INTERNSHIP REPORT

(EVERNORTH HEALTH SERVICES)
06/01/2025 - 04/07/2025

By

MUSHARI AKSHAY
160121748045

Branch: CSE(AI&ML)

Submitted to

Department of Artificial Intelligence
and Machine Learning

CHAITANYA BHARATHI
INSTITUTE OF TECHNOLOGY (A)
(Affiliated to Osmania University)
Gandipet,
Hyderabad- 500075
2024 – 2025

CERTIFICATE

This is to certify that the project titled **"Secure Task Management"** is the work carried out by **Mushari Akshay**, a student of **B.E. CSE(AI&ML)** at **Chaitanya Bharathi Institute of Technology**, during the academic year **2024-2025**.

This project was completed as part of an internship at **Evernorth Health Services**, where the candidate actively contributed to the development of a **secure and efficient Task Application** using **Angular and Node.js**, with a focus on **authentication, authorization, and task tracking**.

The work undertaken demonstrates strong technical proficiency in **full-stack development, database management, API security, and unit testing**, aligning with industry standards and best practices.

Internship Incharge
D Naga Jyothi
Assistant Professor,
Department of AIML,
CBIT(A),
Hyderabad

Mentor
T Ramya
Assistant Professor,
Department of AIML,
CBIT(A),
Hyderabad

Head of Department
Dr. Y Rama Devi
Professor,
Department of AIML,
CBIT(A),
Hyderabad

ACKNOWLEDGEMENT

I would like to convey my gratitude to **Dr Y. Rama Devi**, HOD of the AIML Dept. and **Smt. T. Ramya**, my mentor from CBIT for motivating me to apply for the internship.

I would like to thank the team at **Evernorth Health Services** for giving me the internship opportunity and the proper technical guidance which helped me with my ongoing project at Organization.

This internship provided a glimpse of the work-life in the software industry and the experience of working with mentors and fellow colleagues, and most importantly the encouragement to learn new things without hesitation.

This exposure has been a great learning experience and I'll be looking forward to more such opportunities in the future.

INDEX

ABSTRACT

During my time at **Evernorth Health Services**, I had the incredible opportunity to immerse myself in one of the leading organizations dedicated to transforming healthcare through innovation. This experience provided me with invaluable insights into the dynamic and fast-paced healthcare technology sector, allowing me to apply my knowledge and skills in a real-world setting.

Throughout my tenure, I worked on tasks spanning various aspects of Evernorth's operations, from software development to data analytics and healthcare solutions. I was exposed to cutting-edge technologies, collaborated with skilled professionals, and gained a deeper understanding of the company's commitment to improving health outcomes through advanced digital solutions. I had the opportunity to contribute to the development of technology-driven healthcare services that impact millions of patients and providers globally. Witnessing firsthand how a culture of continuous learning, innovation, and excellence drives Evernorth's success reinforced my passion for leveraging technology to enhance healthcare accessibility and efficiency.

ABOUT ORGANIZATION

Evernorth Health Services, a subsidiary of The Cigna Group established in 2020, is dedicated to transforming healthcare by providing innovative and flexible solutions that enhance health outcomes and improve patient experiences. The company integrates various healthcare services, including pharmacy benefit management, specialty pharmacy care, and medical benefits management. One of its key components is Express Scripts, a leading **pharmacy benefit management** (**PBM**) company that serves over 112 million Americans, offering specialized solutions for general and complex conditions. Additionally, Accredo provides specialty pharmacy services tailored for patients with chronic and complex diseases, ensuring personalized care and support. Another critical service, eviCore, focuses on medical benefits management, optimizing patient outcomes through prior authorization and medical guidelines. Evernorth also operates **MDLIVE**, a 24/7 virtual care platform that offers convenient access to healthcare professionals across the country. The company's comprehensive approach includes solutions for behavioral health, gene therapy, oncology, and women's health, with a strong emphasis on making healthcare more accessible and affordable for employers, health plans, and government programs. Headquartered in St. Louis, Evernorth employs over 10,000 professionals and collaborates with various partners across the healthcare system to deliver high-quality, personalized care.

