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Chapter - 1

1.Introduction

Managing a multi-branch company can be a daunting task, with numerous challenges related to communication, organization, and decision-making. To address these challenges, we have developed a Comprehensive Management System (CMS) using the Django web framework and other modern web technologies.

The CMS is designed to provide a centralized platform for managing all aspects of a multi-branch company, including attendance tracking, leave management, work from home requests, employee profiles, payslips, appraisals, reports, and more. With the CMS, employees and management teams can access and manage critical information from a single location, streamlining communication and ensuring that all branches of the company are on the same page.

The CMS includes a login module with access levels for different users, such as CEO, VP, employee, HR, TL, admin, and others. Each user has access to a personalized dashboard, providing them with relevant information and tools based on their role within the company. The CMS also includes various modules to help manage day-to-day tasks, such as attendance tracking and leave management.

The CMS is built on the Django web framework, which is known for its rapid development and pragmatic design. It is also highly scalable, secure, and easy to maintain, making it an ideal choice for companies of all sizes. In addition to Django, we used HTML, CSS, JavaScript, and Bootstrap for the frontend development, and Python and PostgreSQL for the backend development.

Overall, the CMS provides a comprehensive solution for managing a multi-branch company, allowing for better organization, communication, and decision-making. By centralizing critical information and providing a range of management tools, the CMS can help companies streamline their operations and improve overall efficiency.

1.1 Background and Overview of the Comprehensive Management System

The Comprehensive Management System is an all-in-one software solution designed to manage different aspects of a company's operations. It includes modules for attendance tracking, employee management, payroll processing, leave management, project management, customer management, and more. The system is developed using the Django framework and incorporates languages such as HTML, CSS, JavaScript, Bootstrap, and Python. The system is also built on top of PostgreSQL, an open-source relational database management system.

1.2 Objective of the Internship

The objective of this internship is to gain practical experience in software development by working on the Comprehensive Management System project. The internship aims to provide opportunities to learn and apply programming skills, software design principles, testing techniques, and project management methodologies. As an intern, the focus will be on developing specific modules of the Comprehensive Management System under the guidance of senior developers.

1.3 Scope of the Internship

The scope of this internship includes working on specific modules of the Comprehensive Management System project. The assigned modules include payslip, expense tracker, work from home. As an intern, the scope of work also includes learning about the software development life cycle, software testing, documentation, and teamwork.

1.4 Description of Assigned Modules

1.4.1 Payslip

The Payslip module is designed to automate the process of generating and distributing salary slips for employees in a secure and confidential manner. The module is accessible only to HR personnel who are responsible for managing employee salaries. Every month, the HR personnel will enter the details of the employees' salaries in an Excel sheet which will be uploaded to the system. Once the sheet is uploaded, the system automatically generates a PDF file for each employee, containing the details of their salary and other relevant information.

The generated PDF files are then sent to the respective employees via email. After the PDF files are sent to the employees, the system automatically deletes the files, and they are not stored in any database. This ensures that the confidential information about employees' salaries remains secure and is not accessible to anyone other than the intended employee.The Payslip module is designed to be efficient, secure, and user-friendly, and it helps to streamline the process of generating and distributing salary slips, saving time and effort for HR personnel.

1.4.2 Expense Tracker

The Expense Tracker module is designed to help the person in charge of the company accounts to manage all the bills and payments easily. The module allows the person in charge to upload all the bills with necessary details such as due date, purchase date, mode of payment, amount, bill file, and branch. The module also sends timely reminders to the person in charge for the bills that need to be paid.

Once the bills are paid, the person in charge can update the status of the bill from pending to completed. The completed bills are displayed in normal color while the pending bills are displayed in red color to indicate that they need to be paid. The person in charge has the option to edit, delete, and download the bills.

The module also includes a feature called "Pay Bills" that allows the person in charge to pay bills with just a click. When the person in charge clicks on the "Pay Bills" button, the module redirects them to the official website of the respective vendor where they can make the payment. Additionally, the "Scan to Pay" option displays the QR code for the bill, which can be scanned to make the payment.

This module is accessible only to three users, namely, the CEO, VP, and the person in charge of accounts. The CEO and VP can only view the bills and payments, but they cannot perform any actions. On the other hand, the person in charge of accounts has access to all the options mentioned above. Overall, the Expense Tracker module ensures that the company's bills and payments are managed efficiently and effectively.

1.4.3 Work from Home

The Work from Home module enables employees to request and managers to approve or decline work from home requests. The module has three submenus: Work from Home Request, Work from Home Approval, and Work from Home Details.

1. In the *Work from Home Request* menu, employees can submit their request for working from home, providing details such as the date, duration, reason, and any additional notes. Once the request is submitted, the employee can track the status of their request.
2. In the *Work from Home Approval* menu, team leaders have access to all the requests submitted by their team members. They can either approve or decline the request, and the employee will be notified of the decision. If the request is approved, the employee can work from home on the specified date(s). If it is declined, the employee will be expected to report to work on the specified date(s).
3. In the *Work from Home Details* menu, team leaders can view an overview of all work from home requests submitted by their team members. They can also generate monthly reports that summarize the number of work from home days taken by each team member.

The Work from Home module streamlines the process of requesting and approving work from home requests, ensuring transparency and accountability for both employees and managers.

Chapter - 2

2. Architectural Design and Specifications

2.1 System Design:

The architectural design of the comprehensive management system is based on a client-server model. The system follows a multi-tier architecture, consisting of a presentation layer, application layer, and data layer. The presentation layer is responsible for handling user interfaces and interactions. It includes components such as web pages, forms, and user controls.

The application layer contains the business logic and functionality of the system. It is implemented using the Django framework, which provides a robust and scalable development platform. This layer handles tasks such as user authentication, data processing, and integration with external systems.

The data layer is built on a PostgreSQL database, which ensures data persistence and reliability. It stores all the relevant information related to employees, attendance, leave, projects, and other system data. The database design follows best practices for data normalization, ensuring efficient storage and retrieval of information.

2.2 Software Requirements

Programming Languages :

- HTML
- CSS
- JavaScript
- Python

Framework :

- Django Framework

Additional Libraries :

- Bootstrap

Python Modules :

- django-crispy-form
- psycopg2
- smtp
- boto3
- botocore
- cryptography
- Django
- django rest framework
- openpyxl
- pandas
- python_dateutil
- Requests
- xhtml2pdf

Database :

- PostgreSQL

Tool :

- pgAdmin

2.3 Hardware Requirements

Processor - Intel core i5
RAM - 8GB
Storage - SSD 512GB
Operating system - Windows 10 Pro

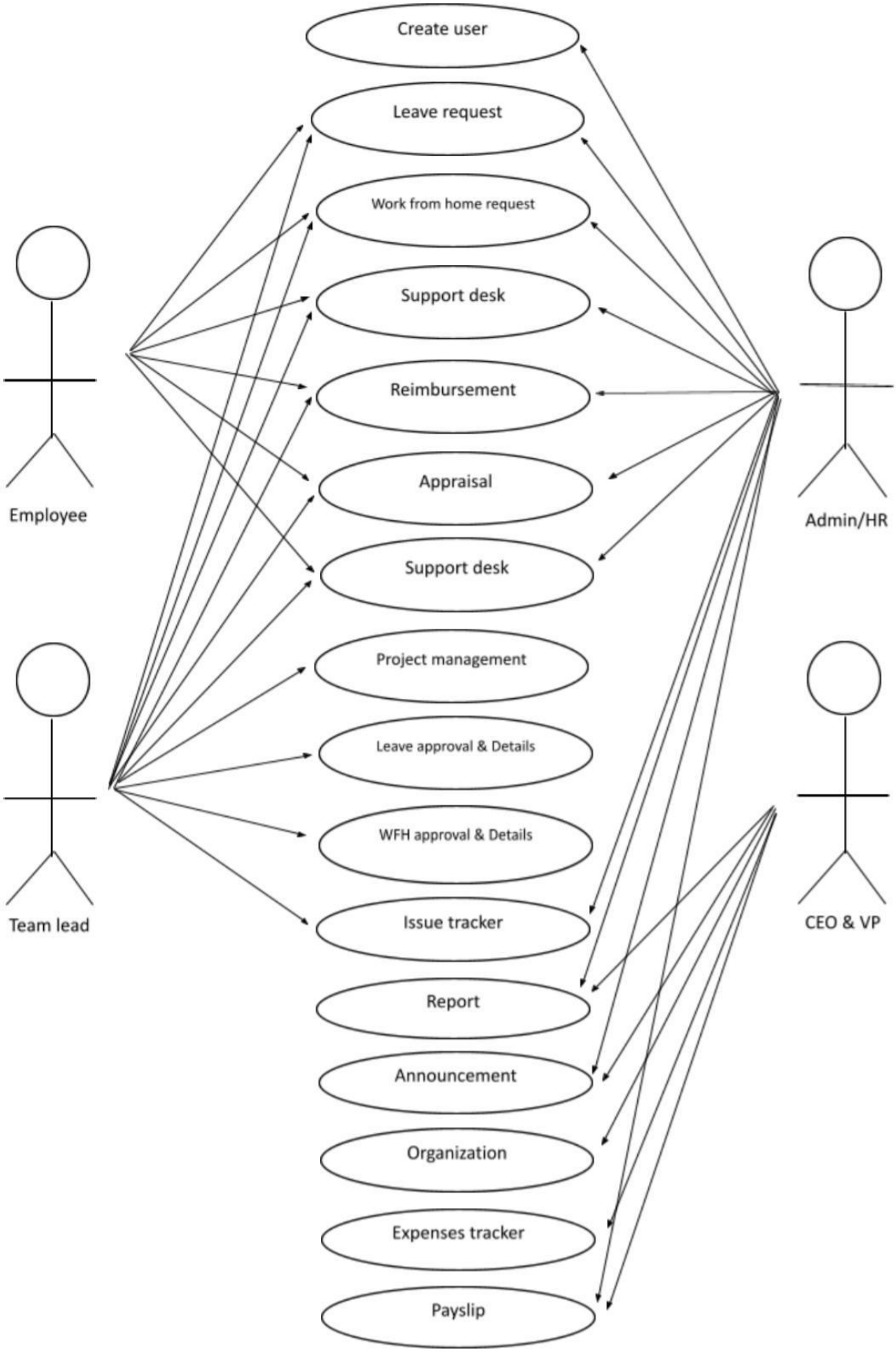
2.4 System Requirements:

In addition to the software and hardware requirements, the system has specific system-level requirements. These include having a compatible operating system, such as Windows, macOS, or Linux, to run the system components. The system also requires a web server, such as Apache or Nginx, to host the application and serve web pages to users.

Furthermore, the system requires a stable internet connection to facilitate communication between the client and server components. It is recommended to have a reliable network infrastructure with sufficient bandwidth to handle the expected user load and data transfer.

By meeting these architectural design and specification requirements, the comprehensive management system can function effectively, ensuring smooth operations and efficient management of various modules and functionalities.

2.5 Use case diagram :



Chapter - 3

3. Overview of the Modules

3.1 Login

The Login module is responsible for controlling access to the system. It allows authorized users to log in using their unique credentials, which are provided by the administrator. The login credentials serve as a security measure to prevent unauthorized access to the system. The module is designed to be simple and user-friendly, providing a seamless login experience for users. Once logged in, users can access the various features and functionalities of the system based on their user roles and permissions.

3.1.1 Dashboards

The Dashboards module provides a visual representation of key performance indicators (KPIs) for the organization. It provides a snapshot of various modules such as attendance, leave, reimbursement, expense, and more. The module allows users to monitor and track their progress towards their goals, identify trends, and make data-driven decisions. It also provides real-time updates and alerts to help users stay informed about critical events and changes. The module can be customized to display data in various formats, including graphs, charts, and tables.

3.2 Create User

The Create User module is designed for the admin to create new user accounts within the system. The admin can assign roles and permissions to the new user based on their job position and responsibilities. The module ensures that only authorized personnel can create user accounts to maintain the security and integrity of the system. It simplifies the process of adding new employees to the system, as the admin can input all necessary employee details and login credentials in one place.

