



TechNova

Report By,
Akshitha Reddy
Pooja Kasar
Shrey Sheth
Vedant Patil

Index

● Executive Summary	3
● Project Sponsor	5
● Team Members	5
● Project Overview	5
● Project Scope	6
● Assumptions/Dependencies and Constraints	7
● Criteria of Success	8
● Business Benefits	9
● Data Collection Approach	9
● Functional Requirements	10
● Non-Functional Requirements	11
● Use Case Diagram	12
● Use Case Glossary	13
● Use Case Narratives	14
● Data Flow Diagram Level 0	23
● Data Flow Diagram Level 1	24
● Data Flow Diagram Level 2	25
● Entity Relationship Diagram	26
● Entity Definition Matrix	27
● Data Dictionary	28
● Interface	30
● System Architecture	33
● Feasibility Analysis	33
● Implementation Plan	39
● Comments and Insights	43

IST 654 Project Report

Human Resource Management System for TechNova

Executive Summary:

TechNova, a consulting company, can benefit greatly from implementing a Human Resource Management System (HRMS) to streamline their HR processes and improve employee management. It is a software platform that helps manage various HR functions, including payroll, benefits administration, time and attendance tracking, employee performance management, and more.

It will provide a centralized database of employee information, making it easy for HR personnel to access and manage employee data, such as personal details, job descriptions, performance records, and other important information. It will also automate several HR tasks, such as employee onboarding, performance appraisals, and leave management.

Additionally, it will facilitate communication between HR and employees through self-service portals, allowing employees to access their personal information, submit leave requests, and view their performance records. This will reduce the workload of HR personnel and give employees more control over their HR-related activities.

The system will also provide valuable insights into the workforce, allowing HR personnel to track employee performance, monitor attendance, and generate reports on key HR metrics. This data can be used to identify areas for improvement, such as employee training and development, and to make informed decisions about HR policies and practices.

Overall, the implementation of this system can improve the efficiency and effectiveness of HR processes at TechNova, leading to better employee management, increased productivity, and enhanced business outcomes.

The human resource management system for TechNova will be designed to help the company attract, retain, and develop top talent. The system will include the following key components:

Performance Management: The system will include tools for setting goals, providing feedback, and evaluating performance. This will help TechNova ensure that employees are aligned with the company's goals and are performing at their best.

Training and Development: The system will include tools for identifying employee training needs, providing training, and tracking progress. This will help TechNova ensure that employees are continually developing their skills and are prepared to take on new challenges.

Compensation and Benefits: The system will include tools for managing compensation and benefits, ensuring that TechNova is offering competitive packages to its employees.

Employee Engagement: The system will include tools for measuring employee engagement and satisfaction. This will help TechNova identify areas where it can improve its work environment and ensure that employees are happy and motivated.

Trip contributions: As a part of the HR management system for TechNova, we are also incorporating a special feature to the system where we are trying to collect the data on the most important metrics associated to the performance of the departments and then it is sent to the HR for analysis. On the other side, a small part of the employees pay, an example of a 20\$ will be deducted from their annual pay and that will be sent toward the trip contributions. Thus, the amount collected via these contributions will be used to sponsor a trip, national or international depending on the number of employees in the team, to the best performing team which the HR analysis from the reports generated by the system.

By implementing this human resource management system, TechNova will be able to attract and retain top talent, ensure that employees are aligned with the company's goals, and provide a work environment that fosters engagement and motivation.

Project Sponsor:

Managing director of TechNova

Team Members:

Akshitha Reddy Kalvakuntla, Pooja Kasar, Shrey Sheth, Vedant Patil

Project Overview:

The project will go through the following phases:

Gathering requirements: The project team will meet with TechNova's HR division to learn about the company's present HR procedures and pinpoint any potential problems. The group will outline the functional, non-functional and technical requirements and note any system integrations that are required.

System design: The project team will create the system architecture, user interface, and database schema in accordance with the requirements. The group will decide if any external modules are required for integration.

Development: The project team will create the employee data management, payroll processing, time and attendance tracking, leave management, performance management, and employee self-service modules for the software application of the system.

Testing: To make sure the system satisfies all functional and non-functional criteria, including those for performance, scalability, and security, the project team will test it thoroughly.

Deployment: The project team will put the system on a cloud-based platform after it has been examined and authorized by TechNova's HR department.

Training and adoption: To make sure TechNova's HR staff and employees are comfortable with the new system and can use it successfully, the project team will hold training sessions for them.

Agile project management will be used, and TechNova's HR department will receive regular updates to make sure the system is meeting their requirements. The project team will also work closely with the IT department to ensure that it is integrated seamlessly with other systems.

Project Scope:

The system will be designed to meet the specific needs of TechNova Company, with a user-friendly interface that can be accessed by HR personnel and employees. It will be secure, with role-based access controls and data encryption to protect sensitive employee data. The system will be scalable, with the ability to accommodate growth and changing HR needs over time.

1. **HR Information Management:** The system will provide a centralized platform for storing and managing employee data, such as personal information, job details, performance reviews, and benefits.
2. **Recruitment and Onboarding:** The system will have functionalities for managing the hiring process, from job postings to screening and interviewing candidates. It will also provide tools for onboarding new hires, such as electronic forms and training modules.
3. **Time and Attendance Management:** The system will track employee attendance and time off requests, including vacation, sick days, and holidays. It will also generate timesheets and reports for payroll processing.
4. **Performance Management:** The system will allow for setting performance goals and tracking progress, as well as conducting performance reviews and providing feedback to employees.
5. **Training and Development:** The system will enable managers to create training plans for employees, track completion of training modules, and identify skill gaps and development opportunities.
6. **Benefits Administration:** The system will manage employee benefits, such as health insurance, retirement plans, and other perks, including tracking enrollment and eligibility.
7. **Reporting and Analytics:** The system will generate reports and provide data analytics to help HR make informed decisions, such as employee turnover rates, performance trends, and benefits costs.

Assumptions/Dependencies/Constraints

Assumptions:

1. The system will be developed and implemented within the allocated budget and timeline.
2. The HR department will provide all necessary data and information required for the development and implementation of the system.
3. The system will be fully integrated with other relevant software systems and tools used by the HR department.
4. The system will meet all regulatory and legal requirements related to employee data privacy and security.

Dependencies:

1. The HR department will need to allocate sufficient resources, including personnel and time, to support the development and implementation of the system.
2. The IT department will need to provide support and assistance in integrating the system with other software systems and tools used by the HR department.
3. The system will depend on the availability of reliable and secure hardware infrastructure to function effectively.

Constraints:

1. The system will need to be developed and implemented within the allocated budget and timeline.
2. The system will need to be compatible with TechNova Company's existing hardware infrastructure.
3. The system will need to be compliant with all relevant regulatory and legal requirements related to employee data privacy and security.
4. The system will need to be user-friendly and intuitive to use for both HR personnel and employees.

Criteria of Success:

The criteria for success for the HRMS project of TechNova Company can be based on the following factors:

1. **Improved Efficiency and Productivity:** The system should enable the HR department to automate and streamline their processes, resulting in increased efficiency and productivity. Success can be measured by tracking the reduction in manual effort, increased processing speed, and improved accuracy in HR functions such as recruitment, onboarding, performance management, time and attendance tracking, benefits administration, and training and development.
2. **Improved Data Management and Analytics:** The system should provide better data-driven decision-making capabilities for the HR department. Success can be measured by tracking the increased accuracy and completeness of employee data, the ease of generating reports and analytics, and the ability to identify trends and insights that help the company make informed decisions related to employee management.
3. **Employee Satisfaction:** The system should enhance the employee experience by providing better self-service capabilities, increased transparency, and quicker resolution of HR-related issues. Success can be measured by conducting employee surveys to gauge satisfaction levels and tracking metrics such as employee retention rates, employee engagement, and absenteeism.
4. **Compliance and Security:** The system should be compliant with all relevant regulatory and legal requirements related to employee data privacy and security. Success can be measured by conducting regular audits and assessments to ensure compliance with regulations such as GDPR, CCPA, HIPAA, and SOC2, and tracking metrics such as data breaches, unauthorized access, and compliance violations.
5. **User Adoption and Satisfaction:** The system should be user-friendly, intuitive, and easy to use for both HR personnel and employees. Success can be measured by conducting user surveys to gauge satisfaction levels, tracking user adoption rates, and identifying and addressing any user-related issues or concerns.

