

Internship at Nedient Technology

Internship Report

Submitted for the partial fulfillment of the degree of

Bachelor of Technology

In

Computer Science & Engineering

Submitted By

Aryan Dubey

0901CD211012

UNDER THE SUPERVISION AND GUIDANCE OF

Dr. Ranjeet Kumar Singh

Assistant Professor

Department of Computer Science & Engineering



MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.), INDIA

माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर (म.प्र.), भारत

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NAAC ACCREDITED WITH A++ GRADE

January-May 2025

DECLARATION BY THE CANDIDATE

I hereby declare that the work entitled **Internship at Nedit** is my work, conducted under the supervision of **Mr. Palash Khnagar, Full Stack Developer and Android Development Team**, during the session Jan-May 2025. The report submitted by me is a record of bonafide work carried out by me.

I further declare that the work reported in this report has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.


Aryan Dubey

0901CD211012

Date: 21/05/2025

Place: Gwalior

This is to certify that the above statement made by the candidates is correct to the best of my knowledge and belief.

Guided By:



Dr. Ranjeet Kumar Singh
Assistant Professor


Department of Computer Science & Engineering
MITS, Gwalior

Departmental Project Coordinator


Dr. Kuldeep Narayan Tripathi

Assistant Professor

Department of Computer
Science & Engineering
MITS, Gwalior


21/05/25
Approved by HoD
Dr. Manish Dixit
Professor & HOD
Department of
M.I.T. Gwalior

Professor & Head

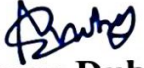
Department of Computer
Science & Engineering
MITS, Gwalior

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The full plagiarism report along with the summary is enclosed.


Aryan Dubey
0901CD211012

Checked & Approved By:



Prof. Mahesh Parmar
Assistant Professor
Department of Computer Science & Engineering
MITS, Gwalior

ABSTRACT

This internship at **Nedient Technology**, starting from **15th December 2024**, provided me with a valuable opportunity to apply and enhance my technical skills by contributing to the **development of a native Android e-commerce application** for one of the company's clients. The primary goal of the project was to design and build a robust, user-friendly, and responsive mobile shopping platform to streamline the customer's purchasing experience.

Throughout the internship, I worked extensively with **Java/Kotlin** in **Android Studio**, focusing on the implementation of key features such as user authentication, product listing, cart functionality, order placement, and integration of a secure **payment gateway**. I also utilized **Firestore services**—including Firestore, Firebase Authentication, Cloud Messaging, and Storage—for handling backend operations, managing real-time data, enabling push notifications, and storing user profile information.

Alongside core functionality, I focused on improving **app performance**, refining the UI/UX design for different screen sizes, and ensuring error handling using tools like **Firebase Crashlytics**. Features like order history, feedback collection, and profile management were added to enhance the user experience.

Although the application is still **under development and not yet published to the Play Store**, the project has already laid a strong foundation and is progressing steadily toward completion. This internship has significantly strengthened my practical understanding of mobile app development, real-time database management, and client-focused design while allowing me to contribute to the digital growth of a business through a real-world software solution.

ACKNOWLEDGEMENT

The full semester project has proved to be pivotal to my career. I am thankful to my institute, **Madhav Institute of Technology and Science** to allow me to continue my disciplinary/interdisciplinary project as a curriculum requirement, under the provisions of the Flexible Curriculum Scheme, approved by the Academic Council of the institute. I extend my gratitude to the Vice Chancellor of the institute, **Dr. R. K. Pandit** and Dean, Faculty of Engineering & Technology, **Dr. Manjaree Pandit** for this.

I would sincerely like to thank my department, **Department of Computer Science and Engineering**, for allowing me to explore this project. I humbly thank **Dr. Manish Dixit**, Professor and friend, Department of Computer Science and Engineering, for his continued support during the course of this engagement, which eased the process and formalities involved.

I am sincerely thankful to my faculty mentors. I am grateful to the guidance of **Dr. Ranjeet Kumar Singh**, Assistant Professor, Computer Science, for his continued support and guidance throughout the project. I am also very thankful to the faculty and staff of the department.



