**ADMIN FEATURES FOR DESIGN AND IMPLEMENTATION FOR AN INTEGRATED STREAMLINED CONTROL EFFICIENCY**

A Capstone

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# INTRODUCTION

In the current business landscape, some merchandisers continue to perform manual tasks despite rapid technological advancements. To address this issue, the Admin is proposing the implementation of a cutting-edge Cluster B Merchandising Management System with unique features tailored specifically for the Great Wall Arts Company. This comprehensive system is designed to tackle existing challenges and provide an efficient solution to support the company's daily operations.

**BACKGROUND OF THE CAPSTONE PROJECT**

The Merchandising Management System is designed to provide administrative support for handling legal documents and creating secure user accounts for employees working within the company. The system includes features that allow for the automatic segregation of files, providing a more efficient and organized approach to document management.

Currently, the Great Wall Arts Company relies on manual methods, such as Excel, Google Drive, and hard copies of files, to perform their job tasks.

The proposed Merchandising Management System aims to address these challenges by offering a comprehensive solution through various modules, features, and integration, providing a more streamlined and effective approach to document management and administrative tasks within the company.

**CONTEXT AND SCOPE**

The current operational framework at Great Wall Arts Company lacks a comprehensive administrative system, leading to a heavy reliance on manual tracking and recording methods facilitated through Excel, Google Drive, and physical files. This manual approach presents significant challenges that necessitate immediate attention.

In response to this operational gap, the proposed Merchandising Management System seeks to address the issue by developing an integrated administrative platform tailored specifically for the retail industry. The primary focus of this system will center on the seamless integration of administrative functions and the establishment of user accounts. Notably, a key feature of this system will be the implementation of an automated file segregation process, effectively eliminating the need for manual handling by employees. This integration will encompass all administrative subdomains, including HR, logistics, core operations, and finance, streamlining and unifying operational processes across the organization.

The admin system will function as a centralized repository for all legal documents and files relevant to the various subdomains. It will offer an automated file segregation feature, ensuring that any inputted files are systematically sorted into the appropriate subdomain folders, thereby enhancing efficiency and accessibility.

Furthermore, user accounts will be meticulously managed by the admin, granting employees access based on their specific roles within the organization. This approach will serve to restrict access to sensitive information, ensuring that employees can only access data pertinent to their respective positions, thereby bolstering security and data confidentiality.

**PROBLEM STATEMENT**

The company is currently facing the following challenges:

1. Manually tracking and storing all data using Google Drive, Excel, and hard drives.

2. Time-consuming input, storage, and retrieval of necessary files.

3. Lack of an administrative system to operate their business efficiently.

The administrative system is designed to effectively address and solve issues by integrating user accounts and segregating files. This seamless integration allows the company to effortlessly track, input, and store all data through a comprehensive system.

**GOALS AND OBJECTIVES**

The primary objectives and goals of the project are as follows:

1. Establish a thorough system for creating and managing secure user accounts for employees with restricted access to ensure confidentiality of sensitive information.

2. Implement an automated process for segregating files within each subdomain to streamline data management and access control.

3. Develop a comprehensive system for storing and organizing various types of data, files, and legal documents, ensuring efficient retrieval and secure archiving.

4. Create an integrated administrative system that seamlessly connects and manages all subdomains, facilitating centralized control and oversight.

**IMPORTANCE AND RELEVANCE**

The Merchandising Management System encompasses the integration and management of user accounts, including the handling of legal documents and segregation of files. Implementation of this system leads to improved operational efficiency, enabling administrators and employees to adeptly manage documents and carry out their tasks. This project holds significant relevance in the contemporary business landscape, where the efficient management of administrative and client processes can profoundly impact the operational success of the company.

**DOCUMENT STRUCTURE**

The document is structured into several sections, each dedicated to different aspects of the capstone project. These sections encompass system design, development process, implementation details, testing and validation, and evaluation of the final system. Upon completion of this document, readers will have acquired comprehensive knowledge of the Merchandising Management System: Admin and its influence on administrative process efficiency.

# LITERATURE REVIEW

**AGILE SCRUM METHODOLOGY OVERVIEW**

**Büşra Özdenizci,  Towards Agile Marketing (2024) -** Agile marketing, which emphasizes the concepts of adaptability, speed, and customer-centricity, is a paradigm change in strategic marketing. Agile techniques are derived from software development methodologies that prioritize flexibility and iterative progress. They have been successfully applied in the marketing area to meet the dynamic and fast-paced demands of modern markets. This strategy emphasizes responsiveness to customer needs and market developments, cross-functional cooperation, and ongoing improvement. Marketing teams may stay competitive in a continuously changing business environment by implementing new campaigns, quickly adapting strategies, and utilizing real-time feedback by integrating varied approaches like Scrum and Kanban. In order to better understand how Agile methods might convert marketing strategies into more effective ones, this chapter will examine the transformative potential of Agile Marketing.

**G. V. Paramonov,**[**L.VBerketova**](https://typeset.io/authors/l-v-berketova-2zl3wa8jns)**, Merchandising a way to attract and retain customers(2023)-** One of the subfields of marketing that is now expanding quickly is merchandising. It is observed that this term is becoming close to the multivalued term "quality" in certain forms. The notion of "merchandising" items is examined by the authors of the essay. Both the broad classification (maker and seller) and the types of merchandising (visual and category) are provided. Using materials at the point of sale, arranging shelves, dividing up available space between competing products, controlling the flow of customers around the store, and putting up special displays are some of the primary merchandising strategies.

[**Vitalii Trach,**](https://typeset.io/authors/vitalii-trach-igtnqpvn05)[**Vlasta Shvahireva**](https://typeset.io/authors/vlasta-shvahireva-3rlab6eh4b)**, The main aspects of the introduction of Scrum methodology in the production management of innovative enterprises (2021)-** The swift growth in innovation and the need to meet new standards for cutting-edge technology have led to the development of agile approaches, most notably the SCRUM methodology. Antiquated techniques are unable to produce in a flexible, quick, or inventive manner, which makes it impossible for businesses to remain competitive. This study investigates the appearance of the SCRUM methodology, the variables that influenced it, and the primary problem that it resolved. Additionally, it explains the general definition of SCRUM as well as its nomenclature, fundamental ideas, and associated events. The three primary elements of the contemporary methodology—what an SCRUM board is, what it isn't, which columns should be added, and how to add them—are thoroughly examined.

