CORPORATE JOB TRAINING SCHEDULER

GE19612 -PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP PROJECT REPORT

Submitted by

LOGESH D **(2116220701144)**

LOGESHWARAN T **(2116220701145)**

MAGIZHAN S **(2116220701154)**

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BONAFIDE CERTIFICATE

Certified that this Project titled **"Corporate Job Training Scheduler"** is the bonafide work of **"LOGESH D(2116220701144), LOGESHWARAN T(220701134), MAGIZHAN S(2116220701154)"**who carried out the work under my supervision. Certified further that to the best of my knowledge the work reported herein does not form part of any other thesis or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE
Dr.P.Kumar., M.E., Ph.D.,
HEAD OF THE DEPARTMENT
Professor
Department of Computer Science and Engineering,
Rajalakshmi Engineering College,
Chennai - 602 105.

SIGNATURE
Dr.M.Rakesh Kumar.,M.E.,Ph.D.,
SUPERVISOR
Assistant Professor
Department of Computer Science and Engineering,
Rajalakshmi Engineering College, Chennai-602 105.

Submitted to Mini Project Viva-Voce Examination held on_____

Internal Examiner **External Examiner**

ABSTRACT

The Corporate Training Scheduler is a fully featured web-based system intended to organize and automate employee training inside an organization. Constructed using a Node.js backend and SQLite database, and styled with a new glass morphic neon UI, this application promises functionality along with an enjoyable user experience. In its essence, the system is skill-based training assignment—employees are enrolled with skills, and when an admin uploads a new course with specified prerequisites, the system auto-recommends suitable employees whose skills match the prerequisites. Admins then have the ability to manually pick among the recommended employees and allocate training. To ensure consistent training trajectory, each staff is allocated a single active course at any given time. When assigned, the system notifies employees via email with scheduling information and reminders. A specialized training calendar view provides admins with a visual representation of training sessions and dates, interactive features to monitor and modify upcoming events. Employees are able to report progress every week through a special form.

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Initially we thank the Almighty for being with us through every walk of our life and showering his blessings through the endeavor to put forth this report. Our sincere thanks to our Chairman **Mr. S. MEGANATHAN, B.E, F.I.E.**, our Vice Chairman **Mr. ABHAY SHANKAR MEGANATHAN, B.E., M.S.,** and our respected Chairperson **Dr. (Mrs.) THANGAM MEGANATHAN**, **Ph.D.,** for providing us with the requisite infrastructure and sincere endeavoring in educating us in their premier institution.

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LOGESH 2116220701144
LOGESHWARAN 2116220701145
MAGIZHAN 2116220701154

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LIST OF ABBREVIATIONS

S. No	ABBR	Expansion
1.	**OTP**	One-Time Password
2.	**API**	Application Programming Interface
3.	**JWT**	JSON Web Token
4.	**SSL**	Secure Sockets Layer
5.	**TLS**	Transport Layer Security
6.	**HTTPS**	Hyper Text Transfer Protocol Secure
7.	**2FA**	Two-Factor Authentication

CHAPTER 1
INTRODUCTION

1.1GENERAL

Continuous training and upskilling of employees have become a necessity for organizational growth and retaining quality employees in today's competitive business world. Organizations require effective mechanisms for tracking employee skills, assigning training, and monitoring progress.Manual assignment of training tasks is time-consuming, prone to errors, and not very effective, particularly with the growth of the number of employees.

To counteract all these issues, a Corporate Training Scheduler system is created. This system supports employee registration automation, skill mapping, recommending suitable employees for training based on skills needed, training session scheduling through a calendar interface, attendance tracking, and auto-generating email notifications for assignments and reminders.

1.2 OBJECTIVE

To make a portal where employees can sign up and post their skills.
To allow administrators to define training courses with specific prerequisite criteria.
To recommend available employees for certain training based on their skill levels.
To make it possible to schedule training sessions using a calendar-view interface.

To enable marking and monitoring employee attendance on training sessions.
To automate automated email notifications of training assignments, reminders, and confirmations.

To enable an admin dashboard for monitoring training overall progress and employee participation.

1.3 EXISTING SYSTEM

There is no single, automated system to guarantee that the correct employees are being assigned the correct training based on their capabilities, and monitor their progress in a seamless manner.

Manual mistakes, timetable clashes, inappropriateness of notification, and attendance difficulty in monitoring compound the process.

Therefore, the need for a computerized system that can seamlessly handle and coordinate the training task and tracking in an organization is very high.

This is followed by job-specific orientation where new hires are introduced to their teams, reporting managers, and functional responsibilities. Departmental heads typically allocate the second and third weeks to functional training that focuses on core tasks, workflows, and project frameworks relevant to the job profile. For example, a marketing team member may undergo training in digital marketing tools, brand guidelines, campaign analytics, SEO, and customer segmentation, whereas a finance employee might be introduced to budgeting tools, forecasting models, expense reporting, and financial compliance norms.

Moving forward, the scheduler should span across a three-month plan for continuous learning. Week five onwards, employees transition into live shadowing, where they observe senior colleagues and actively participate in meetings, projects, or client interactions to understand the nuances of real-time responsibilities. This hands-on exposure typically lasts 2–3 weeks and is accompanied by weekly mentoring check-ins.

CHAPTER 2
LITERATURE SURVEY

A corporate job training scheduler is an essential tool in organizational development, especially in today's fast-paced business environment where continuous learning is critical. Scheduling employee training manually can be inefficient and error-prone, particularly in large firms where thousands of employees with diverse skill needs are involved. This creates a pressing demand for automated and intelligent scheduling systems that streamline the process and improve outcomes.