3.3 User Profile

The User Profile module is where each employee can fill in all the necessary details about themselves, including personal information, contact information, family contact information, background information, work experience, and documents. This module helps to maintain accurate and up-to-date information about each employee in the organization, which can be used for various purposes, such as HR management, payroll processing, and performance appraisal. Employees can also upload relevant documents, such as educational certificates, work permits, and ID proofs, which can be accessed and verified by the HR department as and when required.

3.4 Leave Management

- *Leave Request*: Allows all employees to submit leave requests.
- *Leave Approval:* Allows Team Leaders to approve or reject leave requests submitted by their team members.
- *Leave Details:* Displays the leave details of all employees, including the approved, pending, and rejected leave requests.

The Leave Approval and Leave Details sub-menus are only accessible by Team Leaders.

3.5 Work From Home Management

The Work From Home (WFH) module allows employees to request to work from home, and the request needs to be approved by the respective team leader. The module has three sub-menus: WFH Request, WFH Approval, and WFH Details. Employees can request to work from home using the WFH Request menu, and team leaders can approve or reject the request using the WFH Approval menu. The WFH Details menu provides a summary of all WFH requests, including their status and details.

3.6 Team/Employees Status

The Team/Employees Status module provides information on the teams, projects assigned to them, and the status of each individual employee. It enables the HR department to track employee progress and assess their performance. The module helps in managing employee workload and identifying areas where additional resources may be needed. It also provides insights into team dynamics and enables effective collaboration among team members. The module is useful in ensuring that all team members are working together to achieve common goals.

3.7 Appraisal

The Appraisal module is designed to track and evaluate the performance of employees over a period of time, typically every three months. The system calculates the credits earned by each employee based on their performance, and the employees receive an amount based on their credits. This incentivizes employees to perform well and strive for excellence. The module also provides managers and team leaders with the necessary information to evaluate their team's performance and provide feedback to individual employees.

3.8 Employee support desk

The employee support desk is a module that allows employees to raise support tickets for any issues or queries they may have regarding the company's policies, procedures, or technology. Employees can log in to the system and create a support ticket, which will be assigned to a support agent who will work to resolve the issue. The employee can track the progress of their ticket and communicate with the support agent through the system. This module helps to streamline the support process and ensure that employee queries and issues are addressed in a timely and efficient manner.

3.9 Reimbursement

The Reimbursement module allows employees to request reimbursement for expenses incurred on behalf of the company. The employee can provide all necessary information such as amount, type of expense, and upload supporting documents. The request will be verified by the appropriate authority and approved if deemed appropriate. Once approved, the employee will receive the reimbursement for the expenses incurred.

3.10 Expense Tracker

The Expense Tracker module is a feature that allows the person in charge of company accounts to keep track of expenses incurred by the company. This module enables the user to create and manage expense categories, add expenses, and track all expenses made. The module also provides a summary report of all expenses incurred by the company, which can be used for budgeting and financial planning purposes. Only the person in charge of company accounts has access to this module to ensure the accuracy and confidentiality of financial information.

3.11 Payslip

Payslip module generates individual payslips for each employee on a monthly basis. The system retrieves employee's salary details from the excel sheet and automatically generates a PDF file of the payslip, which is then sent to the employee via email. The system then deletes the PDF file. Payslip information will never get stored in the database to ensure confidentiality of salary details. The payslip contains detailed information on salary, deductions, CL, EL, LOP. This module helps in maintaining transparency and ensuring timely payment of salaries.

3.12 Report

The Report module provides several types of reports such as Periodwise Summary Report, Current Month Report, Leave Report, Customer Summary, and Attendance Report. These reports contain essential information about the company's performance, leave status, customer summary, and attendance. This module is only available to higher-level authorities such as the CEO, Admin, VP, and Team Leaders. Regular employees are not authorized to access these reports. These reports help the higher authorities to make informed decisions and take appropriate actions to improve the company's performance.

3.13 Issue Tracker

The Issue Tracker module is used to track and manage issues or problems that are reported by employees or customers. The issues can be related to various areas such as software, hardware, facilities, or services. When an issue is reported, it is assigned to a specific team or individual for resolution. The status of the issue is updated as it progresses through various stages of resolution, and comments can be added to provide updates or additional information. This module helps to ensure that issues are resolved in a timely manner and that employees and customers are kept informed of the progress.

3.14 Organization

The Organization module serves as a centralized platform for managing teams, projects, team leaders, employees, and other organizational aspects across all four branches of the company. It provides a comprehensive view of the organizational structure and facilitates efficient management of resources and information.

3.15 Project Management

The Project Management module enables efficient project planning, task assignment, and milestone tracking. Team leaders can create projects, assign tasks, and monitor progress, ensuring timely completion. Milestones serve as checkpoints for project deliverables. The module facilitates collaboration, document sharing, and communication among team members, improving coordination and minimizing delays. Overall, it empowers team leaders to organize and monitor projects, allocate tasks, and track progress, optimizing project management practices for successful outcomes.

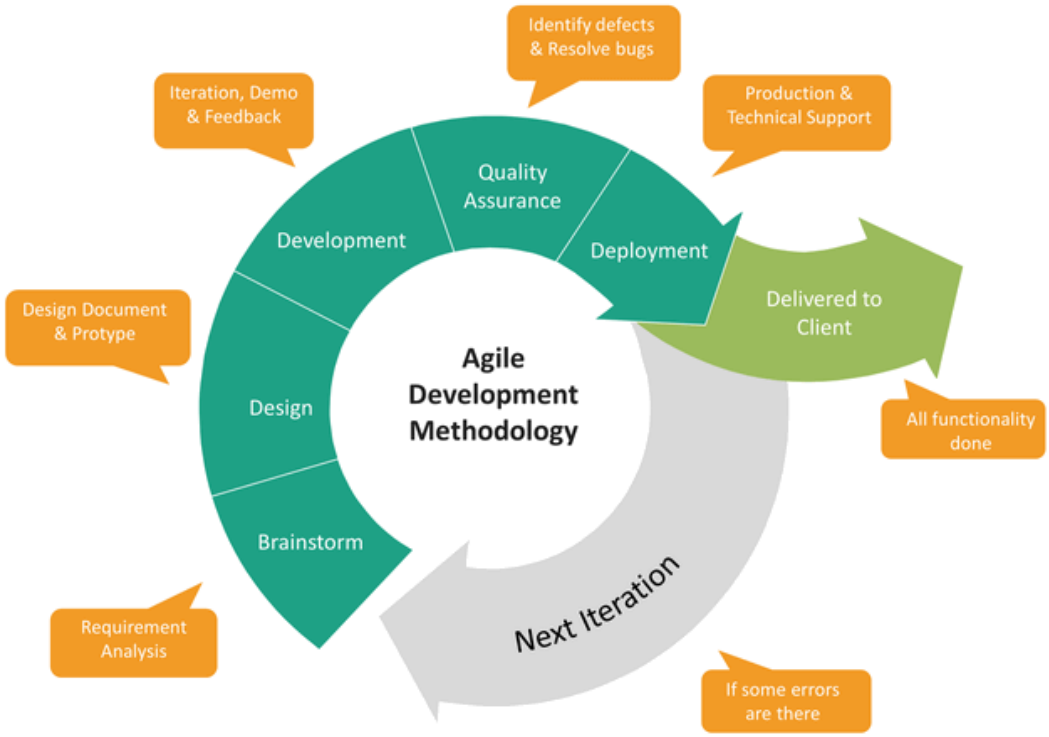
CHAPTER - 4

4. METHODOLOGY

4.1 Overview of Agile Methodology

Agile methodology is an iterative and incremental approach to software development. It focuses on flexibility, collaboration, and continuous improvement. The key principles of Agile include customer collaboration, frequent delivery of working software, and embracing change throughout the development process. Agile methodologies promote adaptive planning, early and continuous feedback, and close collaboration between cross-functional teams.

4.2 Agile Process Steps



1. Brainstorming:

The project team engaged in brainstorming sessions to gather ideas and identify the key features and requirements of the comprehensive management system. During this collaborative session, the team identifies user stories, defines requirements, and determines the scope of work for the sprint.

2. Design:

Once the requirements were established, the design phase began. The team created wireframes, mockups, and user interface designs to visualize the system's architecture and functionality. Feedback from stakeholders and end-users was incorporated to ensure a user-friendly and intuitive design.

3. Development:

The development phase involved coding and building the modules of the comprehensive management system. The project team followed a modular approach, where each module was developed independently. Continuous integration and frequent code reviews ensured the system's stability and maintainability.

4. Quality Assurance:

Quality assurance played a vital role in the Agile methodology. Throughout the development process, the project team conducted various testing activities, including spiral model testing, functional testing, performance evaluation and user acceptance testing (UAT) testing. Bugs and issues were identified, tracked, and resolved promptly to maintain a high-quality system.

5. Deployment:

The deployment phase involved deploying the developed modules to the production environment. Continuous integration and deployment tools were used to streamline the deployment process and ensure smooth transitions between different versions of the system.

The Agile methodology allowed for regular feedback and collaboration with stakeholders, enabling timely adjustments and improvements. The iterative nature of Agile facilitated the delivery of a functional and valuable comprehensive management system while accommodating changes and enhancements based on user feedback.

By adopting the Agile methodology, the project team achieved increased transparency, faster development cycles, and better alignment with the evolving needs of the organization.

Chapter - 5

5. Testing and Results

5.1 Spiral Model Testing:

The spiral model testing approach was used for the comprehensive management system project. The spiral model is a software development model that involves iterating through the development phases multiple times, with each iteration building upon the previous one. In this model, testing is conducted throughout the development process, starting from the planning stage to the deployment stage. The testing activities involved in this project included unit testing, integration testing, system testing, and acceptance testing.

The spiral model testing approach involves breaking down the development process into smaller segments called spirals. Each spiral represents a development phase, which includes requirements gathering, design, implementation, and testing. The idea is to iterate through each phase in a cyclic manner, with each cycle improving upon the previous one until the final product is completed.

During each cycle, testing is conducted to ensure that the product meets the requirements and is free from defects. This approach allows for early detection and correction of defects, which helps to reduce the cost and time required for testing and fixing issues in later stages of development.

In the comprehensive management system project, unit testing was conducted to test individual modules or components of the system. Integration testing was carried out to test the interaction between different modules or components to ensure they work together seamlessly. System testing was conducted to test the entire system as a whole, ensuring it met all the requirements and specifications. Acceptance testing was conducted to ensure that the system met the end-user's expectations and was ready for deployment.

Overall, the spiral model testing approach was effective in ensuring that the comprehensive management system project was developed efficiently, and the final product met all the requirements and specifications.

5.2 Performance Evaluation:

Performance evaluation was conducted to assess the efficiency of the system in terms of speed, responsiveness, and scalability. The performance evaluation involved the use of tools such as load testing, stress testing, and capacity testing. The system was tested with different workloads to determine its ability to handle high volumes of data and users.

Performance evaluation is an important aspect of any software development project, as it determines how well the system performs under various conditions. In the case of the comprehensive management system project, performance evaluation was conducted to assess the system's efficiency in terms of speed, responsiveness, and scalability. The evaluation involved using various tools and techniques to test the system's performance under different conditions.

Load testing was one of the techniques used in performance evaluation, which involved testing the system's performance under a heavy workload. The system was tested with a large amount of data to determine its ability to handle high volumes of users and transactions. Stress testing was another technique used, which involved testing the system's performance under stressful conditions, such as with limited resources or excessive workloads. Capacity testing was also conducted, which involved testing the system's performance in terms of its capacity to handle large amounts of data.

Through these techniques, the system's performance was evaluated and the results were analyzed. The evaluation revealed that the system was able to handle high volumes of data and users without significant performance degradation. The system was also found to be scalable, as it was able to handle increased workloads without crashing or slowing down. Overall, the performance evaluation demonstrated that the comprehensive management system was efficient, reliable, and able to meet the needs of its users.