**Wisnumurti Wisnumurti, Penerapan agile development methodology pada sistem informasi penjualan ecer dan grosir toko kinanti martapura (2022)** - The use of agile development methodology in the business domain of sales information systems is an intriguing area to research in the digital age given current technological advancements. The creation of this approach is one of the areas that computer scientists have researched extensively and is one that is more effective to implement. The Kinanti Sembako Store has an issue with their transaction and stock recording section. They still do manual calculations in this section using a book for inventory, which makes all of the activities in this section ineffective and inefficient, including recording transactions, stock, data search, and reporting. Agile methodology is employed in the creation of sales information systems.

[**Amanda Teixeira Barbosa**](https://typeset.io/authors/amanda-teixeira-barbosa-240f5qk4)**, Agile methodologies: and its applicability in the marketing area (2022)** - The purpose of this article was to conduct an exploratory study to examine many agile approaches and their suitability for use in marketing. Agile methodologies have long been used in the software development and business sectors, but they are increasingly being used by PR and communication firms. This methodology was developed to expedite software development projects and address issues that arose during the process, which involved the use of conventional management techniques. The approach used in exploratory research is more flexible and, as a result, involves fewer formal procedures.

**ENTERPRISE ARCHITECTURE CONCEPTS**

**Djarot Hindarto, Enterprise Architecture Development to Strengthen Sustainability in the Supply Chain (2023)-** In the realm of modern multinational company, supply chain operations and sustainability have become increasingly important. The goal of this study is to better understand how Enterprise Architecture contributes to the sustainability of enterprise supply chains. Through the comprehensive integration of Enterprise Architecture concepts, this study offers a framework that enables firms to develop sustainable sustainability plans. Supply chain important aspects that affect sustainability, like waste management, energy efficiency, resource usage, and choosing sustainable business partners, are identified, managed, and integrated with the help of enterprise architecture. This study shows how implementing progressive enterprise architecture can help firms address social and environmental issues, improve supply chain sustainability, and create long-term value for enterprises and their business ecosystems.

[**Darina Alexandrovna Sizova,**](https://typeset.io/authors/darina-alexandrovna-sizova-505eslv7cu) **Merchandising as an element of the competitiveness of a trading company in modern times (2024)-** Modern methods of product promotion are required due to the increased competitiveness among market competitors. Professional salespeople aim to show their goods in a positive light for themselves and pay attention to it, while applying pressure to the consumer that compels him to take specific actions. These approaches are based on the psychological attitudes of potential buyers. Among these strategies, merchandising holds a particular position since it motivates customers to make purchases and raises the company's turnover. The companies who actively incorporate these ideas into their operations and pay attention to the appearance, packaging, and placement of their products on the counter, in addition to their quality and pricing, are the market leaders.

[**Ana B. Costa,**](https://typeset.io/authors/ana-b-costa-170efete) **Enterprise Architecture Management : Constant maintenance and updating of the Enterprise Architecture (2022)-** An enterprise architecture's ability to present a comprehensive picture of the organization is its most crucial feature . An enterprise architecture needs to help translate corporate strategy into day-to-day operations and concentrate on procedures, people, activities, workflows, and pertinent information in order to be a key component of an organization. Enhancing the effectiveness, timeliness, and dependability of business information is one of the EA's primary goals, and it can only be accomplished in this manner. By fostering greater consistency, measurability, and transparency, EA models help achieve these objectives [2]. All information, data, processes, architectures, and technologies must be in sync with the business for enterprise architecture to perform its function and contribute value to the firm. This necessitates regular updating, which calls for ongoing enterprise maintenance.

[**Jürgen Jung,**](https://typeset.io/authors/jurgen-jung-7fe1fubpgm) **Understanding Business Architecture (2021) -** This chapter introduces concepts and visualizations for Business Architecture that help with understanding the business. Proven concepts like business capabilities and business objects are used as simple but powerful tools. These concepts cover a functional perspective on the business (business capabilities) together with a view on static entities (business objects). These are complemented by concepts to describe business motivation and business models.

**RELATED STUDIES AND RESEARCH**

Debasish Ray: STREAMLINING ADMINISTRATIVE PROCESSES WITH WORKFLOW AUTOMATION “Organizations are increasingly using workflow automation to streamline administrative procedures in an age of digital transformation. In-depth discussion of workflow automation's crucial role in simplifying administrative processes, lowering manual labor requirements, boosting effectiveness, and raising total productivity is provided in this study. Administrative procedures have typically taken a lot of time and been prone to mistakes, including data input, document approvals, task allocations, and reporting. Technology is used to develop, manage, and monitor these processes via workflow automation, which has a number of appealing advantages. The requirement for human intervention is first and mainly greatly decreased by process automation. Automating repetitive, rule-based processes frees administrative personnel to concentrate on more strategic and value-added work. This not only expedites work completion but also reduces the chance of human mistake, increasing administrative operations' correctness. Automation of the workflow also guarantees consistency in the process. Highlights the workflow automation to ensure compliance with standard and regulations, ultimately improving customer satisfaction.

Sai, Teja Gajjala, Devi Deepak, Bhargav Gummadelly, Naga Sailaja K: “Empowering Enterprise Development by Building and Deploying Admin Dashboard using Refine Framework: This project proposes the development of an advanced admin dashboard tailored for enterprise development, leveraging the Refine framework, Ant Design, and GraphQL API. It promises heightened operational efficiency by optimizing backend integration and employing GraphQL's dynamic data subscription for real-time insights.