Historically, training schedules were created manually using simple tools like paper-based calendars, Excel spreadsheets, and email correspondence. These methods required significant human effort and were prone to overlapping sessions, trainer overbooking, and underutilized resources. As organizations grew in size and complexity, such approaches became unsustainable, prompting a shift toward more structured systems.

Early attempts to automate training scheduling used rule-based systems. These systems functioned on a predefined set of conditions such as trainer availability, employee eligibility, course duration, and room availability. Although an improvement over manual systems, they were rigid and struggled to adapt to real-time changes or exceptions in employee availability or business priorities.

To introduce flexibility and efficiency, optimization techniques such as linear programming and integer programming began to be employed. These mathematical models allowed HR managers to solve resource allocation problems by minimizing cost or maximizing efficiency within a set of constraints. In corporate training, this meant optimizing the number of sessions, room usage, and participant allocation without conflicts.

Despite their effectiveness, linear programming methods faced scalability issues in large-scale settings. This led to the adoption of heuristics and metaheuristics for solving complex scheduling problems. Techniques such as genetic algorithms (GAs), simulated annealing, and tabu search became popular due to their ability to explore vast solution spaces quickly and provide near-optimal results even in NP-hard problem domains.

A genetic algorithm, for instance, simulates the process of natural selection and evolution to iteratively improve solutions. When applied to training schedules, it can optimize trainer assignments, time slots, and resource usage while respecting multiple constraints. Researchers have successfully demonstrated the application of GAs in university timetabling and corporate training contexts alike.

Simulated annealing, another metaheuristic, uses a probabilistic technique to find an approximate global optimum in a large search space. This approach is useful when scheduling needs to balance multiple objectives such as cost, convenience, and compliance. Tabu search, by contrast, maintains a list of previously explored solutions to avoid cycles, which helps refine scheduling efficiency.

As computational capabilities improved, artificial intelligence (AI) and machine learning (ML) began to be integrated into scheduling systems. ML models can learn from past data to forecast training needs, recommend training programs, and anticipate employee availability. These capabilities make the scheduler more adaptive and personalized, enhancing employee satisfaction and participation rates.

In AI-enhanced systems, recommendation engines are often employed to match employees to the most relevant training programs. These engines consider an employee’s job role, performance data, and learning history to make personalized suggestions. Such systems not only schedule the training but actively guide learning paths aligned with organizational goals.

Another innovation is the use of Natural Language Processing (NLP) for automating training requests and responses. Chatbots and digital assistants powered by NLP can interact with employees, understand training queries, and enroll participants based on schedule availability—thus reducing the administrative burden on HR staff.

Incorporating data analytics into training scheduling allows HR departments to track attendance trends, identify peak training periods, and predict course demand. Predictive models help plan better by understanding patterns in employee behavior, departmental needs, and historical scheduling conflicts.

Cloud-based platforms have also transformed how training is scheduled. They offer centralized databases, real-time updates, and multi-user access, ensuring consistency across departments and geographies. These platforms are particularly effective for multinational corporations with employees spread across different time zones.

Integration with Learning Management Systems (LMS) is another key trend in training schedulers. An LMS not only delivers content but also manages assessments, feedback, and certifications. When synchronized with a scheduler, it can automatically book sessions, send reminders, and adjust timelines based on progress tracking.

Some corporate training schedulers now incorporate gamification to boost engagement. By awarding points or badges for timely participation or course completion, employees are encouraged to take training seriously, and schedulers can prioritize sessions with high completion likelihood.

AI-based tools also consider external factors like public holidays, peak business periods, and resource constraints when generating schedules. This contextual awareness helps avoid conflicts with core business activities and ensures optimal attendance and participation.

Personalization is another major evolution in training schedulers. Instead of one-size-fits-all programs, systems now curate individual learning paths based on skill gaps, career goals, and preferred learning formats (e.g., in-person, virtual, hybrid). Scheduling algorithms align these preferences with available resources.

Several studies emphasize the importance of user feedback in improving training schedules. Intelligent systems gather feedback after each session to refine future scheduling recommendations and improve user experience. This feedback loop helps in continuously optimizing the training calendar.

Security and compliance are also critical in the design of corporate training schedulers. With sensitive employee data involved, systems must comply with data protection laws like GDPR and ensure secure data transmission and access controls. Additionally, regulatory training schedules must meet compliance deadlines and audit requirements.

A number of commercial tools, such as SAP SuccessFactors, Cornerstone OnDemand, and Workday Learning, offer integrated training scheduling capabilities. These platforms use AI, cloud infrastructure, and data analytics to provide holistic training solutions, although they vary in their level of customization and scalability.

Finally, research continues to explore how reinforcement learning and multi-agent systems can improve scheduling by enabling real-time decision-making and collaboration across departments. These advanced AI models treat scheduling as an ongoing learning process, capable of adapting to both short-term changes and long-term strategic shifts in corporate learning needs.

CHAPTER 3

PROPOSED SYSTEM

3.1 GENERAL

The proposed system for a corporate job training scheduler is designed to intelligently automate the planning, coordination, and execution of employee training programs within an organization. This system leverages artificial intelligence and optimization algorithms to address the complexities of scheduling training sessions by considering various constraints such as employee availability, trainer schedules, resource limitations, and organizational priorities. Unlike traditional manual or rule-based systems, the proposed model incorporates a dynamic scheduling engine that adapts in real time to changes such as last-minute cancellations, urgent project assignments, or sudden unavailability of trainers or rooms. The core of the system is a hybrid optimization framework combining heuristic approaches (e.g., genetic algorithms) with machine learning techniques that learn from historical training data to make predictive and context-aware scheduling decisions.

