SKILLY – WEB BASED CAMPUS FACILITATE PLATFORM

BY

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FINAL YEAR PROJECT REPORT

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering

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APPROVAL

This Project titled "Skilly – Web Based Campus Facilitate Platform", submitted by **Md. Asif Al Muqshit, ID: 201-15-3753** to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on 13-07-2024.

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I hereby declare that, this project has been done by **Md. Asif Al Muqshit, ID: 201-15-3753** under the supervision of **Naznin Sultana, Associate Professor, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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My sincere appreciation and ours go out to Naznin Sultana, an associate professor at Daffodil International University in Dhaka's Department of Computer Science and Engineering. We will benefit from our supervisor's vast expertise and keen interest in "Web Technologies," since they are essential to the project's success. She provided constant academic guidance, encouragement, constructive criticism, intelligent advice, regular and passionate supervision, careful examination of several poor drafts, and meticulous revisions at every stage, all of which helped the project be finished successfully.

Our sincere gratitude is out to Professor and Head Dr. Sheak Rashed Haider Noori for his helpful support in finishing my project. I also wish to thank the staff and other faculty members of Daffodil International University's Department of CSE.

I would want to thank each and every one of my Daffodil International University students who engaged in active discussion on this subject during our homework.

Finally, I would want to sincerely thank our parents for their constant support and patience.

ABSTRACT

My project, Skilly, intends to modernize on-campus educational support through the implementation of a website-based system with multiple functions. In addition to providing a database of academic and professional courses, Skilly also offers a number of tools that are vital to both students and teachers. These capabilities include the ability to place online printing orders, check for plagiarism and grammar, generate assignments and lab reports, and more. Through the integration of various services into a uniform platform, we are able to improve efficiency and make essential resources more easily accessible. My endeavor is the champion of effectiveness, academic honesty, and continuous education. In addition to serving the many demands of the campus community, I am also committed to resolving these needs. The technique that I use involves careful planning, development, integration, and testing in order to guarantee that the final product will be trustworthy and not difficult to use. Feedback from users is taken into consideration throughout the creation and management of Skilly, which is also highly valued. Within the context of supporting academic accomplishment, empowering members of the campus community, and providing opportunities for further education, Skilly acts as a vital effort.

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CHAPTER 1

Introduction

1.1 What is Skilly – Web Based Campus Facilitate Platform?

The urgent need for innovative strategies to improve learning outcomes and streamline administrative processes is greater than ever in the ever-changing educational landscape of the twenty-first century. As a result, our initiative, Skilly, establishes itself as an all-encompassing digital platform intended to function as a versatile instrument for the campus community's faculty, staff, and students. Students encounter plenty of obstacles while attending academic institutions, all of which are effectively addressed by Skilly. Through the integration of various functionalities onto a unified platform, our objective is to optimize workflows, enhance academic integrity, and facilitate both learning and professional growth. Skilly, fundamentally of its users. Our platform offers comprehensive academic support services to students, ensuring that they adhere to stringent standards of quality and integrity. Alongside the ability to facilitate online printing orders, these services are equipped with advanced tools that identify instances of plagiarism and grammatical errors.

Moreover, to go beyond rudimentary administrative support, Skilly provides cutting-edge resources including generators for assignment front pages and lab reports. Furthermore, by simplifying the process of producing scholarly documents, these functionalities empower users to allocate more attention to the substance of their work as opposed to its formatting. Skilly performs administrative and academic support functions while also acting as an entry point to an extensive collection of educational resources. Individuals are granted entry to exceptional educational materials, are able to broaden their perspectives, and develop essential competencies required to thrive in the current competitive environment by enrolling in our carefully curated assortment of scholarly and professional courses. Skilly exemplifies our dedication to fostering the agency of individuals within the campus community and augmenting educational standards by leveraging technology. Our goal is to cultivate an atmosphere that promotes integrity, excellence, and ongoing education by functioning as a centralized hub for all vital services and resources.

1.2 Motivation

Skilly was created as a result of a profound understanding of the changing requirements and obstacles encountered by academic institutions. The educational landscape is changing at a rapid pace due to the rapid advancement of technology, which is resulting in a growing demand for innovative solutions that facilitate academic support, expedite administrative processes, and cultivate an environment that is conducive to professional development and learning.

The multifaceted requirements of students, faculty, and staff are frequently not satisfactorily addressed by conventional educational support systems. They may not possess the exhaustive features, user-friendliness, or integration necessary to effectively support the academic and professional voyage of their users. Skilly was conceptualized as a centralized platform that would address these deficiencies by providing a diverse selection of tools and resources. This was done in recognition of the gaps that were identified.

Skilly's objective is to transform the educational experience by offering a comprehensive, integrated solution that streamlines a variety of administrative and academic responsibilities. Features such as online printing orders, grammar and plagiarism detectors, assignment front page generators, lab report generators, and access to a wide variety of academic and professional courses are all included in the platform. The productivity, academic integrity, and continuous learning of students, faculty, and staff are all enhanced by the meticulous curation of these tools to meet their individual requirements.

Additionally, Skilly is intended to foster engagement and collaboration among the campus community. Skilly encourages interdisciplinary collaboration, knowledge sharing, and peer-to-peer learning through the integration of collaborative tools, group projects, and discussion forums. This fosters an interactive and dynamic learning environment that enables users to excel in both their academic and professional pursuits.

1.3 Objectives

The main goals of this Project are:

- Provide online printing order capabilities to facilitate easy and efficient submission of printing requests. This service helps students, faculty, and staff manage their printing needs conveniently.
- Through various interactive and collaborative tools, Skilly aims to create a vibrant and inclusive campus assistive features like assignment and lab report front page generation.
- Provide users with opportunity to improve their abilities, broaden their knowledge, and keep informed about current developments in the business. This ongoing learning strategy enables students, instructors, and staff to be competitive and well-informed in their particular areas of expertise.
- Offer In addition, we offer grammar and plagiarism checkers to aid in the composition and revision of academic papers. These technologies guarantee that students uphold rigorous standards of academic integrity and professionalism in their schoolwork.

All of these goals work together to provide a solid, user-friendly web-based e-learning and campus helping assistance platform that meets the demands of students, faculties, and staffs.

1.4 Expected Outcomes

The expected outcomes for "Skilly – Web based Campus Facilitate Platform" include:

- Printing Shop Integration: Integration with a printing shop will allow seamless order placement and tracking of print jobs, enhancing convenience and efficiency for users.
- Tools and Resources: Providing state-of-the-art tools such as grammar and plagiarism checkers, assignment generators, and lab report tools will empower students to excel academically while promoting integrity in their work.
- Enhanced Customer happiness: Tailored campus experiences for students that include customizations of their assignment and lab report front pages and conveniently order them to print.
- This has several advantages, including time, cost, and complexity reductions.

All of these anticipated results work together to completely transform our academic enhancement by offering effectiveness, customization, and flexibility to produce a smooth and enjoyable learning and assistive experience.

1.5 Project Management and Finance

Project Management:

- Detailed Project Planning: Developing a comprehensive project plan that outlines tasks, timelines, resource allocation, and milestones for implementing Skilly's various components, such as the printing shop integration and educational tools.
- Implementation of Features: Managing the implementation of Skilly's features, including setting up digital processes for order printing, assignment submission, and report generation, as well as integrating academic tools like grammar checkers and assignment generators.
- Coordination: Coordinating with all, including administrative staff, faculty, and students, to ensure smooth deployment and user adoption of Skilly's functionalities.
- Progress Tracking: Monitoring progress against the project plan, tracking key metrics such as user engagement and system performance to ensure alignment with project goals.
- Design and Prototyping: Start with wireframes and prototypes to see how the platform's features and interface will look and feel to guarantee usability and user-friendliness.
- Development and Testing: When features and functions are produced and integrated, thorough testing processes (unit, integration, and user acceptability tests) are performed to guarantee their functioning and quality.
- Issue Resolution: Quickly addressing any difficulties or obstacles that develop during implementation, changing plans and allocating resources as needed to keep on track.
- Evaluation: Conducting post-implementation assessments to assess Skilly's success in improving efficiency, boosting academic quality, and encouraging collaboration.
- Monitoring and Maintenance: Documentation entails recording lessons learned and best practices to guide future Skilly initiatives or iterations, hence assuring continual progress.

Finance:

- Budgeting: Develop a comprehensive strategy that considers infrastructure, marketing, personnel, software, hardware, and development expenses.
- Resource Allocation: Distribute funds efficiently throughout the project phases, with a focus on the most critical developmental stages and priorities.
- Cost Management: Ensure that project expenditures are consistently monitored and controlled to ensure that they are in accordance with the budget. Identify opportunities for cost optimization without sacrificing quality.
- Risk Management: Identify financial risks and devise contingency measures to avoid unexpected costs or delays throughout development.
- Financial Reporting: To monitor and analyze financial performance, maintain open and accessible financial records, publish regular financial reports, and compare actual expenditure to projected amounts.

The successful development, launch, and sustainability of the "Skilly - Web based campus facilitate platform" are assured within the given resources and strategic goals by striking a balance between strong financial management and competent project management methods.