Aryan Dubey

0901CD211012

CERTIFICATE



Nedient Technology Pvt. Ltd. (CIN-U72900MH2021PTC368030)

Date: 30/06/2025

CERTIFICATE

This is to certify that **Mr. Aryan Dubey**, a student of **Computer Science and Design** from **Madhav Institute of Technology & Science**, has successfully completed an internship as an **Android Developer Intern** at **Nedient Technology Pvt. Ltd.** from **15/12/2024 to 30/06/2025**.

During this period, he demonstrated excellent technical skills, enthusiasm, and dedication to the tasks assigned. He actively worked on various Android development projects and showcased proficiency in technologies such as **Kotlin, XML, MVVM architecture, and Retrofit** for API integration.

Under the guidance of **Mr. Palash Khnagar** (Full Stack Developer & Android Development Team)

Throughout his internship, Aryan exhibited strong problem-solving skills, a keen eye for detail, and a commitment to delivering high-quality work. We are confident that he will excel in his future endeavors and contribute significantly to any organization he becomes part of.

Best regards,


Rahul Ramteke
Director
Nedient Technology Pvt. Ltd.
Nagpur



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CHAPTER 1: INTRODUCTION

The internship involved designing and developing a fully functional **Android e-commerce application** for a client of **Nedient Technology**, a company engaged in delivering custom software solutions to businesses. While the client had a growing product base and strong business potential, their limited digital presence posed a valuable opportunity for transformation through mobile technology.

The overall objective of the internship was to build a **user-friendly, responsive, and feature-rich Android application** that could serve as a complete shopping platform for end users. The app was structured to include essential modules like **user authentication, product listings, search and filters, cart management, checkout with payment gateway, order history, and user profile management**. The goal was not only to present products effectively but also to offer a smooth and intuitive buying experience to customers.

This project gave me the opportunity to work hands-on with **Android Studio** using **Java/Kotlin**, and to build and integrate real-world features. I also gained practical experience with **Firestore** (for database), **Authentication** (for secure login), **Cloud Messaging** (for push notifications), and **Storage** (for profile image uploads). Although the app is still in development and yet to be published, the internship gave me valuable insights into app architecture, modular development, and performance optimization.

Through this internship, I developed my technical expertise in native Android development, learned how to work on client-specific requirements, and experienced the real-world process of designing and building a scalable mobile application from the ground up.

CHAPTER 2: LITERATURE SURVEY

In today's digital-first landscape, having a mobile application is critical for businesses especially in retail and e-commerce sectors—to remain competitive, engage users, and drive growth. A well-built mobile app not only enhances customer convenience but also serves as a powerful tool for branding, direct interaction, and streamlined operations. The e-commerce app I developed during my internship at **Nedient Technology** was aimed at enabling the client to tap into the growing mobile commerce market with a smooth and reliable Android-based solution.

Application Development for B2C Shopping Experience

The mobile application was designed specifically for **B2C use cases**, allowing customers to browse products, add them to their cart, and place orders seamlessly. The user base ranged from casual mobile shoppers to returning customers, requiring the interface to be both **intuitive and responsive**. Features such as **category-wise product display**, **real-time stock updates**, **search and filters**, and **secure payments** were added to enhance the overall buying experience. The project focused heavily on creating a clean shopping flow from **product discovery to checkout**.

Frontend Technologies and Native App Development

The frontend of the application was developed using **Java/Kotlin** in **Android Studio**, following modern mobile UI/UX design guidelines. Components like **RecyclerView**, **Fragments**, and **Navigation Components** were used to build a dynamic and responsive interface. Design elements were implemented to ensure **consistency across various screen sizes** using **ConstraintLayout** and vector assets. Additionally, user-friendly UI patterns such as bottom navigation, floating action buttons, and progress indicators were incorporated for enhanced usability.

Backend and Integration Technologies

While the core of the app was developed natively on Android, backend and real-time features were integrated using **Firestore**. This included:

- **Firestore** for real-time database functionality,
- **Firestore Authentication** for secure login and registration,
- **Firestore Cloud Messaging** for push notifications,
- **Firestore Storage** for handling profile and product images.