3.2 SYSTEM ARCHITECTURE DIAGRAM

The system architecture for the job training scheduler integrates multiple components to deliver an intelligent and efficient solution for managing corporate training activities. At the user level, employees, trainers, and HR administrators interact with the system through web or mobile interfaces to view schedules, enroll in training, manage sessions, or provide feedback. The core component of the architecture is the training scheduler, which handles all the logic for planning and coordinating training sessions. It considers employee availability, trainer schedules, room bookings, and other constraints while generating optimal schedules.

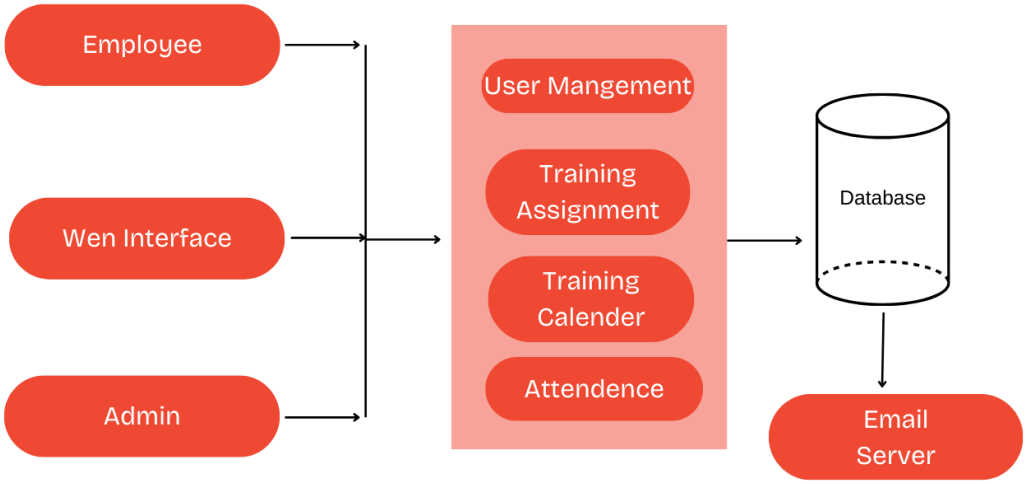

Fig3.1:System Architecture

3.2 DEVELOPMENTAL ENVIRONMENT

3.2.1 HARDWARE REQUIREMENTS

The hardware specifications could be used as a basis for a contract for the implementation of the system. This therefore should be a full, full description of the whole system. It is mostly used as a basis for system design by the software engg.

Table3.1 Hardware Requirements

COMPONENTS	SPECIFICATION
PROCESSOR	Intel Core i3 or higher
RAM	4 GB minimum

POWERSUPPLY	+5Vpowersupply

3.2.2 SOFTWARE REQUIREMENTS

The software requirements paper contains the system specs. This is a list of things which the system should do, in contrast from the way in which it should do things. The software requirements are used to base the requirements. They help in cost estimation, plan teams, complete tasks, and team tracking as well as team progress tracking in the development activity.

Table3.2 Software Requirements

COMPONENTS	**SPECIFICATION**
Operating System	Windows 7 or higher
Frontend	HTML, CSS , JavaScript
Backend	Node.js
Database	SQLite

3.3 DESIGN OF THE ENTIRE SYSTEM

3.3.1 ACTIVITY DIAGRAM

An activity diagram for the job training scheduler illustrates the sequential flow of activities involved in organizing and managing corporate training programs. The process typically begins when an HR administrator or an automated system identifies a training need based on employee performance data, compliance requirements, or scheduled development programs. This triggers the creation of a training event, including defining objectives, selecting a trainer, and choosing a suitable time slot and location. The system then checks trainer and resource availability, as well as potential scheduling conflicts with employees.

