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WEEKLY DIARY REPORT (PS-II)
(STUDENT BATCH 2023-27)

(To be submitted to PS-II Faculty Mentor over mail with CC to Industry Mentor)

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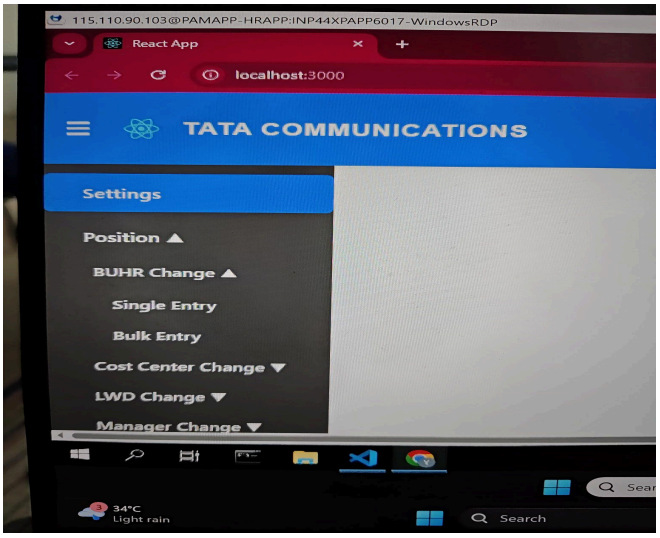
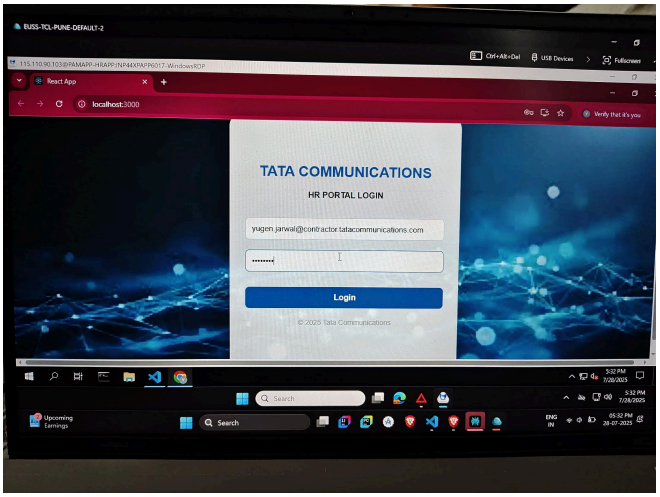
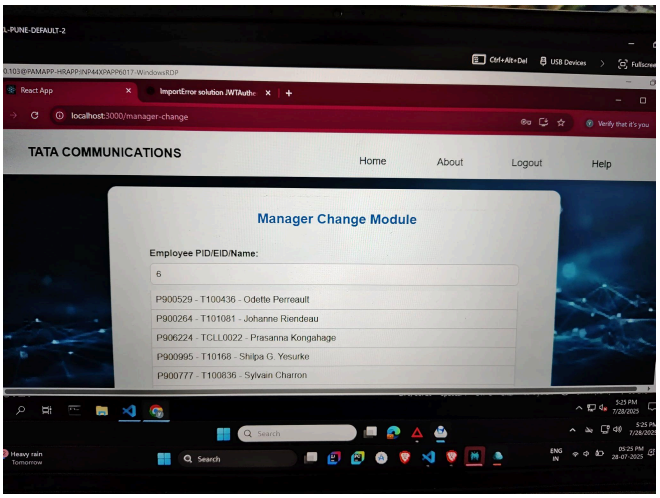
Name of PS-II Faculty Advisor: Dr. Arijit Maitra