5.3 Functional Testing:

Functional testing is a type of software testing that verifies the software system or application under test meets the specified functional requirements. It focuses on testing what the system should do and ensures that the system's behavior is consistent with the requirements. In the case of the comprehensive management system project, functional testing was conducted to ensure that each module functions as intended and that all features are working correctly. This type of testing was performed by executing test cases that covered all the functional requirements specified in the module analysis.

Functional testing also included testing for user experience and usability. Usability testing ensures that the system is easy to use and navigate, and the user interface is intuitive and visually appealing. User experience testing focuses on the user's perception of the system and how well it meets their needs. In addition, functional testing ensured that the system's data processing and flow were correct, and data was accurate, complete, and consistent across all modules. Overall, functional testing was crucial in ensuring that the comprehensive management system met its functional requirements and provided a seamless user experience.

5.4 User Acceptance Testing (UAT):

During the UAT phase, a group of end-users was involved in testing the system to ensure that it meets their requirements and expectations. The UAT was conducted in a real-world environment to simulate actual usage of the system. The users tested the system's functionality and features, including the interface, workflows, and data entry. The goal was to identify any issues or errors and provide feedback to the development team.

The feedback received during UAT was used to make necessary changes to the system to improve its performance, usability, and user experience. The changes included bug fixes, improvements in user interface and workflow, and modifications to system functionality. Once the changes were made, the UAT was conducted again to ensure that the system met the end-users' expectations and requirements.

The UAT phase played a crucial role in ensuring that the system meets the end-users' needs and that it is user-friendly and easy to use. It helped to identify any issues and make necessary improvements before the system was deployed.

5.5 Discussion of Results:

After conducting various testing and evaluation activities on the comprehensive management system project, the results were positive. The system demonstrated good performance in terms of speed, responsiveness, and scalability, which is crucial for a system that needs to handle a large amount of data and user requests. The functional testing showed that each module worked as expected and that all features were functioning correctly, ensuring that the system met the functional requirements specified in the module analysis.

The user acceptance testing (UAT) was also successful as it involved a group of users who tested the system and provided valuable feedback on its user interface and functionality. The feedback was then used to make necessary improvements to the system, making it more user-friendly and efficient. The UAT process helped ensure that the system met the user requirements and was acceptable to the end-users.

Overall, the testing and evaluation phase was critical in ensuring that the comprehensive management system project was successful. It helped identify any issues and make necessary improvements, ensuring that the system is efficient, functional, and user-friendly.

Chapter - 6

6. Conclusion

6.1 Summary of Work

The comprehensive management system project involved the collaboration of multiple team members to create an efficient and user-friendly system for managing various aspects of the company, including attendance tracking, leave management, work from home requests, employee profiles, payslips, appraisals, monthly reports, support desk, knowledge base, HR policy, calendar, staffing, customer feedback, project management, issue tracker, reimbursement, expense tracker and award modules.

The project involved the development of all the mentioned modules. The project also involved the use of the spiral model testing approach, which involved iterating through the development phases multiple times, with testing conducted throughout the process.

The project was successful in achieving its objectives, with all three modules functioning as intended and meeting the functional requirements specified in the module analysis. The system was also tested for performance and user acceptance, with positive results achieved.

Overall, the project provided valuable experience in software development and project management, with a focus on delivering a functional and user-friendly system for managing employee-related processes. The project also demonstrated the importance of testing and evaluation in ensuring the efficiency and effectiveness of software systems.

6.2 Contribution to the Comprehensive Management System

During the internship project, I made significant contributions to the development of the comprehensive management system. Specifically, I was responsible for the design, development, and testing of the payslip module, expense tracker module, and work from home module. I also collaborated with other team members to ensure that the modules integrate seamlessly with the rest of the system.

Furthermore, I provided valuable insights and recommendations that helped to improve the overall functionality and user experience of the system. My contributions to the project were critical in ensuring that the system is efficient, functional, and user-friendly.

Overall, my involvement in the comprehensive management system project has been a rewarding experience that has allowed me to develop my skills in software development, project management, and teamwork.

6.3 Lessons Learned

During the comprehensive management system project, several lessons were learned. One of the significant lessons was the importance of effective communication and collaboration between team members. The project involved multiple modules and team members, and clear communication and collaboration were critical to ensure that the project was completed on time and met the specified requirements.

Another lesson learned was the importance of proper planning and documentation. The project followed the spiral model, and planning and documentation were essential at each stage of the development process. Adequate planning and documentation helped to ensure that the project progressed smoothly and that all team members were on the same page regarding the project's objectives and requirements.

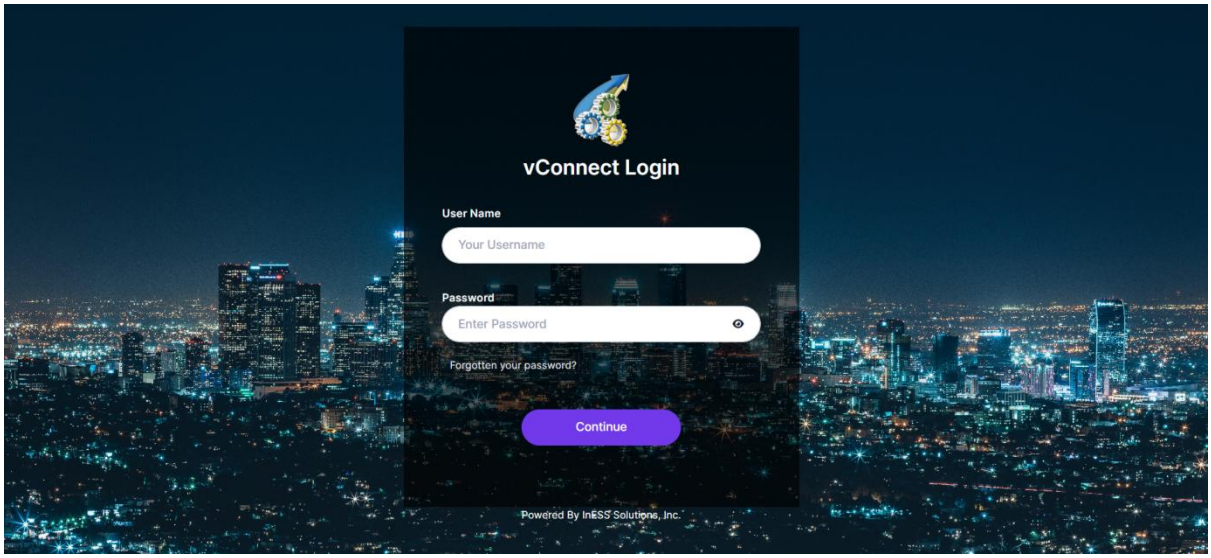
Finally, the importance of testing and evaluation was highlighted during the project. The testing and evaluation phase helped to identify and resolve issues and ensured that the system was efficient, functional, and user-friendly. Overall, these lessons learned are valuable for future projects and can be applied to improve project management and development processes.