With an emphasis on modern aesthetics and user-centric design, it ensures seamless data visualization and management. Key functionalities encompass user administration, data visualization, CRUD operations, real-time notifications, and seamless integration with existing systems. The deliverable includes a deployable dashboard alongside comprehensive documentation, aiming to empower enterprise teams with a cutting-edge, data-driven solution.”

**MICROSERVICES ARCHITECTURE RELATED STUDIES AND RESEARCH**

**Ali et al. (2021) “Enhancing User Experience in Microservices-based Merchandising Systems”** investigates the ways that microservices design improves merchandising systems' user experience. It emphasizes how quicker feature deployments and better user experiences may result from microservices' ability to change front-end components independently of backend services. The study underscores the significance of a user-centric design that facilitates tailored experiences via instantaneous data processing and focused suggestions. Overall, the results indicate that merchandising platforms' responsiveness and flexibility may be greatly improved by implementing microservices, which would eventually increase user engagement and happiness.

**Shaphali Gupta, Divya Ramachandran (2021): “Emerging Market Retail: Transitioning from a Product-Centric to a Customer-Centric Approach”.** In an environment with digital disruptions, retailers must adopt a customer-centric approach to survive and compete effectively. Retailers need to be agile and forward-looking in adopting the relevant analytics and performance metrics to bring a customer-centric approach across upstream and downstream activities in the retail value chain. However, retailers in emerging markets (EMs) need clarity on the specific analytics and performance metrics in the value chain that will enable them to transition from their current product-centric state to the desired customer-centric state. Employing a triangulation approach (i.e., literature review, marketplace evidence, and managerial interviews) in the fragmented retail landscape of EMs, this study provides an organizing framework that explains: the need for a customer-centric approach across the retail value chain; the specific performance metrics that need to be adopted across upstream and downstream activities in the retail value chain to enable EM retailers to achieve their desired customer-centric state; and the role of analytics in providing insights to achieve these performance metrics and improving monetary and non-monetary firm performance outcomes. We also provide firm-specific and macro-level conditions that can influence the EM retailers’ adoption of relevant analytics and explain the different paths retail formats can follow to adopt analytics. We present a strategy matrix that enables retail managers to identify the appropriate analytics to be adopted at different retail value chain stages to achieve desired performance metrics. We also highlight future research opportunities in retailing in EMs.

**(Thompson et al., 2021). "Enhancing Performance Metrics through Microservices in Online Merchandising"** In the competitive landscape of online retail, performance is key. Slow response times or lagging transactions can lead to abandoned carts and lost sales. By leveraging microservices, merchandising platforms can achieve the speed and reliability necessary to meet customer expectations and enhance overall satisfaction. microservices architecture contributes to performance improvements by enabling faster response times, improving transaction speeds through parallel processing, allowing dynamic scaling, and enhancing system resilience. This is particularly beneficial for online merchandising, where efficiency and speed directly impact sales and customer retention.

**(Bautista, 2020)"Challenges in Implementing Integrated Merchandising Systems Cost and Resistance to Change".** Says thatwhen trying to deploy integrated merchandising systems, local retailers face several challenges. Significant obstacles include high upfront costs for purchasing and deploying new technology as well as resistance to change from employees accustomed to the status quo. To successfully address these challenges, organizations must prioritize effective change management strategies and training. By helping staff members get used to new processes and systems, this approach makes deployment easier.  
Overcoming the challenges of high prices and resistance to change is crucial for local retailers wishing to use integrated merchandising systems. By giving training first priority and putting effective change management strategies into place, businesses can facilitate transitions and ultimately boost operational efficiency and competitiveness.

**(Kowal et al., 2019) “Integration Complexity in Microservices Architecture for Merchandising Systems"** Even though microservices are straightforward, they need to be managed carefully in order to be integrated into a coherent merchandising system. Efficient administration of APIs and orchestration of services are essential for seamless communication and functioning across services. These tactics deal with the difficulties brought on by microservices' distributed architecture, allowing for a more effective and unified marketing system.

**Adkins, Joni K.; Tu, Cindy (2019)** “**Applying an Agile Approach in an Information Systems Capstone Course”** The content of a Master of Science in Information System degree as well as the creation and implementation of the first two iterations of the capstone course are described in this article. A capstone course can be beneficial for students and potential employers, according to research. Included are the actions done to set up the capstone course and get ready for the course. Students used Scrum, an agile approach that consists of five sprints and frequent meetings. The results of two student cohorts' responses to questions on their experiences in the capstone course are presented. The article ends with suggestions for more research and revisions.

**Huq, M. Shamsul** **A Quantitative Inquiry into Software Developers' Intentions to Use Agile Scrum Method.** In order to satisfy the demands of modern software development—namely, to produce software that is better and quicker with the inherent flexibility to accommodate last-minute needs changes—organizations have demonstrated a growing readiness to use the agile scrum method (ASM). The purpose of this study was to identify the fundamental elements that favorably impact software developers' desire to utilize ASM. In order to better examine software development methodology, this study combined five constructs from the technology acceptance model (TAM) and innovation diffusion theory (IDT), acknowledging the difference between IS tool acceptance and software development methodology acceptance. IT professionals in the United States of America (USA) with at least one year of ASM were chosen at random to participate in an online survey administered by Qualtrics.

**Tamayo Avila, Daymy; Van Petegem, Wim; Snoeck, Monique**

**IEEE Transactions on Education (Feb 2022**).**” Improving Teamwork in Agile Software Engineering Education: The ASEST+ Framework.”** In order to increase team learning and software engineering student teams, this article introduces agile software engineers stay together (ASEST+), an enhanced version of the ASEST framework that attempts to foster team cohesiveness. Background: A major focus of contemporary software engineering education is effective cooperation, which is essential to the success of agile software development. An first suggestion for ASEST+ was made in the earlier work. An enhanced version that takes coherence antecedents into account and is more suited for teaching agile practices is presented here. A teaching-learning framework that encourages collaboration in agile software education is the intended result. Application Design: To teach students collaborative and technical agile techniques, ASEST+ integrates learning strategies and is based on Scrum teams. ASEST+ creates guidelines for team rule agreements and responsibility distribution.