Business Benefits:

- 1) Recruitment and Retention: High-quality employees can be attracted, hired, and retained by firms with effective HRM. Human resource management procedures including job analysis, hiring and firing, and employee training and development can all help to create a skilled and motivated workforce for TechNova.
- 2) Performance Improvements: Through efficient performance management and feedback systems, goal-setting and employee development plans, recognition and incentives programs, HRM may aid in enhancing employee performance.
- 3) Compliance with Laws: HRM can assist TechNova in adhering to labor laws and regulations, including those pertaining to minimum wage standards, workplace safety, and equal employment opportunity.
- 4) Employee turnover and present: TechNova can save a lot of money by reducing employee turnover and absenteeism through effective human resource management. HRM procedures like employee engagement programs, flexible work schedules, and wellness initiatives can all help to create a productive workplace that encourages employee retention.
- 5) Increased Productivity and Profitability: By coordinating employee goals with organizational objectives, enhancing teamwork and communication, and encouraging a culture of innovation and continuous development, HRM may help businesses become more productive and profitable.

Data Collection Approach:

APPROACH	PEOPLE INVOLVED	METHOD
Surveys	Employees, HR, Management	Online surveys
Requirements analysis	HR, Management	Meetings
Implementation Planning	HR, Management	Meetings

User Feedback	HR	Online surveys
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Functional Requirements:

1. **Employee Information Management:** The system will have a centralized database of employee information that includes personal details, job descriptions, performance records, and other essential data. The system will enable HR personnel to add, edit, and update employee data.
2. **Payroll Processing:** The system will have a payroll processing module that can calculate and generate employee salaries, including taxes and deductions. The module should support different payment methods and payment frequencies.
3. **Time and Attendance Tracking:** The system will have a time and attendance tracking module that can track employee attendance, including work hours, leave requests, and absences. The module should support different time tracking methods and integrate with the payroll processing module.
4. **Performance Management:** The system will have a performance management module that can set goals, provide feedback, and evaluate employee performance. The module should enable HR personnel to create and manage performance appraisal templates and allow employees to self-evaluate their performance.
5. **Leave Management:** The system will have a leave management module that can manage employee leave requests, approvals, and balances. The module should support different types of leave and enable HR personnel to create and manage leave policies.
6. **Employee Self-Service:** The system will have an employee self-service portal that can enable employees to view their personal information, submit leave requests, view performance records, and update their profile. The portal should be accessible through a web or mobile interface.
7. **Reporting and Analytics:** The system will have reporting and analytics capabilities that can generate reports on key HR metrics, including employee turnover, attendance, performance, and engagement. The system should enable HR

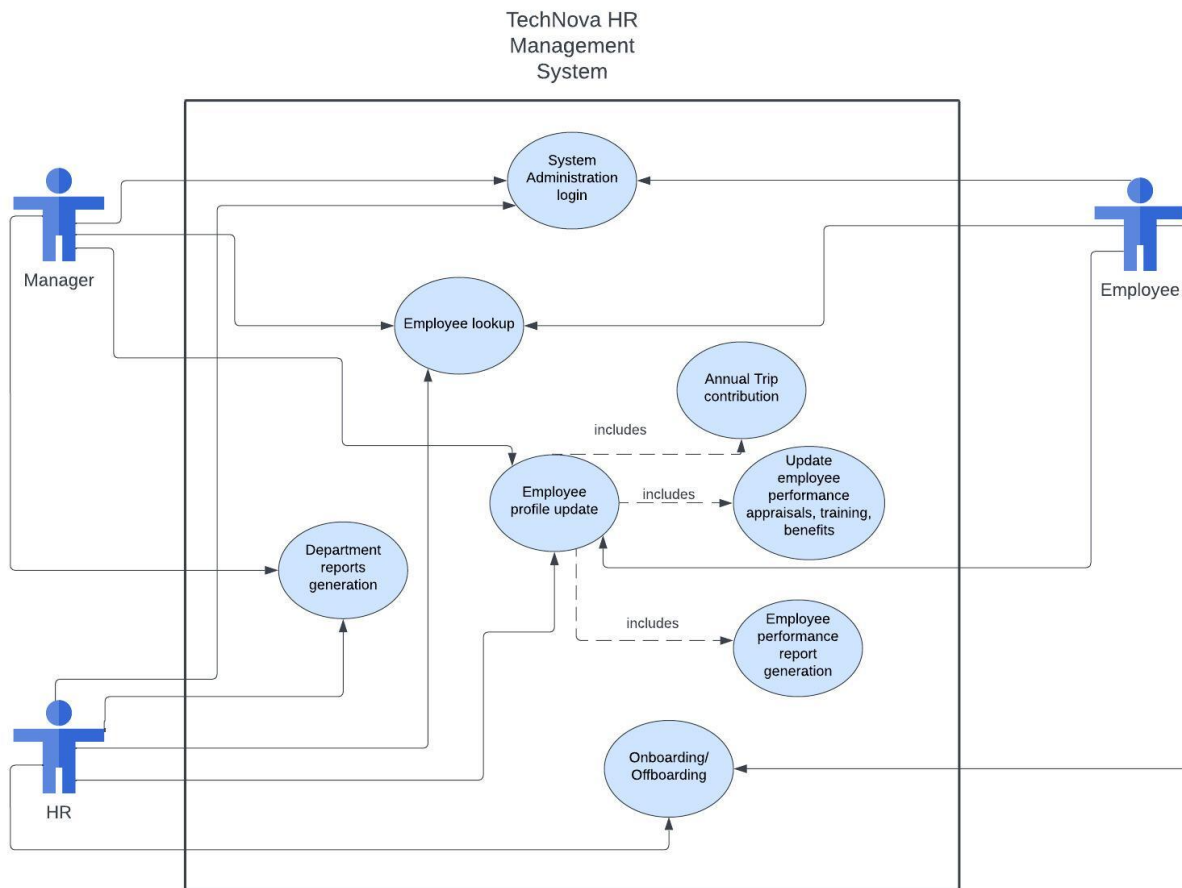
personnel to customize reports and dashboards and export data to different formats.

Non-Functional Requirements:

1. Security: The system should have robust security features, including access controls, data encryption, and backups, to ensure the confidentiality, integrity, and availability of employee data. The system should comply with industry best practices for information security.
2. Scalability: The system should be designed to handle growth in the number of employees and the amount of data over time. The system should be able to accommodate future expansions and integration with other systems.
3. Usability: The system should be user-friendly and easy to navigate for both HR staff and employees. It should be intuitive and require minimal training to use effectively.
4. Reliability: The system should be reliable and available at all times, with minimal downtime or system errors. It should be designed to handle high volumes of transactions and data processing without crashing or slowing down.
5. Performance: The system should be fast and responsive, with quick load times and minimal latency. It should be able to process large volumes of data quickly and efficiently.
6. Accessibility: The system should be accessible to all users, regardless of their location or device. The system should be compatible with different web browsers, mobile devices, and operating systems.
7. Compliance: The system should comply with relevant laws and regulations, such as data protection and privacy laws, employment regulations, and industry standards.
8. Integration: The system should be designed to integrate with other systems, such as payroll systems and accounting software. It should be able to exchange data with other systems seamlessly.

9. Maintainability: The system should be easy to maintain and update over time, with clear documentation and well-structured code. It should be designed to minimize the risk of errors and bugs, and to allow for easy troubleshooting and debugging.