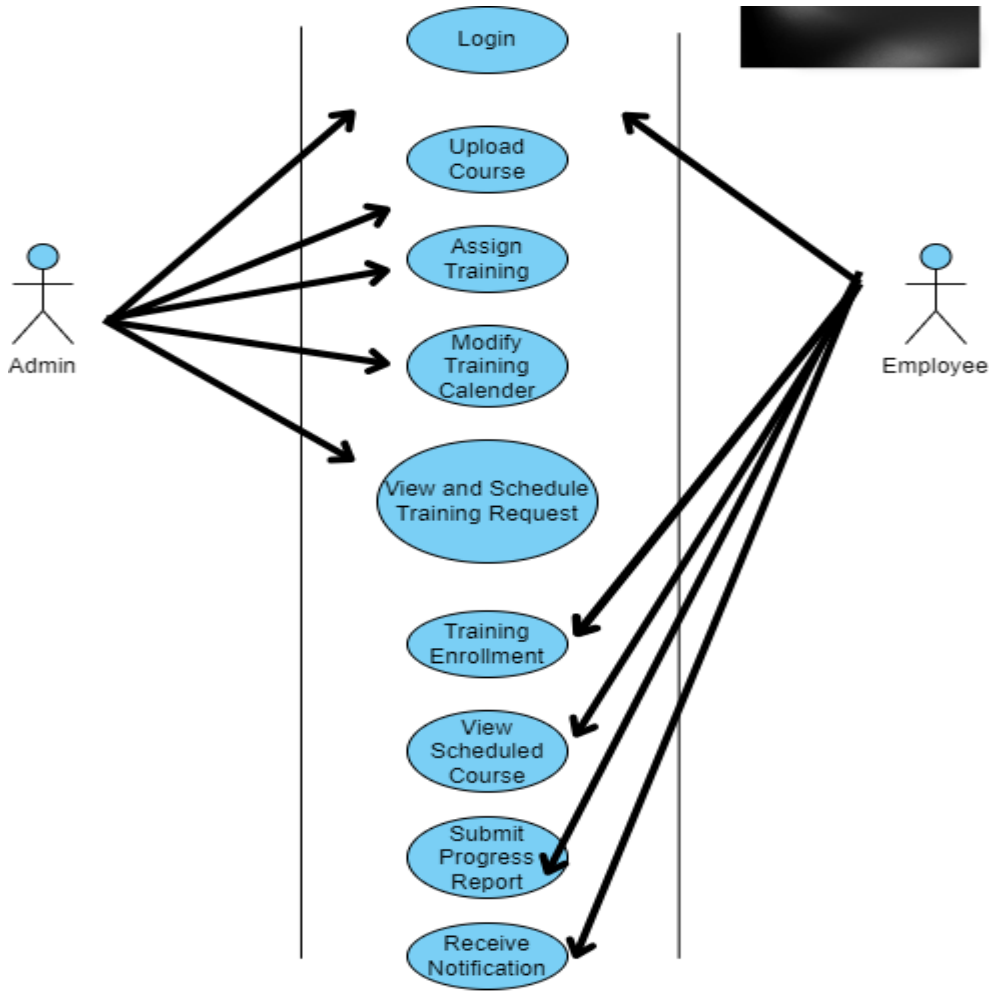

Fig3.2:Activity Diagram

3.4.2 DATA FLOW DIAGRAM

A data flow diagram (DFD) for the job training scheduler represents the movement of data between various system components and stakeholders involved in the training process. At the highest level, the diagram begins with **external entities** such as employees, HR administrators, and trainers, who interact with the system through user interfaces. When a training request is initiated—either by HR or an automated performance monitoring system—data

flows into the **Training Scheduler module**, which processes inputs such as employee profiles, trainer availability, resource constraints, and course requirements.

The Learning Management System (LMS**)** is updated with course materials, assessment tools, and progress tracking linked to each scheduled session. During and after the training session, data flows back into the system in the form of attendance records, trainer evaluations, and participant feedback. This output is stored and analyzed to improve future scheduling accuracy and training effectiveness.

The training scheduler must also dedicate time in the second month for cross-functional exposure, where employees spend short durations with adjacent departments such as sales, IT, operations, or procurement, fostering a broader understanding of organizational functioning and encouraging collaboration. Around week eight, the training program should focus on performance goal-setting, where employees—under the guidance of their managers—define quarterly key performance indicators (KPIs) aligned with departmental targets. This process is typically supported by goal-tracking systems introduced in prior sessions, ensuring alignment with appraisal metrics. The scheduler should then reserve the ninth and tenth weeks for advanced role-specific training modules. These modules may include case study discussions, problem-solving simulations, or certification programs designed to deepen expertise. For instance, a software developer might attend agile methodology workshops, while a sales associate could engage in objection-handling drills or negotiation techniques. Week eleven can be structured around soft skill enhancement revisits, specifically focusing on leadership development, emotional intelligence, and adaptability to change—traits crucial for growth in a corporate setting.