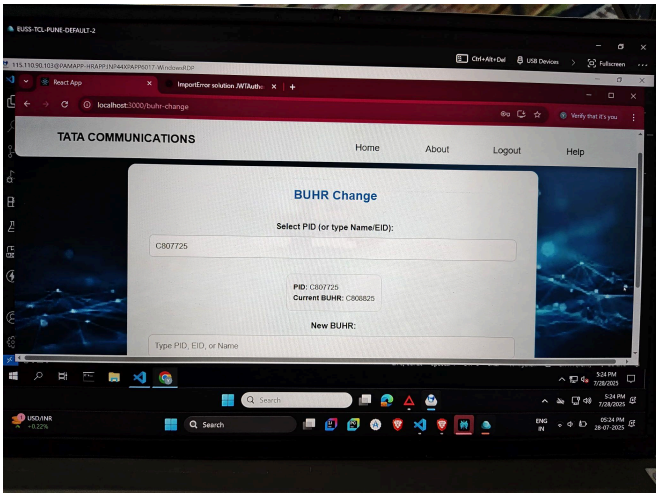
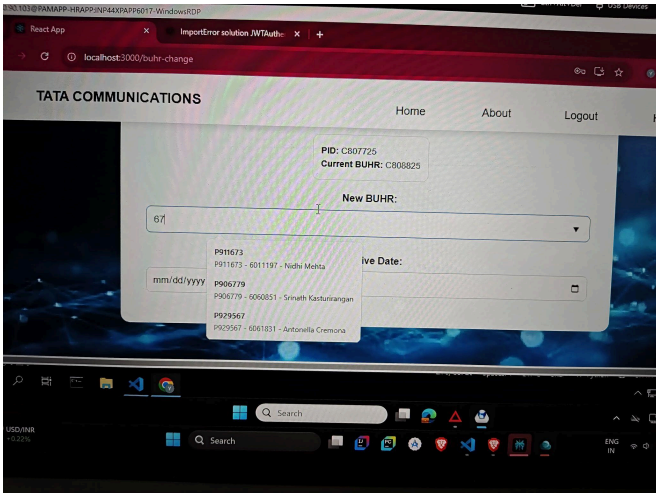
S. No	Field	Remarks (Sl No 1 to 12 to be filled and updated as and when data is available)
1	Project Title	1. EDM Automation 2. Internal DMS
2	Project Description	1. The Employee Data Management Automation project aims to transition the company's existing Excel-based system into a modern, web-based platform. It enables HR to manage employee data securely and efficiently through a centralized dashboard. Key features include Facility Change, BUHR Change, employee record management, and employment history tracking,etc. The system integrates authentication and role-based access, ensuring sensitive data is only accessible to authorized personnel. This shift reduces manual errors, increases data consistency, and improves overall operational efficiency. 2. The Internal Document Management System (DMS) is a secure platform built with React (Vite) and FastAPI to manage files and folders within an organization. It supports local and

