COMP1787:

REQUIREMENTS MANAGEMENT

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University of Greenwich – Da Nang Campus

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Section A: Management Summary

1. Business goals

Introduction

Green Groceries, a reputable mid-sized company, has carved out a niche in the market for organic and locally sourced grocery products over the past five years. With a strong commitment to sustainability and environmentally conscious practices, the company has built a solid reputation among consumers seeking ethically sourced and eco-friendly products environment.

Vision for the Future

The vision for Green Groceries is to broaden its market presence and make sustainable products more accessible to a wider customer base. Recognizing the increasing popularity of online shopping and the growing demand for organic products, the company aims to launch an online platform within the next three months. This strategic move aligns with Green Groceries' overarching goal of promoting sustainability and supporting local producers.

Current Issues

Despite its success in the traditional retail sector, Green Groceries faces challenges in expanding its reach and adapting to changing consumer preferences. Issues such as reliance on paper-based order processing systems and limited flexibility in meeting dynamic market demands have hindered the company's growth potential. Additionally, the absence of an in-house software development team necessitates outsourcing, posing challenges in project management and communication.

Business Goals

From a vision for the coming years and current difficulties, Green Groceries needs to have clear business goals:

- o To expand market reach.
- o To make sustainable, organic, and locally sourced grocery products more accessible.

Aim of the Project

To build an online platform within the next three months that supports the business aim by making it easier for customers to access and purchase Green Groceries' products.

Outsourcing

Outsourcing to System Concepts is inspired by Green Groceries' aim to overcome prior issues found with conventional waterfall methodologies. By cooperating with System Concepts, recognized for their experience in Agile methodology, Green Groceries receives access to new solutions and flexible project management approaches. This cooperation helps Green Groceries to react fast to changing needs, expedite project schedules, and produce a high-quality online platform that fulfills client expectations.

Dev team

To establish the web platform, Green Groceries has teamed with System Concepts, a group proficient in Agile development. The squad includes:

- o Cheryl: in her role as the Project Lead, enforces strict adherence to Agile methods, therefore fostering cooperation and maximizing productivity.
- o Millie: An experienced web developer, Millie excels in coding and plays a significant role in explaining technical information with stakeholders.
- o Peter: A seasoned developer whose experience is crucial for the technical parts of the project, yet he requires cautious incorporation into the team dynamic owing to periodic conflicts.
- o Anita: Her development talents, paired with her community commitment, connect nicely with the company's objective.
- o Pat: Working part-time, Pat contributes to web development and testing, vital for producing a robust and user-friendly platform.

This group's mix of technical talents and dedication to Agile methodology is poised to successfully handle the project's goals within the stipulated timeframe

2. Methodologies

2.1. Methodologies and frame work

Agile methodology

Agile methodology arose as a reaction to discontent with traditional development methodologies like Waterfall. It strives to improve adaptation and speedier software delivery by promoting human relationships and cooperation above technologies. Agile's emphasis on user interaction and adaptability to change, rather than inflexible plans, assures the delivery of functional software over documentation. It stresses team efficiency and internal feedback to prioritize customer satisfaction via the ongoing supply of proven items. Agile's development iteration cycles, replicating short-term projects, offer a simplified approach to product delivery (rikkeisoft, 2022).
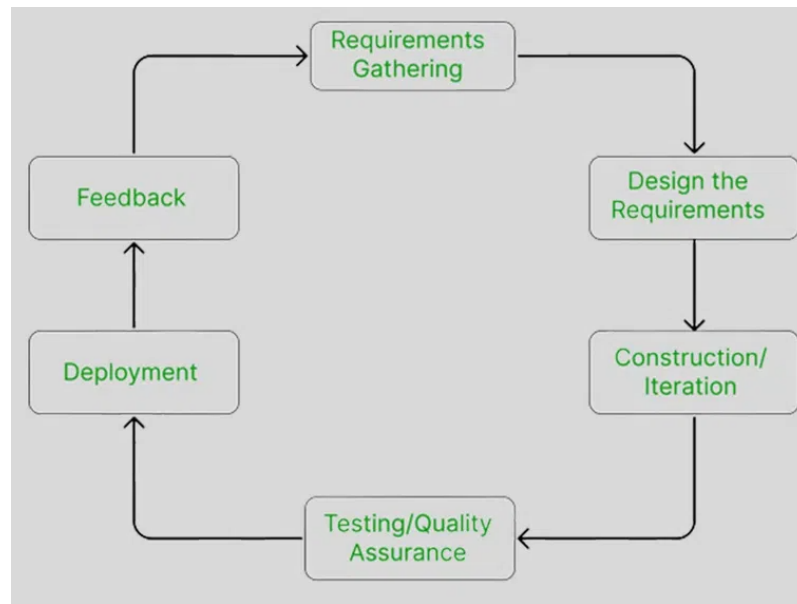
Figure 1 Agile model