Recent initiatives include efforts to lower out-of-pocket costs for prescription drugs, ensuring patients benefit from reduced prices negotiated by its PBM, Express Scripts. Through continuous innovation and integration of healthcare services, Evernorth aims to meet the evolving needs of the healthcare landscape, improving both patient experiences and overall health outcomes.

OFFER LETTER

EVERNORTH
HEALTH SERVICES

Offer Letter of Internship

10-12-2024

Mushari Akshay
2-301, Wanalpad, Wanalpahad,
Thammapur, Nirmal,
Telangana, 504109

Dear **Mushari Akshay**,

This has reference to your application for an internship at **Cigna Health Solutions India Private Limited** conducting business as **Evernorth Health Services** ("Evernorth"/"We"). We are pleased to engage you as an "Intern" in **Evernorth** during the Tenure (hereinafter defined) on the following terms and conditions ("Internship Agreement") at Hyderabad Innovation Hub (HIH) and in accordance with the general rules/policies of **Evernorth** as may be amended from time to time:

1. **Internship Duration and Stipend:**

   The duration of your Internship with **Evernorth** will commence from **06-01-2025** for a period of 6 months. During the Tenure, you shall be receiving a stipend amount of **INR 21,000** per month. Your Internship timings will be as per the business need, and you will be provided weekly holidays and other mandatory holidays as declared by **Evernorth** and as per **Evernorth** Policies, which may be subject to change from time to time.

2. **Intern Responsibilities:**

   - You shall adhere to **Evernorth** policies, including but not limited to policies pertaining to security and professional conduct and integrity.
   - Maintain confidential information received regarding **Evernorth** during your Tenure in the strictest of confidence.
   - Participate actively, responsibly and with due diligence in delivering the assigned tasks and projects.
   - Seek guidance and clarification from supervisors/mentors when needed.
   - Maintain regular attendance and punctuality during the Tenure.

3. **Proprietary Rights:**

   - While interning with **Evernorth**, it is understood that any work/projects or intellectual property that you develop, whether individually or as part of a team, will become the exclusive property of **Evernorth**.
   - This includes tangible and intangible rights such as trademarks, copyrights, inventions, and more.
   - You shall have no rights or claims whatsoever in respect of such intellectual property, and they shall automatically vest with and/or stand assigned to **Evernorth**.
   - "Intellectual Property" includes trademarks, copyrights, discoveries, inventions, licenses (software or otherwise), information, processes and similar proprietary rights, protocols, customer/client information or other written material.

INTRODUCTION

During the development of my **SecureTask Manager**, I had the opportunity to apply my expertise in **Angular** for frontend development and **Node.js with Express.js** for backend services. This project focused on building a user authentication system with robust **form validation** and **secure access control**, ensuring a seamless user experience. The system efficiently handles **user registration, login, and session management**, storing user details in a **file-based database (database.db)** instead of traditional session storage.

A key component of this project was the integration of a **Task Management feature**, which allows authenticated users to manage their tasks efficiently. The application was built using **TypeScript** for both frontend and backend, ensuring type safety, maintainability, and improved code quality. I structured the application with **modular components**, leveraging Angular's **routing and guards** to enforce authentication-based access to the home and todo sections. On the backend, Express.js handled API requests for user authentication and task management, ensuring efficient data processing and security.

To enhance reliability, I implemented **unit test cases** for both frontend and backend using **Jasmine/Karma (Angular)** and **Jest (Node.js/Express.js)**. These tests validated core functionalities, including form validations, authentication flows, API responses, and business logic, ensuring the robustness of the application.

Additionally, I focused on optimizing backend logic, preventing duplicate registrations, and implementing structured **error handling mechanisms**. This project provided valuable experience in **full-stack development**, emphasizing **security, test-driven development (TDD), and best practices** in modern web applications.

