



Tribhuvan University
Faculty of Humanities and Social Sciences

An Internship Report on
“E-LEARNING PLATFORM”
At
NEPBIGYAPAN Pvt. Ltd

Submitted to
Department of Computer Application
Ratna RajyaLaxmi Campus, Kathmandu

In partial fulfilment of the requirements for the Bachelors in Computer Application

Submitted by:
Rachana Khadka (Roll No: 23)

Under the Supervision of:
Bijay Mishra



Tribhuvan University
Faculty of Humanities and Social Sciences
Ratna RajyaLaxmi Campus

SUPERVISOR'S RECOMMENDATION

I hereby recommend that this project prepared under my supervision by **Rachana Khadka** entitled “**E-LEARNING PLATFORM**” in partial fulfilment of the requirements for the degree of Bachelor of Computer Application is recommended for the final evaluation.

.....

SUPERVISOR

Bijay Mishra

Lecturer

BCA Department

Faculty of Humanities and Social Sciences

Ratna RajyaLaxmi Campus



Tribhuvan University

Faculty of Humanities and Social Sciences

Ratna RajyaLaxmi Campus

Letter of Approval

This is to certify that this project prepared by **Rachana Khadka** entitled “**E-LEARNING PLATFORM**” in partial fulfilment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In my opinion it is satisfactory in the scope and quality as a project for the required degree.

<p>.....</p> <p>Bijay Mishra, Lecturer BCA, Ratna Rajyalaxmi Campus</p>	<p>.....</p> <p>Bhupendra Luhar, Co-ordinator BCA, Ratna Rajyalaxmi Campus</p>
<p>.....</p> <p>Internal Examiner</p>	<p>.....</p> <p>External Examiner</p>

Abstract

An e-learning designed to support remote learning and can be accessed from anywhere with an internet connection. The platform can be used for a wide range of learning activities, from individual self-paced learning to collaborative group projects and interactive virtual classrooms. An e-learning platform is an online system that provides learners with access to educational materials, tools, and resources over the internet. E-learning platform can include Course Management, Learning Management, Multimedia Integration, Assessment, and Personalization.

An e-learning platform provides a flexible and accessible way to deliver high-quality education to learners of all ages and backgrounds. It supports remote learning, self-paced learning, and collaborative learning, and can be used for a wide range of educational purposes, professional development, and corporate training.

KEYWORD: E-Learning, Course Management, Multimedia, Assessment, Personalization.

Acknowledgement

First of all, I would like to thank **NEPBIGYAPAN Pvt. Ltd.** for providing this opportunity to undertake an internship which was a great opportunity for learning and developing professionalism. I would like to express my heartiest gratitude to **MR. RAJ KUMAR SHRESTHA**, Senior Laravel Developer at **NEPBIGYAPAN Pvt. Ltd.** (Supervisor of my intern) for giving me an opportunity to be a part of the team. Despite being quite busy with his work, he provided me with continuous guidance, support and information.

Additionally, I would like to express my gratitude to **RATNA RAJYALAXMI CAMPUS** for giving us with an opportunity to develop our abilities and knowledge through practical learning opportunities provided by this internship program, as well as for regularly evaluating our work and assigning definite deadlines. I am very thankful to **BIJAYA MISHRA SIR**, who despite his busy schedule, made the time to listen, guide, and keep me on track during my internship.

I would really want to express my sincere gratitude to all the staff at the office who helped me throughout my internship.

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List of Abbreviations

API	:	Application Programming Interface
ARTISAN	:	Laravel's command-line interface for running tasks
Blade	:	Laravel's templating engine
CRUD	:	Create, Read, Update, Delete - the four basic database operations
Eloquent	:	Laravel's ORM (Object-Relational Mapping)
HTTP	-	HyperText Transfer Protocol
IDE	:	Integrated Development Environment
JWT	:	JSON Web Token-a token used for authentication, authorization
MVC	-	Model-View-Controller
ORM	:	Object-Relational Mapping
SDK	:	Software Development Kit
UI	:	User Interface

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CHAPTER 1: INTRODUCTION

1.1 Introduction

An e-learning platform is a digital platform that provides online courses, training materials, and educational resources to students and learners. It allows learners to access educational content and interact with instructors and other learners from any location with an internet connection. E-learning platforms can offer a range of different learning experiences, from self-paced learning to real-time virtual classrooms.