1.6 Report Layout

Developing a thorough report layout for " Skilly – Web based campus facilitate platform" entails organizing several parts to highlight the specifics of the project, its stages of development, its features, and its results. An outline for the report layout may be seen below:

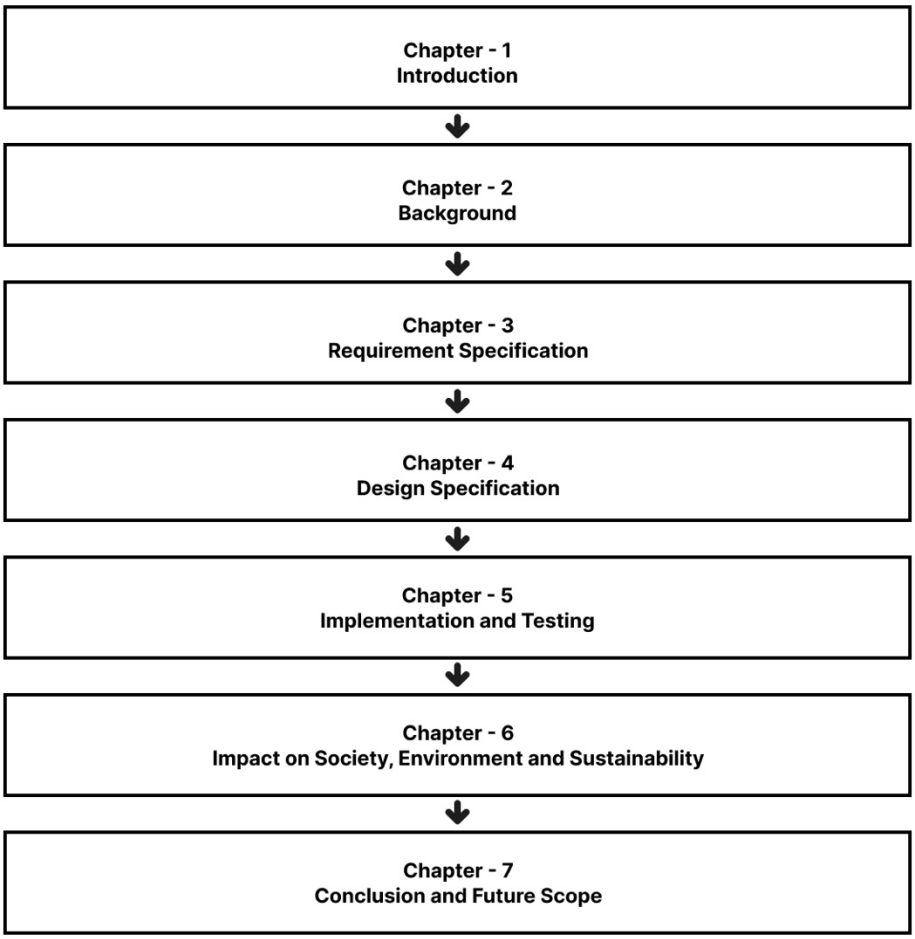

Figure 1.6.1: Report Layout of this Project.

CHAPTER 2

Background

2.1 Terminologies

Here are terminologies related to "Skilly – Web based campus facilitate platform":

- Academic and Campus Support: An all-inclusive platform that helps students, teachers, and staffs to digitally print from home, learn, generate report front pages and check grammar and plagiarism.
- System Administrator: A user role in charge of managing user accounts, maintaining system integrity, and configuring system preferences on the platform.
- Consumer: A user role that uses the platform to browse and submit his PDF to print, generate assignment and lab report front pages, purchase and join courses, and check documentations.
- User Interface (UI): Users may interact with the platform using the graphical user interface (GUI), which consists of navigation, design elements, and user experience.
- Agile Development: A cooperative, flexible, and iterative method of developing software with a focus on continuous improvement.
- Security protocols: Actions taken to safeguard user data, thwart unauthorized access, and ensure data integrity and privacy on the platform.
- Real-time Reporting: Features that enable administrators and organizers to make choices by providing the most recent and rapid data insights.
- Personalization: The process of creating personalized timetables and recommendations for each user based on their travel history, interests, and habits.
- Scalability: The ability of the platform to expand with increasing user counts, workloads, and system needs while maintaining efficiency and usability.

2.2 Related Work

The Skilly project literature review explores educational support systems, online learning platforms, and technological interventions. It highlights their impact on student success, academic integrity, plagiarism detection, and grammar checking. The review also emphasizes user experience design, usability, and accessibility in online learning environments.

- Learning Management Systems (LMS): Course materials are managed, instructor-student communication is facilitated, and assessments are administered through the use of platforms such as Moodle, Canvas, and Blackboard in educational institutions.
- Academic Writing Tools: To help students develop their academic writing abilities and uphold academic integrity, resources like Grammarly, Turnitin, and Scribbr provide grammar checking, plagiarism detection, and writing support services.
- Course management platforms: Websites such as Coursera, Udemy, and Khan Academy provide users with access to high-quality learning materials at any time and from any location with online courses and educational resources covering a variety of subjects.
- Printing Services: A lot of colleges and universities provide online ordering for printing, enabling students to order course materials, research papers, and other documents from a distance.
- Academic Resource Centers: A number of educational establishments have specialized libraries or resource centers where students can obtain academic support services like research, writing, and tutoring. Even though these platforms might have features that are comparable to those of Skilly, each has special qualities, advantages, and disadvantages of its own. To ascertain which platform, or combination of platforms, best suits the needs of your campus community, it is imperative that you thoroughly assess their unique needs and requirements.

2.3 Comparative Analysis

A comparative analysis for "Skilly – Web based campus facilitate platform" involves assessing similar existing platforms or systems in the market. Here's a breakdown for a comparative analysis:

❖ Platform Features and Functionalities:

- Skilly provides grammar and plagiarism checks, assignment front page generators, and lab report generators, unlike systems that specialise in one area. Online printing orders from Skilly make campus printing facilities easier to access without visiting. Skilly supports students, instructors, and staff, unlike Coursera and Turnitin, which serve a wider audience.
- Skilly simplifies print orders that involve order from home service avoiding poorly integrated physical ordering.
- Skilly generates assignment front pages, lab report front pages, and other academic documents where no other online tools are accessible.
- Skilly offers several academic and professional courses and resources for a small fee compared to other platforms.

❖ User Interface (UI) and Experience (UX):

- Skilly has Intuitive navigation, easy access to academic resources where Coursera is User-friendly, but broader focus. Skilly Integrates multiple academic tools where Grammarly is User-friendly for writing tasks. Skilly is Streamlined for online print orders but normally we must physical visit other print shops.
- This platform adapted to the requirements of the campus. It is also Mobile-friendly and inclusive. Here we get a single platform with all the materials together. Skilly gives smooth experience with Simple, easy-to-use UI and better place to peer education.

❖ Security and Privacy Measures:

- User data is securely encrypted, access limits are in place, and privacy rules are regularly updated. Similarly, Coursera, Grammarly, and Turnitin utilise robust encryption, access restrictions, multi-factor authentication, and explicit privacy policies to protect user data and ensure compliance.
- Skilly protects user data with robust encryption and rigorous privacy standards. It protects against breaches and meets industry requirements by using strong authentication, frequent security checks, and swift incident response.

❖ Personalization and Recommendation Systems:

- Enhance Skilly's UX with tech monitoring choices for personalized assistance and printouts. Use user data-driven recommendation algorithms (orders, interests) to provide tool and print choices. Alerts for deadlines and advise, which improve with user input while protecting data privacy.

❖ Customer Support and Engagement:

- Evaluate the customer service skills of competing systems, such as FAQ comprehensiveness, and support ticket processing. Examine their engagement strategies, including loyalty programme advantages and feedback gathering tools like surveys and user forums. Use these insights to improve Skilly's customer service and engagement tactics.

❖ Market Position and User Reviews:

- To find areas for improvement and better understand customer satisfaction and challenges, compare market share, comments, ratings, and reviews of major e-learning and campus assistance platforms. Analyze customer feedback on usability, service efficacy, feature satisfaction, and any reoccurring issues or concerns. Use this data to prioritize upgrades and increase Skilly's competitiveness and customer happiness in the marketplace.

Conducting a comprehensive comparative analysis will provide valuable insights into the advantages, disadvantages, opportunities, and risks associated with the "Skilly – Web based campus facilitation platform," enabling the implementation of modifications and enhancements to ensure a competitive edge in the industry.

2.4 Scope of the Problem

Skilly is a complex web-based platform designed to provide educational support services and resources to college instructors, staff, and students. The project's creation, implementation, and maintenance aim to provide a user-centered instructional platform. Online printing orders, plagiarism and grammar checks, assignment front page generators, and lab report generators are necessary. Online ordering simplifies printing and reduces administrative constraints for academic materials and papers. The platform's powerful assignment front page generator enhances work look and assures formatting compliance. The lab report generator simplifies lab report creation and formatting, letting users focus on their study. Skilly provides access to a carefully selected selection of academic and professional seminars, courses, and resources to help campus members learn, develop, and succeed.