Beyond technical implementation, this project reinforced my ability to design structured **frontend-backend communication**, write maintainable and testable code, and debug efficiently. It served as a practical application of my skills in **authentication, TypeScript-based development, unit testing, and dynamic UI interactions**, strengthening my ability to build scalable and reliable software solutions.

SOFTWARE REQUIREMENTS

1. Development Tools & Frameworks

- **Frontend:** Angular (TypeScript, HTML, CSS)
- **Backend:** Node.js with Express.js (REST APIs)
- **Database:** File-based database (database.db)
- **Version Control:** Git, GitHub / GitLab
- **Package Manager:** npm (for Angular and Node.js)

2. Development Environment

- **IDE for Frontend:** Visual Studio Code, WebStorm
- **IDE for Backend:** Visual Studio Code, IntelliJ IDEA
- **Database Management Tool:** SQLite Viewer / DB Browser for SQLite
- **Build Tools:** Angular CLI, Node.js package scripts

3. Server & Deployment

- **Application Server:** Node.js (Express.js)
- **Web Server:** Angular CLI development server
- **Local Development Server:** Angular live development server (ng serve)

4. APIs & Security

- **Authentication & Authorization:** Custom authentication using TypeScript & Express.js
- **REST API Testing Tools:** Postman, Swagger UI
- **Security Mechanisms:** HTTPS, Input Validation, Password Hashing (bcrypt)

5. Testing & Quality Assurance

- **Frontend Unit Testing:** Jasmine, Karma
- **Backend Unit Testing:** Jest, Supertest
- **Linting & Code Quality:** ESLint, Prettier

6. Additional Tools

- **Task Management & Collaboration:** Jira, Trello, Notion
- **Cloud Services (Optional):** AWS (EC2, S3) for deployment

TECHNOLOGIES USED

Frontend: Angular Technology:

- Angular is a TypeScript-based open-source framework developed by Google for building dynamic and interactive web applications.
- It follows the component-based architecture, making it modular, reusable, and scalable.

Core Features:

- TypeScript: Strongly typed superset of JavaScript that enhances maintainability.
- Two-way Data Binding: Synchronizes data between the model and view in real time.
- Dependency Injection (DI): Helps manage and inject dependencies efficiently.
- Directives & Components: Customizable HTML elements with encapsulated logic.
- Routing & Navigation: Provides single-page application (SPA) capabilities.
- Reactive Programming (RxJS): Handles asynchronous operations like API calls.
- State Management: Can be managed using NgRx or services.

Usage:

- Ideal for building enterprise-level applications, progressive web apps (PWAs), and single-page applications (SPAs).

Backend: Node.js with Express.js

Node.js is a JavaScript runtime that allows executing JavaScript outside the browser, and **Express.js** is a minimal web framework for building APIs.

Core Features:

- Lightweight & Fast: Non-blocking, event-driven architecture.
- REST API Support: Provides middleware and routing for efficient API handling.
- Middleware Integration: Uses Express.js middleware for authentication, validation, and security.
- Security: Implements authentication, session handling, and password hashing (bcrypt).
- Scalability: Efficient request handling for multi-user systems.

Usage:

Used for **authentication services, API endpoints**, and **backend logic for task management applications**.

Database: MySQL / PostgreSQL

- MySQL is an open-source relational database management system (RDBMS) known for its

speed and reliability.
- It follows the Structured Query Language (SQL) standard.
- Used in web applications, content management systems (CMS), and e-commerce platforms.

Key Features:

- High-speed transactions
- Scalability for large datasets
- ACID (Atomicity, Consistency, Isolation, Durability) compliance
- Replication and clustering support for high availability

PostgreSQL

- PostgreSQL is an advanced, open-source object-relational database system (ORDBMS).
- It supports complex queries, JSON storage, full-text search, and advanced indexing.

Key Features:

- ACID-compliant transactions
- Extensibility: Supports custom functions, procedural languages (PL/pgSQL), and plugins.
- JSON & NoSQL support: Can store semi-structured data.
- Better performance in handling large-scale, complex databases.