Scrum framework

Scrum, a lightweight framework within Agile development, cuts down the program development process into brief phases called sprints, often lasting one to four weeks. Each sprint has four segments. The first is Sprint Planning, at beginning of the sprint, the Product Owner outlines the sprint objective. Second, daily Scrum Meeting - the Scrum team meets everyday for roughly 15 minutes to review progress and any impediments. Third, we have the team presenting finished work to stakeholders, like the Product Owner and consumers, this process is called Sprint Review. Finally, Sprint Retrospective, this is feedback is collected to reflect on how the team performed in the previous sprint and suggest areas for improvement (geeksforgeeks, 2024).

Figure 2 Scrum model

DSDM framework

An agile project delivery framework primarily used in software development, encompasses a wealth of project management knowledge. Initially anchored in software development, DSDM has grown into a flexible frame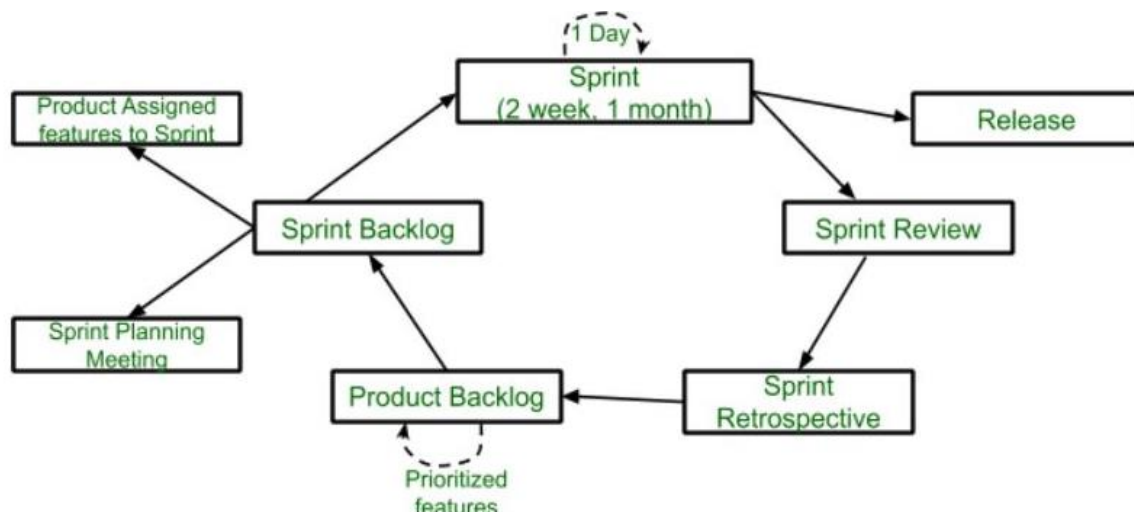work appropriate for difficult problem-solving activities across different areas, including business development. It allows both agile and conventional development methods and offers a clear framework based on best practices for project delivery. While DSDM provides simplicity and versatility, it doesn't pretend to be a one-size-fits-all solution for all applications (Elbeheri, 2016).
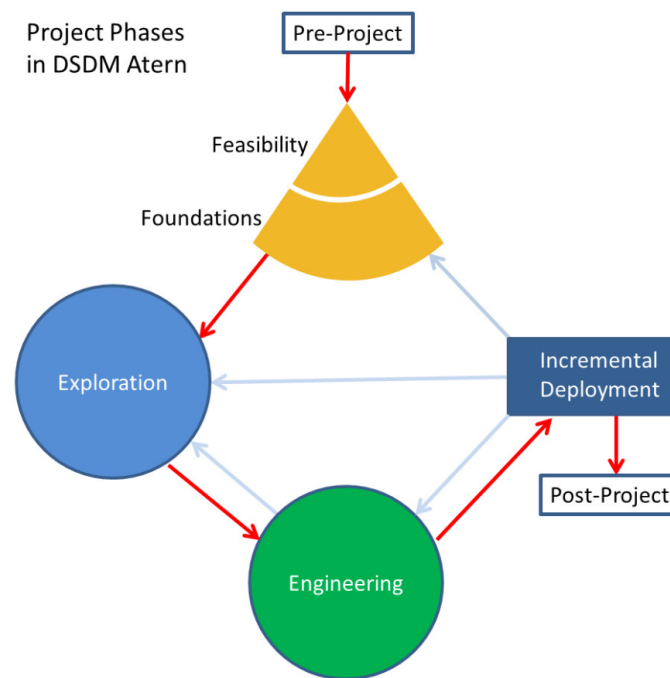
Figure 3 DSDM project structure