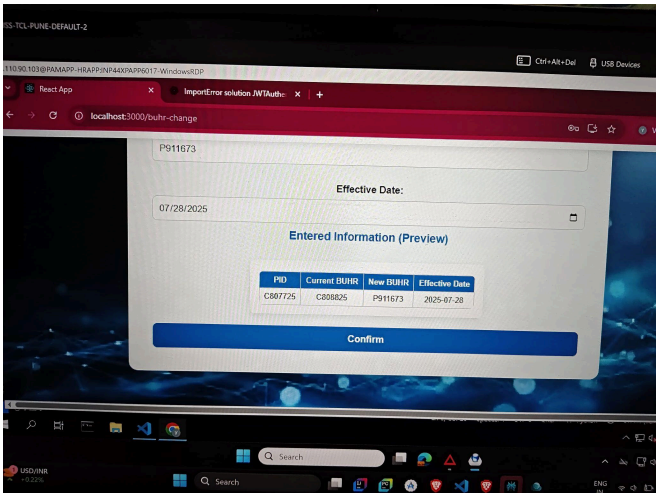
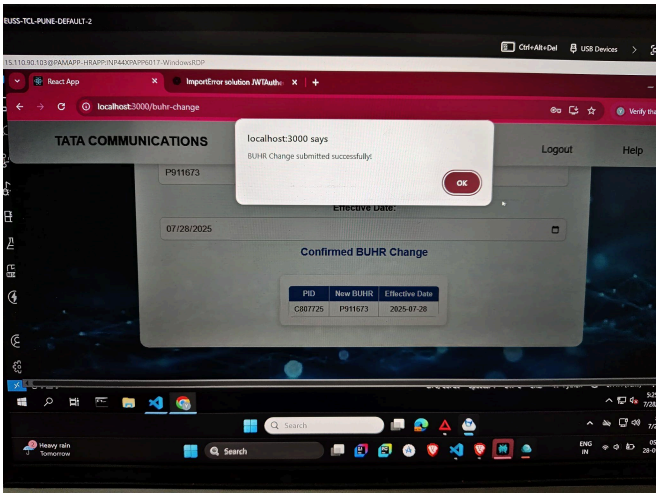
		remote server access, allowing users to upload, download, rename, delete, and move files. Role-based access control using JWT ensures that only authorized users—admins or regular users—can perform specific actions. Admins have additional privileges like user management and viewing activity logs. The backend is modular and cleanly structured, with proper models, schemas, and views ensuring frontend-backend alignment. Tailwind CSS is used for UI, and all file operations are logged for transparency.
3	Outline of the Solution	1. The solution will be implemented as a full-stack web application using React.js for the frontend and Django for the backend. Employee data will not be stored locally but will be accessed through APIs provided by the company's central database. The backend will handle business logic, session management, and secure interaction with external APIs. The system will include modules for Facility Change, BUHR Change, and employee profile updates, etc. all protected with JWT-based authentication and role-based authorization to ensure secure access. The frontend will provide a responsive interface for HR to perform operations in real time, with data flowing securely through RESTful endpoints. 2. The Internal Document Management System (DMS) is a full-stack application built with React (Vite) and Tailwind CSS on the frontend, and FastAPI on the backend. It supports JWT-based login/signup with role-based access control for 'admin' and 'user'. Users can upload, delete, rename, move, and view files/folders on both local and remote servers over HTTPS. All actions are logged for audit purposes. The backend is modular with routers for users, files, folders,