Chapter - 7

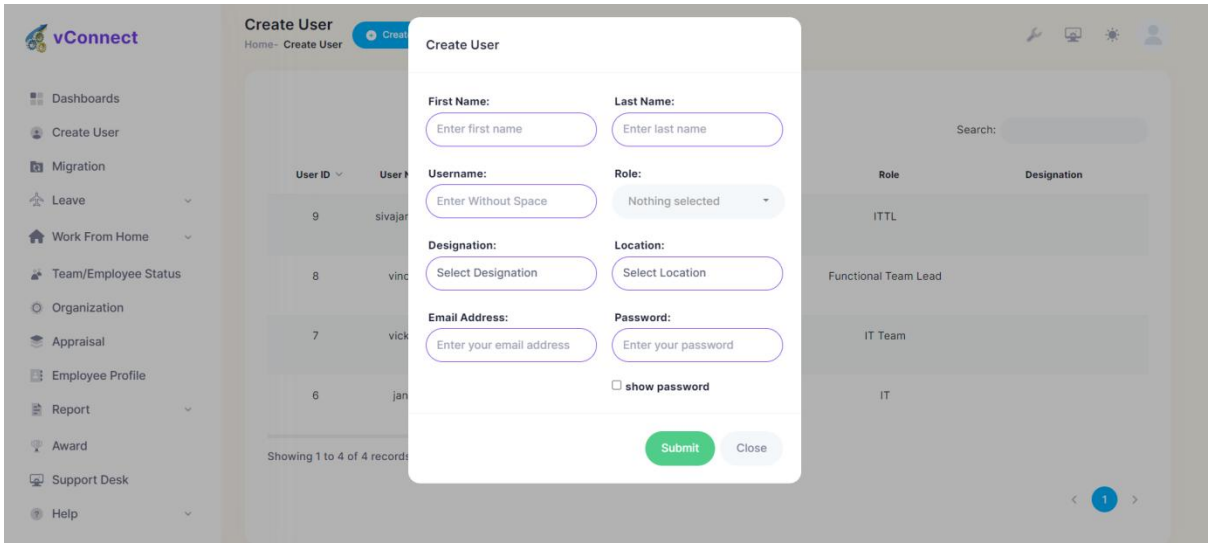
7. APPENDICES

7.1 System screenshots

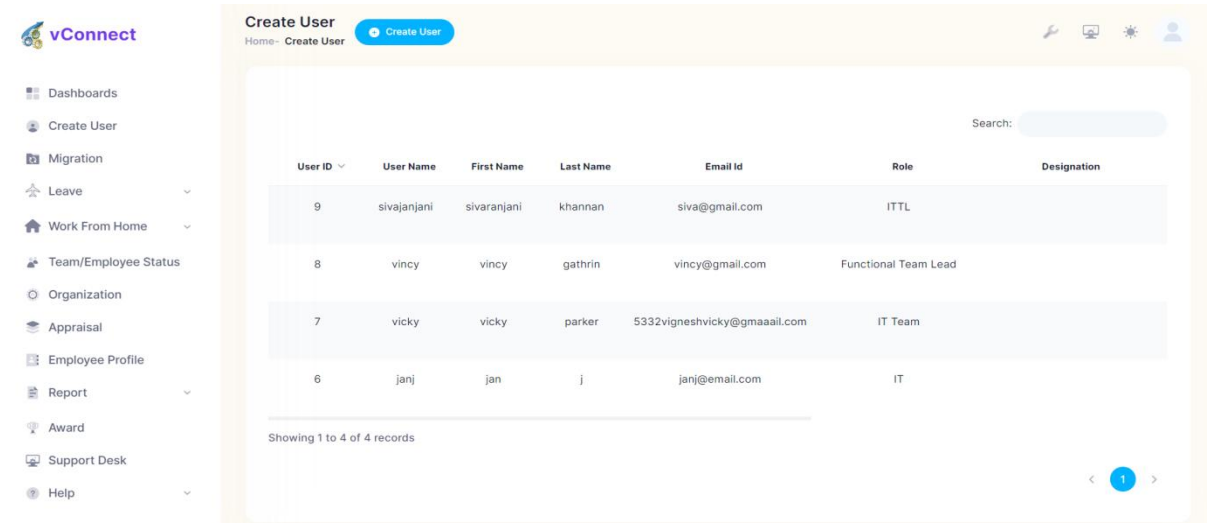
7.1.1 login



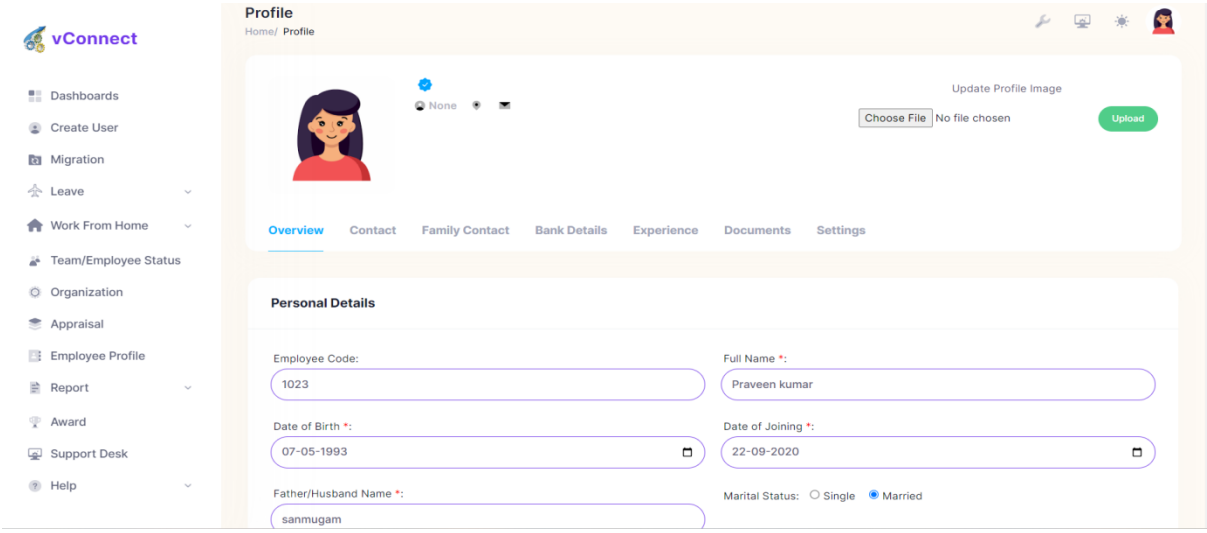
7.1.2 Create user - form

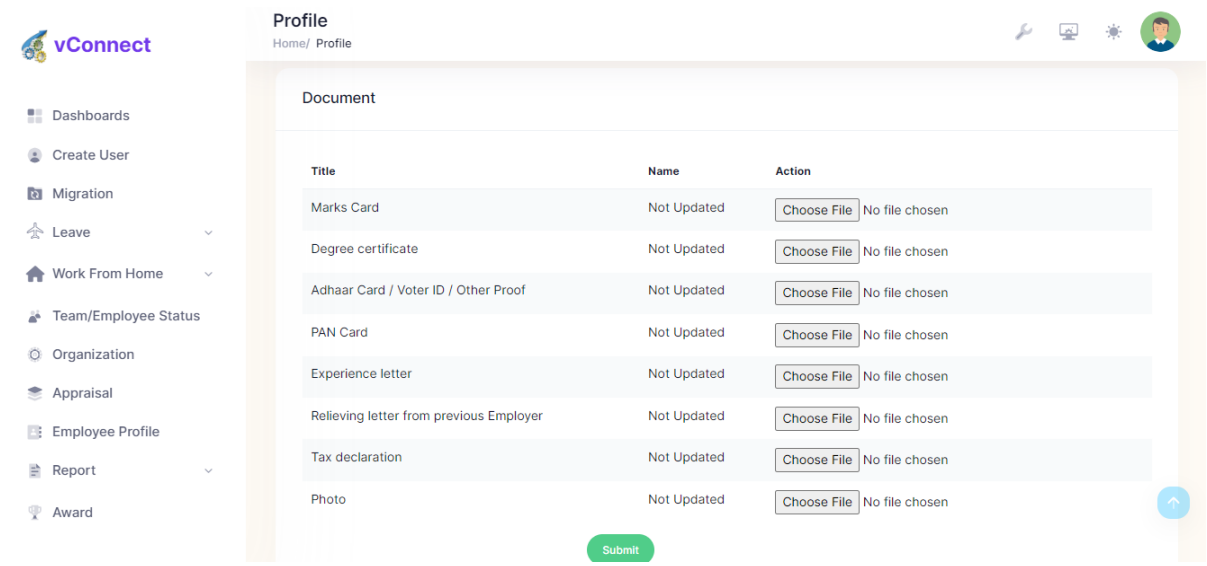


7.1.3 Create user - details

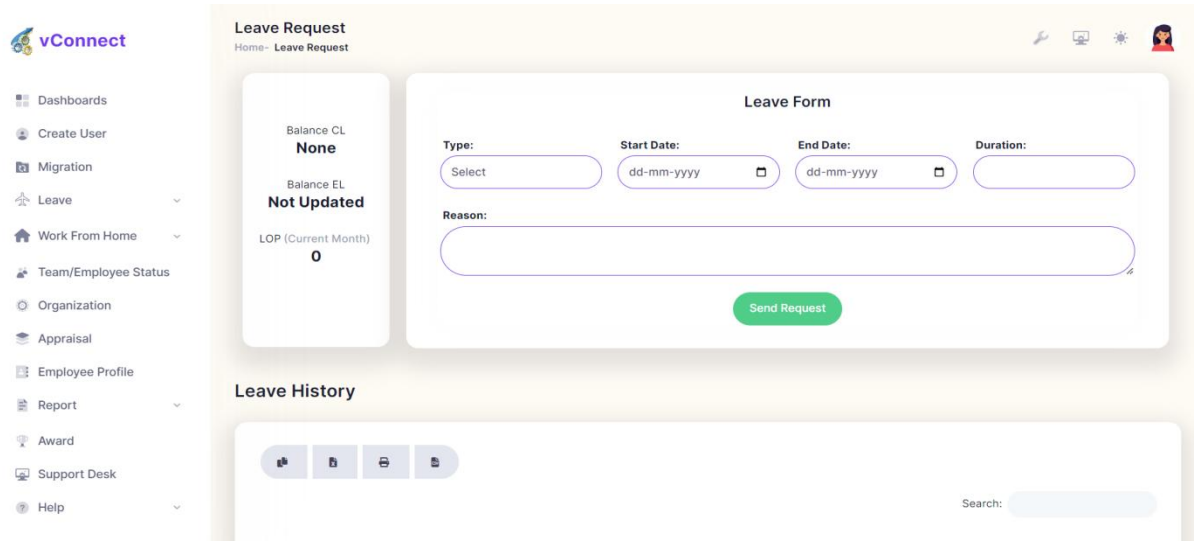


7.1.4 User Profile

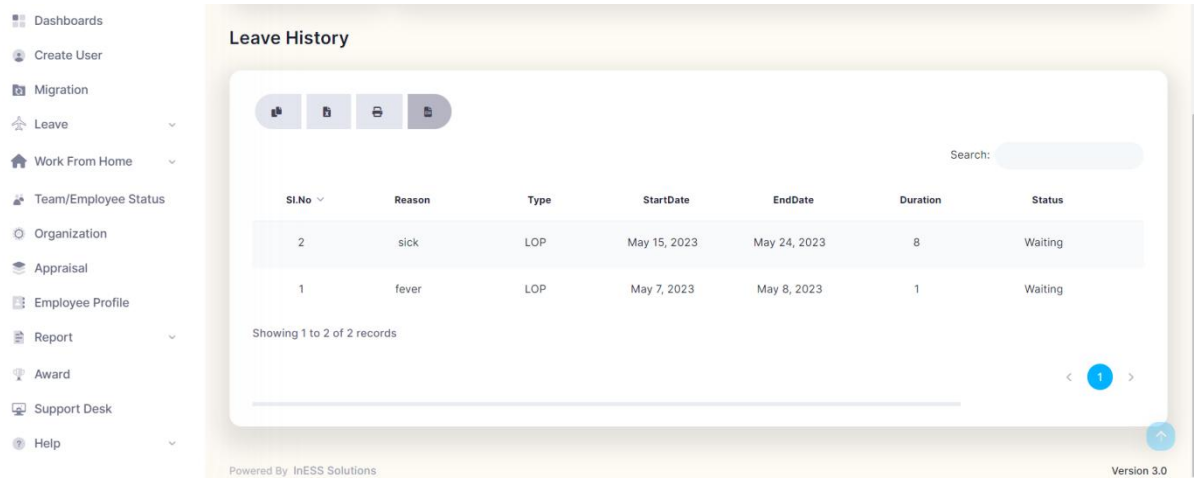




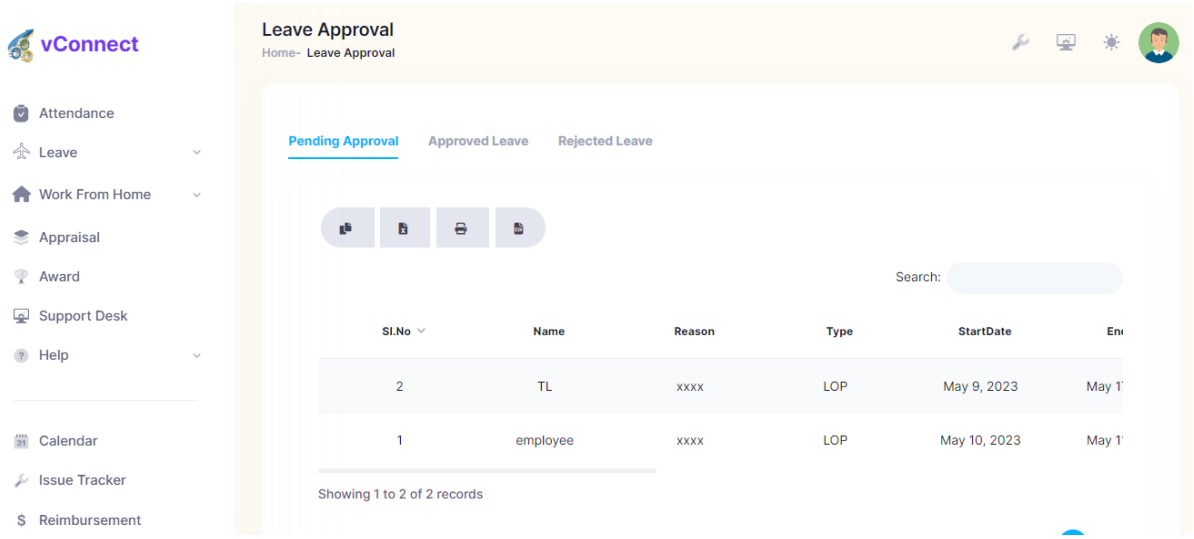