**Chang, Hung-Fu; Shokrolah Shirazi, Mohammad**

**Informatics in Education, (2022). “Adapting Scrum for Software Capstone Courses”.** Since Scrum is a popular paradigm in business, several universities include it into their software engineering curricula, especially capstone courses. Scrum must be modified to accommodate capstone projects because students and industry professionals differ from one another. In this article, we provide a decision-making procedure to help teachers come up with a plan to modify Scrum for their class. This framework maintains Scrum events and Agile concepts while taking into account important variances, such as student workloads and course timetables. By numerically examining user story points and source codes and subjectively examining teacher ratings, student comments, and Sprint Retrospective notes, we examined students' learning experiences, satisfaction, and performance in order to assess the modified Scrum.

**Salleh, Shanti Faridah; Ujir, Hamimah; Sapawi, Rohana; Hashim, Hashimatul Fatma (Mar 2020) “Accreditation Document Tracking System Using Scrum Approach”** . Staff members have found that document tracking, which entails following and recording the flow of papers, is a time-consuming activity. The issues with document control have always been displacement and timeline neglect. Implementing an efficient technology, such a web-based system, in the workplace may be done most easily. The purpose of the Accreditation Document Tracking System (ADTS) is to effectively track the transfer of documents from one department to another during the accreditation process. This project's primary goal is to create a system that can track a document's location and submission progress at all times. The most popular agile technique in the business, the scrum approach, is employed to construct this beneficial system.

**DEVOPS, CI/CD**

**Jelena Mihajlovic-Milicevic; Miloš Radenkovic; Aleksandra Labus; Danijela Stojanovic; Zorica Bogdanovic.** “**An Approach to Agile Management of Virtual Student Teams in Smart Environment Development”.** This essay examines the issue of managing and supervising remote teams and their respective capacities. The objective is to create a model that can be used to oversee online student teams who are focused on creating smart settings. The created model is built on Safe and DevOps, which together give us a framework for assessing team performance in a learning context. Furthermore, by utilizing an agile approach, DevOps concepts may be more effectively utilized to provide students a better grasp of continuous value delivery. Virtual student teams were effectively supervised and mentored throughout the project lifecycle while gaining real-world experience in self-organization and virtual team management through the use of the suggested model. Additionally, virtual student teams were urged to be more flexible.

**Partha Sarathi Chatterjee (2024). “Enhancing Operational Efficiency through the Integration of CI/CD and DevOps in Software Deployment**”. Due to the constantly shifting needs of businesses and consumers, software applications have become more complicated and dynamic in the quickly developing digital age. Traditional software development and deployment processes are challenged by this transformation, since they frequently find it difficult to keep up with the rapid changes in the software industry. This article examines the shift from traditional approaches to agile processes, highlighting the latter's vital role in preserving the stability of applications and enabling upgrades that are smooth and have the least negative effect on users. The analysis of automated deployment methods, in particular Continuous Integration/Continuous Deployment (CI/CD), and their revolutionary effects on the software deployment process are at the heart of this research. The study explores the complexities of the DevOps lifecycle, emphasizing the roles played by several environments, including Development (Dev), Testing (Test), and Production (Prod).

**International Arab Conference on Information Technology (ACIT)(2022).  “Effect of Using Continuous Integration (CI) and Continuous Delivery (CD) Deployment in DevOps to reduce the Gap between Developer and Operation” -** This paper focuses on how to use continuous integration (CI) and continuous Delivery (CD) methodology in DevOps to reduce the developer-operator gap. It also, shows how CI can be a CD bridge. The paper review DevOps and analyze strategies, methodologies, issues, and processes identified for the adoption and implementation of continuing practices. The result of our case studies shows the benefits, and advantages of using CI/CD in software development. Furthermore, this paper presents DevOps as a new model for reducing the gaps between development (Dev) and operations (ops). The Azure tool is used as DevOps CI/CD for the empowerment of continuous delivery of software to enable rapid and frequent releases, this enables rapid responses to changing customer requirements and thus it may be a decisive competitive advantage. This paper also measures the effectiveness of using CI/CD for reducing the time and effort in software development. We also, focus on the DevOps initiative to benefit of CI/CD and to effect of enhances flexibility in delivering the program with the expected quality on time to determine the areas that bridge the gap between Continuous Integration for Continuous Delivery. The methodology used in this paper by exploring and tracking a project developed by the company using the Azure software development tool. The experiment includes a project performance and evaluation.

[**M. Zulfahmi Toh,**](https://typeset.io/authors/m-zulfahmi-toh-5421x9zqp5)[**Shamsul Sahibuddin,**](https://typeset.io/authors/shamsul-sahibuddin-yuyck1ujpy)[**Rohani Binti Abu Bakar**](https://typeset.io/authors/rohani-binti-abu-bakar-4jinlbop15)[**Universiti Teknologi Malaysia,**](https://typeset.io/institutions/universiti-teknologi-malaysia-3qql74fu)[**University Malaysia Pahang**](https://typeset.io/institutions/universiti-malaysia-pahang-2fumybs8) **Aug 2021(IEEE). “A Review on DevOps Adoption in Continuous Delivery Process” -** It is widely acknowledged that DevOps is a collection of methods for both software development and operation that promotes close coordination between the two in order to accelerate the time it takes to deliver software. DevOps creates important Agile practices that shorten the time it takes to deliver software solutions. While Continuous Delivery (CD) is one of the DevOps processes that helps the software production team to quickly deliver new features and products, there is still uncertainty around the official and established services guidelines for DevOps. This study aims to explore the challenges and concerns related to the use of DevOps practices that might enhance the CD process. This was accomplished by identifying the DevOps and Continuous Delivery through a literature review.