2.5 Challenges

Potential challenges for the Skilly project include integrating complex technological processes such as automated printing and assignment submission across multiple platforms, ensuring robust data security and privacy compliance, encouraging user adoption and engagement with new features, effectively allocating resources for continuous improvement, and navigating a competitive market by innovating and distinguishing from established platforms. To guarantee Skilly's sustainability and success in the e-learning and campus assistive platform environment, these difficulties will need to be addressed by strategic planning, proactive management, and response to user input.

CHAPTER 3

Requirement Specification

3.1 Business Process Modeling

Constructing the flow of business processes part of the "Skilly – Web based campus facilitate platform" business process modeling. This business model diagram describes how Skilly intends to give value to its client groups, earn income via multiple streams, and control expenses while being operationally efficient and competitive in the educational technology industry.

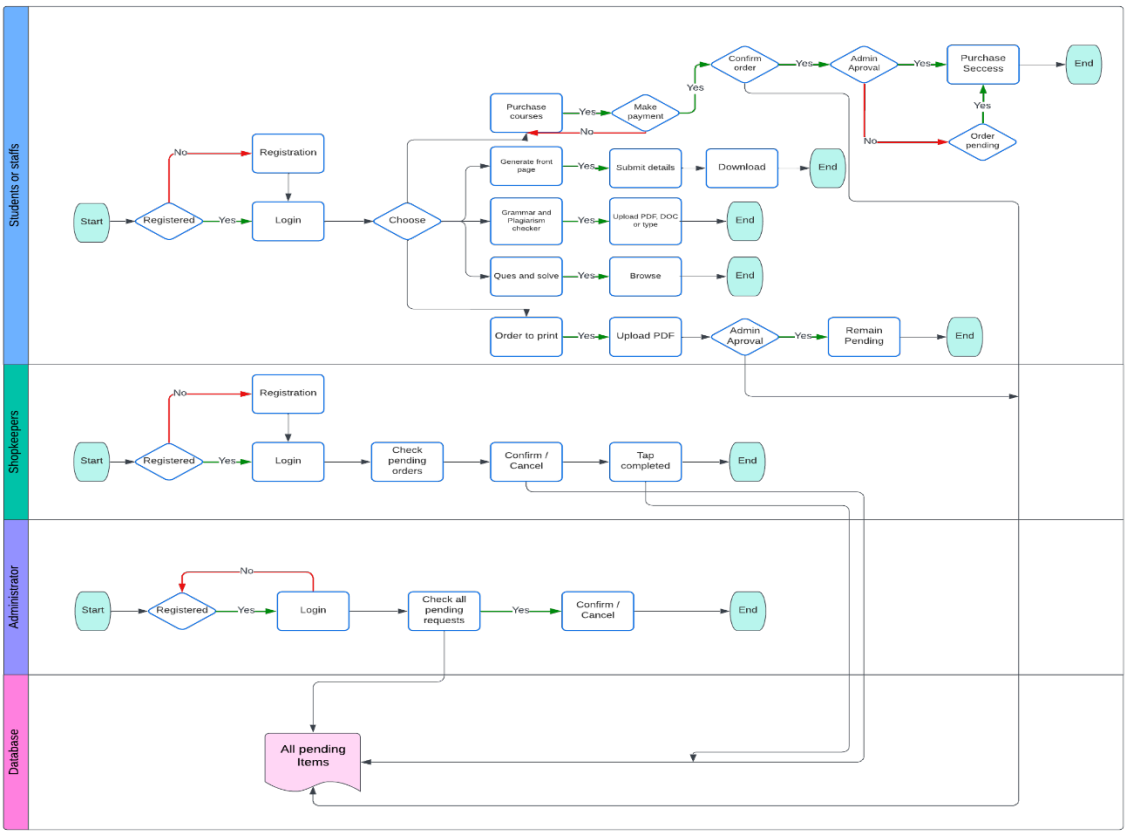

Figure 3.1.1: Business Process Modelling

3.2 Requirement Collection and Analysis

Requirement Collection and Analysis for "Skilly" entails a rigorous approach to gathering and analyzing the needs of system administrators, designers, and users. Here's a quick overview of the method:

- Determine the platform's primary stakeholders, such as students, teachers, shopkeepers and administrators. Be aware of their commitments and expected results.
- Engage stakeholders through surveys, workshops, and interviews to collect requirements, preferences, problem areas, and desired functionality.
- Assess the procedures of the current e-learning platform to identify imperfections, barriers and possible chances for automation or enhancement.
- Develop use cases and user stories that are associated to the features and behaviors of each user role based on the requirements that have been collected.
- State the requirements for security protocols, lodging, reporting, and creating, in addition to other functional requirements. Specify non-functional requirements, including performance, scalability, and safeguarding strategy.
- Regulation requirements in order of importance, considering the impact on the primary features and user experience of the system, sustainability, and response from peers.
- Ensure that all parties involved are in agreement by verifying the gathered requirements. In response to criticism and new information, adjust and enhance.
- Gather all the requirements that have been gathered into a comprehensive document or database that includes functional specifications, use cases, user stories, and features that should be prioritized.
- Conduct review meetings with interested parties to ensure that the criteria as they are written accurately reflect their requirements. Before progressing with the development phase, it is necessary to obtain the consent of peers.

3.3 Use Case Modeling and Description

Order management, reporting, itinerary creation, user registration, and other scenarios are all included in Skilly's use case modelling. Each instance defines the manner in which system administrators, organizers, and consumers interact with one another, delineating specific features and user responsibilities within the platform's process.

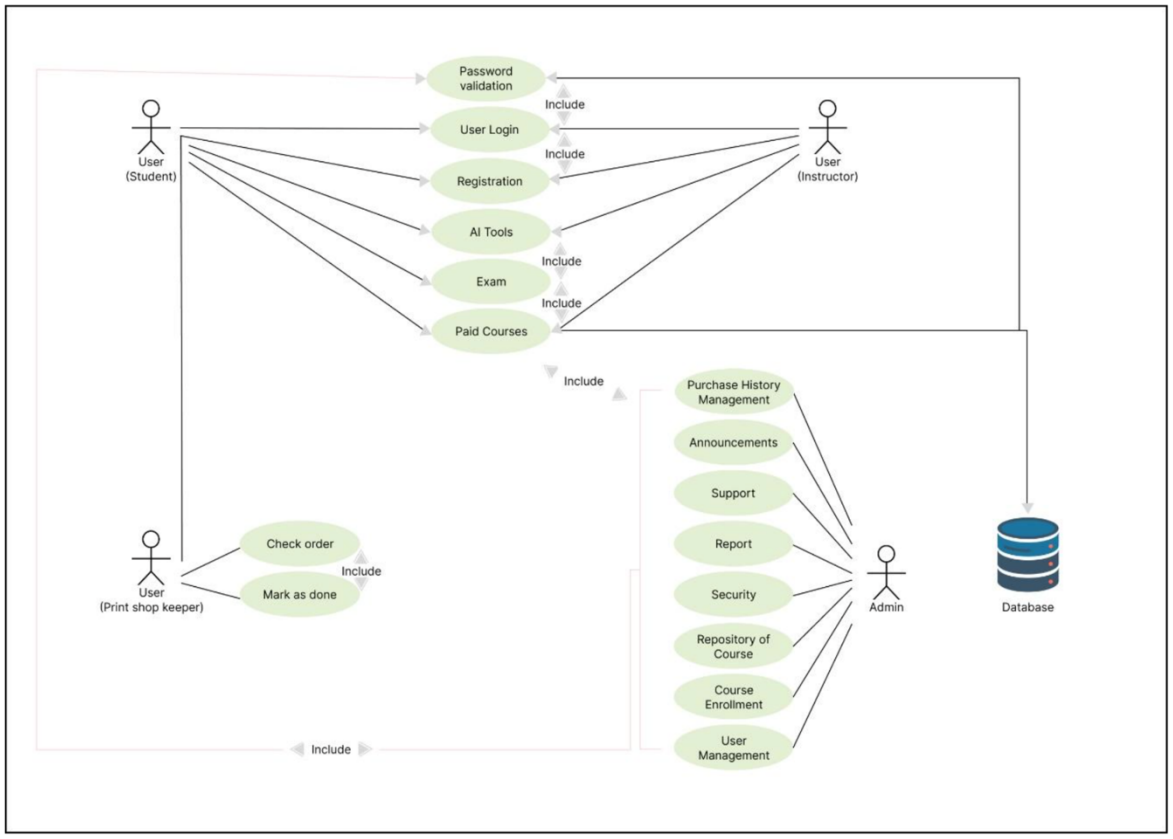

Figure 3.3.1: Use Case Diagram.

3.4 Logical Data Model

With the following items in its logical data architecture, "Skilly – Web based campus facilitate platform" includes users, shops, itineraries, orders, documents, and preferences. The links between these entities establish interactions; consumers may adjust their preferences and place orders linked to certain shops. Entity characteristics collect relevant data and build the platform's structure for efficient management and user interaction.