Use Case Diagram:



Use Case Glossary:

Use-case ID	Use-case ID	Use-Case Description	Actor
1	System Administration login	Allows employees,HR,Managers to log in to the system to view and update their personal information, submit leave requests, and view their performance records.	Manager, HR, Employee
2	Employee lookup	Employees,HR and managers will be able to access the system to view and update their personal/professional information, request time off, view their pay stubs, and enroll in benefits.	Manager, HR, Employee
3	Employee profile update	The system enables employees to access their personal information, request time off, and review their performance records by logging in to their accounts. They can also update their personal information through the system.	Manager, HR, Employee
4	Department reports generation	Department reports generation refers to the process of generating reports that provide information about the performance and activities of a particular department within an organization.	Manager, HR
5	Annual Trip contribution	The system will monitor both employee information and their contributions towards the Annual Trip initiative.	Manager, HR, Employee
6	Update employee performance appraisals, training, benefits	The system will allow for setting performance goals and tracking progress, as well as conducting performance reviews and providing feedback to employees.	HR
7	Employee performance report generation	The system will generate reports and provide data analytics to help HR make informed decisions, such as employee turnover rates, performance trends, and benefits costs.	Manager, HR
8	Onboarding/ Offboarding	The system will offer features to manage employee departures, which includes conducting exit interviews and monitoring the	HR, Employee

		return of company assets. Additionally, it will guide HR staff through the process of welcoming new employees by verifying their personal details, assigning job roles, configuring payroll, and delivering any required training.	
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Use Case Narratives:

Use Case Name	Generate Payroll Report
Use Case ID	1
Priority	High
Source	Requirement
Primary Business Actor	Payroll Administrator
Other Participating Actors	None
Other Interested Stakeholders	Finance Department
Description	Use case referring to the generation of payroll report
Precondition	The payroll administrator logs into the system and navigates to the payroll report generation page
Trigger	The payroll administrator has to generate a payroll report for the employees

Typical Course of Events:	<ul style="list-style-type: none"> • The payroll administrator selects the appropriate pay period and filters for the report • The system retrieves the necessary information for the payroll report • The payroll administrator reviews the report to ensure accuracy • The system generates the payroll report • The payroll administrator saves and/or prints the report for distribution
Alternate Courses	If there are any errors found in the report during the review process, the payroll administrator can make necessary changes and re-generate the report
Conclusion	Once the payroll report has been generated and saved or printed, the use case is concluded
Post Condition	The payroll report is generated and stored in the system for future reference
Business Rules	Generating payroll report is a function of payroll administrator only.
Implementation Constraints and Specs	The payroll report generation interface should be user-friendly and provide an option to save and/or print the report
Assumptions	All payroll data is up to date and accurate

Use Case Name	Update Employee Information
Use Case ID	2
Priority	High
Source	Requirement

Primary Business Actor	Employee
Other Participating Actors	HR Manager, Department Manager
Other Interested Stakeholders	None
Description	This use case describes the process of updating employee information through the system. Employees can access their personal information, request time off, and review their performance records by logging in to their accounts. They can also update their personal information through the system.
Precondition	The employee has access to the system and is logged in.
Trigger	The employee needs to update their personal information in the system.
Typical Course of Events	<ul style="list-style-type: none"> • The employee logs into the system and navigates to the personal information update page. • The employee updates their personal information (e.g., address, phone number, emergency contact, etc.) in the corresponding fields. • The employee submits the updated information to the system. • The system verifies the input data and sends back a message indicating that the information was updated successfully.
Alternate Courses	<ul style="list-style-type: none"> • If any required field is left blank, the system sends back a message requesting that the employee fill in the missing information. • If the employee enters invalid data (e.g., incorrect phone number format), the system sends back a message requesting that the employee correct the data.

Conclusion	When the system sends back a message indicating that the information was updated successfully, the use case has been concluded.
Post Condition	The updated employee information is stored in the system.
Business Rules	<ul style="list-style-type: none"> • Only employees are allowed to update their personal information through the HRMS system. • The HR manager and department manager have access to view and update employee information for their respective departments.
Implementation Constraints and Specs	<ul style="list-style-type: none"> • The personal information update page should be a separate interface from the other HRMS system screens. • The system should have data validation checks in place to ensure that the input data is accurate and complete.
Assumptions	<p>The employee has access to the system and is authorized to update their personal information.</p> <p>The updated employee information will be reflected in the system in real-time.</p>

Use Case Name	Employee Lookup
Use Case ID	3
Priority	High
Source	Requirement
Primary Business Actor	HR Manager, Employees, Managers
Other Participating Actors	None
Other Interested Stakeholders	All

Description	This use case allows HR, employees, and managers to access the system to view and update their personal/professional information, request time off, view their pay stubs, and enroll in benefits.
Precondition	The user has logged into the system.
Trigger	The user navigates to the employee lookup page and enters their search criteria.
Typical Course of Events	<ul style="list-style-type: none"> • The user navigates to the employee lookup page and enters their search criteria. • The system displays a list of employees that match the search criteria. • The user selects the employee they want to view or update. • The system displays the employee's personal/professional information, pay stubs, time-off requests, and benefit enrollment information.
Alternate Courses	If the search criteria do not match any employee, the system will display a message indicating that no results were found.
Conclusion	The user is able to view and update employee information.
Post Condition	The employee's personal/professional information, pay stubs, time-off requests, and benefit enrollment information is updated.
Business Rules	Only authorized users can access employee information.
Implementation Constraints and Specs	The employee lookup page should be user-friendly and easy to navigate.
Assumptions	None

Use Case Name	Annual Trip Contribution
Use Case ID	4
Priority	Medium
Source	Employee
Primary Business Actor	Employee
Other Participating Actors	None
Other Interested Stakeholders	HR, Managers
Description	The system will monitor both employee information and their contributions towards the Annual Trip initiative.
Precondition	The employee must be logged in to their account and the Annual Trip initiative must be active.
Trigger	The employee navigates to the Annual Trip contribution page.
Typical Course of Events	<ul style="list-style-type: none"> • The system displays the Annual Trip contribution page. • The employee enters the amount they wish to contribute towards the Annual Trip. • The system verifies that the amount entered is within the allowed limits and that the employee has sufficient funds. • If the verification is successful, the system saves the contribution and displays a confirmation message. • If the verification fails, the system displays an error message and prompts the employee to re-enter the amount
Alternate Courses	If the employee navigates to the Annual Trip contribution page but the Annual Trip initiative is not active, the system displays an error message and the use case ends.