**JM Ali - Advances in Engineering Innovation, 2023 – “DevOps and continuous integration/continuous deployment (CI/CD) automation”.** A revolutionary age in software development has begun with the quick integration of DevOps and Continuous Integration/Continuous Deployment (CI/CD), which has improved release efficiency and streamlined procedures. A more responsive and cooperative approach to the software lifecycle is made possible by the integration of development (Dev) and IT operations (Ops) into a single DevOps model. The software release cadence is accelerated concurrently by CI/CD automation, which promises faster feedback loops and more frequent feature releases. This essay explores the fundamental ideas of DevOps and CI/CD, clarifying the advantages of working together while also emphasizing the difficulties that arise. In addition, the study evaluates how CI/CD affects software quality, offering insights into industry best practices and possible future developments in DevOps-driven software engineering.

**T Rangnau, R Buijtenen, F Fransen, F Turkmen 2020 IEEE 24th International Enterprise Distributed Object, “Continuous security testing: A case study on integrating dynamic security testing tools in ci/cd pipelines”.** In DevOps, continuous integration (CI) and continuous delivery (CD) are well-known techniques that guarantee the quick release of new features. To do this, new software versions are automatically tested and released, for example, several times a day. However, this rapid Software Development Life Cycle (SDLC) is too fast for traditional security management solutions. However, it is now more crucial than ever to ensure that software systems are of a high security caliber. Integrating security methods into current DevOps procedures is the goal of the emerging DevSecOps concept. One crucial area of study in this trend is the automation of security testing. Few works address security testing and CI/CD procedures simultaneously, despite the fact that there is a wealth of literature on both subjects.

**PS Chatterjee, HK Mittal, (2024) Sixth International Conference on Computational Intelligence,** “**Enhancing Operational Efficiency through the Integration of CI/CD and DevOps in Software Deployment”-** Due to constantly shifting customer and corporate needs, software applications have become far more complicated and dynamic in the quickly changing digital age. Traditional software development and deployment approaches, which frequently find it difficult to keep up with these quick changes, are challenged by this transition. The shift from traditional to agile approaches is examined in this paper, with a focus on how important it is to preserve application stability and enable smooth updates with little to no impact on end users. Examining automated deployment models—in particular, Continuous Integration/Continuous Deployment, or CI/CD—and its revolutionary effects on the software deployment process are at the heart of this research. Exploring the complexities of the DevOps lifecycle, the study emphasizes the significance of different environments, including Development (Dev), Testing (Test), and Production (Prod).

**“Effect of using continuous integration (ci) and continuous delivery (cd) deployment in devops to reduce the gap between developer and operation” .AM Mowad, H Fawareh, MA Hassan (2022) International Arab Conference on Information Technology (ACIT). -** This paper focuses on reducing the developer-operator gap in DevOps through the use of continuous integration (CI) and continuous delivery (CD) methodologies. It also demonstrates how CI can function as a CD bridge. The study examines DevOps and examines the methods, approaches, problems, and procedures found for the adoption and use of continuous practices. Our case studies' outcomes demonstrate the advantages of CI/CD in software development. Additionally, this article introduces DevOps as a novel approach to closing the gaps between operations (ops) and development (dev). The Azure technology is utilized as DevOps CI/CD to empower continuous software delivery, allowing for quick and frequent releases. This allows for quick answers to evolving client needs, potentially making the difference.

**“Analyzing the impact of digital transformation on business” Jha, Robin. (2020)-** The "use of technology to radically improve performance or reach of enterprises" is the definition of digital transformation (DT). Software may now be supplied on ever-tinier schedules, measured in weeks or even days, thanks to the constant acceleration towards faster and less expensive computing resources. At the same time, the corporate landscape is evolving due to technological advancements like mobile computing, social media, analytics, etc. Businesses are constantly under pressure to change in order to remain competitive because of both internal and external factors. Facilitating DT is a difficult task for any organization, though, and must be understood and carried out with a clear vision and corporate strategy.

**“Preliminary Experiences of Using the Azure DevOps Platform in Software Development Automation” Željana Grujić; Miloš Milić; Ilija Antović (2024).** -Examining the concepts provided by GitOps and how they interact with the Azure DevOps platform's capabilities to automate software development is the aim of this study. This paper examines the ways in which the use of specific ideas and services can facilitate Continuous Integration, Continuous Delivery, and Automation in the software development process for retail clothes stores. An overview of how to apply both solutions to maximize their potential will be provided, along with a side-by-side analysis of their observed benefits, drawbacks, and limitations as well as alternative opportunities they offer. By combining and putting these solutions into practice, there is a chance to fulfill the expanding needs of end users and attain software development excellence.

# METHODOLOGY

**AGILE SCRUM METHOD IN PROJECTS**

The Agile scrum methodology is a vital framework for the iterative and incremental development of projects. A series of in-depth interviews were conducted with HR, CEO, LOGISTICS including the scrum master, lead programmer, lead researcher, and a group representative to gain comprehensive insights into the specific needs and objectives of the organization. These interviews were aimed at identifying existing challenges and exploring opportunities for enhancing the team's daily workflow.

During these interviews, it was revealed that the company lacked a robust admin system for its merchandising management. This gap led to the realization that there is a significant opportunity to develop an integrated system that will automate and streamline the company's manual processes, thereby improving overall efficiency and productivity.

**ROLES (e.g. Scrum Master, Product Owner, Development Team)**

The success of the project is heavily reliant on the crucial contributions of the Scrum Master, Product Owner, and Development Team.

The Scrum Master plays a vital role in fostering effective communication within the development team, ensuring the seamless integration of their efforts to create a comprehensive system for the Great Wall of Arts. This is achieved through a combination of in-person and online meetings, meticulously orchestrated to guarantee optimal collaboration.