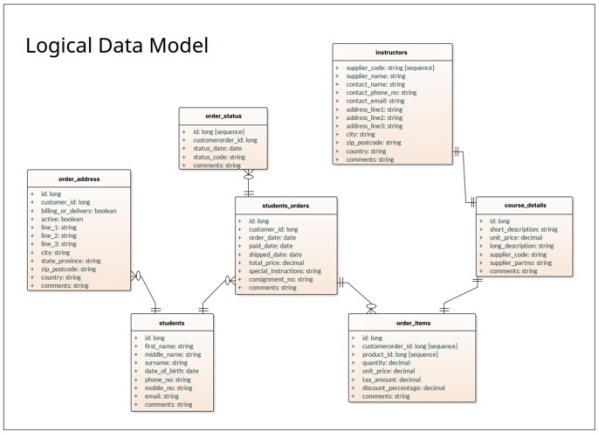

Figure 3.4.1: Logical Data Modeling.

3.5 Design Requirement

Design requirements for "Skilly – Web based campus facilitate platform" constructs multiple aspects to imperfect an effective and user-friendly system:

- User Interface/UX: Create an intuitive, responsive, and visually beautiful interface that is easy to use and enhances the experience of using it across a range of devices.
- Security Measures: Respect industry regulations and legal requirements while implementing robust security measures to safeguard user information, financial transactions, and system integrity.

- ❖ Scalability and Performance: Construct a scalable architecture that can handle increasing user loads and continue to operate at a consistent level even during periods of high usage.
- ❖ Customization and Personalization: Give clients personalized experiences that allow them to change their travel schedules, get advice that are tailored to their needs, and personalize their preferences.
- ❖ Compatibility and Integration: Verify that it is compatible with various browsers, devices, and operating systems. Integrate APIs for smooth connectivity with other services, such travel APIs or payment gateways.
- ❖ Reporting and Analytics: By integrating reporting tools and analytics, administrators may monitor user behavior and system performance and make informed decisions.
- ❖ Accessibility: Ensure that the platform complies with accessibility rules so that a variety of users, including those with impairments of various kinds, may utilize it.
- ❖ Reliability and Maintenance: Create a system with little downtime, easy maintenance, and efficient bug fixes to ensure dependability and continuous service availability.
- ❖ Support and Documentation: Provide comprehensive documentation to users and administrators. Give customer care channels to address queries, grievances, and feedback. Together, these design requirements aim to deliver "Skilly" that is robust, dependable, and user-focused, meeting the many needs of stakeholders while prioritizing usability, security, scalability, and user satisfaction.

CHAPTER 4

Design Specification

4.1 Front-end Design

Skilly's front-end design places a strong emphasis on a modern, intuitive user interface. For smooth cross-platform use, responsive design principles are employed. The UI is designed in a way that makes it easy to navigate and quickly access important features like creating front pages for assignments and lab reports, purchasing PDFs for printing, and creating personalized user profiles. Visual elements such as interactive maps and call-to-action buttons increase user engagement. A positive and productive user experience is ensured by giving accessibility, usability, and aesthetics top importance in the design.

4.2 Back-end Design

Python frameworks, specifically Django, are used in Skilly's back-end architecture. Composer is used for package management, while Django is used as a command-line tool for productive development.

A high-level Python web framework called Django promotes efficient development and simple, straightforward design. It has several built-in capabilities, including an admin interface, authentication, an object-relational mapping (ORM) for database interactions, and a URL routing system. It is well-known for its "batteries-included" mentality. Because Django places a strong emphasis on security, scalability, and reusability, it's a well-liked option for developing reliable web applications fast.

The Model-View-Template (MVT) architectural pattern is adopted by Django, which enables it to function as a framework that offers a structured foundation for the construction of web applications. In addition to managing data access and storage, the model is responsible for defining the data structure and database design. The logic, which is responsible for processing user requests, retrieving data from models, and generating the relevant templates, is included inside views.

For the purpose of defining the structure and appearance of the data that is delivered to the user, templates are HTML files. The routing of URLs is handled by Django through the use of a URL dispatcher. Requests are processed through the use of views, models are used to interact with the database, and templates are used to produce the final result. Additionally, it comes with built-in functionality for identity verification, handling of forms, and an administrative interface for the management of application data.

With its speed, scalability, and strong security features, Django is a key player in the modern web development scene. The "batteries-included" paradigm allows developers to create and deploy apps rapidly by providing various built-in tools and frameworks. Django can easily manage massive amounts of traffic and is therefore well-suited for both small and large-scale projects. Django is a great tool for current online development because it has strong security features that defend against typical web vulnerabilities and because there is a huge and active community that provides information, support, and third-party packages.

4.3 Interaction Design and User Experience (UX)

The primary objectives of Skilly's interaction design and user experience (UX) initiatives are to maximize the effectiveness of user interactions and to ensure that users have a seamless and easy-to-understand experience throughout the whole platform:

Interaction Design:

- Use intuitive navigation to make it easy for users to move between features and platform sections.
- Utilize buttons or prompts that are unambiguous and simple to comprehend to guide users through desired actions, such making a order to print or perform any purchase.
- Maintain a consistent layout, design, and language for the platform to reduce cognitive load and increase user comfort.
- Provide visual feedback for user activity (such as loading indicators or success messages) in order to identify user interaction and maintain responsiveness.

User Experience (UX):

- Personalization: Offer individualized settings, customized itineraries, and personalized suggestions to boost engagement and satisfy a range of interests.
- Accessibility: Verify that the platform meets accessibility standards, can be used by users of all abilities, and provides alternatives for users with disabilities.
- Usability Testing: Perform usability testing to identify and address any issues with the platform's usability and ensure that its functionalities are easy to use and grasp.
- Visual Design and Aesthetics: Use a visually attractive design that puts readability, clarity, and an aesthetically beautiful interface first in order to maximize user engagement.
- Performance and Speed: To minimize user discomfort and encourage use, speed up loading times, and ensure flawless performance on a variety of devices.

"Skilly" aims to provide an enjoyable, efficient, and user-focused experience by including these guiding principles throughout the design process. This encourages user satisfaction and loyalty inside the web-based trip management system.

This figure describes about how the Landing page may look like and the options having on home page.

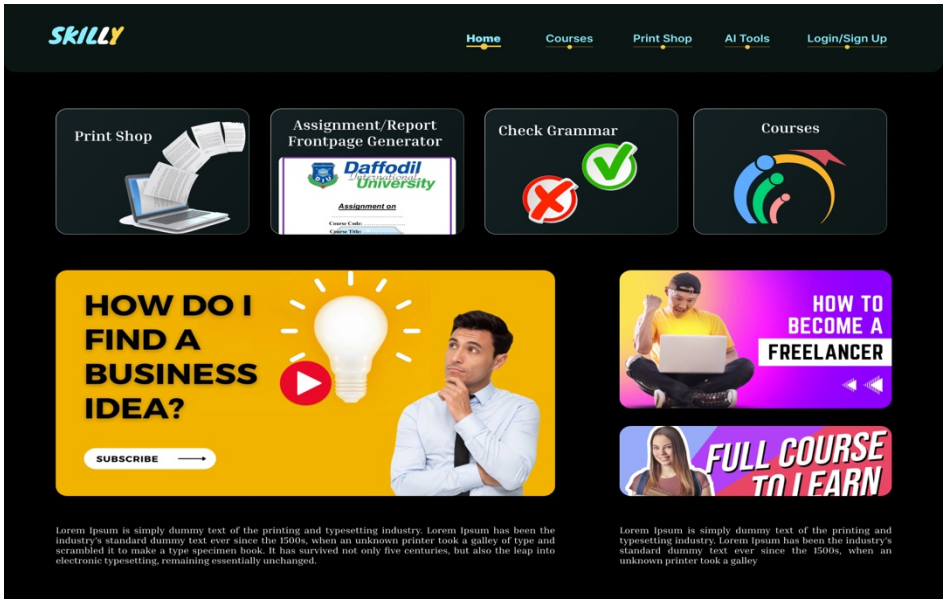

Figure 4.3.1: Landing Page UI(Figma).

This figure describes about the print shop page, shop details and where to submit the PDF to print.