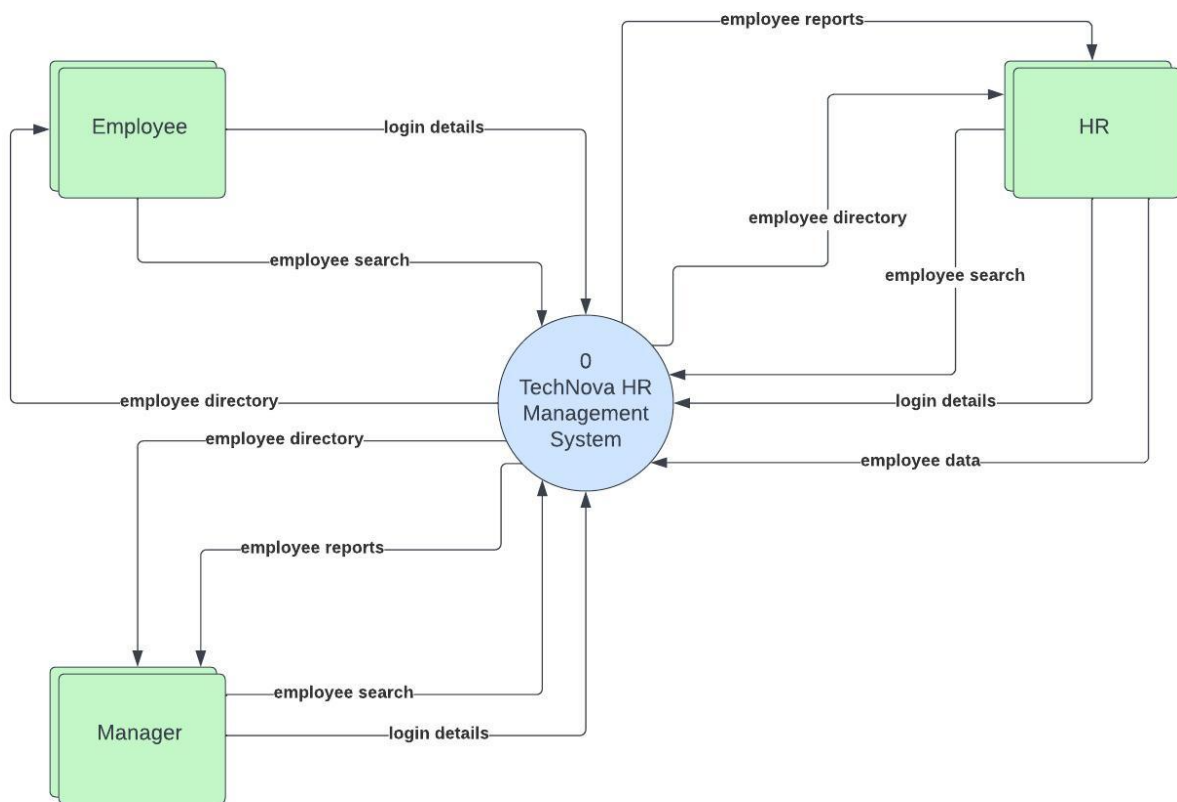
Conclusion	The employee has contributed towards the Annual Trip initiative and the use case has been successfully concluded.
Post Condition	The employee's contribution is saved in the system and will be included in the calculation of the total contributions towards the Annual Trip.
Business Rules	<ul style="list-style-type: none"> • The employee must have an active account in the system to contribute towards the Annual Trip. • The employee's contribution must be within the allowed limits. • The employee must have sufficient funds to cover the contribution.
Implementation Constraints and Specs	None
Assumptions	The Annual Trip initiative is currently active and the employee has sufficient funds to make the contribution.

Use Case Name	Onboarding/Offboarding
Use Case ID	5
Priority	High
Source	Requirement
Primary Business Actor	HR
Other Participating Actors	Manager, Employee
Other Interested Stakeholders	IT Department, Legal Department

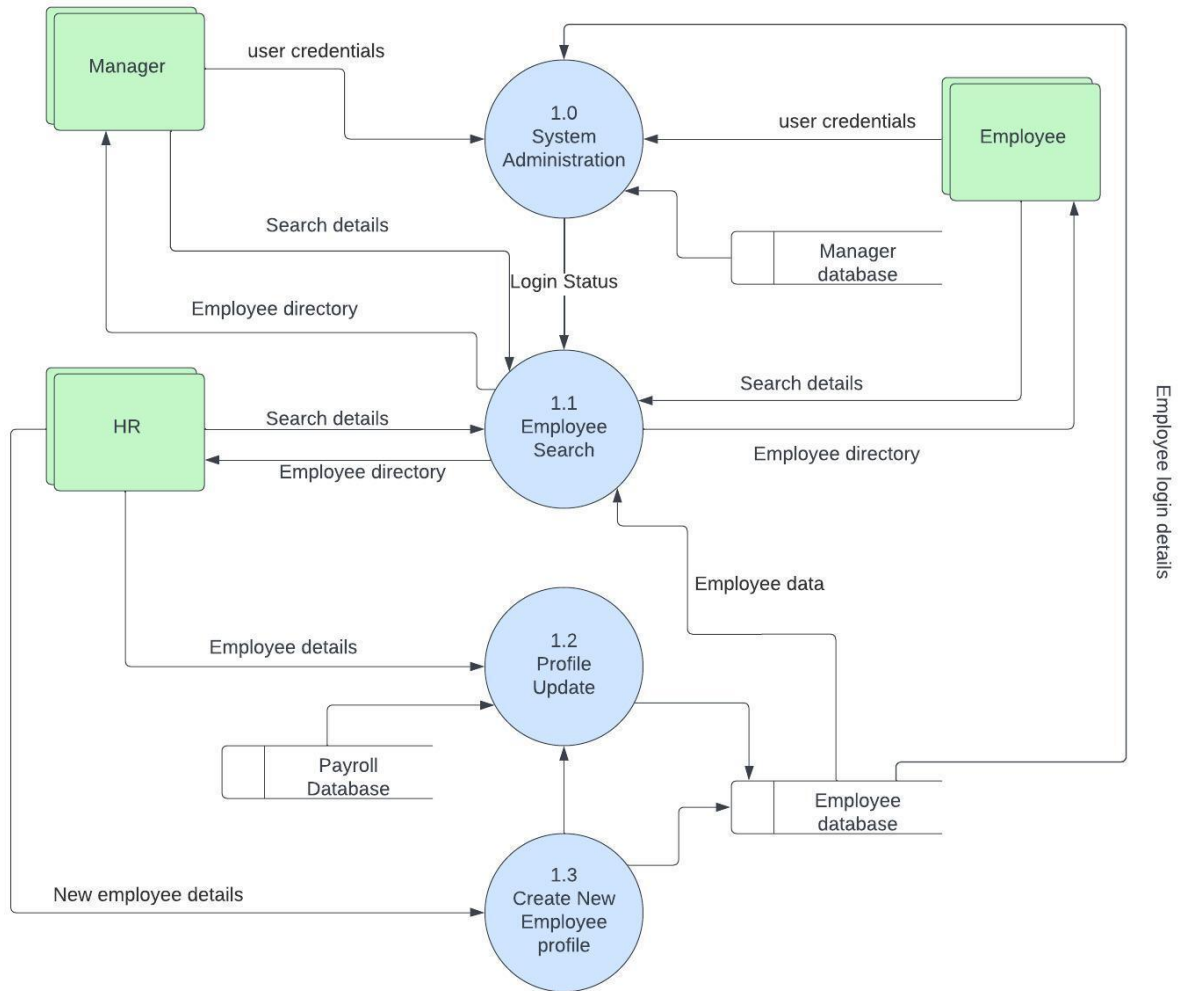
Description	The system will offer features to manage employee departures, which includes conducting exit interviews and monitoring the return of company assets. Additionally, it will guide HR staff through the process of welcoming new employees by verifying their personal details, assigning job roles, configuring payroll, and delivering any required training.
Precondition	HR staff member logs into the system and navigates to the onboarding or offboarding section.
Trigger	An employee has joined or left the company and HR needs to manage the onboarding or offboarding process.
Typical Course of Events	<ul style="list-style-type: none"> • HR staff members access the onboarding/offboarding section of the system. • HR staff members input relevant information about the employee, such as name, job title, department, and start or end date. • If onboarding, the system guides HR staff through the process of verifying the employee's personal details and assigning job roles. • If offboarding, the system guides HR staff through the process of conducting an exit interview and monitoring the return of company assets. • The system automatically configures payroll based on the employee's details. • If necessary, the system delivers any required training to the new employee. • The system sends a notification to the manager and employee confirming the completion of the onboarding/offboarding process.

Alternate Courses	<ul style="list-style-type: none"> • If the employee is being terminated for cause, the system may require additional steps, such as legal review and documentation of the termination. • If the employee is being promoted, the system may require additional steps, such as updating the employee's job role and salary information.
Conclusion	The HR staff member has completed the onboarding/offboarding process for the employee.
Post Condition	The employee's information is stored in the system, payroll has been configured, and any required training has been delivered.
Business Rules	Only HR staff members have access to the onboarding/offboarding section of the system.
Implementation Constraints and Specs	The onboarding/offboarding section should be a separate interface from the access employee data screen.
Assumptions	The employee has been assigned to a department and job role in the system.