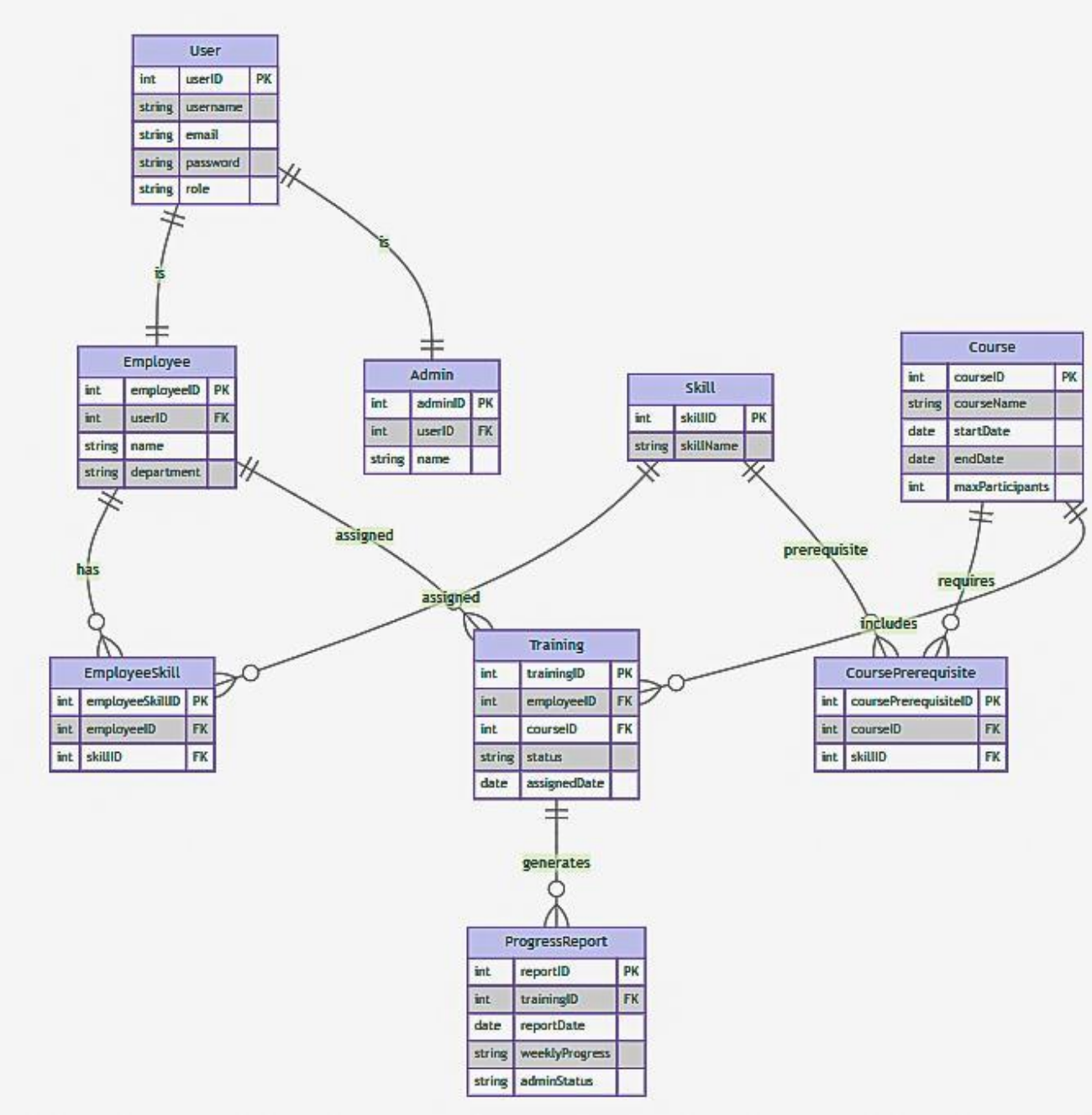

Fig3.3:Data Flow Diagram

3.4 STATISTICAL ANALYSIS

Statistical analysis is the process of collecting, reviewing, interpreting, and drawing

conclusions from data using various methods and techniques. It's used across multiple disciplines to identify patterns, trends, and relationships in data. Descriptive statistics summarize the characteristics of a dataset and provide a simple overview. These include measures like the mean (average), median (middle value), mode (most frequent value), range (difference between max and min values), and standard deviation (spread around the mean).

Inferential statistics allow you to make predictions or inferences about a larger population based on sample data. This includes hypothesis testing, where assumptions about a population are tested, confidence intervals, which provide a range likely to contain the true population value, and regression analysis, which models relationships between variables, like how temperature influences electricity demand.

Feedback loops are integrated throughout the scheduler—from post-session feedback surveys to 360-degree appraisals after every training phase—allowing real-time refinement and personalization of training content. Special attention must also be given to hybrid or remote employees by incorporating virtual sessions, recorded modules, and flexible learning windows in the training scheduler. This ensures equitable access to learning regardless of location. The scheduler must also align with annual performance review timelines; thus, one month prior to appraisal cycles, focused sessions on self-assessment, goal documentation, and career planning are conducted to empower employees. For new managers or recently promoted leaders, the scheduler contains onboarding tracks such as "managing teams," "conducting evaluations," and "driving performance" to ease their transition and promote leadership efficiency.

CHAPTER 4

MODULE DESCRIPTION

The workflow for the proposed system is designed to ensure a structured and efficient process for detecting and preventing blockchain security threats. It consists of the following sequential steps:

4.1 SYSTEM ARCHITECTURE

4.1.1 USER INTERFACE DESIGN

The User Interface (UI) design for the Training and Skill Management System is structured to provide a clean, user-friendly, and role-based experience for both employees and administrators. Upon accessing the system, all users are presented with a secure login screen where they input their credentials and select their role (Employee or Admin). Once authenticated, employees are directed to a personalized dashboard displaying their profile information, including department and skills. This dashboard also features sections for viewing assigned training courses with details like course name, status, and dates, as well as a module for submitting and reviewing weekly progress reports. A section showing available or recommended courses enhances engagement by allowing employees to explore further learning opportunities.