E-learning platforms can be beneficial for learners who want to study at their own pace, who cannot attend traditional classroom settings, or who want to supplement their existing education. Additionally, e-learning platforms can offer flexible learning options that can be tailored to individual needs and learning styles (Litmos, 2012).

Developers play a critical role in creating e-learning platforms and tools that enable learners to access and engage with course materials. where our company have also built e-learning having module like login management, video encryption, enrollment management, course management, subject management, topic management, account management and assignment management. Where I have role and responsibility for backend in Laravel for login management and other various management module. E-learning, also known as online learning, is a form of education that utilizes technology to deliver instructional content and learning experiences to learners. E-learning has its roots in distance education, which has been around for over a century, with correspondence courses being the earliest form of distance education.

1.2 Problem Statement

Despite the increasing availability of technology and internet connectivity in Nepal, many students in remote and rural areas still lack access to quality education due to a lack of infrastructure and resources. The COVID-19 pandemic has highlighted the need for effective e-learning solutions, but there is a significant gap in the availability and accessibility of online learning platforms and resources. This has resulted in a significant education gap and limited opportunities for students in remote and underprivileged areas to continue their education and gain the skills necessary to succeed in today's digital economy.

This problem statement highlights the challenges faced by students in remote and underprivileged areas in Nepal, and the need for effective e-learning solutions that can

bridge the education gap and provide students with access to quality education and opportunities for personal and professional growth.

1.3. Objectives

The objectives of E-learning are:

- To manage and create the videos, assignments and courses for e-learning
- To ensure efficient, reliable and accessible platform for learners and instructor.
- To organize courses for the learners and allowing learners to access high-quality resources.

1.4. Scope and Limitation

Scope

- E-learning can provide opportunities for professional development.
- E-learning can provide access to quality education to students in remote and underprivileged areas those who are access to the internet.
- E-learning can promote digital literacy among students.

Limitation

- Access to reliable internet connectivity.
- Limited Interaction between learners and instructors.
- Digital Literacy

1.5. Report Organization

This report is organized into four chapters:

Chapter 1. Provides the introduction regarding the task assigned during the internship period.

Chapter 2. Provide information regarding organization its hierarchy, working domain of an organization.

Chapter 3. Describes the background study of an organization that offered the internship and literature review regarding the project.

Chapter 4. Describes the roles and responsibility assigned during the internship period, system design of the project and feasibility study of the system. The implementation of the system and task performed during the internship are also covered in this unit.

Chapter 5. Includes conclusions about the internship and skills and lesson learned during the internship in the organization.

CHAPTER 2: INTRODUCTION TO ORGANIZATION

2.1. Introduction to Organization

NEPBIGYAPAN work as software development, IT consultancy and in house development. Currently it is working under e-learning platform where it records video, take live classes and sale for other various organization with in a nation.

NEPBIGYAPAN, is established to provide E-learning platform which provide a means for learners to access quality educational resources and develop essential skills in areas such as digital literacy, technology, and professional development. It is a private company promoted by professional individuals with broad experience in the industry.

NEPBIGYAPAN, A highly experienced management team, specializing in software development with years of quantifiable experience also ensure to accomplish a rich and corporate working set up and to provide customer satisfying services with operations focused on the highest level of customer satisfaction. NEPBIGYAPAN, is established to provide E-learning platform which provide a means for learners to access quality educational resources and develop essential skills in areas such as digital literacy, technology, and professional development.

The company has an extensive network throughout the country and aggressively extending its network with various organization.

2.2. Organizational Hierarchy

The following diagram illustrates the organization's hierarchy:

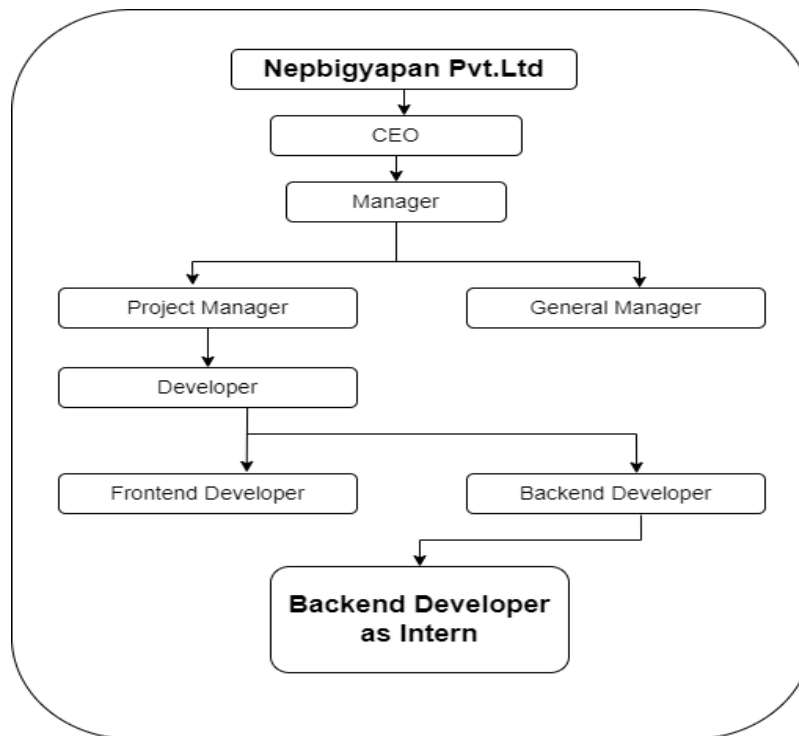


Figure 1 Organizational Hierarchy

2.3. Working Domains of Organization

NEPBIGYAPAN work as software development, IT consultancy and in house development. Currently it is working under e-learning platform where it records video, take live classes and sale for other various organization with in a nation and government agencies. NEPBIGYAPAN, is established to provide E-learning platform which provide a means for learners to access quality educational resources and develop essential skills in areas such as digital literacy, technology, and professional development. It is a private company promoted by professional individuals with broad experience in the industry. in software development with years of quantifiable NEPBIGYAPAN, A highly experienced management team, specializing experience also ensure to accomplish a rich and corporate working set up and to provide customer satisfying services with operations focused on the highest level of customer satisfaction

2.4. Description of Intern Department Unit

NEPBIGYAPAN consist of two department development team and project management team. The Development Team looks over the development of web applications and mobile applications while the project management Team look after candidates with the potential to be included in the development team. During my internship period, I worked in the Web Development team with other fellow interns under the supervision and mentorship of senior developer MR. RAJ KUMAR SHRESTHA. The team handled various in-house projects of the company as well as projects for clients. I worked closely with my mentor and fellow interns on several projects while learning the basics and advanced concepts of web frontend development. Communicating with the mentor was easy as he always stayed close to the interns.

CHAPTER 3: BACKGROUND STUDY AND LITERATURE REVIEW

3.1. Background Study

E-learning platforms can be beneficial for learners who want to study at their own pace, who cannot attend traditional classroom settings, or who want to supplement their existing education. Additionally, e-learning platforms can offer flexible learning options that can be tailored to individual needs and learning styles (Litmos, 2012).

E-learning, also known as online learning, is a form of education that utilizes technology to deliver instructional content and learning experiences to learners. E-learning has its roots in distance education, which has been around for over a century, with correspondence courses being the earliest form of distance education.

The use of computers in education dates back to the 1960s, with the development of computer-assisted instruction (CAI) and computer-based training (CBT) systems. These systems were used to deliver instruction and assess learning outcomes in a computer-based environment. In the 1990s, with the emergence of the internet and the World Wide Web, the first web-based e-learning systems were developed, enabling learners to access instructional content and interact with instructors and other learners online (Introduction Into E-learning, 2013).

The COVID-19 pandemic has also accelerated the adoption of e-learning globally, with many educational institutions and organizations shifting to online learning to ensure continuity of education during lockdowns and social distancing measures. E-learning has emerged as a vital tool for remote learning, providing learners with access to quality educational resources and enabling them to continue their education from home (Journal of the Institute of Engineering, 2017). Since then, e-learning has evolved significantly, with the development of new technologies and instructional design strategies. Today, e-learning platforms offer a range of multimedia resources, including videos, animations, simulations, and interactive assessments, to engage learners and facilitate effective learning.

3.2. Literature Review

There are some of the researches and report publication carried out on E-Learning platform which are the source of reviewing.

Nepal Open University: Nepal Open University (NOU) is a government-run institution that provides distance education programs through online and offline modes. NOU offers undergraduate, graduate, and post-graduate courses in various subjects.