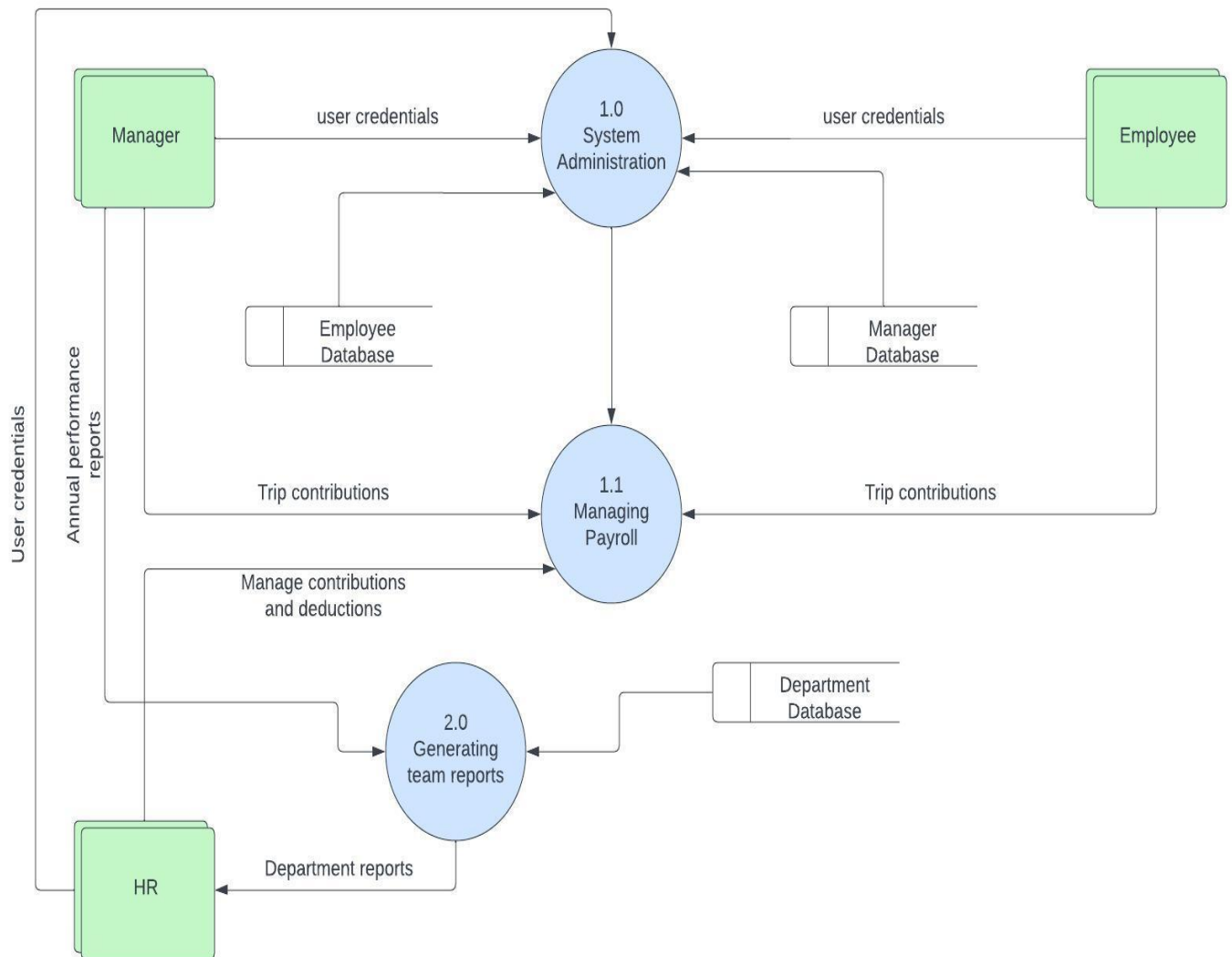
Data Flow Diagram - Level 0



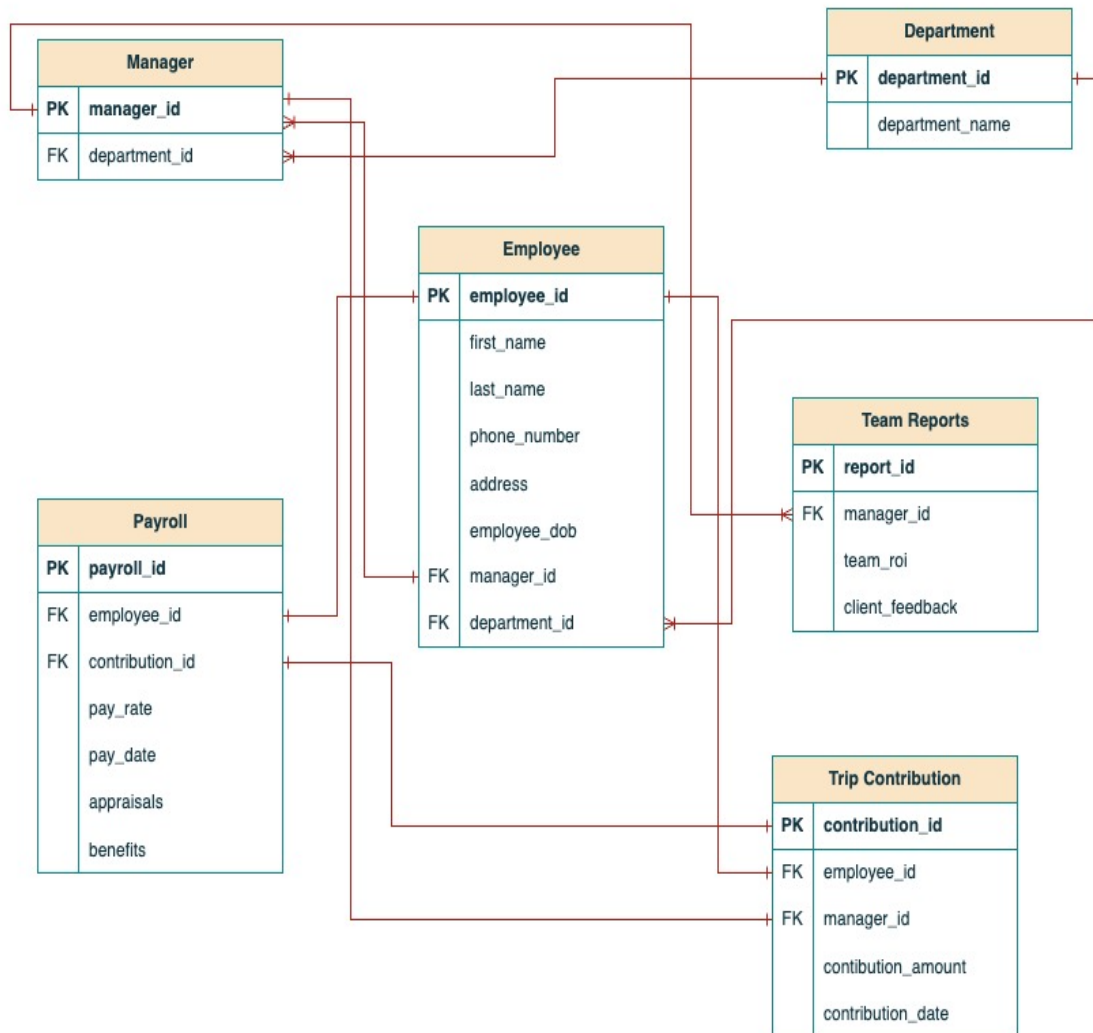
Data Flow Diagram - Level 1



Data Flow Diagram - Level 2



Entity Relationship Diagram



Entity Definition Matrix

Entity	Business Definition
Manager	A person who supervises and manages a team of employees within a department. They are responsible for assigning tasks, managing schedules, providing feedback, and ensuring that the team meets its goals.
Payroll	The process of calculating and distributing employee salaries and benefits, including taxes, deductions, and bonuses. This involves tracking employee hours, maintaining accurate records, and ensuring compliance with labor laws and regulations.
Employee	An individual who is hired by an organization to perform specific job duties. They are typically assigned to a team or department, and are responsible for completing tasks, meeting deadlines, and contributing to the overall success of the organization.
Department	A functional unit within an organization, responsible for carrying out specific tasks or activities. Departments may include HR, finance, marketing, sales, operations, and others. They are typically led by a manager or director, who is responsible for overseeing the department's performance and ensuring that it meets its objectives.
Team Reports	Reports generated by a team that provide information on team activities, progress, and achievements. They may include information on project status, performance metrics, and team goals. These reports are used by managers to monitor team performance and make decisions on resource allocation and strategy.
Trip Contribution	A record of an employee's contribution to a company-sponsored trip for the best performing team of the year.