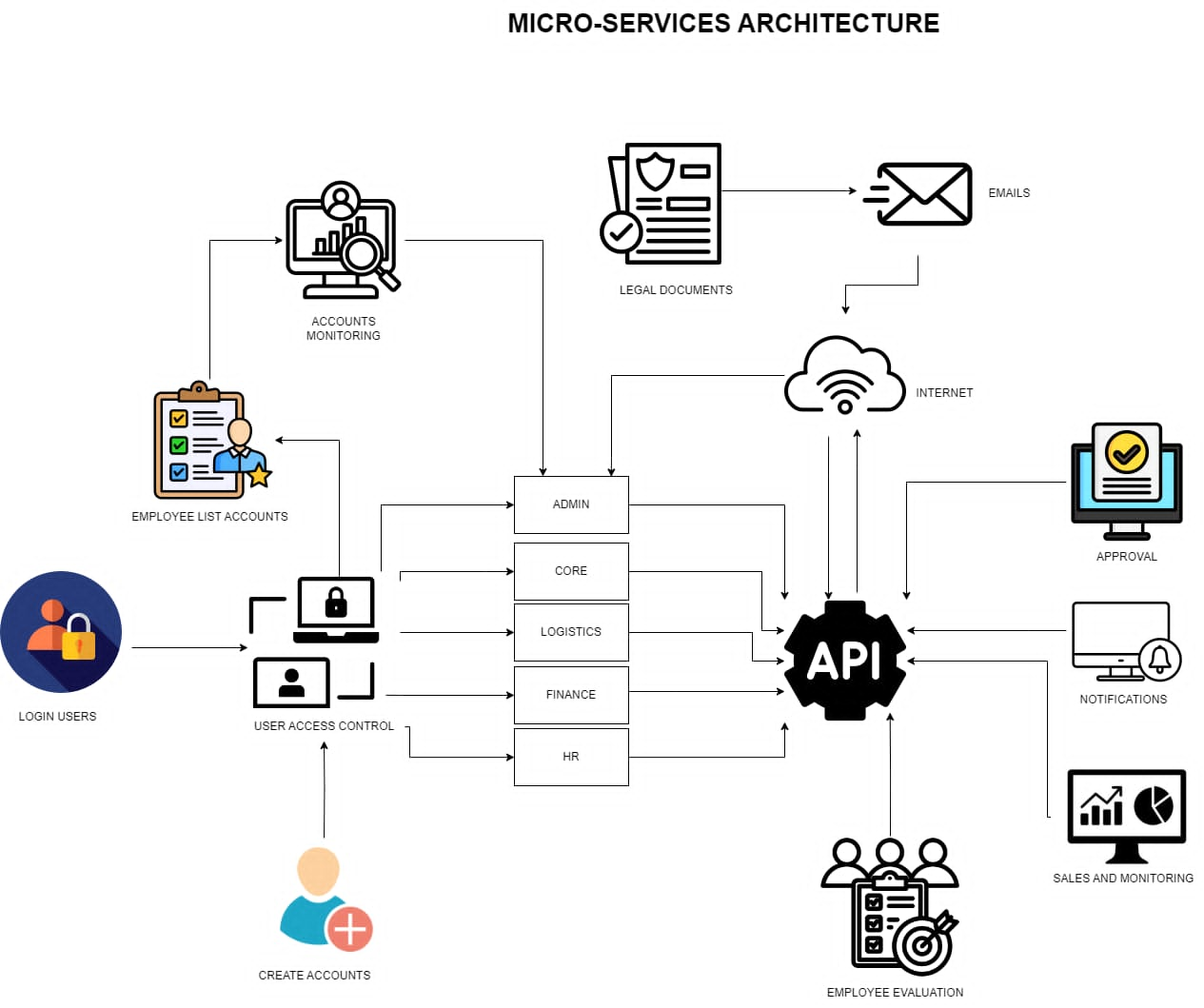
The Product Owner's active involvement is of paramount importance, as their cooperation and openness in sharing critical information and entrusting the Scrum Master and development team with insights into their company and system significantly impact the progress of the Merchandising Management System: Admin, particularly in the realm of legal documentation.

The Development Teams are deeply committed to their collaborative efforts, engaging in intricate programming tasks, meticulous documentation creation, and active brainstorming sessions. Their collective aim is to ensure that the project aligns seamlessly with the preferences and recommendations of the Product Owner, resulting in a successful and meticulously executed implementation.

**SPRINT CYCLES (e.g. sprint planning, daily projections, sprint reviews)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Product Backlog Items | Sprint NO. | Duration | Sprint Goals | KEY TASK |
| System Security | Login forms | 1 | 2 weeks | Setup and initial project planning. | - Define the product vision and backlog.  - Set up development environment.  - Gather data from client.  - Interview and appointment |
| Hashed password |
| User control |
| Admin Dashboard and navigation | Dashboard | 2 | 2 week | Develop Login form with security and registration. | - Create login form with hashed password.  - Create database for storing of accounts  - Create registration form for creating accounts |
| Navbar for logout and notifications icon |
| All folder in Sidebar | 3 | 1 week | Develop a dashboard, sidebar and navbar for. | - Develop a admin dashboard and homepage.  - Develop a responsive sidebar and navbar with all the folders monitoring (HR, LOGISTICS, CORE AND FINANCE) |
| HR Folder |
| Core Folder |
| Finance Folder |
| Logistics Folder |
| User Account | 4 | 1 week | Develop a folder monitoring | - Create monitoring folders each subsystem and connect it to my sidebar. |
| Notifications |
| Emails |
| Admin Monitoring Accounts | 5 | 1 week | Develop a notification bell | - Create a notification bell and make it responsive |
| HR monitoring folders | Legal Documents | 6 | 2 weeks | Develop a storing of legal documents | - Develop a uploaded documents, upload documents or files, creation of folder with search, create, delete, rename and upload and also automatically store in database for all subsystem. |
| Employee evaluation |
| Approval |
| Employee Account |
| New hired list |
| Monitoring of accounts |
| Core Monitoring Folders | Legal Documents | 7 | 1 week | Develop a approval form | - Create a approval form with automatically update status which is accept of reject and store in database. |
| Sales and monitoring |
| Approval |
| Employee Account | 8 | 2 weeks | Develop a employee accounts | - Create a form for registration accounts.  - Has a search button, delete account button, update and register account.  - Can view all account register in employee accounts based on their level like (HR, CORE, LOGISTICS, FINANCE and ADMIN). |
| Customer account monitoring |
| Monitoring of accounts |
| Logistics Monitoring folders | Legal Documents |
| Monitoring of accounts |
| Approval | 9 | 1 weeks | Develop a employee monitoring of accounts | - Fetching all login actions from database.  - Indicating all the information’s in form such as time of login, username, id and level |
| Employee Account |
| Products Ratings |
| Finance Monitoring Folders | Legal Documents |
| Monitoring of accounts | 10 | 1 week | Develop a New hired list form | Fetching all data of new hired employee in HR |
| Approval | 11 | 1 week | Develop a employee evaluation | Fetching all data of employee evaluation in HR and show it in admin side. |
| Employee Account |
| Invoices | 12 | 2 weeks | Develop a sales and monitoring | - All sales must show in monitoring of core folder.  - Admin can audit.  - Graph will automatically updated based on report documents |
|  |  | 13 | 1 week | Develop a invoices folder | - Create a folder for storing of all invoices. |
|  |  | 14 | 1 week | Creating a folder for customer account. | - Creating a form for admin to monitor all the benefits that the customer receiving. |
|  |  | 15 | 1 week | Develop a product ratings | - Create a form for product evaluation of all the products that enter in company and it will send in logistics. |
|  |  | 16 | 3 weeks | Develop a emails | - Creating emails for sending notification, messages, documents and files. |
|  |  | 17 | 1 week | Develop a homepage | - Develop a homepage with number of folders, files and total employees and automatically increasing and decreasing based on their total |
|  |  | 18 | 1 week | Show employee attendance in homepage | - Fetching a Employee attendance using dummy data and show it in homepage |