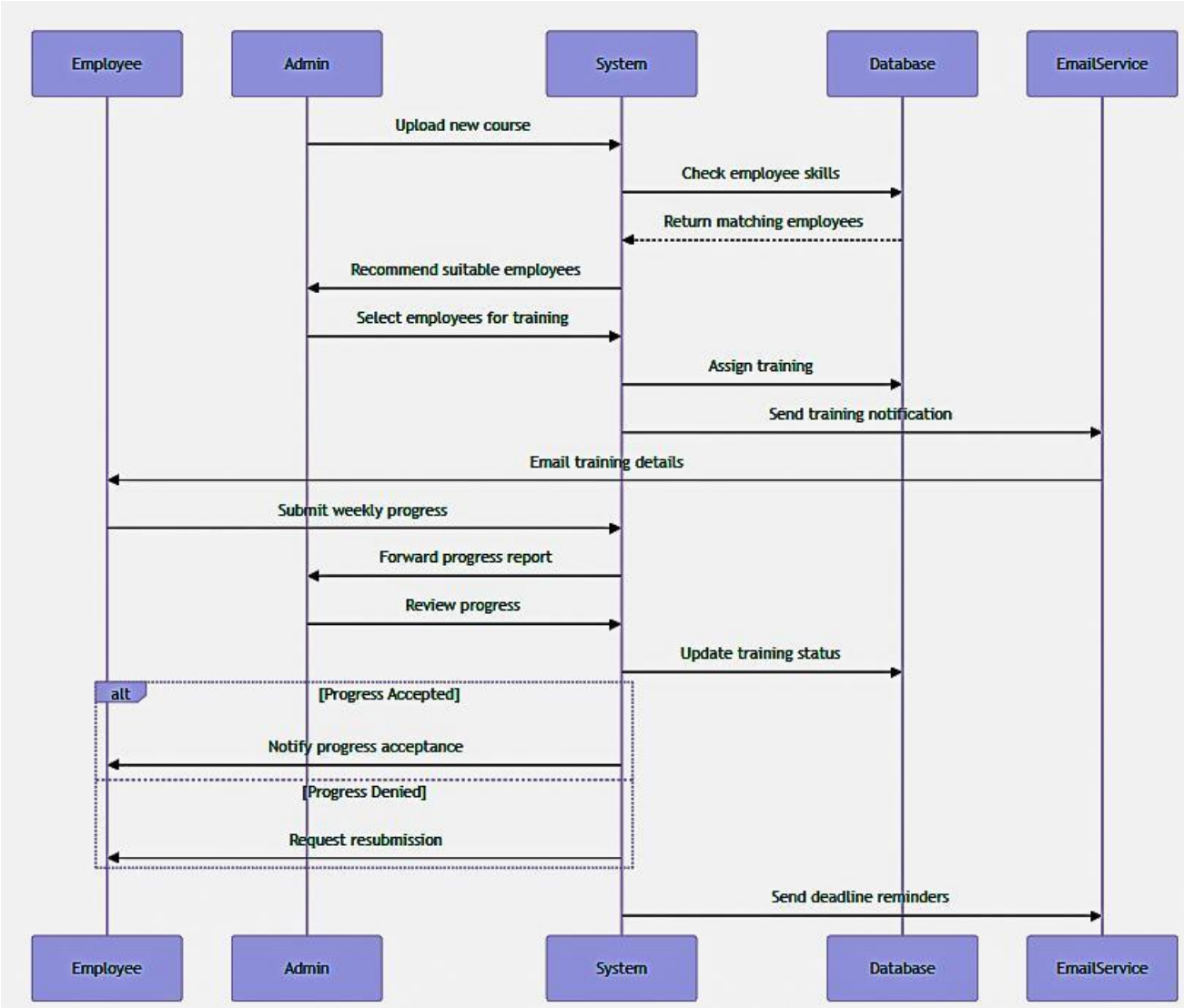

Fig 4.1: SEQUENCE DIAGRAM

4.2 User Authentication

The **User Authentication Module** ensures secure access to the Training and Skill Management System. All users, whether employees or admins, must log in using their credentials (username and password). The system verifies the provided credentials against the User table, which stores hashed passwords and user roles. Upon successful login, users are redirected to their respective dashboards based on their role—Employee or Admin. This module provides a secure gateway to protect sensitive

training data and role-based access to system functionalities.

4.3 Employee and Admin Role Management

4.3.1 Employee Registration

The **Employee Module** enables HR or system admins to register new employees into the system. Each employee is linked to a user account through a foreign key and associated with department-specific information. Employees are also mapped to the skills they possess using the EmployeeSkill table, which helps in recommending suitable training sessions.

4.3.2 Admin Controls

Admins are users with elevated privileges. The **Admin Module** allows administrators to oversee system activities including assigning training, managing users, and reviewing progress reports. Admins are also associated with a user account and have the authority to approve or update training progress.

4.4 Skill and Course Management

4.4.1 Skill Management

The **Skill Module** manages the master list of skills within the organization. Each skill has a unique ID and name. These skills are referenced in both the employee's profile (via Employee Skill) and course prerequisites (via CoursePrerequisite), ensuring that training assignments are aligned with skill requirements.

4.4.2 Course Management

The **Course Module** stores detailed information about each course, including duration, start/end dates, and participant limits. Courses may have associated prerequisites, defined by required skills listed in the CoursePrerequisite table. This ensures that only eligible employees can be assigned to specific training.

4.5 Training Assignment and Tracking

4.5.1 Training Assignment

The **Training Module** records training assignments. Each record links an employee to a specific course, including assignment status and date. This module helps in managing ongoing training sessions and tracking participant progress.

4.5.2 Progress Reporting

The **Progress Report Module** allows weekly monitoring of an employee's training. Linked to the Training table, each report includes the report date, progress notes, and admin status for feedback or approval. This ensures transparency and accountability in the training process.

4.6 Reporting and Audit Logs

All training activities and progress reports are stored securely in the database, allowing admins to generate reports for internal evaluations, audits, or performance reviews. The historical data enables performance tracking over time and supports strategic training decisions.

4.7 Database

The **Database Module** forms the backbone of the system, integrating all modules into a cohesive structure. Tables like User, Employee, Admin, Skill, Course, Training, and Progress Report are interlinked with foreign keys to maintain referential integrity. The system supports efficient querying, real-time updates, and data consistency to support both daily operations and long-term training strategy.

Each training program may consist of multiple **Sessions**, and the **Sessions** table maintains the schedule information including session ID, trainer assigned, start and end time, venue or meeting link, capacity, and status (scheduled, ongoing, completed). The **Trainers** table stores information about internal or external trainers, including their expertise, availability, ratings, and contact details. Employees register for these sessions through the **Enrollments** table, which logs employee IDs, session IDs, enrollment dates, and completion statuses. The **Feedback** table captures post-training feedback from participants, allowing the HR or Learning & Development (L&D) team to evaluate the effectiveness of sessions and trainers. It includes fields such as rating, comments, training relevance, and suggestions.

Additionally, the **Performance Metrics** table links training completion data with on-the-job performance indicators. This helps managers assess the return on investment (ROI) of training programs. Fields in this table may include employee ID, training attended, key performance indicators (KPIs), and performance review scores before and after training. For continuous learning, the database also supports tracking of certifications, self-paced learning modules, refresher courses, and cross-functional training through extended schema.

CHAPTER 5

IMPLEMENTATION

5.1 IMPLEMENTATION

The implementation of the Training and Skill Management System involves the integration of front-end interfaces, back-end logic, and a relational database structure to deliver a seamless, role-based learning experience. The system is developed using a web-based architecture, with front-end technologies such as HTML, CSS, and JavaScript (or frameworks like React or Angular) used to create responsive and intuitive user interfaces for both employees and administrators. The back-end is powered by a server-side language such as Python (with Django or Flask), PHP, or Node.js, which handles user authentication, data processing, and communication with the database. Authentication mechanisms are built to securely validate user credentials and ensure appropriate access to system modules based on the user's role.