7.1.5 Leave request form



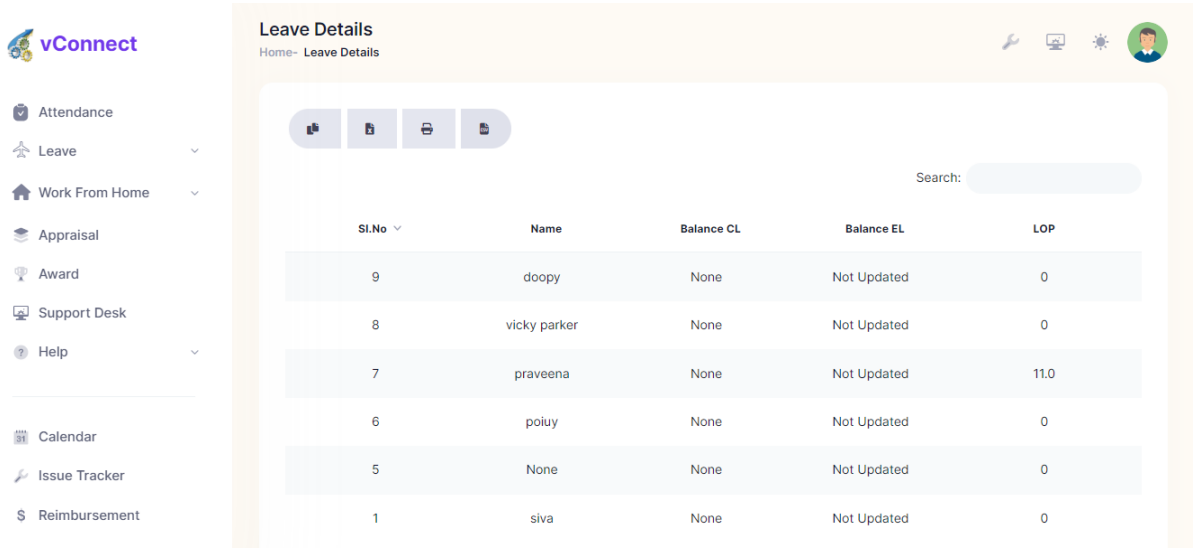
7.1.6 Leave history



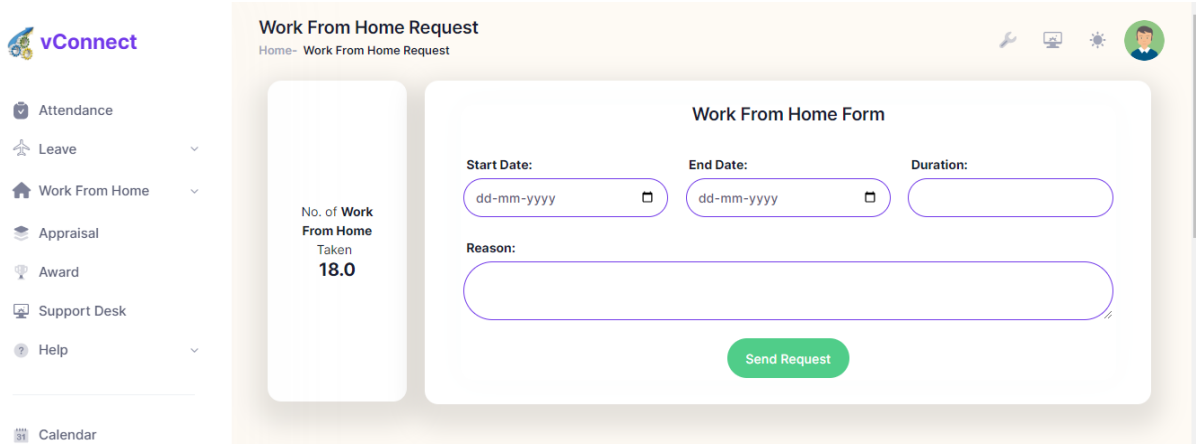
7.1.7 Leave approval



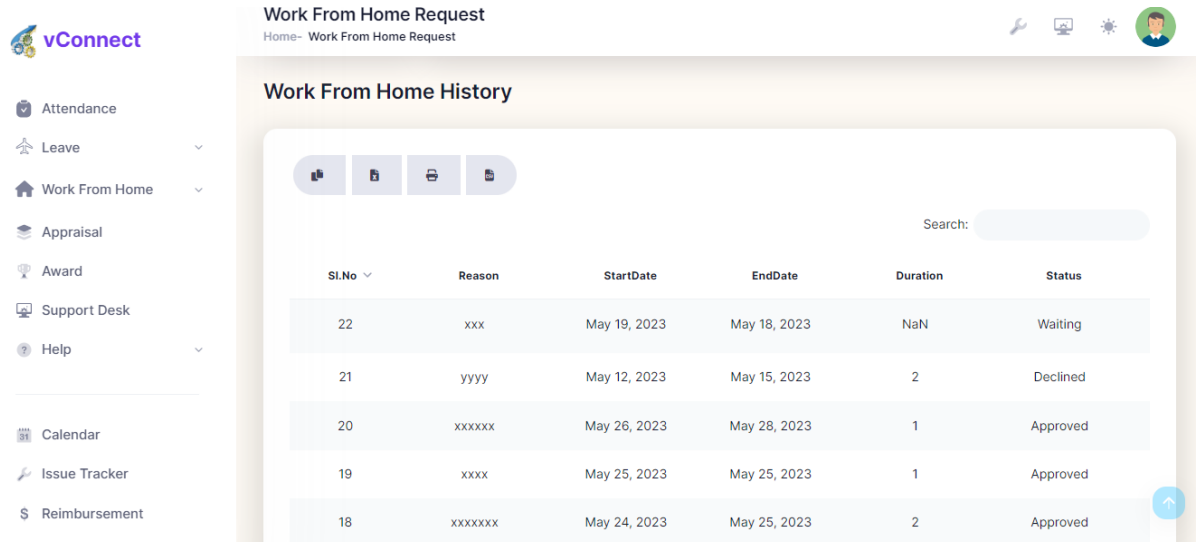
7.1.8 Leave details



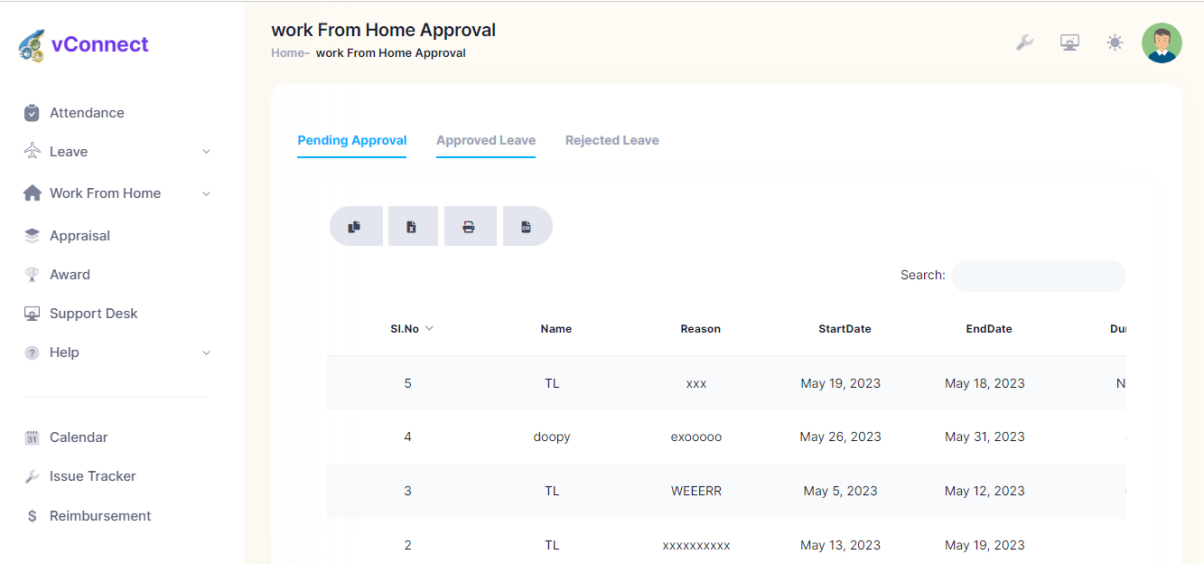
7.1.9 Work from home request



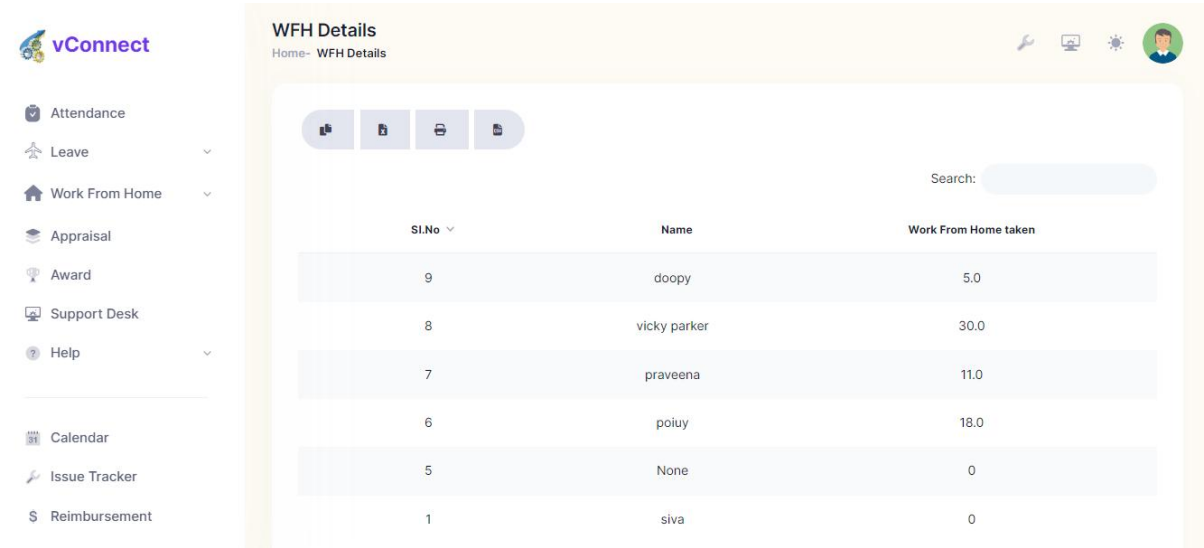
7.1.10 Work from home history



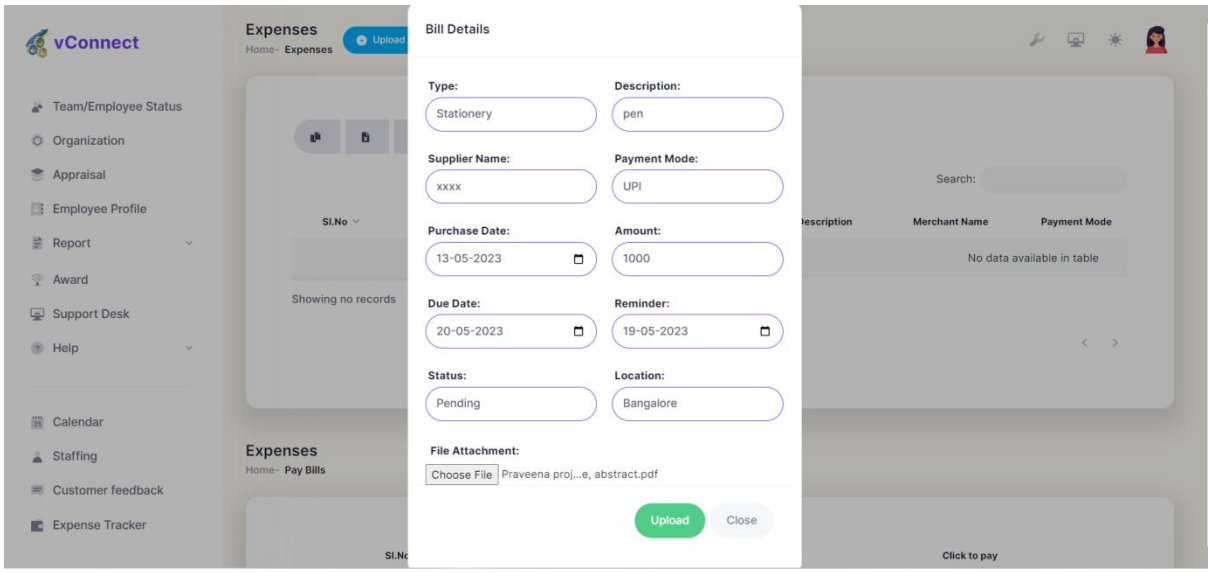