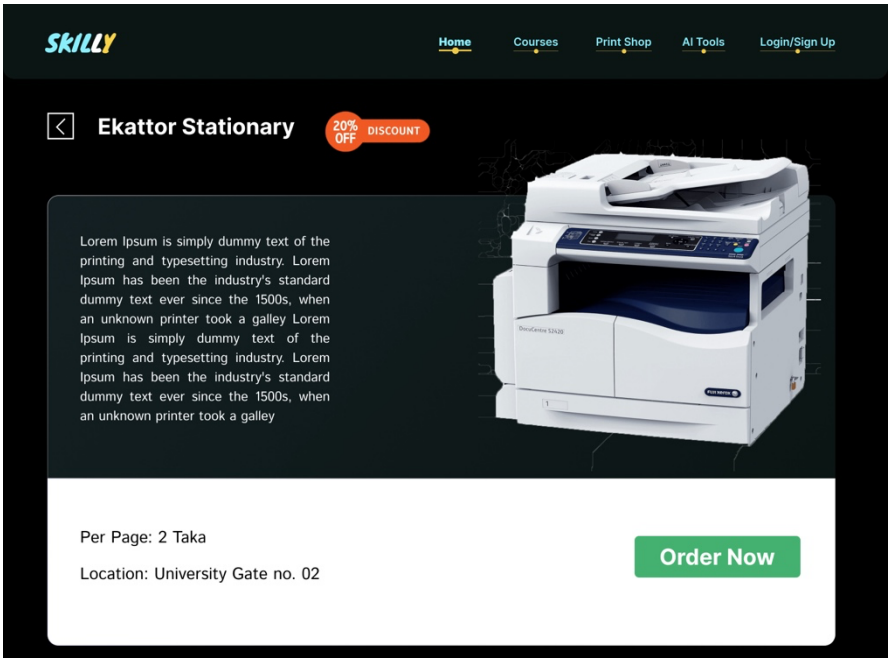

Figure 4.3.2: Print shop Page UI(Figma).

This figure describes about course enrollment and course details.

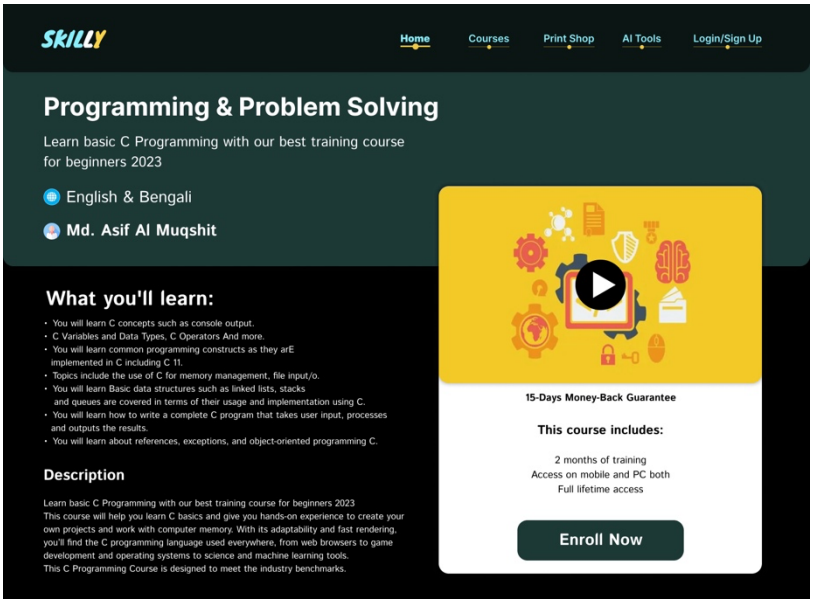

Figure 4.3.3: Course Enrollment Page UI(Figma).

This figure describes about how the User dashboard(student) page may look like and the options having on this specific page.

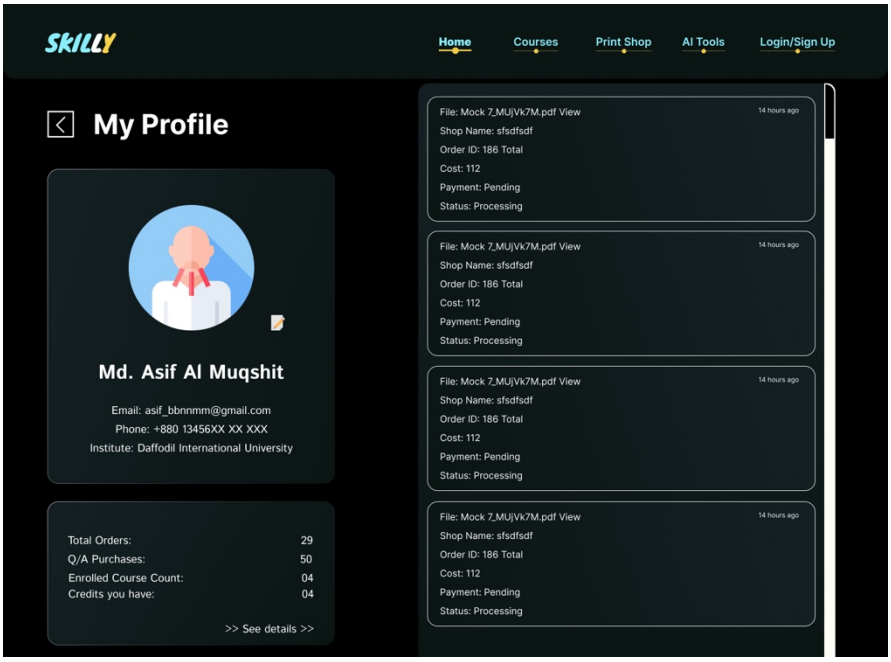

Figure 4.3.4: User Dashboard Page UI(Figma).

4.4 Implementation Requirements

The implementation requirements for Skilly comprise the following technologies:

❖ Front End Technologies

- HTML
- CSS
- SCSS
- PowerShell
- Bootstrap

❖ Back End Technologies

- SQLite
- Python
- Django

❖ Tools

- Web Browser
- Visual Studio Code (*IDE*)

CHAPTER 5

Implementation and Testing

5.1 Implementation of Database

The program's ability to store, manage, and retrieve data is made possible by those Database Tables, which also serve as a dependable basis for the functioning of the application and guarantee data integrity, security, and performance.

This particular figure shows about the database structure and how it is organized as well.

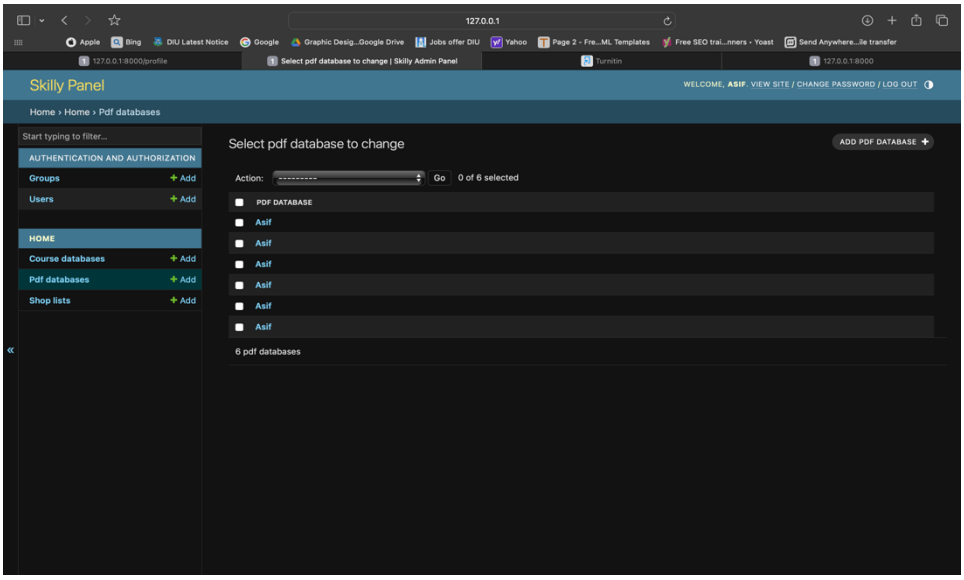

Figure 5.1.1: Database Architecture.

5.2 Implementation of Front-end Design

Skilly's front-end design prioritizes making an interface that is responsive and user-friendly, allowing for simple navigation and an effective user experience for people throughout the globe.

This figure shows about the actual home page implementations and other options.

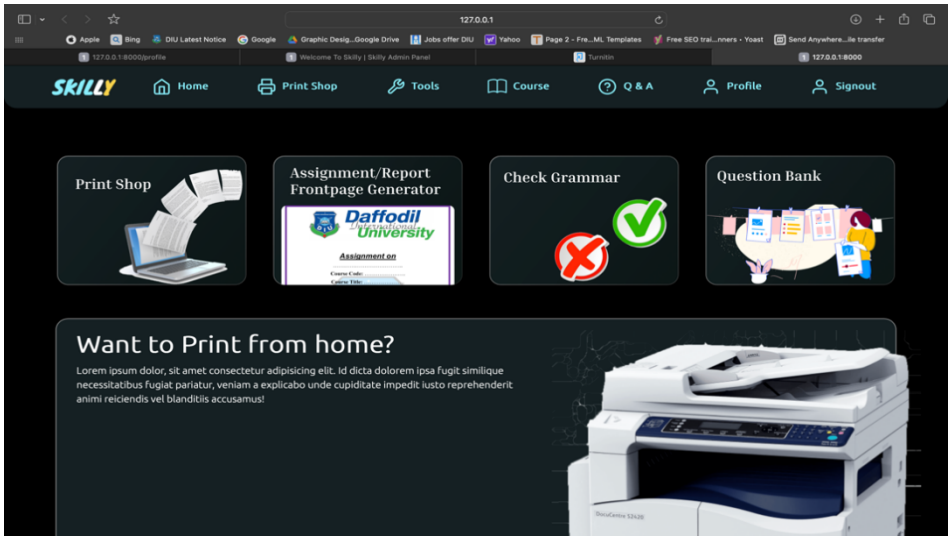

Figure 5.2.1: Landing Page Design.