2.2. Chosen method for the scenario

For an overview of why Green Groceries selected Agile methodology along with frameworks like SCRUM and DSDM, let's first look at the issues they encountered with conventional waterfall methods. The case study indicates that Green Groceries faced issues in the past with typical 'waterfall' initiatives. These obstacles likely include concerns such as restrictive project planning, difficulty in adapting to changing needs, and delays in providing value to clients.

In response to the issues encountered with conventional waterfall methodologies, Green Groceries sought a more flexible and adaptable approach to software development. Therefore, they selected for SCRUM, an Agile methodology recognized for its iterative and collaborative approach.

2.3. Discuss about benefit when applying Agile, SCRUM, DSDM

Agile Methodology Benefits for Green Groceries Project

- o Time Efficiency: Agile approach allows for incremental development, and that is why Green Groceries has been able to release project components in sections thus

supporting faster overall delivery dates. The iterative process also gives room for fast adaptation towards the dynamic market needs.

- o Cost Effectiveness: Continuous alignment of project deliverables with organizational goals through agile system implementation minimizes spending on unnecessary features hence protecting Green Groceries from cost overruns.
- o Resource Management: Agile systems encourage better utilization of human capital by fostering an environment where all team members (from Green groceries and system concept team) are actively involved in the project. This involvement enhances accountability; it also optimizes how work is shared based on team skills and resources availability.
- o Improved client Satisfaction: Involving customers throughout the development stages while utilizing agile guarantees that the final product is closely aligned with their needs, thereby increasing satisfaction and loyalty.
- o Staff Development and Empowerment:: All team members have active roles in Agile, leading to expansion of skills as well as morale enhancement due to individual's capacity to take action based on their own wisdom.

SCRUM Framework Benefits for Green Groceries Project

- o SCRUM focuses on the time efficiency through short sprints that deliver specific features fast, keep the project going and enable quick responses to changing market conditions which reduce time to market for new functionalities.
- o Cost Efficiency: SCRUM facilitates a tight budget by investing in prioritized projects that deliver maximum business value so that every dollar spent is aligned to project objectives. Regular sprint reviews and retrospectives assist the green Groceries team in improving processes thereby cutting down unnecessary costs associated with process inefficiencies.
- o Resource Management: The Scrum Master plays a crucial role in managing team dynamics and optimizing resource usage. This has been critical for Green Groceries as Cheryl, Scrum Master effectively conducted the sprints guiding everyone along ensuring they were all aligned and focused on their individual roles.
- o Stakeholder Engagement: By continuously involving stakeholders; SCRUM helps in increasing their alignment, satisfaction with project outputs which is necessary for achieving strategic business objectives.
- o Roles and Responsibilities: In SCRUM framework roles are clearly articulated thus allowing efficient management of individuals. For example, Cheryl, working as the Scrum Master, leads daily stand-ups to verify team alignment and resolves any obstacles that might slow down the team's development. Anita, the Product Owner, prioritizes the backlog items and expresses the client's vision to the team, ensuring that everyone is working towards a united objective. This precise demarcation of duties within Green Groceries has led to greater productivity and better communication.