Data Dictionary:

Employee:

Name	Data Type
employee_id	Auto Number
first_name	Short Text
last_name	Short Text
phone_number	Number
address	Large Text
employee_dob	Date

Payroll:

Name	Data Type
payroll_id	Auto Number
pay_rate	Large Number
pay_date	Date
appraisals	Number
benefits	Large Text

Department:

Name	Data Type
department_id	Auto Number
department_name	Large Text

Manager

Name	Data Type
manager_id	Auto Number

Team Reports:

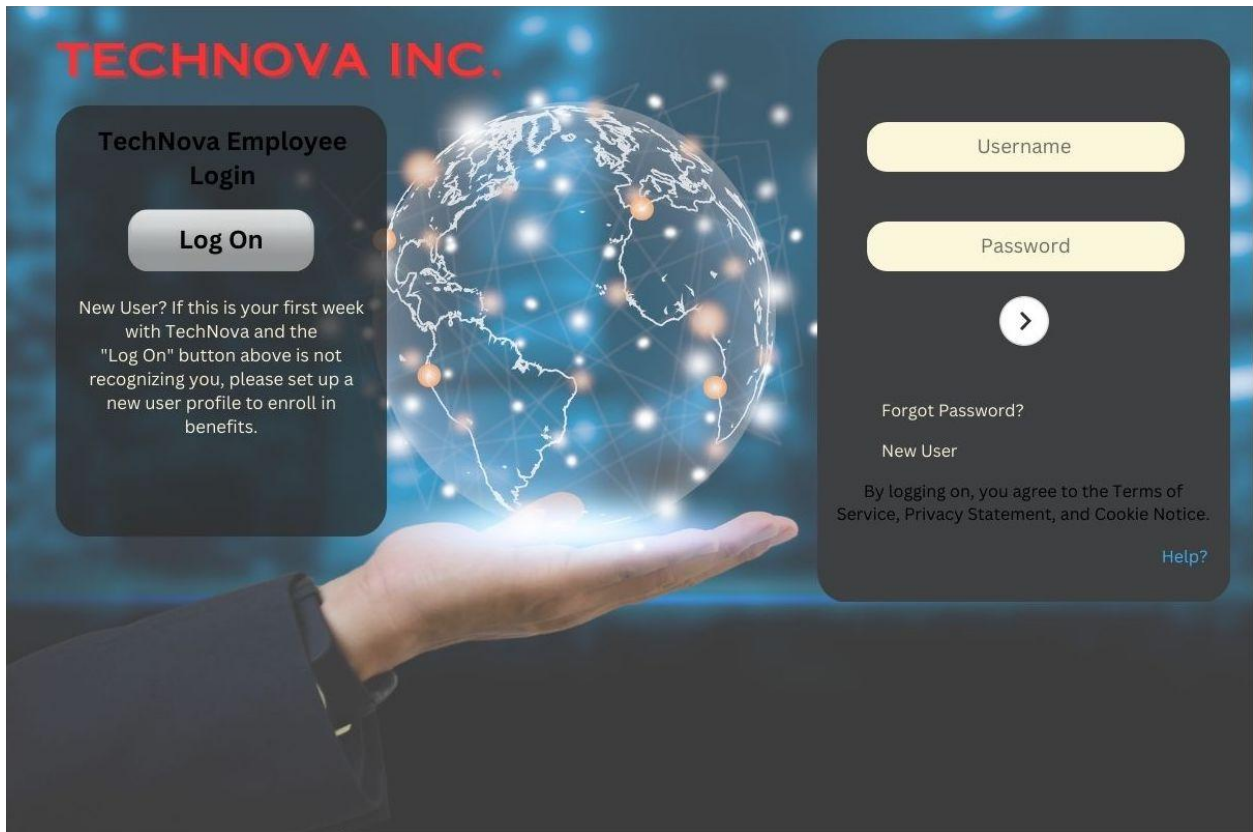
Name	Data Type
report_id	Auto Number
team_roi	Number
client_feedback	Large Text

Trip Contribution:

Name	Data Type
contribution_id	Auto Number
contribution_amount	Number
contribution_date	Date

Interface


Login Interface:





Here the employee can login to the system using a unique username and password. If the employee is new, they need to use the new user button and set up a new profile with help of the HR.

Employee search interface

EMPLOYEE LOOKUP


Search 



Permanent Employees 

Employee Details

Address	219 Euclid Ave, Syracuse, NY, USA
Phone	+1 2367987352
Department	Fintech
Manager	Richard Thomas
Team	Fin 801
Contribution	\$20/month

Edit 

Show More Details

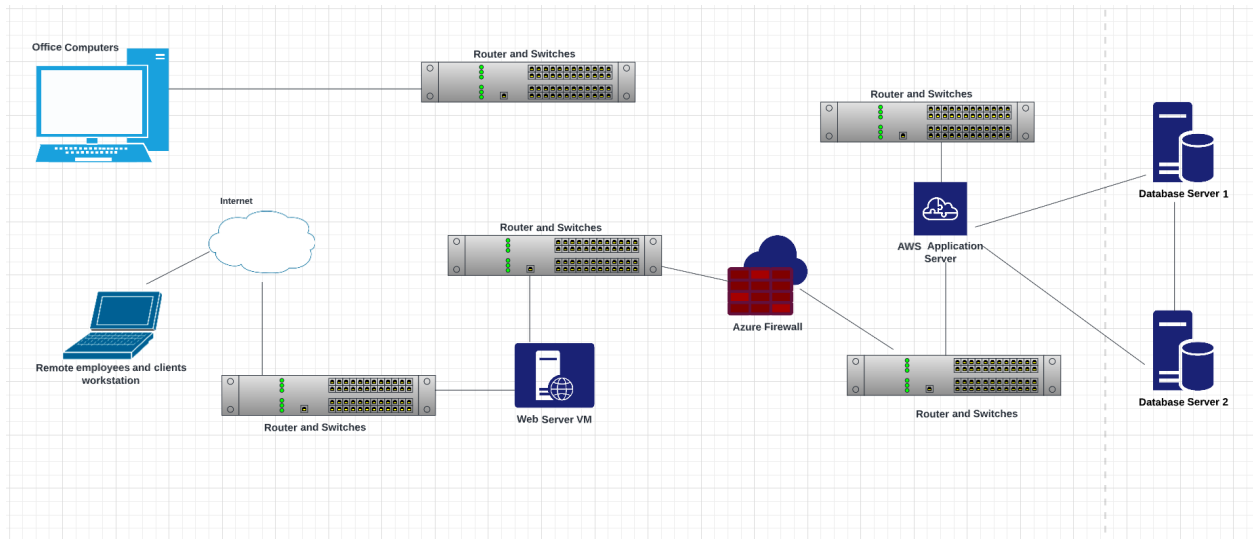
Here the system will give the user certain details about the searched employee and would also allow them to filter among certain details. If the user is a Manager or a HR, they can view more details about the employee such as payroll and trip contributions.

Reports and Analytics Interface:



The Managers and HR exclusive window shows the reports and analytics of different departments inside the company. They can change the report metrics and also add departments as per requirements. This would help determine the annual winners of the trip initiative.