Additionally, a **payment gateway** was integrated into the checkout process, enabling users to complete transactions safely within the app. Although backend API creation wasn't a major focus, this architecture laid a strong foundation for future scalability and real-time operations.

Design, Usability, and User Experience

A key priority in the app's development was delivering a **seamless and visually appealing experience** to the end user. Principles of **material design**, **intuitive navigation**, and **minimalist UI** were applied. Special attention was paid to load times, responsive layouts, and feedback mechanisms like snackbars and dialogues for real-time user communication. These design choices aimed to make the app attractive and accessible to a wide audience—from tech-savvy users to everyday shoppers.

CHAPTER 3: WORK DONE

Throughout the internship, I was actively involved in the **end-to-end development** of a native Android e-commerce application for one of **Nedient Technology's** clients. The project aimed to create a responsive, feature-rich, and intuitive mobile shopping platform that would serve the needs of general users and support seamless product discovery, order placement, and payment processes.

The significant tasks accomplished within this timeframe are presented below:

Project Planning and Requirement Analysis:

- Understood the client's business model and target user base to define application goals.
- Designed the overall app architecture, including screen navigation flow, user journey, and core modules like product browsing, cart, and checkout.
- Analyzed design requirements and mapped out the features required for user engagement and operational efficiency.

Frontend (Android) Development::

Developed the app using **Android Studio** with **Java/Kotlin**, focusing on clean UI, performance, and functionality. Key screens developed include:

- **Splash & Login/Signup Screens:** Implemented secure login and registration using Firebase Authentication.
- **Home & Product Listings:** Showcased products dynamically with RecyclerViews and filters for better user experience.
- **Product Details Screen:** Displayed images, pricing, descriptions, and stock status with a smooth UI.
- **Cart & Checkout:** Enabled users to add/remove items, view total costs, and proceed to checkout.
- **User Profile Section:** Included profile image upload (via Firebase Storage), order history, and settings.

Responsiveness and UI Design:

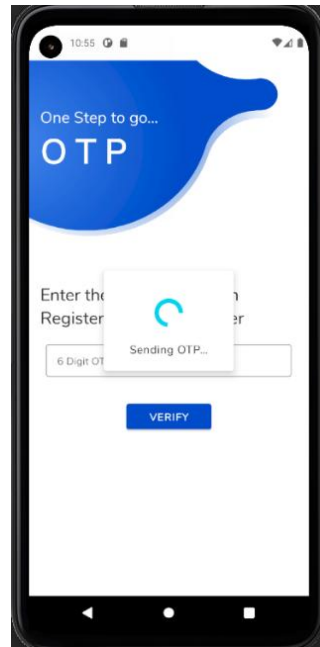
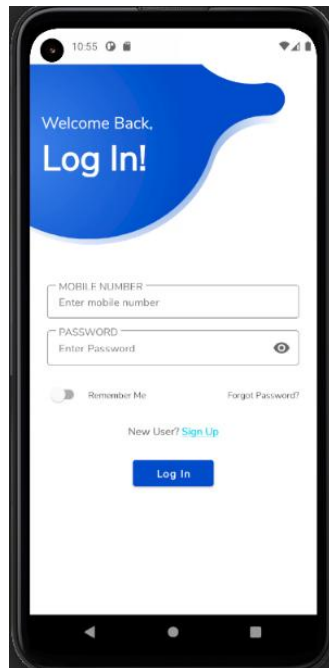
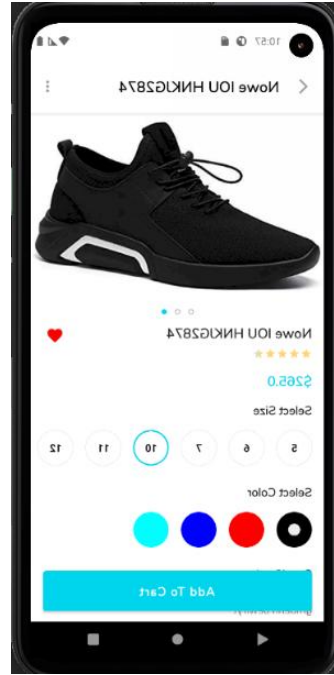
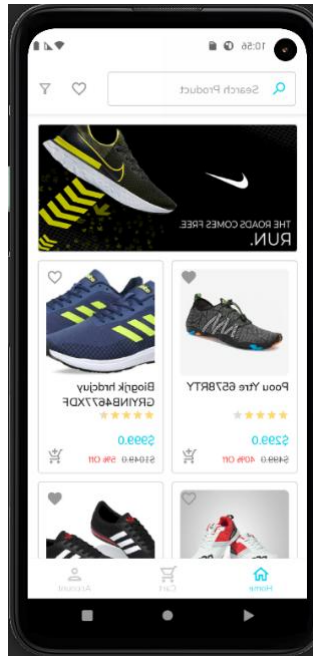
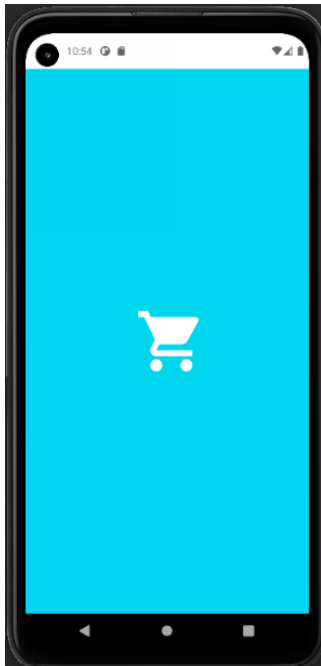
- Designed layouts using **ConstraintLayout** to support various screen sizes.
- Applied Material Design principles for clean UI, consistent iconography, and visual feedback using elements like snackbars, toasts, and progress indicators.
- Ensured intuitive navigation via bottom navigation bar and fragment-based architecture.