DSDM Benefits for Green Groceries Project

- o Time Efficiency: DSDM's established timelines give precise goals that fit with company objectives, critical for timely project completion, such as seasonal product releases.
- o Cost Efficiency: DSDM's emphasis on providing strategic business advantages and prioritizing work via MoSCoW prioritization (Must have, Should have, Could have, Won't have this time) has helped Green Groceries optimize project costs by concentrating resources on important capabilities first.
- o Resource Management: DSDM's collaborative decision-making optimizes resource utilization, making choices with a full grasp of their influence on the project.
- o Adaptability and Flexibility: DSDM's flexibility is crucial in adjusting to the growing online retail sector, guaranteeing Green Groceries can react successfully to market developments.
- o Stakeholder Engagement: DSDM needs active stakeholder participation throughout the project, ensuring choices correspond with business goals and stakeholder expectations.
- o In summary, by combining Agile, SCRUM, and DSDM approaches, Green Groceries has considerably boosted project delivery in terms of time, cost, and resource management, while also boosting stakeholder satisfaction and project flexibility. This thorough strategy guarantees that the project corresponds closely with developing market needs and business objectives.

2.4. Discuss about disadvantage when applying Agile, SCRUM, DSDM

Agile Disadvantages:

- o Lack of Predictability: Agile's flexible nature can sometimes lead to project scope creep due to its iterative approach and frequent reassessment of project deliverables.
- o Dependence on Customer Interaction: Requires heavy customer involvement, which can be challenging if stakeholders are not consistently available or committed.

SCRUM Disadvantages:

- o Requires Experienced Team Members: SCRUM demands a high level of self-management and experience, which can be problematic for teams new to this framework.
- o Frequent Meetings: The daily stand-ups and other SCRUM ceremonies can consume significant time, potentially detracting from actual productivity if not managed correctly.

DSDM Disadvantages:

- o Rigid Framework: Despite its iterative nature, DSDM requires strict adherence to its processes and roles, which can limit flexibility compared to other Agile methodologies.

- o High Initial Cost: The extensive planning and analysis phase at the start of a DSDM project can lead to higher initial costs and resource allocation before any actual development begins.

3. Feasibility of the project

Technical feasibility:

Analyzing the facts about Outsourcing, dev team, and the specified techniques and frameworks helps us to analyze the technical viability of the project. For instance, Green Groceries' choice to outsource software development to System Concepts suggests a deliberate effort to harness external expertise in web development, guaranteeing access to the essential technical talents and resources needed for the project. Additionally, the use of Agile techniques such as SCRUM and DSDM Atern indicates a recognition of the necessity of flexibility and agility in reacting to shifting technological requirements and market circumstances. This technique increases the project's technical feasibility by allowing iterative development and rapid responsiveness to changes, hence improving the chance of successful implementation.

Economic feasibility:

Here, it is vital to examine the company's financial capacities. Green Groceries is recognized as a credible mid-sized firm with a robust market presence, showing high economic potential. The feasibility study should dive into the estimated costs involved with the project, including outsourcing charges, software development costs, and prospective income streams from the web platform. By completing a full economic study, including cost-benefit analysis and return on investment calculations, Green Groceries can analyze the financial sustainability of the project. This analysis will assist establish if the predicted benefits surpass the investment expenses, ensuring that the project matches with the company's financial goals and objectives.

Legal feasibility:

Legal feasibility comprises analyzing whether the proposal conforms with applicable laws, regulations, and ethical standards. Green Groceries must verify that the online platform conforms to data protection standards, customer privacy laws, and other legal requirements. Additionally, the organization should assess any possible legal risks or liabilities linked with the project and devise measures to manage them. By completing a full legal study, Green Groceries can guarantee that the project runs within the confines of the law and ethical values, limiting the danger of legal challenges and reputational harm.

Operational feasibility:

Operational feasibility analyzes how effectively the organization can adapt to the project and how the project fits the organization's objectives and purpose. Green Groceries has to analyze its internal capabilities, including personnel preparation, organizational structure, and operational procedures, to determine its readiness to execute the project. Furthermore,

the feasibility study should analyze how the idea works with Green Groceries' strategic aims and purpose of promoting sustainability and supporting local producers. By assessing these operational elements, Green Groceries may identify possible problems and opportunities and establish strategies to guarantee the effective execution of the project.