Khan Academy: Khan Academy is a non-profit organization that provides free online courses on various subjects such as math, science, and humanities. It is known for its interactive learning materials and practice exercises.

Nepal Education Platform: Nepal Education Platform is an online learning platform that provides online courses and resources for Nepalese students. The platform offers courses in various subjects, including mathematics, science, and English, and is designed to supplement traditional classroom teaching (Mansaray, 2023).

Virtual Classroom Initiative: The Virtual Classroom Initiative is a program run by the Nepalese government to provide e-learning opportunities to students in rural and remote areas of the country. The initiative aims to improve access to quality education in these areas by providing online classes and resources.

Udemy: Udemy is a well-known online learning platform that offers courses on various topics such as business, technology, and creative arts. It has a massive collection of courses with over 155,000 courses and has over 40 million students worldwide (Best Online Learning Platforms, 2023).

Coursera: Coursera is another popular platform that offers online courses from top universities and organizations. It has over 4,000 courses and specializations in various subjects, including business, technology, and humanities.

Codecademy: Codecademy is an online learning platform that provides courses on coding and programming languages such as Python, HTML, and CSS. It is designed for beginners and has interactive coding exercises to help students learn by doing (10 Best E-Learning Platforms Worth Trying, 2023)

CHAPTER 4: INTERNSHIP ACTIVITIES

4.1. Roles and Responsibilities

As a backend developer intern at NepBigyapan Company, I was responsible for working on Laravel-based projects and supporting the development team in creating and maintaining the company's web applications. My role involved a range of tasks, including designing and implementing software systems, writing clean and efficient code, testing and debugging, and collaborating with team members.

Role and Responsibilities During my internship, I was assigned the following responsibilities:

- **Laravel Development:** My primary responsibility was to work on Laravel-based projects and to develop robust and scalable backend systems. This involved understanding the project requirements, designing database schema, and implementing the business logic using Laravel's features and libraries.
- **Testing and Debugging:** I was responsible for testing and debugging the code to identify and fix issues that could impact the functionality or user experience of the application. This involved using tools like PHPUnit, Selenium, and Postman to ensure that the application worked as expected and met the client's requirements.
- **Collaboration:** One of my main responsibilities was to collaborate with other team members, including developers, designers, and project managers. This involved attending meetings, providing regular updates on the project's progress, and contributing to brainstorming sessions to identify innovative solutions to project challenges.

4.2. Weekly Log

Table 4. 1: Weekly log

Week	Tasks
Week 1	Setting up the development environment and installing necessary dependencies and Introduction with the developers, mentors and co-workers.
Week 2	Taught about the databases and create the necessary migrations for the tables.
Week 3	Design Account Management module and supervised the project work progress of the collaborated report to the director.
Week 4	View student's enrollment request and creating the student enrollment verification module. (Controllers module and blade file)
Week 5	Complete and verifying the APIs for enrollment request and progress.
Week 6	Verifying the payment details of the students and taught about the Laravel's Eloquent ORM.
Week 7	Continued working on issue and bugs fixing and verifying the payment details of the students.
Week 8	Present the complete backend architecture to the development team for feedback.

4.3. Description of project Involved During Internship

My technical skills in Laravel development, database design, and testing were honed during the internship. The system's frontend and backend development was the main area where the Intern was mainly active. E-learning projects were worked on during the internship, and the opportunity was given to collaborate with the development team, participate in code reviews, testing, and debugging, and contribute to documentation. Software tools such as Visual Studio Code were used during the internship.

The primary responsibility was to work on the Validation, authentication and authorization system, controllers, Database module, enrollment verification module of the application. The development and implementation of new features and functionalities for those modules were my responsibility.

For handle the verification process the request for access to the resources was sent by the students to the admin, created a method named “VerifyEnrollent”. Then the accept a “request” object as a parameter.

Lots of tasks and activities were performed by me during the project, such as database creation to store student information, including their enrollment status. The student enrollment verification module (Controllers module and blade file) was also created by me. The payment details of the students were verified to allow or reject access to course materials. Collaboration with other team members was also done by me. The APIs for enrollment request and progress were verified by me, and the project work progress was supervised by me, and the collaborated report was reported to the director.