Usage:

- MySQL is commonly used for general-purpose web applications, whereas PostgreSQL is preferred for enterprise-grade applications that require complex queries and transactions.

Version Control: Git & GitHub / GitLab

Git
- Git is a distributed version control system (DVCS) used for tracking code changes.
- Developers can branch, merge, and revert code versions efficiently.
- Enables collaborative development with multiple contributors.

GitHub & GitLab

- GitHub and GitLab are cloud-based Git repository hosting services.
- GitHub is widely used for open-source projects, while GitLab is often used for self-hosted DevOps solutions.
- Features include code collaboration, issue tracking, CI/CD pipelines, and code reviews.

Usage:

- Essential for team-based software development and code version management.

Package Managers: npm (Angular)

npm (Node Package Manager)

- npm is the default package manager for Node.js and Angular applications.
- It helps install, manage, and update JavaScript libraries and dependencies.

Common npm Commands:

- npm install <package> – Installs a package.
- npm update <package> – Updates a package.
- npm run <script> – Executes a script from package.json.

IDE for Frontend and Backend Development

Visual Studio Code (VS Code)

- **VS Code** is a lightweight, open-source **code editor** developed by Microsoft.
- It supports **TypeScript, JavaScript, HTML, and CSS**, making it a great choice for Angular development.
- Comes with a **built-in terminal, Git integration, and IntelliSense (code completion)**.
- Offers **extensions** for Angular development like Angular Language Service.

Features

Free & open-source
Fast and lightweight
Rich extension marketplace

Database: File-based Database(database.db)

A simple **SQLite-based file storage system** for storing user credentials and tasks.

Core Features:

- **Lightweight & Embedded:** No need for an external database server.
- **Fast Read/Write Operations:** Optimized for small to medium-sized applications.
- **Easy Integration:** Works seamlessly with Express.js and Node.js.

Usage:

Used for **storing user authentication data** and **task management records**.

Node.js

- Node.js can be used as a lightweight web server to serve Angular applications.
- The frontend can be built using ng build and deployed using Express.js or hosted on CDN services.
- Not as common as Nginx for production, but useful in development or small-scale deployments.

Features

Works well with JavaScript-based environments
Can serve Angular apps dynamically with SSR (Server-Side Rendering) using Angular Universal

Local Development Server

Angular CLI Development Server

- The Angular CLI (Command Line Interface) development server is used during frontend development.
- It provides live reloading and a local server at http://localhost:4200/.
- Used for testing before deploying the final build.

Features

Fast local development
Live reloading for instant changes
Integrated with TypeScript and debugging

Unit Testing & Quality Assurance

Frontend Unit Testing:

- **Jasmine & Karma** – Used to write and execute unit tests for Angular components.

Backend Unit Testing:

- **Jest & Supertest** – Used for testing Express.js routes and API responses.

Linting & Code Quality:

- **ESLint & Prettier** – Ensure clean and maintainable code.

TASKS

Requirement Analysis & Project Planning

- Understood the project scope and application objectives through discussions with mentors and stakeholders.
- Documented functional and non-functional requirements for the application.

Frontend Development using Angular

- Designed and developed responsive UI components using Angular, HTML, and CSS.
- Implemented form validation for login and registration pages using Angular Reactive Forms.
- Created reusable components for user dashboard and task list views.
- Configured routing with route guards to restrict unauthorized access to protected pages.

Backend Development using Node.js & Express.js

- Developed RESTful APIs for user authentication, registration, login, and task management.
- Used file-based storage (`database.db`) for maintaining user and task data in the backend.
- Ensured password encryption and secure authentication flow using JWT (JSON Web Tokens).

Authentication & Authorization

- Implemented secure login mechanism using JWT tokens for session management.
- Developed middleware to protect private routes and allow access only to authenticated users.
- Prevented duplicate registrations by validating unique usernames and emails.

Task Management Module Integration

- Designed the “TodoHome” module to allow users to create, read, update, and delete tasks.
- Linked the task module with user sessions to ensure personalized task management.