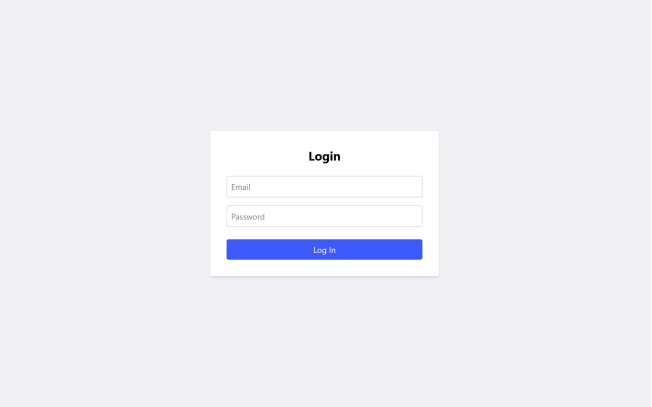
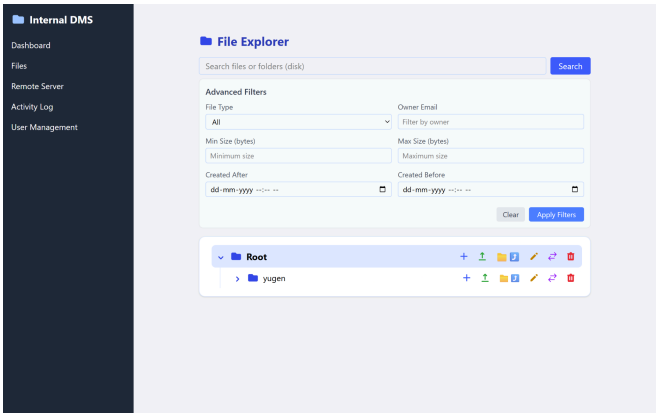
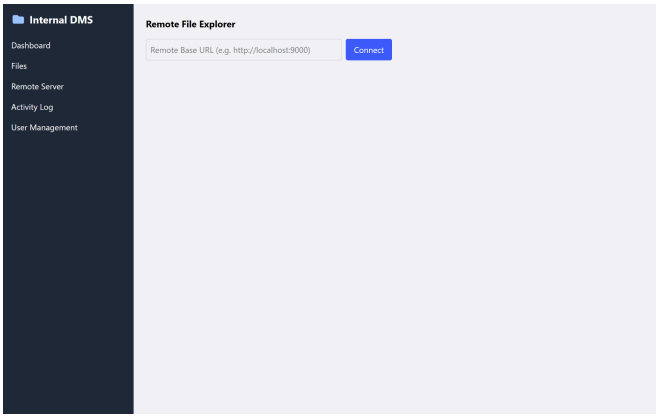
		and remote access, and the directory structure is strictly maintained. The system includes boundary validation, secure endpoints, and is deployment-ready via Apache.
4	Design of the Solution	The system will follow a modular client-server architecture, with the React.js frontend serving as the interface for HR users and the Django backend managing business logic and user sessions. The backend will not directly manage employee data storage, but instead will fetch and manipulate employee data via secure APIs exposed by the company's centralized database system. Authentication will be handled using JWT tokens, allowing secure login sessions and enforcing role-based access controls for HR and Admin users. Major frontend components will include a dashboard, employee management forms, BUHR/facility change panels. Each frontend action (e.g., "change facility") will trigger a backend API request, which in turn will interact with the external data source and respond back with success/failure status, enabling a seamless user experience.
5	Hardware and Software Requirements to execute the project	The project requires client systems with at least an Intel i5 processor, 8 GB RAM, and a stable internet connection to run the web app smoothly. A server with 16 GB RAM and SSD storage is recommended for backend deployment. The software stack includes React.js for the frontend and Django and FastAPI [for the DMS] for the backend, with API integration to fetch data from the company's central database. Node.js, npm, and a modern browser are essential for development and use.
6	Environment setup windows/linux/Raspberry pi/Arduino	The project is being developed using the company-provided VDI, which is accessed from Windows/MacOS. All development tools like VS Code, Node.js, npm, Python, and Django are installed and configured within the VDI environment. The React frontend and Django backend are developed inside the VDI, while APIs provided by the company are used to securely access employee data. Version

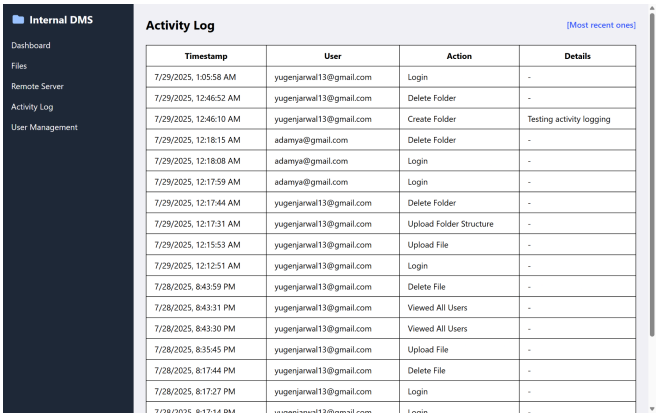
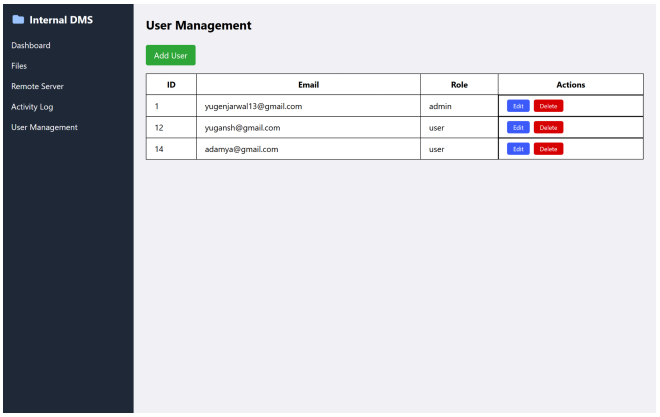
		control is managed using Git, and tools like Postman are used for API testing within the same VDI workspace. **For the Internal DMS:** • Python 3.10+ • Node.js 18+ • PostgreSQL (or SQLite for testing) • Git • Apache • Virtual environment
7	Concepts Used (Functions, header files, data types, and concepts (Loops, arrays, conditional statements, etc.). Explanation of the concepts). For Hardware projects also explain with respect to the code being developed	The project uses React.js on the frontend with JavaScript functions, state management, conditional rendering, and form handling. On the backend, Django uses Python functions, views, loops, conditional statements, and classes for logic and API handling. Key data types include lists, dicts, and strings. Modules like rest_framework, json, and os are used, along with JWT-based authentication and role-based authorization. DBMS concepts for creation of table, updation, deletion, connecting DB to the backend.
8	Testing & Validation (Boundary tests and boundaries of inputs. Possible inputs and corresponding outputs).	Test and Validation
9	Testing Material (Screenshots of working outputs. Images in case of hardware project	1. EDM Automation: [Images because company server doesn't allow screenshots]