The first technical step is designing the system architecture and the underlying database. The architecture typically follows a three-tier model: the presentation layer (user interface), the application layer (business logic), and the data layer (database). Developers begin by creating the Entity Relationship Diagram (ERD) and defining tables such as Employees, Trainers, Training Programs, Sessions, Enrollments, and Feedback. Relationships are established using foreign keys to ensure data integrity. The database is then built using a relational database management system like MySQL or PostgreSQL.

5.2 OUTPUT SCREENSHOTS

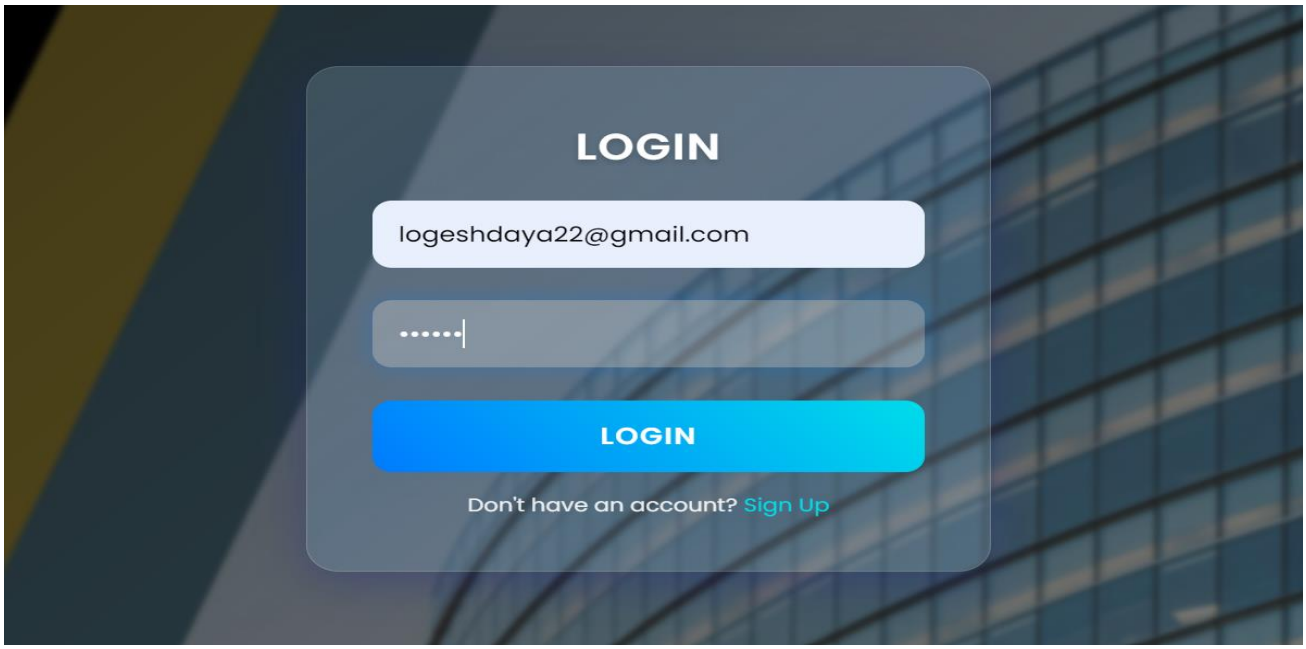

Fig 5.1 login with mobile number or email and password. Authentication process is achieved by logging into the existing account or creating entirely new account.

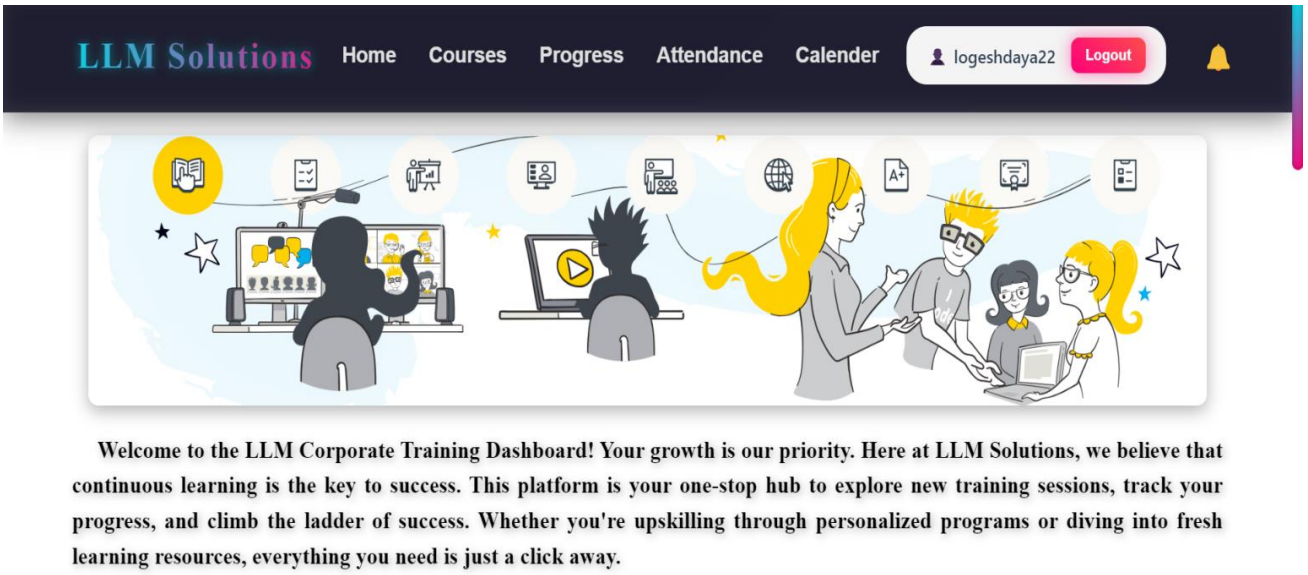

Fig 5.2 User Interface consisting of Home, Courses, Attendance, Calender, Drop Down Box. Additional feature of notification is added which is at the top right corner.