7.1.11 Work from home approval



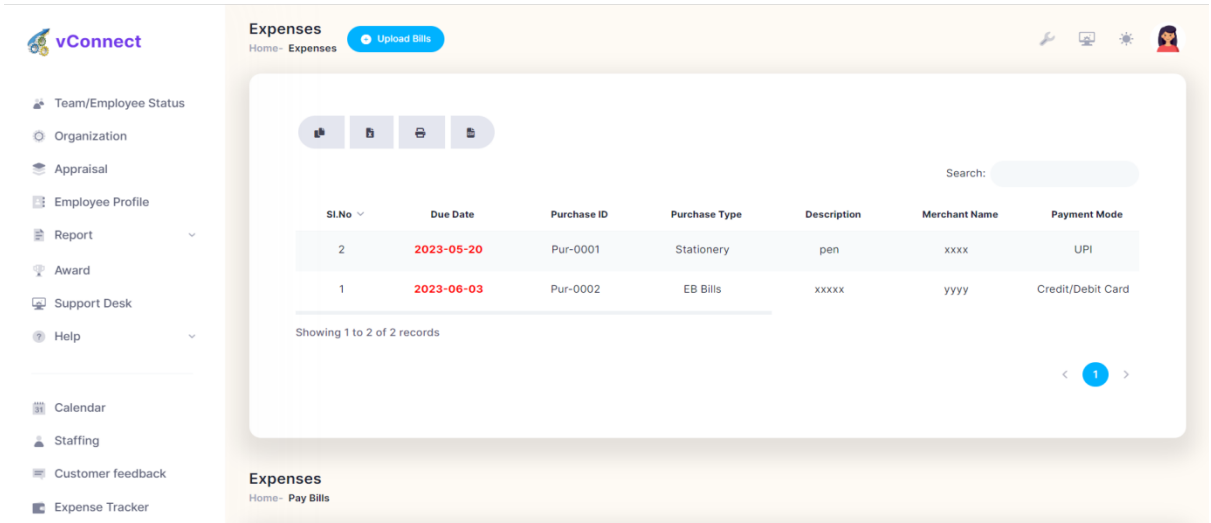
7.1.12 Work from home details



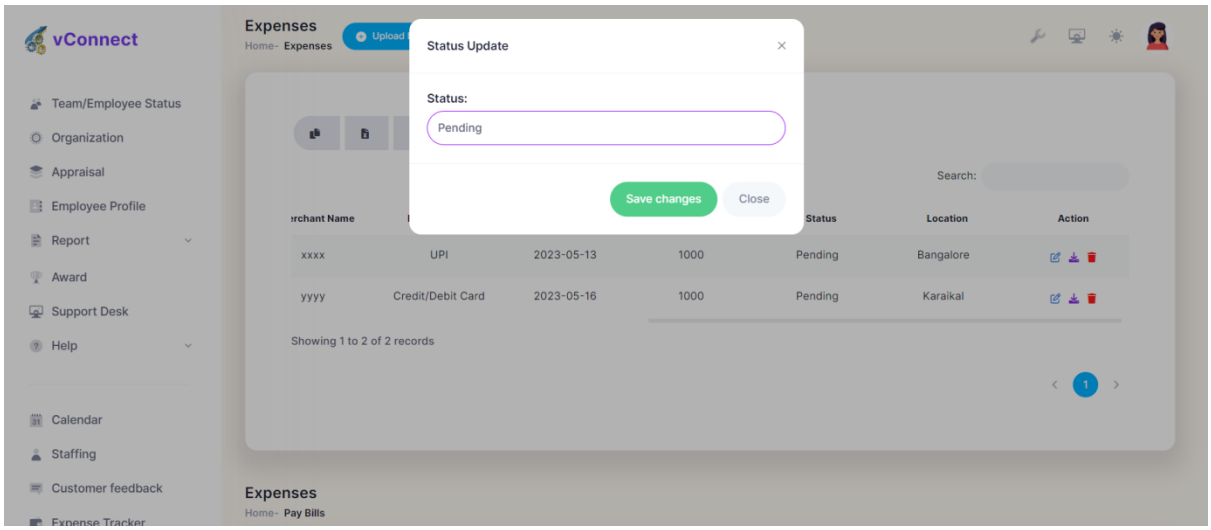
7.1.13 Expenses tracker - form



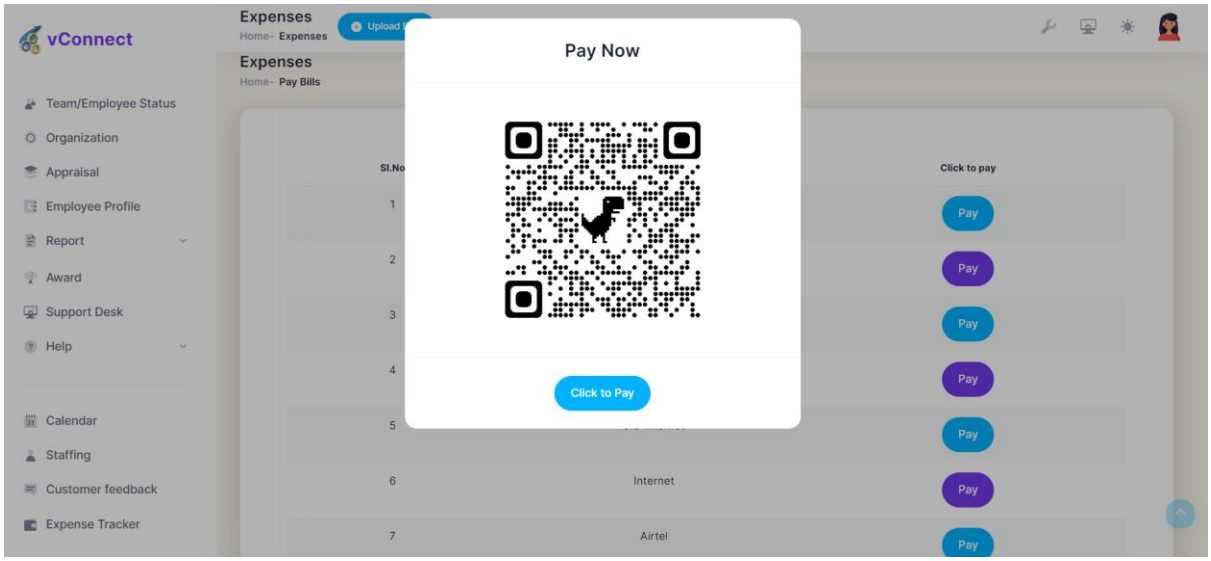
7.1.14 Expenses tracker - details



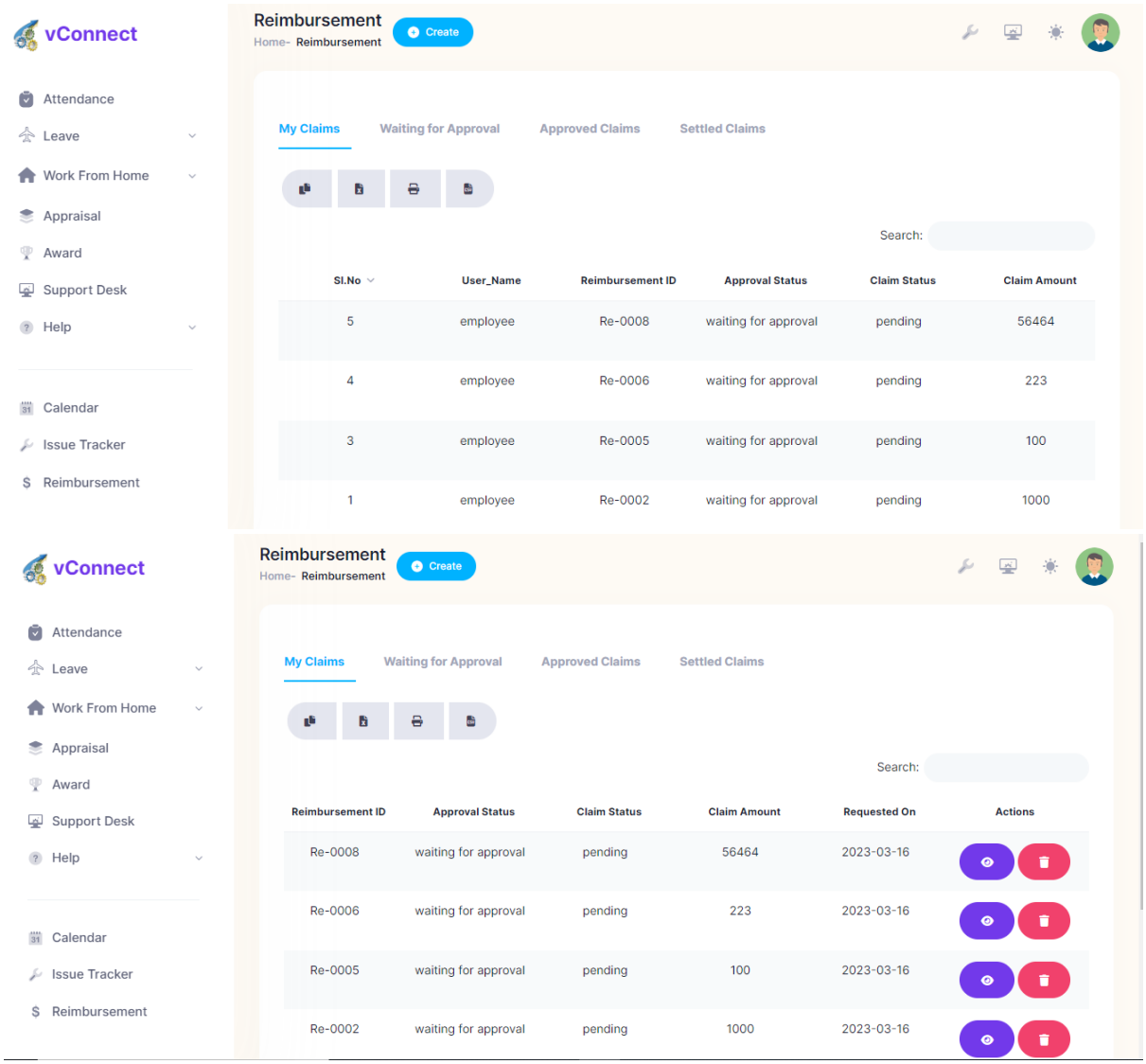
7.1.15 Expenses tracker - status update form



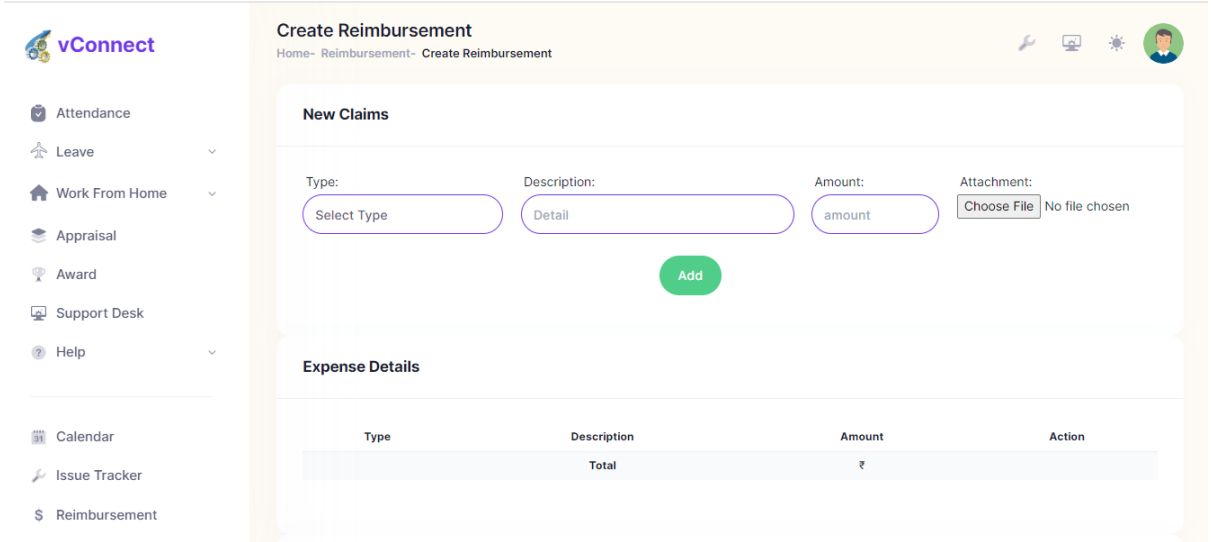
7.1.16 Expenses tracker - QR code for pay the bills