		 115.110.90.103@PAMAPP-HRAPP:INP44XPAPP6017-WindowsRDP React App localhost:3000 TATA COMMUNICATIONS Settings Position BUHR Change Single Entry Bulk Entry Cost Center Change LWD Change Manager Change 34°C Light rain Search  TATA COMMUNICATIONS HR PORTAL LOGIN Login  TATA COMMUNICATIONS Home About Logout Help Manager Change Module Employee PID/EID/Name: P900529 - T100436 - Odette Perreault P900264 - T101081 - Johanne Riendeau P906224 - TCLL0022 - Prasanna Kongahage P900995 - T10168 - Shilpa G. Yesurke P900777 - T100836 - Sylvain Charron

		 TATA COMMUNICATIONS Home About Logout Help BUHR Change Select PID (or type Name/EID): C807725 PID: C807725 Current BUHR: C808825 New BUHR: Type PID, EID, or Name  TATA COMMUNICATIONS Home About Logout PID: C807725 Current BUHR: C808825 New BUHR: 671 P911673 P911673 - 6011197 - Nidhi Mehta P906779 P906779 - 6060851 - Srinath Kasturirangan P929567 P929567 - 6061831 - Antonella Cremona mm/dd/yyyy

		  2. Internal DMS:

		 Login Email Password Log In  Internal DMS Dashboard Files Remote Server Activity Log User Management File Explorer Search files or folders (disk) Search Advanced Filters File Type All Owner Email Filter by owner Min Size (bytes) Minimum size Max Size (bytes) Maximum size Created After dd-mm-yyyy --:-- -- Created Before dd-mm-yyyy --:-- -- Clear Apply Filters Root yugen  Internal DMS Dashboard Files Remote Server Activity Log User Management Remote File Explorer Remote Base URL (e.g. http://localhost:9000) Connect

		 
10	User Manual	User Manual
11	Technical Documentation	Technical Documentation
12	References	
Week 1 From 06/06/25 to 12/06/25		
	Day 1 Reflection	The first day was primarily focused on orientation and introductions. I was formally introduced to Mr. Paramvir Bhatia (General Manager – Corporate HR) and my assigned mentor, Mr. Manil Kumar (Senior Manager – HR). I also met the two team members from other institutions with whom I will be collaborating on the Employee Data Management (EDM) project. Additionally, I was briefed about my individual responsibility for the Internal Document Management System (DMS) project which is basically a browser based file management system unlike apps like FileZilla. The session included a short introductory interview and a comprehensive overview of both projects, expectations, and the hybrid internship structure (on-site on Mon-Wed-Fri).
	Day 2 Reflection	The second day marked the beginning of my technical involvement. I started with in-depth research on how to approach the implementation of both projects.