Fig 5.3 Attendance is being marked by the user on that particular date. It is achieved by connecting the local LAN address.

Fig 5.4 Registered user gets stored in the database and it can be accessed through the admin login.

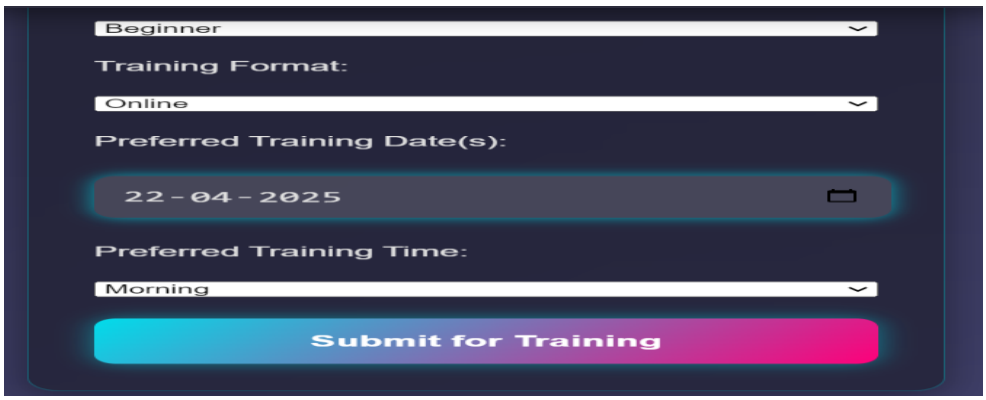

Fig 5.5 User is allowed to choose their level of difficulty, their preferred training date and also Preferred training time.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

6.1 CONCLUSION

The Corporate Job Training Scheduler successfully addresses the common challenges faced in traditional retail shopping, such as long checkout queues and manual billing inefficiencies. By integrating barcode scanning, secure OTP-based mobile authentication, and seamless Razorpay payment processing, the system offers a fast, secure, and user-friendly shopping experience. It empowers customers to independently manage their purchases, improves operational efficiency for retailers, and enhances overall customer satisfaction. The use of lightweight technologies like Flask and SQLite ensures that the system remains scalable, reliable, and cost-effective for real-world deployment. Extensive testing validated the system's performance in terms of accuracy, payment security, and user convenience. With its modular structure, the system is easily adaptable for future enhancements such as loyalty programs, dynamic offers, and advanced analytics. Overall, the project demonstrates a practical and innovative approach to modernizing retail operations through the effective use of technology.

6.2 FUTURE ENHANCEMENT

While the current system efficiently handles search, secure authentication, and digital payment, several future enhancements can further improve its functionality and user experience. A loyalty points system could be introduced, rewarding customers for repeated purchases and encouraging brand loyalty. Integration of dynamic offer displays and personalized product recommendations based on customer purchase history can enhance the marketing potential of the

platform. Additionally, the implementation of multilingual support would make the system accessible to a wider range of users from diverse backgrounds. Expanding the payment options to include digital wallets and QR code payments could offer even greater flexibility. From a management perspective, developing a complete admin dashboard with real-time sales analytics, inventory management, and reporting tools would help retailers streamline their operations. Incorporating machine learning for predictive analytics and customer behavior analysis would position the system as a next-generation smart retail solution.

REFERENCES

1. Armstrong, M. (2020). Armstrong's Handbook of Human Resource Management Practice (15th ed.). Kogan Page.
2. Noe, R. A. (2022). Employee Training and Development (9th ed.). McGraw-Hill Education.
3. Dessler, G. (2023). Human Resource Management (16th ed.). Pearson Education.
4. Werner, J. M., & DeSimone, R. L. (2019). Human Resource Development (7th ed.). Cengage Learning.
5. Saks, A. M., & Haccoun, R. R. (2019). Managing Performance Through Training and Development (7th ed.). Nelson Education.
6. Gilley, J. W., & Maycunich, A. (2000). Beyond the Learning Organization: Creating a Culture of Continuous Growth and Development Through State-of-the-Art Human Resource Practices. Perseus Books.
7. Blanchard, P. N., & Thacker, J. W. (2013). Effective Training: Systems, Strategies, and Practices (5th ed.). Pearson Education.
8. Goldstein, I. L., & Ford, J. K. (2002). Training in Organizations: Needs Assessment, Development, and Evaluation (4th ed.). Wadsworth Publishing.
9. Rothwell, W. J., & Kazanas, H. C. (2011). Planning and Managing Human Resources: Strategic Planning for Human Resources Management (2nd ed.). Human Resource Development Press.
10. Kirkpatrick, D. L., & Kirkpatrick, J. D. (2006). Evaluating Training Programs: The Four Levels (3rd ed.). Berrett-Koehler Publishers.

11. Pfeffer, J. (1998). The Human Equation: Building Profits by Putting People First. Harvard Business Review Press.
12. Bee, F., & Bee, R. (1994). Training Needs Analysis and Evaluation. Institute of Personnel and Development.
13. Swanson, R. A., & Holton III, E. F. (2009). Foundations of Human Resource Development (2nd ed.). Berrett-Koehler Publishers.
14. Phillips, J. J., & Stone, R. D. (2002). How to Measure Training Results: A Practical Guide to Tracking the Six Key Indicators. McGraw-Hill.
15. Burrow, J. L., Everard, K. E., & Kleindl, B. (2019). Business Principles and Management (13th ed.). Cengage Learning.

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