Scheduling:

Scheduling entails determining a realistic timeframe for the project and establishing expectations for milestones or objectives. Green Groceries has to consider elements such as resource availability, project dependencies, and possible hazards while designing the project timetable. Additionally, the feasibility study should include measures to overcome any delays and assure timely project delivery. By carefully planning and organizing the project operations, Green Groceries may reduce project risks and improve resource usage, improving the chance of project success.

4. Summarize for section B

About section B, involve refining high-level requirements and prioritizing them using the MoSCoW method and timeboxing. This comprises detecting incorrect needs, updating the list with functional requirements, and sorting them according to significance. The SCRUM approach will be employed, grouping work into sprints based on the MoSCoW prioritizing to guarantee efficient development within the specified period.

5. Summarize for section C

The section highlights the responsibility of the Data Controller in ensuring data protection and compliance with legal, social, ethical, and professional norms. I also outlines the BCS Code of Conduct, outlining its four fundamental elements. Furthermore, examples from the case study explain how these ideas work in reality. The section presents a full assessment of the legal, social, ethical, and professional considerations pertinent to the project.

Section B: High level requirements analysis and MoSCoW prioritisation

ID	Description	Stakeholder
GWO-1	In my work as an Order Handling Clerk, I intend to migrate to internet-based administration for telephone payments, decreasing dependency on paper-based methods.	Sale staff
GWO-2	Green Groceries Company pledges to maintaining a minimum of 20 workplace plants to promote a healthy and environmentally friendly environment.	Staff
GWO-3	Customers desire the opportunity to amend their account data to verify the correctness of their information.	Users
GWO-4	The CEO intends to create a virtual event on the internet for their birthday to promote a healthy business culture.	Staff
GWO-5	The Managing Director highlights the need of maintaining the website's compliance with Data Protection Act regulations to prevent any fines.	Director
GWO-6	Customers desire to register accounts for simple access to services.	Users
GWO-7	Customers demand a range of delivery slots to successfully manage their calendars.	Customer
GWO-8	Customers seek the capacity to update their purchasing carts to simplify decision-making.	Users
GWO-9	Green Groceries Company promotes for the implementation of pet-friendly policies to build a healthy and inclusive working environment.	Staff
GWO-10	The system must be capable of managing a thirty percent increase in traffic during peak hours without performance deterioration.	Staff

GWO-11	Customers desire the opportunity to designate alternate delivery and invoicing addresses for flexibility.	Users
GWO-14	Customers want to select whether they get marketing materials to minimize unwanted solicitations.	Users
GWO-15	It is vital to safeguard all customer data, especially personal and financial information, to guarantee utmost security.	Staff
GWO-16	The Marketing Director underlines the necessity of having similar branding components and design throughout the website.	Staff
GWO-17	The HR/Development Team highlights the necessity for frequent team-building activities to create cooperation and a healthy work environment.	COO
GWO-18	The Marketing Director recommends for the establishment of an offers or discount page to notify consumers.	Marketing Director
GWO-19	The Chief Accountant urges conformity with VAT rules to avoid any fines.	Accountant
GWO-20	The Operations Director seeks to accept all forms of payment to grab a wide market.	CEO

1. B1 - Identify Requirements are not High-level Requirement

ID	Description	Stakeholder	FR/NFR	Reson
GWO-2	Green Groceries Company pledges to maintaining a minimum of 20 workplace plants to promote a healthy and environmentally friendly environment.	Staff	NFR	- Irrelevant to business objectives of expanding market reach. - Does not influence online platform functionality. - No related to the aim of online platform. - Pertains to office culture rather than project scope.
GWO-4	The CEO intends to create a virtual event on the internet for their birthday to promote a healthy business culture.	Staff	FR	- No contribute directly to the online platform's aims - No connected to business goal No selling items or developing market presence - Allocating resources to this event may distract attention that not the fundamental aims - Resource diversion from more vital activities aligned with the platform's key aims
GWO-5	The Managing Director highlights the need of maintaining the website's compliance with Data Protection Act regulations to prevent any fines.	Director	NFR	- Does not effect online platform functioning. - Compliance is a standard requirement, generally integrated inside development frameworks such as HTTPS - Employing frameworks like bcrypt helps maintain data security during transmission and storage. - Specific attention as a high-level need is unnecessary.
GWO-7	Customers demand a range of delivery slots to successfully manage their calendars.	Customer	FR	- Irrelevant to business aims of growing market reach. - Aim company develop the market and reach the global market, thus it is tough to set a suitable timetable. - Attached to another party for delivery, hence it is tough