**MICROSERVICES DIAGRAM**



**INTRODUCTION TO TOGAF AND THE FOUR ARCHITECTURAL DOMAIN**

This TOGAF framework for an Admin Merchandise System will align the core functionalities with business objectives. It will also describe the structured approach to design and implement the system, as well as how to continually manage the system in meeting the changing organizational needs.

**Business Architecture:** Business architecture is one of the key aspects by which merchandise management is streamlined, as it gives an organized framework according to which strategic objectives are aligned with tactical demands. It is essentially a blueprint of the organization portraying the governance structure, business processes, and information flow. This way, everything involved in merchandise management- design, implementation, control, or efficiency-working towards the same common goals are integrated.

**Information Architecture**: Information architecture (IA) forms the backbone of any successful merchandise management system. All such product information will be arranged in a way to be logistically and intuitively easy for administrators to manage and for researchers to access. A well-structured IA helps streamline the management process and improves search functionality, leading to better decision-making in merchandise planning and development.

**Application Architecture:** Application architecture It helps you automatically separate different kinds of data, like products' information and corresponding records for inventories, so they are accessible and manageable. The automatic segregation of such data helps you to keep the right count of inventories for proper analysis, right analysis leads to accurate decisions, thus resulting in better decision-making about your merchandise

**Technology Architecture:** Technology architecture is the backbone of a stable merchandise administration system. It's an effective blueprint that helps with the harmonious assembling of all parts involved in the smooth working of the system.

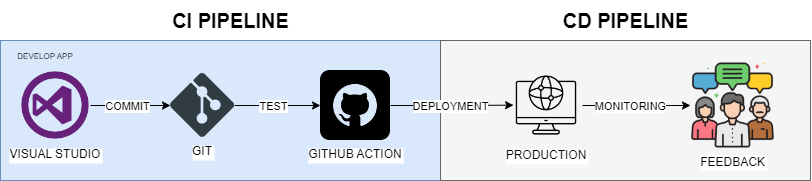
**SCRUM BOARD**

|  |  |  |  |
| --- | --- | --- | --- |
| NO. | TO DO | IN PROGRESS | DONE |
| 1 |  |  | Kick-off meeting |
| 2 |  |  | UI dashboard and designing |
| 3 |  |  | Interview with the client |
| 4 |  |  | Creating login form with hashed password and user access control |
| 5 |  |  | Creating Registration of accounts |
| 6 |  |  | Develop a dashboard |
| 7 |  |  | Navbar for logout and notifications icon |
| 8 |  |  | All folder in Sidebar |
| 9 |  |  | HR Folder |
| 10 |  |  | Core Folder |
| 11 |  |  | Finance Folder |
| 12 |  |  | Logistics Folder |
| 13 |  |  | User Account |
| 14 |  | Emails |  |
| 15 |  | Notifications |  |
| 16 |  |  | Admin Monitoring Accounts |
| 17 |  |  | Legal Documents for HR |
| 18 | Employee Evaluation for HR |  |  |
| 19 |  | Approval for HR |  |
| 20 |  |  | Employee Account of HR |
| 21 | New hired list of employee |  |  |
| 22 |  |  | Monitoring of accounts of HR |
| 23 |  |  | Legal Documents of Core |
| 24 |  | Sales and Monitoring of Core |  |
| 25 |  |  | Approval for Core |
| 26 |  |  | Employee Account of Core |
| 27 |  |  | Customer account monitoring |
| 28 |  |  | Monitoring of accounts for Core |
| 29 |  |  | Legal Documents of logistics |
| 30 |  |  | Monitoring of accounts of logistics |
| 31 |  |  | Approval of products and procurements |
| 32 |  |  | Employee Account of logistics |
| 33 | Product ratings |  |  |
| 34 |  |  | Legal Documents of Finance |
| 35 |  |  | Monitoring of accounts of finance |
| 36 |  |  | Approval for finance |
| 37 |  |  | Employee Account of finance |
| 38 | Invoices |  |  |