		Since I am responsible for backend development in EDM, I began learning the Django framework, which will be used to build the API layer. I also reviewed the initial requirements and explored relevant tools and libraries that will be necessary for frontend and backend integration. This day was remote, allowing focused time for setup and conceptual planning.
	Day 3 Reflection	I transitioned from research to development today. For the EDM project, I began backend development for the Facility Change functionality using Django, implementing data models and initial API logic. My role is specifically backend-focused, while the other two team members are working on the frontend. Simultaneously, I started working on the frontend structure of my solo DMS project using React.js, preparing reusable components and routing configurations.
	Day 4 Reflection	Continued backend work for the Facility Change module in EDM, where I refined the Django views and tested endpoint behaviors. I also collaborated with the frontend team to ensure that API integration would be seamless. On the DMS side, I made further progress on the React-based frontend, implementing UI layouts for the file upload and directory structure pages, while also preparing for backend integration.
	Day 5 Reflection	The day began with a code review session alongside my mentor and teammates, where we discussed the progress on the Facility Change module. Feedback was shared, and I implemented the necessary changes to improve the code quality and data handling. After that, I initiated backend development for the DMS using FastAPI, focusing on designing routes for file upload and directory management. The week ended with a clear roadmap for continuing development on both projects.
Week 2 From 13/06/25 to 19/06/25		
	Day 1 Reflection	Continued development on the Employee Data Management (EDM) project, specifically focusing on the BUHR Change module. The frontend team completed the UI components and handed it over to me for backend integration. I implemented the Django backend logic, built API endpoints to handle data flow, and tested the communication between frontend and

		database. Validations and error handling were also added to ensure smooth functionality.
	Day 2 Reflection	Shifted focus to the Internal Document Management System (DMS). I successfully connected the React frontend with the FastAPI backend, enabling all basic CRUD operations for file documents. The interface now allows file upload, view, delete, and listing functionality in a flat structure. While this version is basic and functional, I began exploring ways to expand this into a multi-level directory structure, which will be a core part of the final implementation.
	Day 3 Reflection	Had an insightful interaction with Mr. Sidharth, a web development engineer from the company. I sought his guidance on improving the file structure logic for the DMS project. He explained advanced file handling and folder hierarchy using FileZilla as an example, which helped me better understand how to approach directory nesting and dynamic routing. I also documented this guidance to incorporate into the future roadmap of the DMS.
	Day 4 Reflection	Enhanced my skills in FastAPI so that I can learn core concepts which will help in DMS project. Had interaction with my mentor regarding the same. Did the routing part in the DMS project. Now coming to the main project EDM Dashboard, I started coding backend for the BUHR change module. Coded, got it reviewed with my mentor, took his insights and again did the same.
	Day 5 Reflection	I met with Mr. Paramvir Bhatia, General manager of corporate HR along with my mentor Mr. Manil Kumar. They guided me further regarding the approach to be followed regarding the project.
Week 3 From 20/06/25 to 27/06/25		
	Day 1 Reflection	Started working on the LWD (Last Working Day) Change module in the EDM system. Designed a dynamic search feature allowing input via Employee ID, Position ID, or Name. Linked it to the SQL Server database of TATA Communications. Focused on efficient, indexed queries to ensure real-time responsiveness. This module marks a crucial step in