This is how the home page of Skilly look like. Here show some option as login option, print shop, courses, AI tools etc.

This figure shows about the admin panel and other throughout options and access for admins.

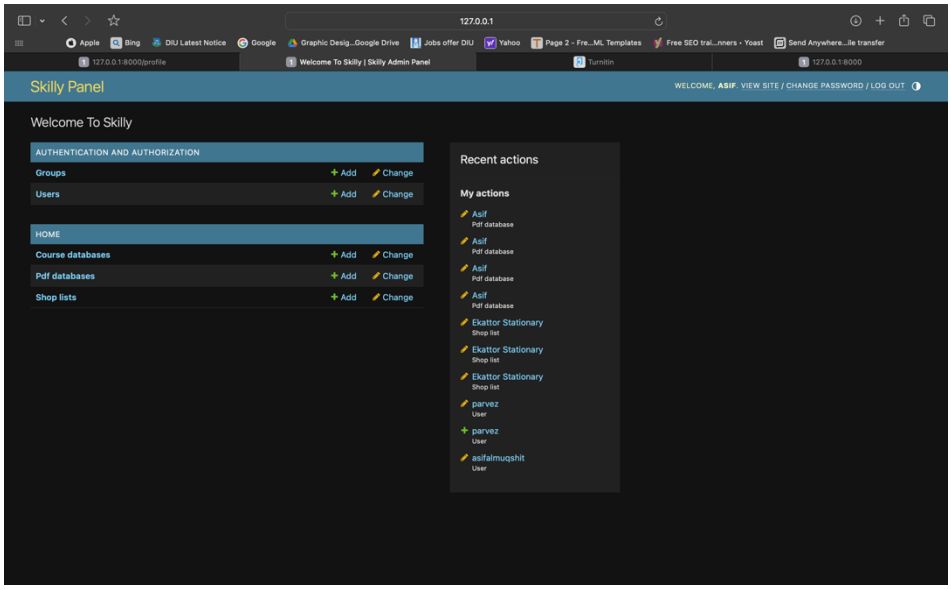

Figure 5.2.2: Admin Dashboard Design.

The administrative dashboard is shown on this page. Additionally, this page offers a plethora of controls for this website.

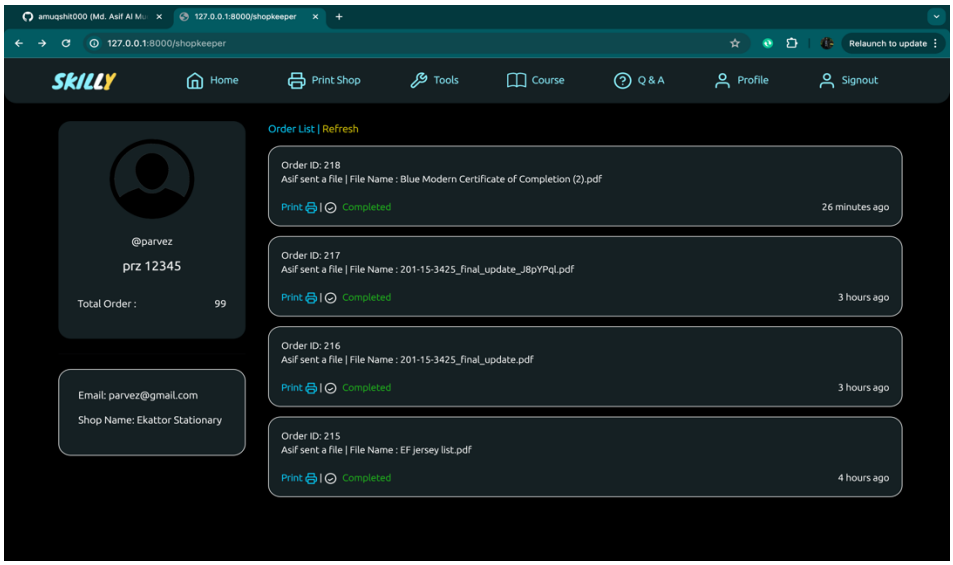

Figure 5.2.3: seller Dashboard Design

The shopkeeper's dashboard is this. Shopkeepers get orders to print and complete via this dashboard. Furthermore, shown in front of this panel are the services, earnings, and pending tasks.

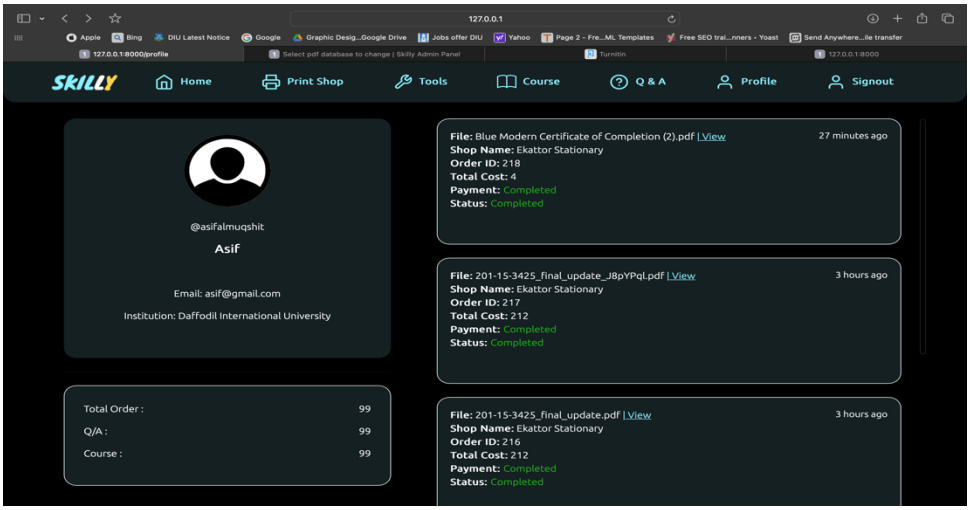

Figure 5.2.4: student Dashboard Design.

This is the profile or dashboard page for students and staff.

5.3 Testing Implementation

The testing implementation for Skilly makes use of a well-organized technique in order to ensure that the platform is successful in terms of its performance, security, usability, and usefulness. The following is a synopsis of the procedures for testing:

Testing Types:

- Unit testing: Verify the proper functioning of various components, characteristics, and units.
- Integrity testing: Analyze the interactions between various components to ensure seamless operation and integration.
- System Testing: Ensure that the system's behavior and overall functioning meet the given standards.
- User Acceptance Testing (UAT): Engage stakeholders in scenario-based testing using real-world situations to ensure that the platform meets user requirements.
- Security testing: To identify vulnerabilities and provide robust protection against potential threats, do security assessments.
- Performance testing: Evaluate the system's responsiveness and stability by assessing its performance under different levels of workload.

Testing Procedures:

- Test Case Development: It is necessary to develop extensive test cases that include all of the capabilities, edge circumstances, and user scenarios.
- Execution and Reporting: Methodically conduct test cases, record results, and give reports that analyze successes and failures.
- Bug Tracking: Utilize bug tracking software to record and oversee detected problems, allocating priority and monitoring their remedies.
- Regression Testing: Conduct regression testing after bug patches or the introduction of new features to verify that current functionality remains intact.
- User Feedback Incorporation: Use User Acceptance Testing (UAT) feedback to enhance usability and user experience.

Testing Environments:

- Development Environment: Developers evaluate and assess individual components and functions inside their local development environments.
- Staging Environment: Conduct testing of integration and system functions in a simulated environment that closely resembles the actual production environment.
- User Testing Environment: Engage real users or stakeholders to conduct User Acceptance Testing (UAT) inside a regulated testing environment.

Automation:

- Automated Testing: Utilize frameworks for automated testing to execute regression and repeated tests.
- (CI/CD): To ensure seamless testing and deployment, it is essential to include automated testing into continuous integration/continuous deployment (CI/CD) pipelines.

Skilly ensures a high-quality user experience by minimizing risks and ensuring functionality, security, reliability, and user happiness via the implementation of rigorous testing environments and processes prior to deployment.

5.4 Test Results and Reports

The test reports and results for Skilly indicate that the system, integration, and unit testing were successfully executed. The platform demonstrates robust functionality, strict respect to security standards, and receives positive feedback from users, ensuring a reliable and exceptional experience.

Test reports and results provide essential documentation of the testing process, including the identified issues, their impact on the program, and recommended improvements.