System Architecture:



Feasibility Analysis

Economic Feasibility:

Equipment	Approximate Cost
Server	\$2,000 - \$10,000
Network Switch	\$500 - \$1,500
Storage Device	\$1,000 - \$5,000
Workstations	\$500 - \$2,000
Printers	\$200 - \$1,000
Scanners	\$200 - \$1,000
Routers	\$500 - \$1,500
Backup System	\$2,000 - \$10,000
Firewall	\$1,000 - \$5,000
Uninterruptible Power Supply (UPS)	\$500 - \$2,000

Component	Cost
Hardware (servers, storage)	\$20,000 - \$30,000
Software licenses	\$10,000 - \$20,000
Development and customization	\$50,000 - \$100,000
Training and documentation	\$5,000 - \$10,000
Maintenance and support	\$10,000 - \$20,000
Miscellaneous (e.g. consulting)	\$5,000 - \$10,000
Total	\$100,000 - \$190,000

Training and Documentation Costs	Description	Approximate Cost
User Training	Training sessions for end-users on how to use the system	\$3,000
Admin Training	Training sessions for system administrators	\$4,000
Customized Training Materials	Creation of customized training materials for the system	\$2,000
User Manuals	Development and printing of user manuals	\$1,500
Technical Documentation	Creation of technical documentation for the system	\$2,500
Total		\$13,000

Cost Item	Approximate Cost
Bug fixes and updates	\$10,000
Technical support	\$5,000
Security updates and patches	\$8,000
Server maintenance and backup	\$12,000
Total	\$35,000

Metric	Value
Initial investment	\$100,000
Discount rate	10%
Time horizon	5 years
Yearly profit	\$130,000
Total profit over 5 years	\$650,000
Total costs over 5 years	\$450,000
Net present value (NPV)	\$795,029
Lifetime ROI (After 5 years)	344.44%
Yearly ROI	74.44%

The economic feasibility for this project is based largely on the premises that the project is essentially a requirement, that the company is a consulting company and will recruit a large number of people to work for them. Through the implementation of this HR management system, the company will benefit in the following ways:

- **Cost of implementation:** Installing an HR management system can be expensive at first, as it requires paying for software, hardware, networking supplies, and expert services like consulting and training. Whether the anticipated advantages outweigh the initial investment will determine whether the system is economically viable.
- **Cost Savings:** By automating repetitive operations like benefit administration, payroll processing, and time tracking, an HR management system can assist to save labor costs. Additionally, it can aid in finding and eliminating waste in HR procedures.
- **Productivity gains:** By reducing the time spent on administrative duties and allowing HR employees to concentrate on more strategic objectives like talent acquisition and retention, an HR management system can increase productivity.
- **Improved Decision-making:** Decision-making is improved when HR managers and staff have real-time access to data and analytics. This allows them to make better choices. This system will help on whether the anticipated decision-making enhancements result in measurable advantages like increased revenue or cost savings.
- **Return on investment (ROI):** The system can be economically implemented if the anticipated ROI is good.

Operational Feasibility:

Features Requirements

- HR data is stored in excel sheets or paper-based files and takes up a lot of materials and space of the company Database stores the HR information, maintaining security and integrity of the data The system should store HR data in the database for easy storage and retrieval
- HR data needs to be manually entered in the excel sheet or paper-based file A web-based HR interface allows the HR manager to enter all the mandatory and related HR information HR managers must be able to enter HR data into the system
- HR manager manually keeps track of employee attendance and leaves The system provides a leave management module, where employees can apply for leave and HR managers can approve or reject the application HR managers should be able to view the attendance and leave information of the employees at any point in time
- HR manager manually maintains the employee's performance record The system provides a performance management module, where employees and their managers can set goals, provide feedback, and review the performance The system should help HR managers in identifying the high performers and plan their career path
- HR manager manually calculates the payroll The system provides a payroll management module, where HR managers can input the salary details and the system can calculate the payroll automatically The system should be able to generate the payslips for the employees and calculate the taxes and deductions accurately
- HR manager needs to manually generate the HR reports The system provides a report generation module, where HR managers can generate various HR reports, such as employee turnover rate, performance appraisal, and salary reports The system should help HR managers in analyzing the HR data and make data-driven decisions

We also assess the following factors to determine operational feasibility:

- **Management Support:** The proposed system has support from executives as it results in better utilization of resources, and would help in generating HR reports for the company. Also, implementing an information system to manage all HR processes would help them get an upper hand in the business.
- **Workforce Reduction:** The proposed system would reduce a lot of manual work done by the employees but would not result in any employee layoff. It would ensure better utilization of the workforce.
- **User Training:** The company would require one-time training for the users of the new system. This training would help them understand the navigation of forms and controls of the system.
- **User Involvement:** The users would be involved in planning the system as their inputs would be taken while designing the system.
- **Performance:** The proposed system will provide authorized access to the users of the system, and the information can be used anywhere and anytime. Thus, the performance would be increased with the new system.

Technical Analysis:

- **Assessment of skills:** This process requires determining the technical, functional, and soft skills of the people needed to carry out the project. It aids in determining whether the human resources have the required knowledge to complete the project successfully.
- **Evaluation of experience:** This involves determining the degree of experience that human resources have in the pertinent subject. It aids in determining whether the project team possesses the necessary expertise to carry out the project successfully.
- **Evaluation of knowledge:** This involves determining the degree to which the project's human resources are knowledgeable in the relevant field. It aids in determining whether the project team possesses the necessary expertise to complete the project successfully.
- **Resource allocation:** Allocating resources entails assessing their availability and choosing how much of each to give the project team. It assists in making sure the project team has the resources required to finish the project successfully.
- **Training requirements:** This involves deciding the project team's training requirements and creating a strategy to meet those needs. It aids in enhancing the project team's abilities and expertise and guarantees that they can successfully complete the project.

Cultural Analysis:

A human resource management system's cultural feasibility would depend on a number of elements, including the organization's cultural background, the attitudes and beliefs of its employees, and the system's own features and functioning. The system's design and execution may be impacted by some cultures' increased emphasis on hierarchy and formal communication channels. The kinds of information that are gathered and retained in the system may also be affected by cultural norms or beliefs relating to privacy.

The cultural feasibility of an HRMS can also be significantly influenced by employee attitudes and beliefs. It's possible that some workers will fight the adoption of new technologies or adjustments to their working procedures. Some might worry about the protection of their private data or think the system is overbearing or superfluous.

These certain data collection approaches were used to curate a stable HRMS for TechNova keeping in mind all the business requirements and needs.

Schedule Analysis:

The schedule has been created with utmost care and consideration, taking into account the various factors that are critical to the success of the project. The first and foremost factor that was taken into account was the need for the new system and the availability of resources to make it happen.

To ensure that the new system does not interfere with the schedules of the employees, the schedule was planned in such a way that the transition from the old to the new system would be seamless. This would allow the employees to continue working without any disruption and ensure that the productivity levels remain constant.

The schedule also includes time for training the case managers and supervisors. This is an essential step in ensuring that they are familiar with the new system and can use it effectively. The training program has been designed to be comprehensive and detailed, covering all aspects of the new system.

Additionally, since external entities are involved in the project, time has been allocated to acquaint them with the new system. This would ensure that they are not left clueless about the new system and can collaborate effectively with the internal teams.

Overall, the schedule has been created with meticulous attention to detail and with a view to ensuring the smooth implementation of the new system. All stakeholders have been

taken into consideration, and every effort has been made to ensure that the project is completed within the stipulated timeline while maintaining the highest levels of quality.

Legal Analysis:

- Data security and privacy: Employees' names, residences, social security numbers, and pay information are frequently found in HR management systems together with other sensitive personal data. As a result, it is crucial to abide with rules governing data privacy and security, such as the GDPR, CCPA, and HIPAA.
- Compliance with Employment Laws: The HR management system must abide by the employment laws and rules of the nation or region where the project is being implemented. For instance, the Fair Labor Standards Act (FLSA), Equal Employment Opportunity (EEO) regulations, and other state-specific employment rules must all be complied with by the HR management system in the United States.
- Compliance with Accessibility Standards: The HR management system must be accessible to individuals with disabilities and must adhere to laws governing accessibility, such as the Americans with Disabilities Act (ADA) in the United States.
- Intellectual Property Rights: The project must not violate anybody else's intellectual property rights, and it must have suitable legal protection for the system's design and source code.
- Contractual Obligations: The project must abide by all of the organization's contractual commitments, including any contracts with outside suppliers or service providers.