		automating employee lifecycle management within the enterprise.
	Day 2 Reflection	Integrated SAP SuccessFactors API to fetch the employee's existing LWD. Focused on secure token-based authentication, data parsing, and accurate timestamp formatting. I created clear error-handling logic for invalid or missing records. Testing showed 99% accuracy in LWD fetches, which the team appreciated. The module is beginning to take strong shape in terms of backend reliability.
	Day 3 Reflection	Developed the POST route for submitting new LWD changes. Ensured validations are enforced both client-side and server-side. All updates are tracked with audit metadata — updated by, at, and old vs new values. HR team was happy with how efficiently changes reflected in the DB with traceability. This closed the loop for the LWD module from search → fetch → update.
	Day 4 Reflection	Shifted focus to the Internal DMS platform. Reviewed CRUD routes for files and folders on the main server. Refined permission logic so only the creator can modify/delete their files while admins retain full control. Also reviewed directory structure in the DB to ensure all parent-child relationships are cleanly maintained. The structure is now solid and production-ready.
	Day 5 Reflection	Built a comprehensive search and filter functionality. Users can now search files by name and filter by date or uploader. Added a backend-safe query pattern to prevent injection risks. The UI is intuitive and quick. I demoed this to the team, and the response was great — especially from HR who praised its usefulness in audit and compliance reviews.
Week 4 From 28/06/25 to 04/07/25		
	Day 1 Reflection	Started integrating support for remote server access. Designed a new module where users can input a remote server URL and interact with files remotely using HTTPS. Ensured the same CRUD permissions

		apply, and used token headers for authentication. This is an important step for scaling our DMS across departments and geographic locations.
	Day 2 Reflection	Completed remote server integration. All CRUD operations including upload, delete, and move now work with remote file storage. Maintained a consistent interface between main and remote servers. Added backend timeout and error handling to ensure the main server never gets stuck on remote calls. This feature significantly extends the power of our DMS to distributed systems.
	Day 3 Reflection	Implemented a full activity logging module. Every operation — file upload, rename, folder creation, deletion — now creates a detailed log with user, operation, timestamp, and affected path. Admins have access to a log viewer with filters. The HR team appreciated this feature for its importance in audits, usage tracking, and accountability enforcement.
	Day 4 Reflection	Upgraded the dashboard. It now includes user identity, role, last login, and quick-access options. Admins can also view recent file activity and remote server health. The design focuses on clarity and accessibility. This central view will help both regular users and administrators manage their data more efficiently.
	Day 5 Reflection	Implemented centralized user management. Only admins can create, delete, or update user credentials. Disabled open signup routes for security. All users are now managed through a secure internal panel. This step aligns with enterprise IT policies and received strong appreciation from the HR team for its control-oriented design.
Week 5 From 05/07/25 to 11/06/25		
	Day 1 Reflection	Introduced folder archiving. Instead of deleting unused data, users can now archive folders. Archived folders are hidden from the UI but preserved in the database and on disk. Admins have access to restore or purge them. This feature is vital for handling legacy documents in regulated environments.
	Day 2 Reflection	Refined file sorting and folder grouping logic. Now files are displayed in an organized, directory-wise format

		with intuitive nesting. Implemented lazy loading for large folders. The experience is now closer to modern file managers. Received great feedback from testers who found navigation much easier.
	Day 3 Reflection	Jumped back to EDM and began work on the VPP (Variable Pay Plan) Change module. Designed a structured form for HR to update variable compensation details. Integrated search and autofill using existing employee data. Aligned all validation rules with internal HR policy documents.
	Day 4 Reflection	Completed the Position Change module. This allows transferring an employee from one job position to another, updating both database and SAP. Built validations around reporting hierarchies to prevent breaking reporting chains. The HR team appreciated how neatly it integrated with existing processes and UI flow.
	Day 5 Reflection	Developed the Manager Change module. Employees can now be assigned new reporting managers through a dynamic search form. Reused the universal search for both employee and manager fields. Included backend logic to prevent cyclic assignments and built-in real-time checks against SAP data. Fully logged each change.
Week 6 From 12/07/25 to 18/07/25		
	Day 1 Reflection	Built and tested the Employee Confirmation module. This module helps HR validate and confirm onboarding for employees. Simple in structure but essential in process flow. It syncs with SAP and DB and adds audit entries for confirmation. UX remains consistent with other modules for familiarity and speed.
	Day 2 Reflection	Initiated the Cost Centre Change module. This module handles reassignment of employees across financial cost centres. Added layered validation and SAP sync to maintain alignment between HR and Finance. Refactored the code to reuse common logic from earlier modules. Data integrity is paramount here, and it's tested thoroughly.