4.4. Tasks / Activities Performed

During my internship at NEPBIGYAPAN, The opportunity was given to me to work as a backend developer on a project aimed to develop an e-learning platform. As a backend developer, my role was to develop the account management system and create interactive activities that would engage users and enhance their learning experience.

The project followed an agile methodology. Close work had to be done by me with the project manager, frontend developers, and other stakeholders to ensure that the project requirements and objectives were met. We used software tools such as Visual Studio Code to collaborate with the development process.

One of the main challenges interns faced during the project was that interns were unfamiliar with the Laravel framework, which the project used. It took interns about a week to understand and set up the development environment.

To initiate a project first interns needed to set up the development environment. For this intern installed PHP and a web server that supports PHP. For this, interns chose to use Apache (XAMPP). Then, they installed Composer, which is used by Laravel to manage its dependencies. Once interns had installed Laravel, they created a new Laravel project by running the following command:

- `laravel new E_learning`

This created a new Laravel project with the name "E_learning" in the current directory. From there, interns were able to develop the necessary backend functionalities to create an engaging and effective e-learning platform for our users.

Once the project was started, The creation of interactive activities such as enrollment verification and assessment functionalities was assigned to me.. For this at first, interns set up a MySQL database to store student information, including their enrollment status and other relevant details. Then they created the necessary models and make migrations to implement the changes in the database. To make migration interns used “php artisan migrate” command which applied the new changes to the database. Interns also had to implement authentication functionalities and install necessary dependencies to configure and query the database.

For authentication they first looked at the user role on database and checked if that user can access the data, he/she requests. If the user has the authority, the requested data is provided else the user is sending an unauthorized error. I was also responsible for the

request verification process, which meant that I had to ensure that only authorized users could access certain resources.

- **Student Enrollment Verification:**

One of my main responsibilities was to view the student's enrollment request and creating the student enrollment verification module using Controllers module and blade file. Verifying by the payment details of the students (If the student has valid payment information and credentials, the student is allowed access to the course materials. If not, the access is rejected) To perform enrollment verification on Laravel, Interns created a middleware that checked the student's payment details before allowing them to access the course. This middleware was created using the `make:middleware` command in Laravel, and the logic for checking payment details was defined in the `handle` method of the middleware. The Interns retrieved the student's payment details from the database and checked whether they had successfully paid for the course. If the payment details were valid, they allowed the student to access the course by calling the `$next($request)` method. Otherwise, they redirected the student to a payment page or displayed an error message.

To use the middleware, Interns registered it in the `$routeMiddleware` array in the `app/Http/Kernel.php` file and applied it to the course routes using the middleware method in the route definition. When a student tried to access a course that required enrollment verification, Laravel ran the middleware to check their payment details and either allowed or denied access based on the result.

Interns also collaborate with other team members, including developers, designers, and project managers. This involved attending meetings, providing regular updates on the project's progress, and contributing to brainstorming sessions to identify innovative the software projects and play an important role in the successful completion of the projects. Also scheduling project, project staffing in their organization the software projects and play an important role in the successful completion of the projects. Also scheduling project, project staffing in their organization.

CHAPTER 5: CONCLUSION AND LEARNING OUTCOMES

5.1. Conclusion

In conclusion, Laravel is a free and open-source PHP framework created by Taylor Otwell.⁰¹ It is a powerful Model-View-Controller (MVC) PHP framework, designed for developers who need a simple and elegant toolkit to create full-featured web applications. “e-learning platform” help students build their practical skills for dealing with and facing the competitive, ever-changing IT workplace environment. It Allow learner to access high-quality educational resources from anywhere. So that it ensures efficient, reliable and accessible platform for learners and instructor of particular organization. That help to manage and create the videos, assignments and courses for e-learning. The COVID-19 pandemic has highlighted the need for effective e-learning solutions, but there is a significant gap in the availability and accessibility of online learning platforms and resources.