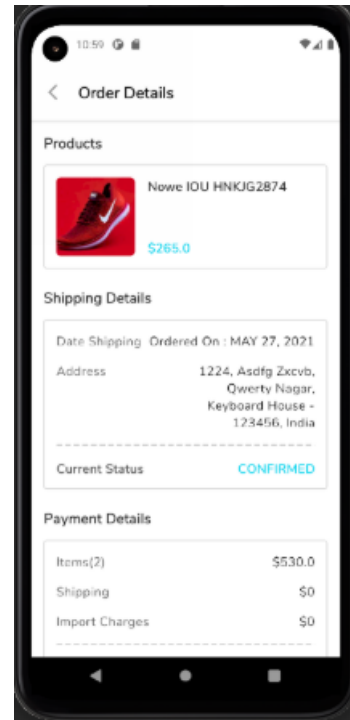
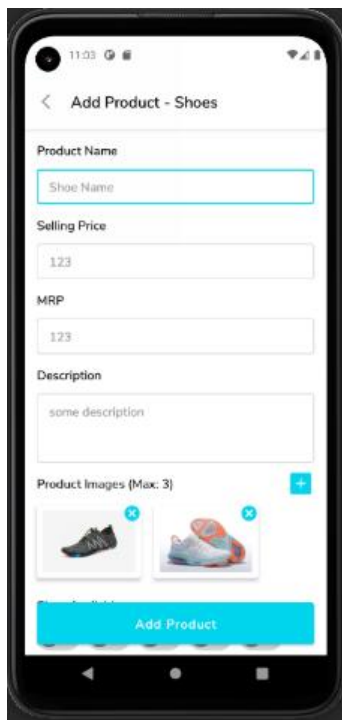
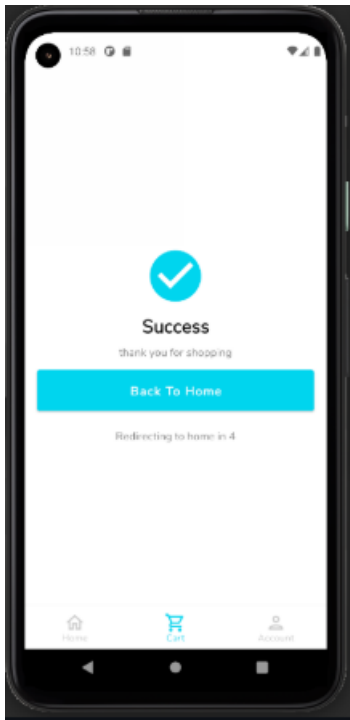
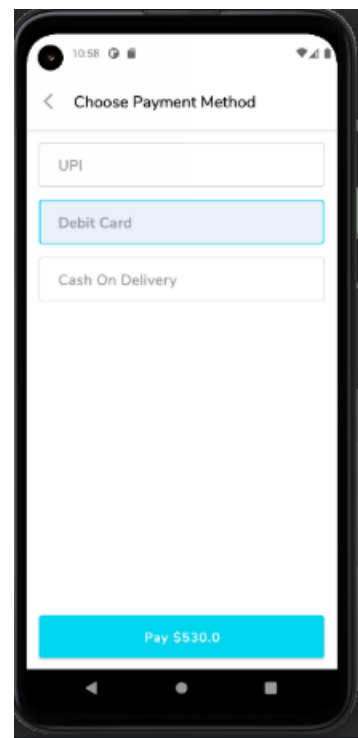
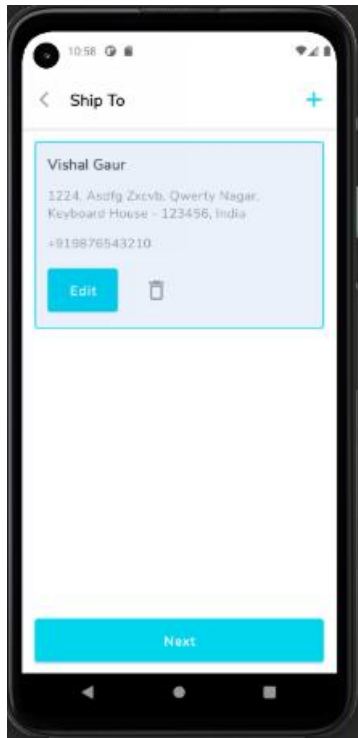
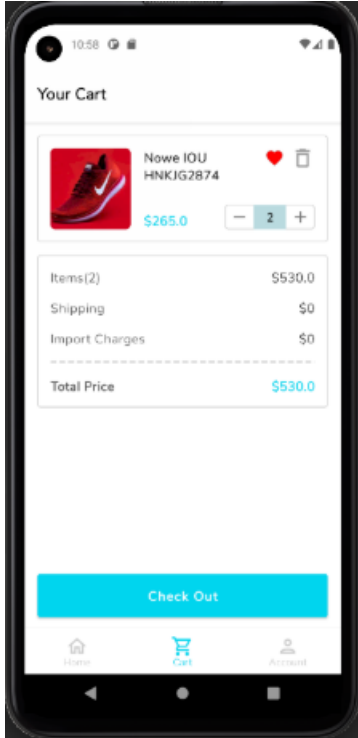
Backend Integration and Services:

- Integrated **Firestore** for real-time data management, enabling smooth product updates, user-specific carts, and order tracking.
- Added **FCM** for real-time push notifications related to order updates and promotions.
- Integrated **Razorpay** as the payment gateway for secure and user-friendly transaction handling.

Testing and Refinement:

- Performed functionality testing across different Android devices to ensure smooth performance.
- Implemented **form validations**, error handling (via try-catch), and network status checks.
- Continuously refined the UI/UX based on feedback, fixed bugs, and ensured the app followed best practices for performance and responsiveness.





CHAPTER 4: OUTCOMES GAINED

The internship at **Nedient Technology** offered a fulfilling and enriching experience by allowing me to apply my academic knowledge in a real-world mobile development setting. Through the end-to-end development of an Android e-commerce application, I gained valuable technical skills and professional insights that contributed significantly to my personal and career growth.

Technical Outcomes:

- Successfully developed a fully functional, native **Android-based e-commerce app** using **Java/Kotlin** in **Android Studio**.
- Designed **responsive and interactive layouts** using XML with support for various screen sizes and device types.
- Implemented **Firebase Authentication** for secure user login and signup functionality.
- Gained hands-on experience with **Firestore Database** for storing and retrieving real-time product and order data.
- Integrated **Razorpay** for handling secure in-app payments and learned how to manage transaction flow and error handling.
- Used **Firebase Cloud Messaging (FCM)** to send real-time push notifications to users regarding orders and promotions.
- Enhanced skills in debugging, version control (Git), and adhering to clean architecture and code reusability practices.

Professional & Learning Outcomes:

- Translated client requirements into structured technical tasks and user-centric mobile features.
- Understood the role of **UI/UX design principles** in mobile app development and optimized user flow for better engagement and satisfaction.
- Strengthened **project planning, time management**, and iterative development through regular progress reviews and feedback sessions.
- Sharpened **problem-solving abilities** by resolving issues related to app performance, compatibility, payment gateway errors, and real-time data syncing.
- Learned to work in a **real development environment** with collaborative tools and agile thinking.

CHAPTER 5: SKILLS GAINED

Technical Skills Acquired:

- **Android App Development (Java/Kotlin):** Gained hands-on experience building native Android applications using Android Studio and writing clean, maintainable code in Java/Kotlin.
- **UI Design with XML & Material Design:** Learned how to design responsive, user-friendly interfaces using ConstraintLayout, RecyclerView, and Material Design components to ensure consistency and appeal.
- **Authentication and Database Integration:** Integrated **Firebase Authentication** for secure user login/signup and **Firestore** for real-time data storage and dynamic content loading.
- **Payment Gateway Integration:** Successfully implemented **Razorpay** to enable seamless and secure in-app payment handling.
- **Push Notifications (FCM):** Learned to configure and send targeted push notifications using **Firebase Cloud Messaging** to improve user engagement and update flows.
- **Version Control (Git):** Practiced effective version tracking, branching, and collaboration using Git, ensuring code quality and team workflow efficiency.

Soft Skills Acquired:

- **Project Planning & Time Management:** Broke down the e-commerce app project into phases (design, development, testing) and adhered to weekly goals and deadlines.
- **Problem Solving:** Improved logical thinking and debugging by resolving UI alignment issues, handling API failures, and optimizing app performance across devices.
- **Client-Centric Development:** Understood and adapted to real-world client requirements, making changes based on feedback and business goals.
- **Communication & Reporting:** Sharpened professional communication through regular progress updates, feature demos, and documentation of workflows and issues.

CHAPTER 6: SOCIAL RELEVANCE

- Empowered a local business by digitizing its operations, enabling it to serve a broader customer base and transition from traditional sales to a mobile-first e-commerce model.
- Promoted digital inclusivity by designing an intuitive and responsive mobile application accessible to users with varying technical proficiency.
- Streamlined the shopping and order management process, reducing manual work and improving customer convenience through digital payments and real-time order updates.
- Showcased Make-in-India capabilities by developing a complete mobile commerce solution tailored for Indian consumers and businesses.
- Personally, the internship provided valuable experience in Android app development, client collaboration, problem-solving, and real-world implementation of software engineering principles.

CHAPTER 7: CONCLUSION

In summary, my internship experience at **Nedient Technology** has been an incredibly valuable and rewarding learning opportunity. Over the past few months, I had the chance to contribute to the development of an **Android-based e-commerce application** for one of the company's clients — a project that plays a crucial role in shaping their digital retail presence.

Throughout this project, I gained direct, hands-on experience in **Android application development**, covering both frontend design and backend integration. On the frontend, I worked with **XML layouts** and **Material Design components** to create responsive, user-friendly screens and smooth navigation experiences. On the backend, I implemented **Firebase Authentication**, **Firestore for data storage**, and **Razorpay for payment gateway integration**, which deepened my understanding of real-time databases, user management, and transaction handling.