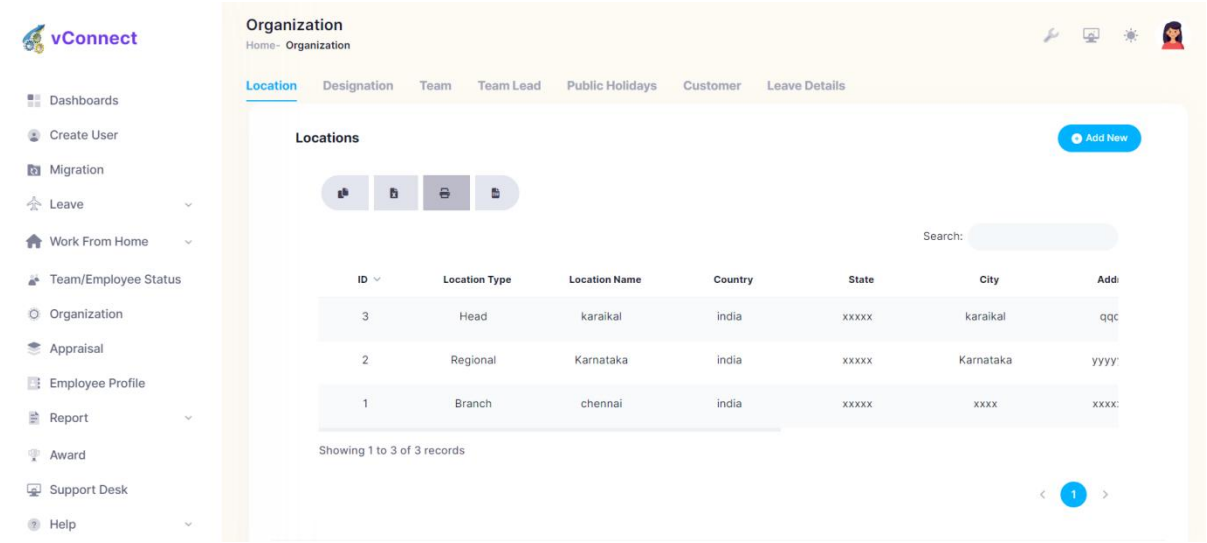
7.1.17 Reimbursement



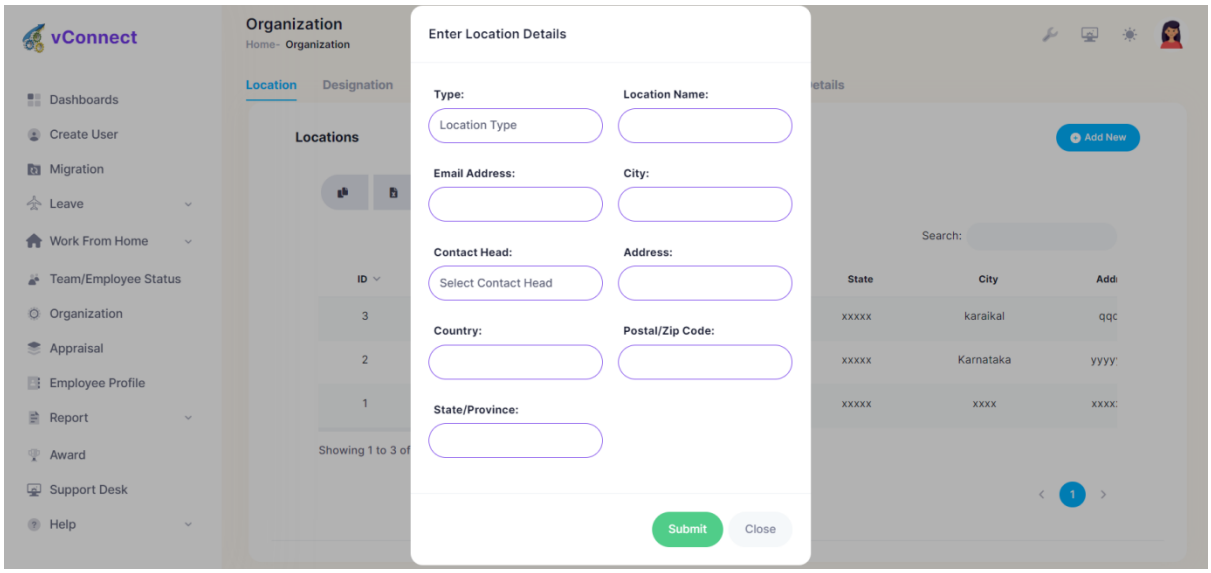
7.1.18 Reimbursement - form



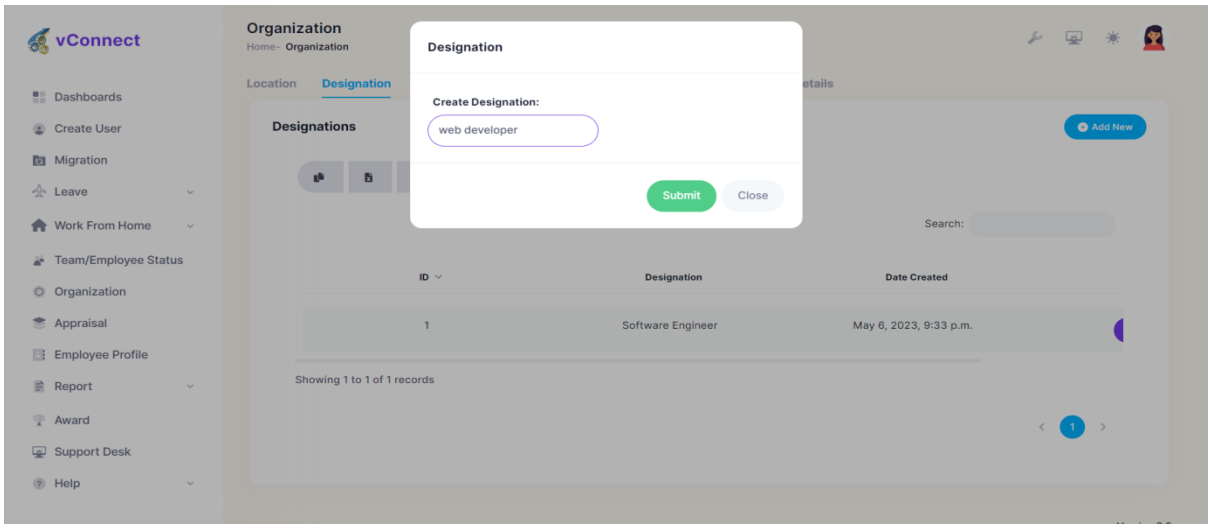
7.1.19 Organization



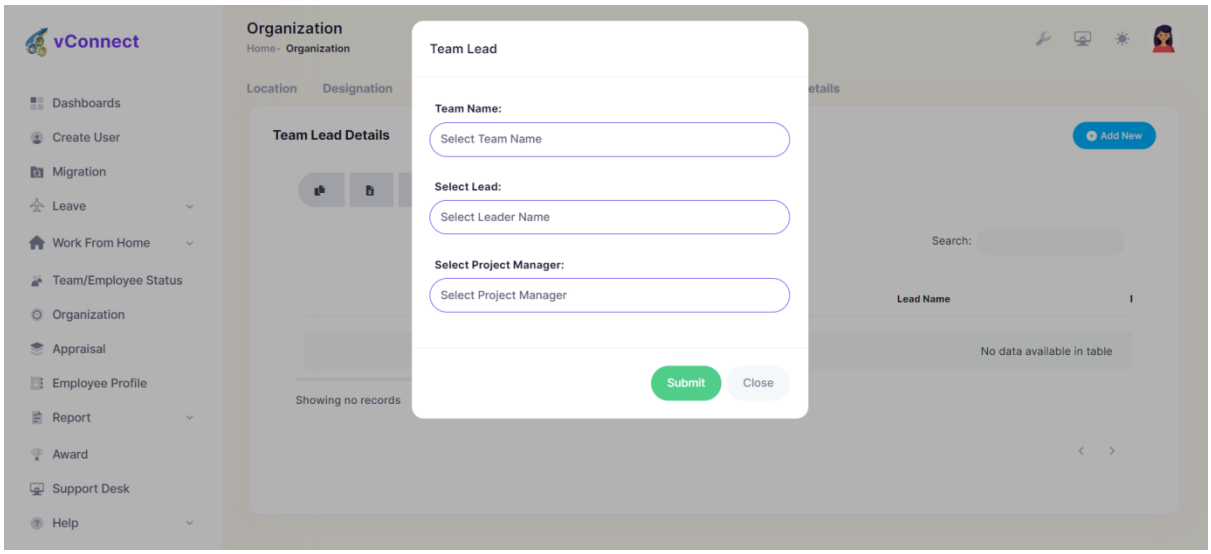
7.1.20 Organization - Form for adding new location



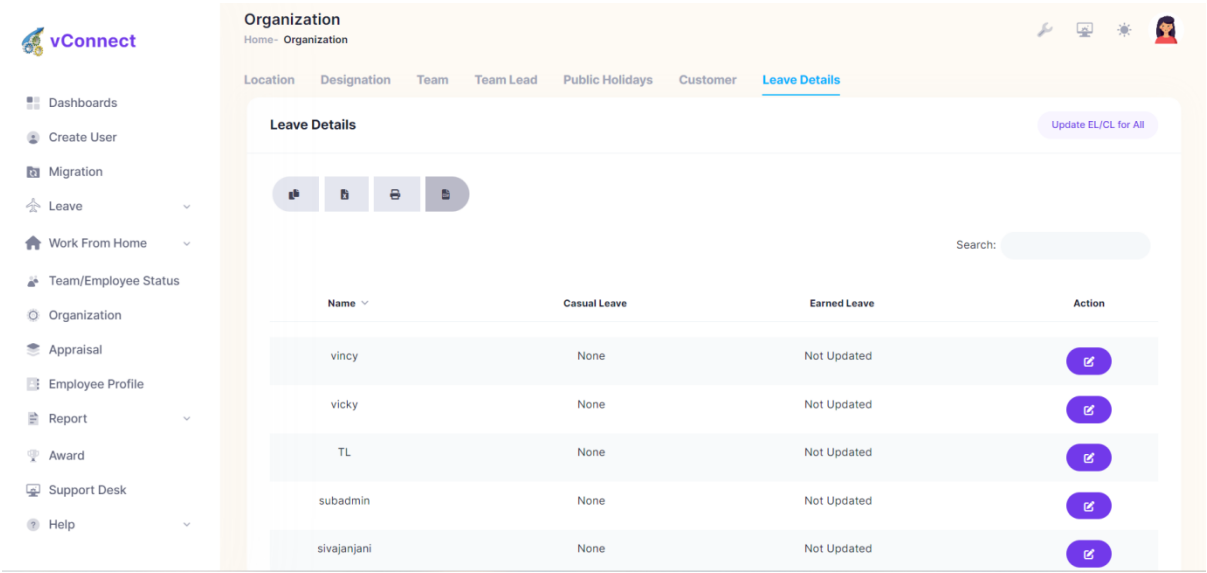
7.1.21 Organization - Form for adding new designation



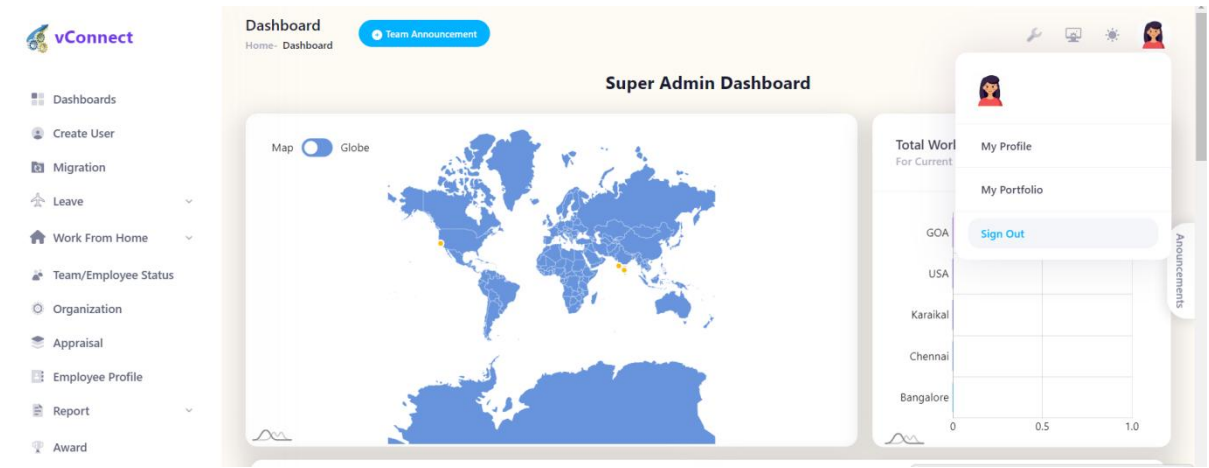
7.1.22 Organization - Form for adding new team lead