5.2. Learning Outcomes

As an intern of web backend development at NEPBIGYSPAN, I got to learn a lot working on E-learning platform project and other projects. I think that this learning phase helped to improve my knowledge base and development skills exponentially. Working on a real-world project

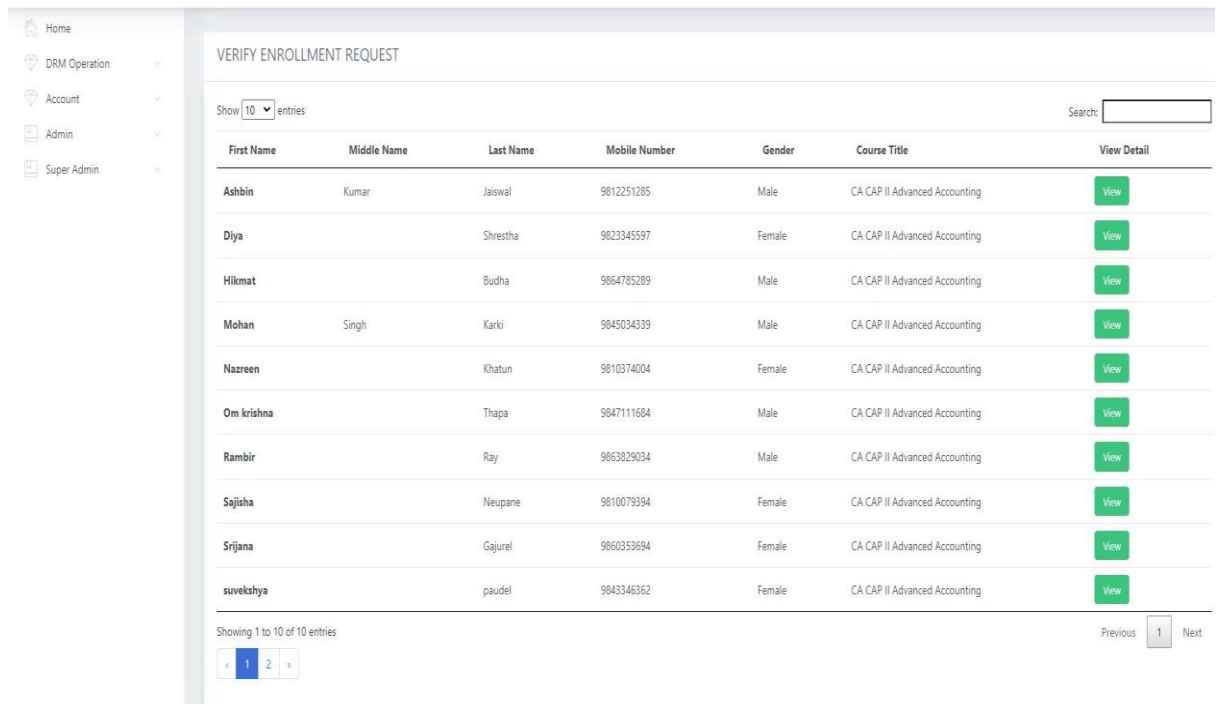
Provided me with the opportunity to understand how real-world apps work and how quality and efficient web applications can be developed using the given tool set. Since backend is a very important part of any system where the user interacts, creating efficient design for a system and optimizing it as much as possible is the job that a backend developer has to do. A small mistake in the backend design or an inefficient logic can significantly hamper the performance of the system. All these things that I was able to learn from the internship are valuable ones and I will carry them with me as long as I am developing backends for web applications.