Beyond technical skills, this internship also gave me insight into **working in a professional development environment**. I learned to communicate effectively with my team, meet deadlines, and troubleshoot problems in real-time — all of which are critical abilities for a future career in software development.

Overall, I am grateful to have been a part of this project and the team at Nedient Technology. The experience, knowledge, and confidence I've gained have significantly boosted my capabilities and will serve as a strong foundation for future Android development projects.

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Department of Computer Science and Engineering
 (Session: Jan–June 2025)

MONTHLY REPORT OF PROGRESS (MRP) FROM INDUSTRY MENTOR

Name of student	Aryan Dubey		Department	Computer Science and Engineering		
Industry/Organization	Nedient Technology Pvt. Ltd		Date/Duration	13/01/2025 -13/02/2025		
Criterion	Poor	Average	Good	Very Good	Excellent	
Punctuality/Timely completion of assigned work					✓	
Learning capacity/Knowledge upgradation				✓		
Performance/Quality of work				✓		
Behaviour/Discipline/Team work					✓	
Sincerity/Hard work					✓	
Comment on nature of work done/Area/Topic	This month, Aryan showed a genuine commitment to teamwork and collaboration, fostering a positive and inclusive environment where everyone felt valued and supported.					
<u>OVERALL GRADE (Any one)</u>	<u>POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT</u> ✓					
<u>Name of Industry Mentor</u>	Palash Khnagar					
<u>Signature of Industry Mentor</u>						

Receiving Date	13/02/2025	Name of Faculty Mentor	Dr. Ranjeet Kumar Singh	Sign	
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FEB-MARCH



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Department of Computer Science and Engineering
 (Session: Jan–June 2025)

MONTHLY REPORT OF PROGRESS (MRP)-2

FROM INDUSTRY MENTOR

Name of student	Aryan Dubey		Department	Computer Science and Engineering	
Industry/Organization	Nedient Technology Pvt. Ltd		Date/Duration	12/02/2025 -12/03/2025	
Criterion	Poor	Average	Good	Very Good	Excellent
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge upgradation					✓
Performance/Quality of work				✓	
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	This month, Aryan actively contributed to the development of various Android features, including payment gateway integration and authentication, among others. He demonstrated exceptional consistency and discipline in his work while effectively collaborating with the team. His efforts fostered a positive and inclusive work environment where every team member felt valued and supported.				
<u>OVERALL GRADE (Any one)</u>	<u>POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT</u> ✓				
<u>Name of Industry Mentor</u>	Palash Khnagar				
<u>Signature of Industry Mentor</u>					

Receiving Date	12/03/2025	Name of Faculty Mentor	Dr. Ranjeet Kumar Singh	Sign	
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MARCH-APRIL



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Department of Computer Science and Engineering (Session: Jan–June 2025)

MONTHLY REPORT OF PROGRESS (MRP)-3

FROM INDUSTRY MENTOR

Name of student	Aryan Dubey		Department	Computer Science and Engineering	
Industry/Organization	Nedient Technology Pvt. Ltd		Date/Duration	15/03/2025 -12/04/2025	
Criterion	Poor	Average	Good	Very Good	Excellent
Punctuality/Timely completion of assigned work					✓
Learning capacity/Knowledge upgradation					✓
Performance/Quality of work				✓	
Behaviour/Discipline/Team work					✓
Sincerity/Hard work					✓
Comment on nature of work done/Area/Topic	This month, Aryan actively contributed to the development of various Android features, and made some user friendly UI designs using XML and enhanced user activity, among others. He demonstrated exceptional consistency and discipline in his work while effectively collaborating with the team. His efforts fostered a positive and inclusive work environment where every team member felt valued and supported.				
<u>OVERALL GRADE (Any one)</u>	<u>POOR/AVERAGE/GOOD/VERY GOOD/EXCELLENT</u> ✓				
<u>Name of Industry Mentor</u>	Palash Khnagar				
<u>Signature of Industry Mentor</u>					

Receiving Date	12/04/2025	Name of Faculty Mentor	Dr. Ranjeet Kumar Singh	Sign	
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