- Enabled dynamic rendering of tasks using Angular data binding.

Unit Testing

- Wrote and executed unit test cases for both frontend (Angular) and backend (Node.js) components.
- Used Jasmine/Karma for Angular testing and Mocha/Chai for backend service testing.
- Ensured high code coverage and functional accuracy through test-driven development.

Version Control & Code Management

- Used Git for version control and GitHub for project collaboration and source code tracking.
- Maintained clean commit history with meaningful commit messages.
- Managed branches effectively to handle development and testing workflows.

Deployment & Debugging

- Tested the application on the local Angular development server and Node.js backend.
- Debugged cross-component issues and ensured frontend-backend integration consistency.
- Documented deployment steps and maintained code modularity for scalability.

Documentation & Reporting

- Prepared comprehensive documentation for project setup, API structure, and module descriptions.
- Documented all test cases, configuration files, and dependencies used in the application

CONCLUSION

During my internship at Evernorth Health Services, I had the invaluable opportunity to work on a variety of projects that significantly enhanced my technical and professional skills. By contributing to the **Authenticated Task Management System**, I was able to develop both **frontend and backend components**, ensuring the seamless functionality of the application. The key accomplishments and learnings from this internship can be summarized as follows:

1. Technical Proficiency

- **Backend Development:** Gained hands-on experience with **Node.js and Express.js**, developing secure and scalable RESTful APIs, managing a file-based database (database.db), and implementing authentication mechanisms using JWT.
- **Frontend Development:** Utilized **Angular, TypeScript, HTML5, and CSS3** to build a responsive and interactive user interface, ensuring an enhanced user experience.
- **Full-Stack Development:** Developed a **comprehensive understanding of frontend and backend integration**, implementing API calls efficiently to create a high-performance application.

2. Application Development & Infrastructure Management

- **Node.js & Angular:** Designed and developed a **modular, scalable full-stack application**, ensuring smooth communication between the frontend and backend.
- **Database Management:** Implemented a **file-based database** for efficient data storage and retrieval, ensuring seamless task management and authentication.
- **Version Control & CI/CD:** Used **Git and GitHub** for structured collaboration, implementing **best practices for version control** and continuous integration.

3. Project Contributions

- **Authenticated Task Management System:** Developed and enhanced key features to enable secure task tracking and user authentication.
- **UI Enhancements:** Improved the frontend **design, accessibility, and responsiveness**, ensuring a seamless user experience.
- **Backend API Development:** Designed and implemented **secure RESTful APIs** for smooth data exchange and user authentication.
- **Unit Testing:** Wrote unit test cases for both **frontend (Jasmine, Karma)** and **backend (Jest, Supertest)** to ensure code reliability and functionality.

4. Collaboration & Teamwork

- Worked closely with a team of experienced developers, contributing to a **collaborative development environment** through code reviews and pair programming.

- Actively participated in **sprint meetings, debugging sessions, and feature discussions**, improving my problem-solving and teamwork skills.

5. Professional Growth

- Developed a deep understanding of **agile development methodologies** and **software development lifecycle (SDLC)** in a real-world environment.

- Applied **best coding practices**, ensuring code maintainability, security, and performance optimization.

6. Real-World Application

- Applied **theoretical knowledge** in a **practical, enterprise-level application**, bridging the gap between academic learning and industry requirements.

- Contributed to building a **secure and efficient task management system**, demonstrating the **real-world impact** of my work in improving productivity and task tracking.

This internship at Evernorth Health Services provided a **comprehensive learning experience**, reinforcing both **technical and professional skills**. By working on the **Authenticated Task Management System**, I strengthened my expertise in **full-stack development, authentication mechanisms, and agile project management**. This experience has **prepared me for future professional endeavors**, equipping me with a **strong foundation in web development and industry best practices**.

REFERENCES

- https://www.evernorth.com/
- https://angular.dev/overview
- Node.js v23.11.0 Documentation
- https://docs.github.com/en
- https://www.postgresql.org/docs/