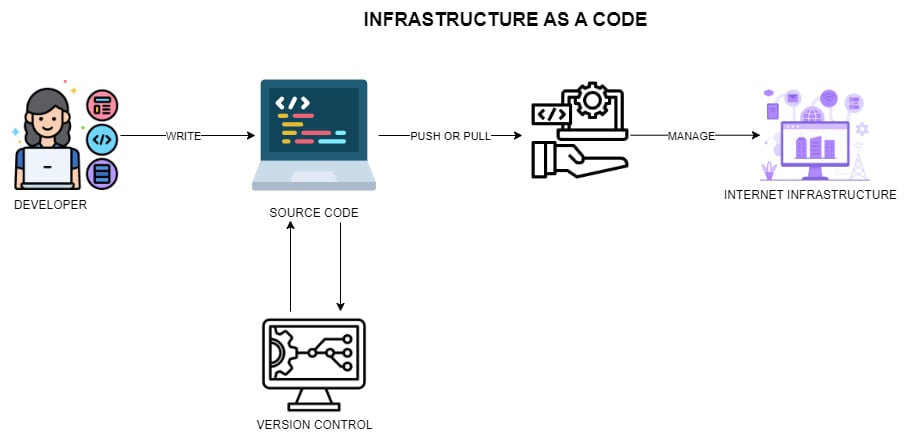
**SPRINT BACKLOG**

|  |  |  |
| --- | --- | --- |
| NO. | USER STORIES | STATUS |
| 1 | As an administrator, I want to have a login page with security |  |
| 2 | As an administrator, I want to have user access control to limit the access. |  |
| 3 | As an administrator, I want to handle the creation of account. |  |
| 4 | As an administrator, I want to have separate monitoring folder for different subsystems. |  |
| 5 | As an administrator, I want to have home page that automatically count the number of files and folders and all the total of employees. |  |
| 6 | As an administrator, I want to view all the time in and time out of employees. |  |
| 7 | As an administrator, I want all the folder can view in sidebar to monitor it easily. |  |
| 8 | As an administrator, I want to have a folder where in I can store all the legal documents of HR. |  |
| 9 | As an administrator, I want to have an approval folder inside the HR monitoring folder where I can approved and reject all the request that are needed of my consent. |  |
| 10 | As an administrator, I want to have Employee account folder inside of HR monitoring folder to monitor and manage all the accounts of HR employees. |  |
| 11 | As an administrator, I want to have employee monitoring account inside HR monitoring folder to monitor login actions of HR employee. |  |
| 12 | As an administrator, I want to have a folder where in I can store all the legal documents of Core inside the core monitoring folder. |  |
| 13 | As an administrator, I want to have an approval folder inside the CORE monitoring folder where I can approved and reject all the request that are needed of my consent. |  |
| 14 | As an administrator, I want to have Employee account folder inside of CORE monitoring folder to monitor and manage all the accounts of CORE employees. |  |
| 15 | As an administrator, I want to have employee monitoring account inside CORE monitoring folder to monitor login actions of HR employee. |  |
| 16 | As an administrator, I want to have a sale and monitoring account where in I can audit the report of sales. |  |
| 17 | As an administrator, I want to have a customer monitoring account where in I can view and monitor all the discounts and benefits that the customer receiving. |  |
| 18 | As an administrator, I want to have a folder where in I can store all the legal documents of LOGISTICS. |  |
| 19 | As an administrator, I want to have an approval folder inside the LOGISTICS monitoring folder where I can approved and reject all the request that are needed of my consent specially the procurement and supplier details |  |
| 20 | As an administrator, I want to have a product ratings where in I can review and rate all the products that are entering in company |  |
| 21 | As an administrator, I want to have Employee account folder inside of LOGISTICS monitoring folder to monitor and manage all the accounts of LOGISTICS employees. |  |
| 22 | As an administrator, I want to have employee monitoring account inside LOGISTICS monitoring folder to monitor login actions of LOGISTICS employee. |  |
| 23 | As an administrator, I want to have a folder where in I can store all the legal documents of FINANCE. |  |
| 24 | As an administrator, I want to have an approval folder inside the FINANCE monitoring folder where I can approved and reject all the request that are needed of my consent. |  |
| 25 | As an administrator, I want to have Employee account folder inside of FINANCE monitoring folder to monitor and manage all the accounts of FINANCE employees. |  |
| 26 | As an administrator, I want to have employee monitoring account inside FINANCE monitoring folder to monitor login actions of FINANCE employee. |  |
| 27 | As an administrator, I want to have a folder where in I can store all the invoices that came from finance. |  |
| 28 | As an administrator, I want to have a new hired list folder inside the HR monitoring folder so that I can view all the new hired employees that are needed for creating an account. |  |
| 29 | As an administrator, I want to have an email where in I can send an email, files or message inside the system. |  |
| 30 | As an administrator, I want to have a responsive notification. |  |
| 31 | As an administrator, I want to handle all the employee accounts where in I can delete, search, update and change the password of the accounts. |  |
| 32 | As an Administrator, I want to handle all the uploaded documents inside the legal documents of each monitoring folders where in I can delete, upload, create and rename a folder of file |  |

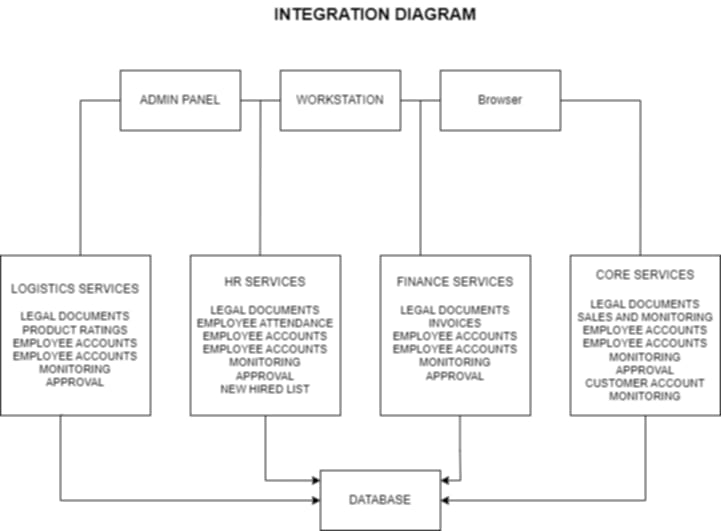
**CI/CD PIPELINE**

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**INFRASTRACTURE AS A CODE (IAC)**

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**INTEGRATION DIAGRAM**

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