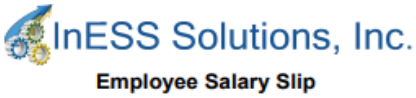
7.1.23 Organization - leave details



7.1.24 Sign out



7.1.25 Payslip - pdf



Employee Salary Slip

Employee Name: **PRAVEENA**

Department: **cs**

EL: 1.0 CL: 2.0

LOP: 2.0 Paid leave: 11.0

Earnings	Amount (Rs.)	Deductions	Amount (Rs.)
Basic Salary	10000.0	PF	1000.0
HRA	1000.0	MI	1000.0
Travel	100.0	N/A	-
Performance Pay	50000.0	N/A	-
Convenience	13400.0	N/A	-
Medical	1000.0	N/A	-

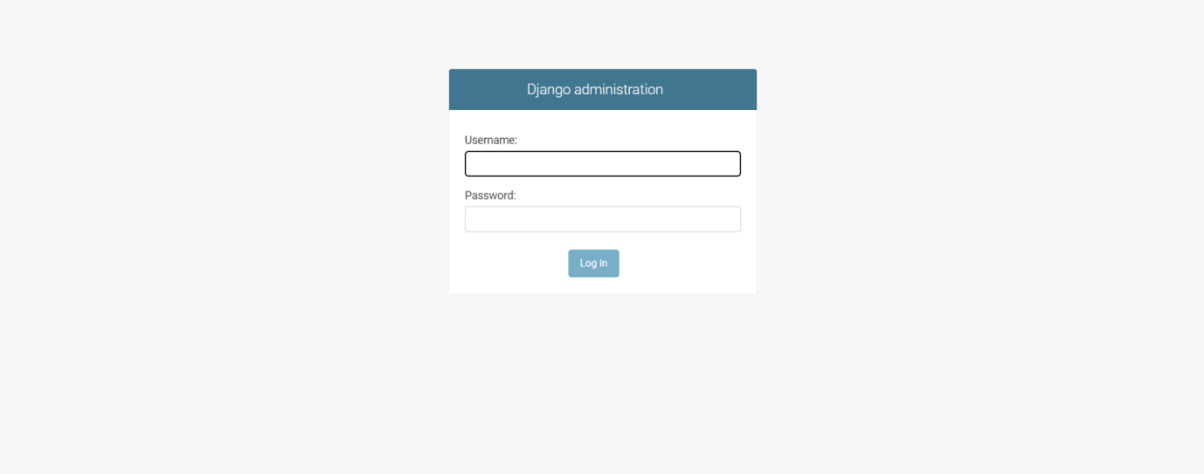
Net salary : **110000.0**

Net salary(in words) : **One lakh, ten thousand rupees, zero paise**

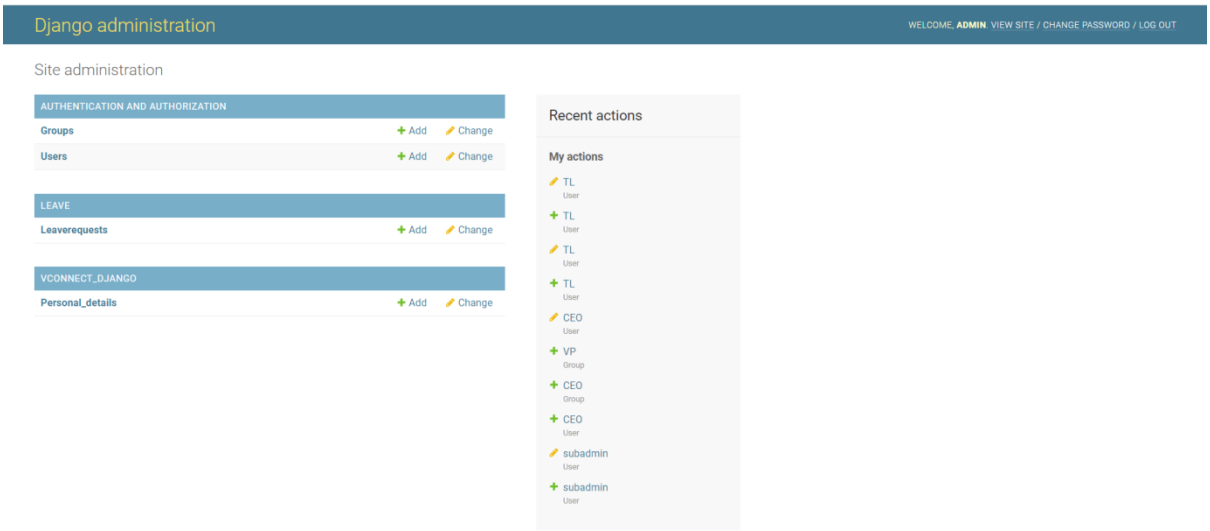
Generated at 26-04-2023 11:11:05

7.2 Super-Admin administration screenshot

7.2.1 Login

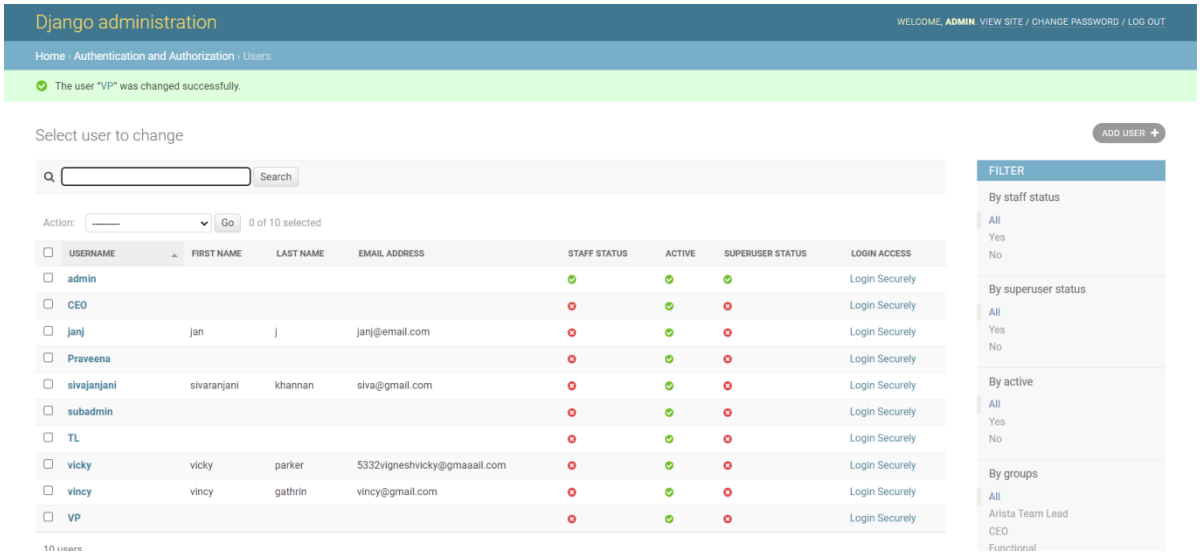


7.2.2 Django administration



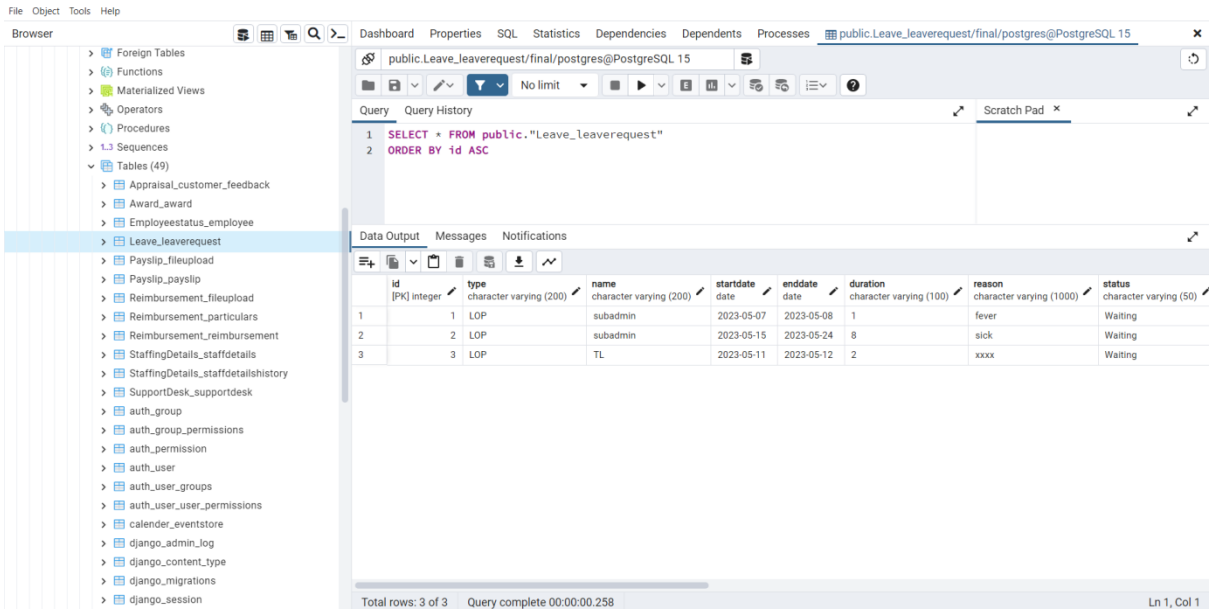
7.2.3 Super admin administration - groups

7.2.4 Super admin administration - users

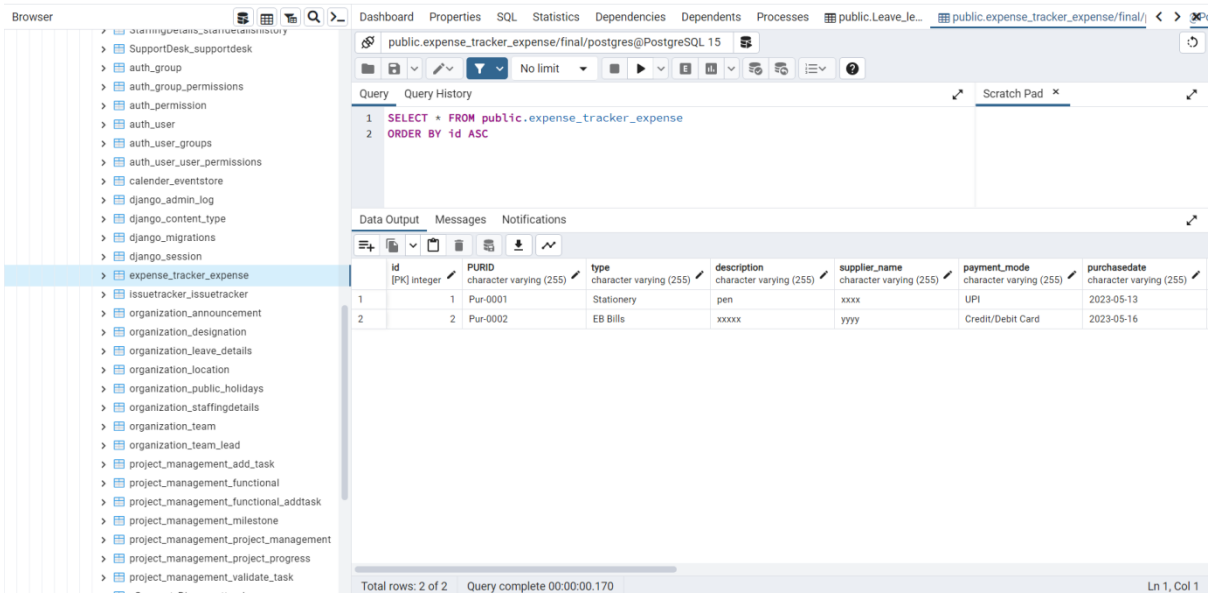


7.3 Database - Postgresql

7.3.1 Leave request table



7.3.2 Expenses tracker table



References

- **pip** - package installer for Python (https://pypi.org/project/pip/)
- pgAdmin documentation (https://www.pgadmin.org/docs/)
- Django documentation (https://docs.djangoproject.com/en/4.2/)
- Stack overflow
- Bootstrap documentation (https://getbootstrap.com/)
- PostgreSQL documentation (https://www.postgresql.org/docs/)
- W3Schools (https://www.w3schools.com/)
- GitHub (https://github.com/)