CHAPTER 6

Impact on Society, Environment, and Sustainability

6.1 Impact on Society

The implementation of "Skilly – Web based campus facilitate platform" holds significant potential for impacting society in several positive ways:

- Enhances educational experiences: Provides tools like grammar and plagiarism checkers, assignment front page generators, and lab report generators. Streamlines academic tasks and improves the quality of students' work.
- Supports lifelong learning and professional development: Offers a diverse range of courses and workshops. Fosters a more knowledgeable, skilled, and competitive community.
- Encourages collaboration and engagement: Promotes collaboration among students, faculty, and staff. Creates a vibrant and supportive academic environment.
- Reduces reliance on physical paper: Provides online printing orders and digital document generation. Minimizes paper waste and decreases the environmental footprint of educational institutions.
- Promotes eco-friendly practices: Encourages digital document handling. Contributes to the conservation of natural resources.
- Ensures long-term sustainability in education: Provides accessible and inclusive learning tools for students of all abilities and backgrounds.
- Focuses on inclusivity and continuous learning: Supports sustainable growth and ensures educational institutions can meet future challenges effectively.

- Commits to regular updates and industry standards: Guarantees relevance and adaptability in a constantly evolving educational landscape.

Skilly enhances society by optimizing academic processes, enhancing user satisfaction, fostering inclusivity, and enhancing overall efficiency in the institutional domain..

6.2 Impact on the Environment

Skilly may have a good impact on the environment via many means:

- Reduction in Paper Usage: Skilly decreases paper use by introducing digital and automated procedures for operations such as order printing and document submission. This not only contributes to paper conservation efforts but also helps in decreasing deforestation.
- Energy Savings: Generally speaking, digital platforms use less energy than conventional techniques that include physical infrastructure and transportation. This may result in reduced carbon emissions and total energy savings.
- Encouragement of Remote Learning: Skilly encourages chances for remote learning by creating a digital learning environment. This lessens the need for travel for conventional schooling and commuting, which lowers transportation-related carbon emissions.
- Efficiency in Resource Management: By streamlining administrative procedures, digital platforms such as Skilly enhance campus resource management and overall efficiency. This may result in less trash being produced and less resources being used.
- Educational Impact: By enhancing access to educational resources and promoting collaboration among students and faculty, Skilly contributes to a more informed and educated society. Educated communities are often more aware of environmental issues and more likely to adopt sustainable practices.

Even though the platform may have an indirect direct environmental effect, it may ultimately benefit the educational sector and environmental conservation efforts by improving logistics, promoting sustainable choices, and reducing unnecessary experience.

6.3 Ethical Aspects

Certainly, the development and implementation of Skilly involve various ethical considerations:

- Privacy and Data Security: Making ensuring that strong safeguards are in place to prevent unauthorized access to or breaches of user data, including academic records and personal information. It's critical to uphold user privacy rights and follow data protection laws like the CCPA and GDPR.
- Ensuring accessibility and inclusivity: Designing Skilly to be accessible to all users, including those with impairments, and guaranteeing equitable access to educational materials and opportunities. Enhancing user experience and supporting educational fairness is achieved by promoting inclusion in design and functioning.
- The integrity: Academic integrity of education may be maintained by offering tools such as plagiarism checkers and promoting openness in the use of academic resources. Promoting ethical conduct and deterring plagiarism or cheating among users.
- Ensuring accessibility for all users involves designing the platform to accommodate users with impairments and following accessibility principles to guarantee inclusiveness for all users.
- User permission and Transparency: Acquiring well-informed permission from users about the utilization of their data and guaranteeing openness in the process of collecting, storing, and using their data inside Skilly. Ensuring users are provided with unambiguous terms of service and privacy policies.
- Community Engagement & Feedback: Actively involving the Skilly community in order to collect feedback, answer any complaints, and consistently enhance the platform according to user input. Establishing trust by engaging in transparent communication and promptly addressing consumer requirements.
- Environmental Impact Consideration: Promoting responsible and sustainable tourism by supporting eco-friendly travel choices and sustainability measures.

  Skilly can build trust, protect user rights, and improve education and society by prioritizing these ethical problems.

6.4 Sustainability Plan

Skilly's sustainability plan must ensure long-term sustainability, reduce environmental damage, and promote morality. An outline:

- Employee Engagement:

  Fostering a supportive work environment in which workers are appreciated and encouraged to share ideas for innovation and development is an important step in employee engagement. Make available chances for professional growth and development.

- Ethical Business Practices:

  Uphold high ethical standards in all areas of Skilly's operations, including honest communication, fair treatment of workers and partners, and compliance with legal and regulatory obligations. This is an example of an ethical business practice. Make certain that ethical sourcing methods are followed for both content and technology, moreover with the goal of fostering honesty and trust among stakeholders.

- Continuous Improvement:

  Utilize agile development methodologies to incrementally improve Skilly's features and user experience, taking into account feedback and market trends. Consistently assess and enhance operational procedures to maximize efficiency and efficacy, guaranteeing that Skilly stays adaptable to changing educational requirements.

- Responsible Data Handling:

  Ensure user privacy and data security by establishing strong safeguards for data protection and responsible management of personal information. Comply with stringent data protection standards such as GDPR and CCPA, and provide clear and open communication with users on the use of data and privacy rules.

- Social Responsibility:

  Display dedication to social responsibility by active endorsement of educational projects and community involvement activities. Collaborate with educational institutions, non-profit organizations, and local communities to advance the availability of high-quality education and have a beneficial impact on social welfare.

- Financial Viability:

  Ensure In order to guarantee long-term financial viability, Skilly must establish a strong and resilient revenue model. Possible sources of revenue may include fees charged to institutions or consumers for subscriptions, income generated from premium features based on transactions, or collaborations with educational service providers. Ensuring stability and growth requires diversifying sources of income and regularly evaluating financial performance in relation to operating expenditures and development expenses.

- Technological Innovation:

  In order to guarantee long-term financial viability, Skilly must establish a strong and resilient revenue model. Possible sources of revenue may include fees charged to institutions or consumers for subscriptions, income generated from premium features based on transactions, or collaborations with educational service providers. Ensuring stability and growth requires diversifying sources of income and regularly evaluating financial performance in relation to operating expenditures and development expenses.

- Ethical Standards:

  Maintaining elevated ethical principles is essential for establishing trust and credibility among consumers. Skilly should give top priority to safeguarding data privacy and security by adhering to rules such as GDPR or CCPA in order to ensure the protection of user information. Enhancing academic honesty via the provision of technologies such as plagiarism detectors and establishing clear regulations on data use and user rights serves to strengthen.

- Feedback and Improvement:

  It is crucial to have strong feedback systems in order to obtain valuable information from users and stakeholders. Consistently examining user input, doing usability testing, and making incremental enhancements based on results guarantee that Skilly fulfills user expectations and successfully tackles growing difficulties. Regularly monitoring performance metrics and user satisfaction indicators allows for the identification of areas that may be improved and informs strategic decision-making.

CHAPTER 7
Conclusion and Future Scope

7.1 Discussion and Conclusion

Skilly has undergone thorough examination and execution to improve the educational experience and simplify campus operations. The platform's emphasis on digital transformation, including automated procedures and modern academic tools, enables it to greatly diminish paper use, alleviate administrative costs, and foster sustainability. Skilly enhances academic integrity and quality by including grammar checks, plagiarism detectors, and collaboration tools. Additionally, it promotes a dynamic and interactive learning.

In addition, Skilly's dedication to ethical business practices, which include responsible data management and transparency, guarantees user confidence and adherence to international regulations like GDPR and CCPA. Interacting with the community via feedback loops and continual improvement activities has been essential in enhancing the platform to properly fulfill the demands of users. Skilly's commitment to making a good effect in and beyond the educational industry is reinforced by its implementation of employee engagement and social responsibility programs.

Skilly embodies a progressive approach to education and campus management, using technology to enhance effectiveness, environmental friendliness, and inclusiveness. The educational platform sets a new benchmark with its extensive features and dedication to ethical methods, boosting academic achievement as well as environmental and social accountability. Skilly is poised to take the lead in revolutionizing the educational field by consistently adapting to user input and industry trends. This will ensure that it continues to be a relevant and reliable resource for students, instructors, and administrators. Skilly's journey is in its early stages, and its ability to influence a more effective, fair, and environmentally friendly future for education is both thrilling and full of promise.

The Skilly project represents a significant advancement in the manner in which educational institutions regulate administrative processes and make it easier for students to achieve academic excellence. Through the use of digital and automated solutions, Skilly is able to enhance productivity, reduce its effect on the environment, and cultivate a climate that encourages collaboration and inclusion in the classroom. The fact that the project places such a strong focus on tough security measures, ethical standards, and continuing refinement ensures that it will continue to be a dependable and essential tool for students, teachers, and administrators.

The strategic planning and comprehensive sustainability strategy that Skilly has implemented have put the company in a position to achieve long-term success and growth. The company's commitment to innovation, assuring the satisfaction of its customers, and meeting its social duties will further improve the positive effect that it has on the educational sector. As a result of Skilly's ability to not only overcome existing challenges in the field of education but also to lay the groundwork for future advancements, the educational environment is made more efficient, equitable, and long-lasting.