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APPENDICES

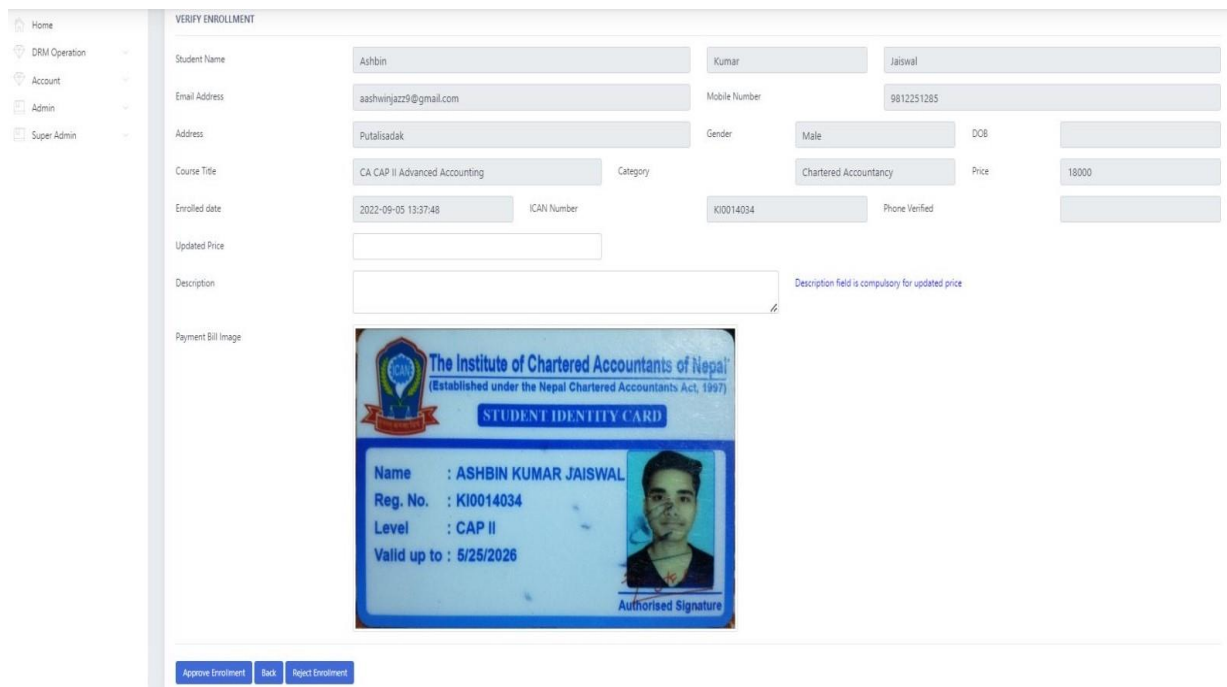
Screenshots:



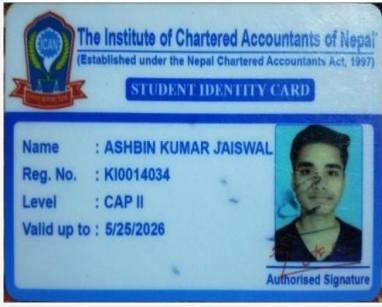
The screenshot shows a web application interface for verifying enrollment requests. On the left is a sidebar menu with options: Home, DRM Operation, Account, Admin, and Super Admin. The main content area is titled 'VERIFY ENROLLMENT REQUEST'. It features a search bar and a table with 10 entries. Each entry includes a 'View' button. Below the table is a pagination control showing 'Showing 1 to 10 of 10 entries' and a 'Previous' button.

First Name	Middle Name	Last Name	Mobile Number	Gender	Course Title	View Detail
Ashbin	Kumar	Jaiswal	9812251285	Male	CA CAP II Advanced Accounting	View
Diya		Shrestha	9823345597	Female	CA CAP II Advanced Accounting	View
Hikmat		Budha	9864785289	Male	CA CAP II Advanced Accounting	View
Mohan	Singh	Karki	9845034339	Male	CA CAP II Advanced Accounting	View
Nazreen		Khatun	9810374004	Female	CA CAP II Advanced Accounting	View
Om Irishna		Thapa	9847111684	Male	CA CAP II Advanced Accounting	View
Rambir		Ray	9863829034	Male	CA CAP II Advanced Accounting	View
Sajisha		Neupane	9810079394	Female	CA CAP II Advanced Accounting	View
Srijana		Gajurel	9860353694	Female	CA CAP II Advanced Accounting	View
suvekshya		paukel	9843346362	Female	CA CAP II Advanced Accounting	View

Screenshots: Verify enrollment request.



The screenshot shows the 'VERIFY ENROLLMENT' form. It contains fields for Student Name, Email Address, Address, Course Title, Enrolled date, Updated Price, and Description. Below these fields is a section for 'Payment Bill Image' which displays a student identity card. The card is for Ashbin Kumar Jaiswal, Reg. No. KI0014034, Level: CAP II, Valid up to: 5/25/2026. At the bottom of the form are buttons for 'Approve Enrollment', 'Back', and 'Reject Enrollment'.

Student Name: Ashbin Kumar Jaiswal
Email Address: aashwinjazz9@gmail.com
Address: Putalisadak
Course Title: CA CAP II Advanced Accounting
Enrolled date: 2022-09-05 13:37:48
Updated Price:
Description:
Payment Bill Image: 

Approve Enrollment Back Reject Enrollment

Screenshots: Verify Enrollment.