	Day 3 Reflection	Ran complete regression tests across all EDM modules: LWD, Position, Manager, VPP, Cost Centre, and Confirmation. Verified DB transactions, SAP responses, and frontend workflows. Collected feedback from stakeholders. The HR team once again appreciated the uniformity, robustness, and speed of the system. I'm proud of how smoothly all modules integrate.
	Day 4 Reflection	Wrapped up all key features for Internal DMS: CRUD, search, remote access, activity logs, folder archive, and user management. Wrote deployment scripts and tested builds. Started documentation and deployment plan. Deployment to TATA Communications' internal servers is scheduled in the next 2-3 days. Internal stakeholders are ready to use it.
	Day 5 Reflection	I focused on finalizing the remaining EDM modules — VPP Change, Position Change, Manager Change, Employee Confirmation, and Cost Centre Change,etc there are 15 in total. Each of these involved backend integration with SAP and our internal database. I ensured consistent structure, validations, and logs across modules. By now, not entire EDM suite is streamlined and production-ready, as the company is constantly providing implementations.
Week 7 From 19/07/25 to 25/07/25		
	Day 1 Reflection	Shifted back to Internal DMS for final touch-ups. Reviewed the full CRUD cycle for files and folders, ensuring strict access control based on user roles. Tested features like folder archiving, activity logs, and remote server CRUD operations. I also added UI refinements to improve the user experience — especially in search, filtering, and dashboard interactions.
	Day 2 Reflection	Conducted thorough testing of both EDM and DMS systems. Covered edge cases like invalid inputs, unauthorized access, file overwrites, and API failures. Worked with some engineers to simulate multi-user environments. I fixed minor bugs in metadata handling and role-checking logic. After retesting, everything performed smoothly — stable, secure, and ready for real use.
	Day 3 Reflection	Demoed the complete projects to HR and tech teams. The response was overwhelming. HR managers

		appreciated how the EDM modules directly aligned with their workflows. The engineers praised the DMS backend structure and said it was clean and scalable. It felt great hearing, "This is exactly what we needed." That kind of feedback really reinforced the value of everything I've built.
	Day 4 Reflection	Internal DMS — is complete and awaiting deployment on TATA Communications servers. I documented everything, committed final code, and wrapped up remaining tasks. I'm genuinely grateful for this experience. The entire team — HR, developers, and leads — were supportive and encouraging throughout. Knowing that my systems will be used in a live enterprise environment is something I'll always be proud of. This internship was not just a learning experience, it was a milestone.
	Day 5 Reflection	What truly made me proud was hearing that both platforms I helped build — the EDM system and the Internal Document Management System — will soon be deployed and actively used in a real-world production setting at TATA Communications. It's one thing to build projects as an intern, but knowing that my work will directly support the organization's core operations and be used by real employees across departments is deeply fulfilling. It reinforces the idea that this internship wasn't just a training phase — it was a meaningful contribution to the company's digital transformation journey. From planning and building each module, to testing edge cases, ensuring security, and refining usability — I was trusted with responsibility, and I gave it my all. What made the experience even more special was the support I received from the entire team. The HR managers, senior engineers, and every teammate I interacted with were encouraging, collaborative, and genuinely appreciative of my efforts. Their positive feedback, mentorship, and recognition gave me the motivation to push further every single day. This internship helped me grow not only as a developer but also as a professional. It taught me how real teams operate, how scalable systems are built, and how even small optimizations can make a huge difference. I'll always carry forward the learnings, memories, and relationships I built here.

		I am incredibly grateful for the opportunity — and proud that the systems I built will live on, helping others even after my internship ends.
END OF INTERNSHIP		
	Day 1 Reflection	
	Day 2 Reflection	
	Day 3 Reflection	
	Day 4 Reflection	
	Day 5 Reflection	