7.2 Scope for Further Developments

"Skilly- Web based campus facilitate platform" presents several prospects for additional development and improvement:

- Advanced AI Integration: By integrating advanced artificial intelligence (AI) and machine learning, Skilly's tools may be improved. This includes features like customized learning suggestions, adaptive exams, and automated content development that are specifically designed to meet the unique requirements of each student.
- Enhanced Collaboration Feature: By extending collaboration tools beyond conventional forums to include real-time virtual classrooms, interactive group projects, and peer-to-peer mentoring features, users may experience more profound involvement and facilitate the flow of information.

- ❖ Enhanced Mobile Experience: Enhancing Skilly for mobile devices via responsive design and specialized mobile applications may enhance accessibility and usability, meeting the increasing need for mobile learning and convenient access.
- ❖ Gamification and Engagement Strategies: By using gamification components such as badges, leaderboards, and interactive challenges, we can encourage users to participate more actively, boost their motivation, and improve the overall user experience on Skilly.
- ❖ Global Expansion and Localization: Expanding Skilly's reach to a wider worldwide audience may be achieved by localizing information, accommodating numerous languages, and adapting to varied educational systems and cultural situations. This will result in a larger user base and a greater global influence.
- ❖ Blockchain for Credential Verification: Integrating blockchain technology to provide safe and transparent verification of credentials, such as diplomas and academic accomplishments, may bolster confidence and legitimacy within the educational community.
- ❖ Continuous Security Enhancements: Remaining diligent in establishing cybersecurity measures, including biometric authentication, and increasing data encryption methods to ensure the protection of user privacy and defend against constantly changing cyber threats.
- ❖ Partnerships and Ecosystem Expansion: Skilly aims to enhance its ecosystem by partnering with educational institutions, technology suppliers, and content producers. This collaboration will enable the integration of complementary services and the provision of complete solutions that are specifically designed to meet the changing educational requirements.

By taking advantage of these growth options, "Skilly" might become a more innovative and complete travel management platform that improves functionality, accessibility, and user experience for tourists globally.

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Appendix A

Course Outcomes, Complex Engineering Problems (EP) and Complex Engineering Activities (EA) Addressing

Title: SKILLY – WEB BASED CAMPUS FACILITATE PLATFORM

Student ID: [201-15-3753]

CO Description for FYDP

CO	CO Descriptions	PO
	Phase -I	
CO1	Integrate recently gained and previously acquired knowledge to identify a **web based travel management** problem for the Final Year Design Project (FYDP)	**PO1**
CO2	Analyze different aspects of the goals in designing a solution for this FYDP	**PO2**
CO3	Explore diverse problem domains through a literature review, delineate the issues, and establish this goals for the FYDP	**PO4**
CO4	Perform economic evaluation and cost estimation and employ suitable project management procedures throughout the development life cycle of the FYDP	**PO11**
	Phase -II	
CO5	Design and develop technical solutions and system components or processes that meet specified requirements, ensuring compliance with public health and safety standards, as well as considering cultural, socioeconomic, and environmental factors in this FYDP	**PO3**
CO6	Choose and apply appropriate methodologies, resources, and contemporary engineering and IT technologies to address complex engineering processes, encompassing prediction and modeling, while adhering to relevant constraints in this FYDP	**PO5**
CO7	Analyze societal, health, safety, legal, and cultural considerations, along with associated responsibilities, in the context of professional engineering practice and the resolution of this problem, employing logical reasoning guided by contextual understanding.	**PO6**
CO8	Comprehend and evaluate the enduring sustainability and impact of professional engineering endeavors in addressing intricate engineering challenges within social and environmental frameworks.	**PO7**
CO9	Implement ethical principles and adhere to professional standards and norms in this FYDP	**PO8**
CO10	Capable of operating proficiently both individually and as a team member or leader across diverse teams and interdisciplinary settings in this FYDP.	**PO9**
CO11	Proficiently communicate with the engineering community and broader society regarding complex engineering endeavors, including the ability to comprehend and generate comprehensive reports and design documentation, as well as provide and receive clear instructions throughout this FYDP.	**PO10**

CO12	Acknowledge the importance of self-directed and life-long learning within the evolving landscape of technology, and possess the readiness and capability to engage in lifelong learning endeavors.	**PO12**

Addressing CO (1 to 8), Knowledge Profile (K), Attainment of Complex Engineering Problems (EP), and Attainment of Complex Engineering Activities (EA)

Addressing CO (1 to 8), Knowledge Profile (K), Attainment of Complex Engineering Problems (EP):

SN	EP Definition	Attainment	CO	Justification (with Knowledge Profile)	References
1.	**EP1: Depth of Knowledge required**	Yes	CO1, CO2, CO3	My project requires HTML, CSS, JavaScript, Django, python, API integrations which cover K3 and K4.	**Page no:** [12,14-16,21], **Section:** [3.1, 3.3, 3.4, 5.1, 5.2] **Page no:** [17-24], **Section:** [4.1, 4.2, 4.3, 5.1, 5.2, 5.3]
				A web-based front end has been developed to facilitate the integration of the diverse components necessary for our project. This covers K5 and K6.	**Page no:** [12-16], **Scetion:** [3.1, 3.3, 3.4, 3.5] **Page no:**

					[17-20], **Section:** [4.1, 4.2, 4.3, 4.4]
				After research, Campus Companion emerges with unique features, user-friendliness, customization, and robust security, standing out in the market.	**Page no:** [8-10], **Section:** [2.2, 2.3]
2.	**EP2: Range of Conflicting Requirements**	Yes	CO2, and CO7	The project confronts **EP-2** by addressing challenges like integrating diverse features while maintaining user experience, balancing security with functionality, scalability, real-time data synchronization, evolving industry standards, privacy regulations compliance, and implementing effective recommendation systems through careful planning, flexible development, and continuous adaptation.	**Page no:** [11] **Section:** [2.4, 2.5]
3.	**EP3: Depth of analysis required**	Yes	CO2	After identifying user problems and understanding the target audience and competitors, we create Ui/UX designs and ensure user data security.	**Page no:** [17-20], **Section:** [4.2, 4.3, 4.4]
4.	**EP4: Familiarity of Issues**	Yes	CO3	Skilly stands out in the market due to its unique features, user-friendly interface, customization options, and robust security measures.	**Page no:** [8-11], **Section:** [2.2, 2.4]

5.	**EP5: Extends of application codes**	No	CO5	N/A	N/A
6.	**EP6: Extends of stakeholders involved and conflicting requirements**	No	CO3	During our meeting with shop owners, we thoroughly reviewed our plan, considering their available facilities.	N/A
7.	**EP7: Interdependence**	Yes	CO5	My project has to handle a number of subsystems, getting into with the design of the project itself, progressing to the creation of a user-satisfactory frontend design, and culminating in the development of a backend incorporating a database.	**Page no:** [21-23], **Section:** [5.1, 5.2]

Addressing CO11 with Complex Engineering Activities (EA) [Some or all of the following]:

SN	EA Definition	Attainment	CO	Justification	References

1.	**EA1: Range of resources**	Yes	CO11	This system is developed by a highly competent team with expertise in several areas. The team carefully allocates financial resources for infrastructure, marketing, and development. They use tools such as XAMPP, Visual Studio Code, and numerous programming languages, frameworks, and databases to ensure efficient execution.	**Page no:** [20], **Section:** [4.4]
2.	**EA2: Level of interaction**	No		N/A	N/A
3.	**EA3: Innovation**	No		This project includes a system called print from home. This is going to be add another era for saving time.	N/A
4.	**EA4: Consequences for society and the environment**	Yes		This project prioritizes social impact and environmental sustainability by improving students' effectiveness, advocating for sustainable academic methods, and guaranteeing ethical factors such as robust security, privacy, and transparent business practices. This will promote societal well-being and environmental stewardship.	**Page no:** [26-31], **Section:** [6.1, 6.2, 6.4]

5.	**EA-5: Familiarity**	Yes		The Comparative Analysis for "Skilly - Web-based campus assistant" assesses market competitors such as Coursera and Grammarly, emphasizing its distinctive characteristics, security measures, customization options, and customer interaction. This analysis enhances comprehension of the market and provides insights for making strategic decisions to improve competitiveness and value proposition.	**Page no:** [7-10], **Section:** [2.1, 2.3]

Addressing CO (4, 9, 10, and 12):

SN	COs	Attainment	Justification	References
1	CO4	Yes	The project collects CO4 by using financial management techniques such as budgeting, resource allocation, cost management, and risk mitigation. This ensures that funds are distributed efficiently, expenditures are monitored, and opportunities for optimization are identified, all while preserving quality.	**Page no:** [4-5], **Section:** [1.5]
2	CO9	Yes	The project adheres to ethical principles by giving priority to user privacy, ensuring openness in data use, offering unbiased ideas, respecting cultural sensitivities, and encouraging accessibility. This fosters confidence, transparency, and integrity among all parties involved.	**Page no:** [28], **Section:** [6.3]
3	CO10	No	N/A	N/A
4	CO12	Yes	The implementation phase of the project focuses on continuous learning via various testing methods, automated frameworks, and CI/CD pipelines. This ensures continuous improvement and adaption to new technology trends. The analysis of outcomes helps refine the platform to make it more effective.	**Page no:** [21-25], **Section:** [5.1, 5.4]

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