Implementation Plan

Development:

- Establish a one-man development team to build the relational database using Microsoft SQL server.
- Ensure support from the system admin as needed.
- Build the GUI on a system compatible with most operating systems and browsers, and computers with low processing power.

- Focus on simplicity and compatibility with widely used browsers and operating systems.
- Design forms to resemble existing paperwork for easier employee transition and to meet government requirements.
- Test the system in iterations as entities are constructed and relations between them are built.
- Utilize sample data entry to test the functionality of the system.
- Test the GUI as it is being built using sample entries.
- Perform testing for data flow, security, operability, and network functioning after the database development has been completed and the system has been installed.
- Ensure that appropriate changes can be made by the Nonprofit Care Inc. IT team as needed utilizing the code in Microsoft SQL server as needed.

Testing:

- Test the functionality of the system using sample data entry during development.
- Test the GUI using sample entries during development.
- Perform testing for data flow, security, operability, and network functioning after installation.
- Ensure appropriate changes can be made by the Nonprofit Care Inc. IT team as needed utilizing the code in Microsoft SQL server as needed.

It is important to note that the development and testing plan should be flexible and adaptable based on the needs of the project and any unforeseen challenges that may arise. Regular communication and collaboration between the development team and the Nonprofit Care Inc. The IT team is also essential for the successful implementation of the Technova HRMS.

Deployment:

The deployment process for the HRMS project of TechNova Company can include the following steps:

- Testing: Conduct comprehensive testing of the system to ensure that it meets all functional, performance, and security requirements.
- User Acceptance Testing (UAT): Conduct UAT with key stakeholders and users to verify that the system meets their needs and requirements.

- Data Migration: Migrate existing employee data from the current HR system to the new HMS system.
- Integration: Integrate the system with other relevant software systems and tools used by the HR department.
- Training: Conduct training sessions for HR personnel and employees on how to use the new system effectively.
- Communication: Communicate the deployment of the new system to all stakeholders and users, including HR personnel and employees.
- Deployment: Deploy the new system to the production environment.
- Post-Deployment Testing: Conduct post-deployment testing to ensure that the system is functioning as expected and that all data is accurate and up-to-date.
- Monitoring: Monitor the system closely to ensure that it is running smoothly and that any issues or concerns are addressed promptly.

Training:

The purpose of training for the HRMS project of TechNova Company is to ensure that all stakeholders and users are equipped with the necessary knowledge and skills to use the new system effectively.

- Understanding the System: Train HR personnel and employees on the features, functions, and capabilities of the new system, including how to navigate the system, access data, and perform tasks such as managing employee records, processing payroll, and managing benefits.
- Standardization: Ensure that all users understand and follow standard processes and procedures for using the new system, which will help to minimize errors and ensure consistency in data entry and management.
- Efficiency: Train users on how to use the new system to automate and streamline their processes, resulting in increased efficiency and productivity.
- Compliance: Train users on the regulatory and legal requirements related to employee data privacy and security, and on how to use the new system to ensure compliance with these requirements.
- User Adoption: Encourage user adoption and buy-in by demonstrating the benefits and advantages of using the new system, and by providing ongoing support and guidance to users.

Maintenance of the system:

- **Regular Backups:** In order to prevent data loss, it is crucial to make sure that the database and files on the system are regularly backed up. TechNova's Hr management system depends on its data, therefore losing it can have serious repercussions. Regular backups offer protection from system failures, emergencies, and other unforeseen situations that could result in data loss. The integrity and dependability of the system depend heavily on the implementation of a strong backup strategy and the regular execution of backups.
- **Security updates:** Security updates are essential for preventing security flaws and potential breaches. The system must be kept up to date with the most recent security patches and updates. In systems, hackers are constantly seeking for weaknesses to exploit, and out-of-date software is a common target for attacks. The system will be kept secure and security breaches will be avoided by regularly updating the system with the most recent security patches and upgrades.
- **User management:** This is essential to guarantee that only authorized users have access to critical information and features. This includes managing user accounts, access rights, and permissions. Access rights and permissions should be constantly evaluated to make sure they are current and suitable. Access to sensitive data should only be given to those who need to know. Effective user management guards against data breaches and unauthorized access to private data.
- **Testing and troubleshooting:** To make sure the system is operating as intended, it is crucial to regularly test it to find and fix any problems that may develop. Users' reported difficulties are investigated, and system testing is done to find and fix any problems before they grow to be more serious ones. The system's stability and dependability are maintained by regular testing and debugging.
- **Documentation:** To make sure the system is simple to use and maintain, it is essential to keep system documentation up-to-date and available to all users. User guides, system setups, and technical documentation are all included in comprehensive documentation. Updated documentation makes it simpler to diagnose problems and assists users and administrators in understanding the system's capabilities, constraints, and operations.
- **User training:** Making sure that users receive frequent training and support helps them in getting properly trained and prepared to utilize the system. Comprehensive training lowers the risk of user errors and system downtime by educating users on

how the system functions and how to utilize it effectively. For users to be able to use the system successfully and efficiently, ongoing support is essential.

- **Performance monitoring:** Monitoring the system's performance on a regular basis is essential to ensuring that it is running smoothly and effectively. Monitoring system utilization, reaction times, and other performance indicators makes it easier to spot any problems that might be impairing the system's functionality. Regular monitoring ensures the system runs at peak efficiency by assisting in the early detection and resolution of issues.

Comments and Insights:

As an analyst working on this project, we learned several important lessons, encountered some difficulties and gained valuable experience. Some of the things we learned include:

- **Importance of proper planning:** One of the most important aspects of any project is proper planning. It is essential to have a clear understanding of the project requirements, goals, timelines, and budget to ensure the project's success.
- **Collaboration and communication:** Effective communication and collaboration are critical for the success of any project. It is essential to keep all stakeholders informed of project progress, issues, and challenges.
- **Importance of testing and debugging:** It is important to conduct thorough testing and debugging throughout the development process to ensure that the system is reliable and free from bugs.
- **Cost estimation:** Estimating project costs accurately can be challenging. It is important to consider all factors that can affect project costs, such as equipment, software, development and customization, training and documentation, and maintenance and support costs.
- **Documentation:** Proper documentation is important for the project's success. It helps ensure that everyone involved in the project understands the system's functionalities and requirements, and it can also be useful in future upgrades or modifications.
- **Importance of security:** Security should be a top priority in any system development project. It is important to identify and mitigate potential security risks throughout the development process.

- Time management: Proper time management is essential for project success. It is important to create a realistic timeline and schedule and to manage project tasks effectively to meet project deadlines.

Some of the difficulties encountered during this project include estimating project costs accurately, identifying potential security risks and mitigating them, and ensuring that the system meets all functional and non-functional requirements.

To ensure the success of future projects, I would suggest the following:

- Performance Management System: Develop a performance management system that allows managers to set performance goals for their team members, monitor progress, and provide feedback on a regular basis. This system could be integrated with the HRIS and payroll systems to provide a comprehensive view of employee performance and compensation.
- Employee Self-Service Portal: Create an employee self-service portal that allows employees to view and update their personal information, view pay stubs and tax forms, request time off, and access company policies and training materials. This portal could be integrated with the HRIS and payroll systems to ensure accurate and up-to-date information.
- Succession Planning System: Develop a succession planning system that identifies high-potential employees and provides them with the training and development opportunities needed to prepare them for future leadership roles. This system could be integrated with the performance management system and HRIS to ensure that the right people are being identified and developed.
- Diversity, Equity, and Inclusion (DEI) System: Create a DEI system that tracks diversity metrics such as gender, race, and ethnicity, and provides managers with the tools and resources needed to foster an inclusive workplace. This system could be integrated with the HRIS and performance management systems to ensure that DEI goals are being met and progress is being tracked over time.
- Learning Management System: Develop a learning management system that allows employees to access training and development materials on a variety of topics, including technical skills, leadership development, and DEI. This system could be integrated with the HRIS and performance management systems to ensure that training and development efforts are aligned with company goals and individual performance needs.