				to organize. - Could lengthen project timeframe and complicate logistics. - Important for user convenience but must be balanced with practicality.
GWO-9	Green Groceries Company promotes for the implementation of pet-friendly policies to build a healthy and inclusive working environment.	Staff	NFR	- Related to office atmosphere, not online platform functionality. - Related to company rules, not online platform functioning. irrelevant to business aims of growing market reach. - Does not effect the operational or service components of the platform. - No connected to the objective of internet platform. - This is a nonfunctional needs.
GWO-10	The system must be capable of managing a thirty percent increase in traffic during peak hours without performance deterioration.	Staff	NFR	- This is a nonfunctional requirement - Traffic handling innovations may be introduced incrementally. - This pertains to designing for performance rather than concentrating on business objectives and project goals. - Prioritizing it as a high-level necessity may produce unnecessary complexity and delay the project's completion. - Allocating resources to this event may deflect attention that not the core goals . - Not actually essential in the 1st prototype.

GWO-15	It is vital to safeguard all customer data, especially personal and financial information, to guarantee utmost security.	Staff	NFR	- This is an ineffective requirement. - Data protection is established in programming, so it is already included. - High-level attention is superfluous owing to existing security measures such as AES encryption for data at rest and HTTPS for safe data transmission.
GWO-16	The Marketing Director underlines the necessity of having similar branding components and design throughout the website.	Staff	NFR	- This is an ineffective requirement. - Brand consistency must be led by UX/UI design guidelines, which might cause issues for developers. - High-level strict criteria could impede flexibility and response to customer input. - Brand identity will be enhanced time by time.
GWO-17	The HR/Development Team highlights the necessity for frequent team-building activities to create cooperation and a healthy work environment.	COO	NFR	- Essential for mental health but unrelated to platform functioning. - Better suited as part of organizational growth, not project-specific needs. - Irrelevant to business objectives of expanding market reach. - Does not influence online platform functionality. - No related to the aim of online platform.

2. B2 - List of requirements needed to build system

ID	Description	Stakeholder	FR/NFR	Reason
GWO-1	In my work as an Order Handling Clerk, I intend to migrate to internet-based administration for telephone payments, decreasing dependency on paper-based methods.	Sale staff	FR	- **E-commerce Alignment:** Matches contemporary e-commerce trends of incorporating digital payment methods. - **Accessibility:** Makes payments accessible via common devices, boosting user ease. - **Personal Connection:** Supports human engagement in the sales process, possibly enhancing client happiness. - **Market Expansion:** Helps in extending market reach by giving a more accessible and efficient purchase procedure.
GWO-3	Customers desire the opportunity to amend their account data to verify the correctness of their information.	Users	FR	- **Accuracy in Personal Data:** Ensures that the client information is current and accurate, boosting the dependability of service delivery and marketing. - **Privacy and Security:** Provides users with the option to update their personal information, hence protecting their privacy and confidence in the platform. - **Personalization of Services:** Allows for more accurate and individualized offerings, boosting customer experience and satisfaction. - **Compliance with requirements:** Helps ensuring that the platform stays compliant with data protection requirements by enabling users to control their data. - **Customer happiness:** Improves overall customer happiness by allowing consumers to govern their personal information and service interactions.

GWO-6	Customers desire to register accounts for simple access to services.	Users	FR	- **Profile Creation:** Enables users to construct a unique profile to manage their interactions, promoting simpler and more tailored service. - **Order administration:** Allows for better monitoring and administration of order history, payments, and delivery schedules. - **Marketing Optimization:** Enhances the efficacy of marketing activities via targeted promotions and communication based on user preferences and history. - **Financial Tracking:** Simplifies financial management for both the firm and users by offering a consolidated view of transactions and promotions. - **Customer Engagement:** Improves customer engagement and loyalty via a tailored user experience and effective service providing.
GWO-8	Customers seek the capacity to update their purchasing carts to simplify decision-making.	Users	FR	- **Flexibility in Purchasing:** Allows clients to change their options, enhancing decision-making confidence. - **Enhanced User Experience:** Provides a smooth shopping experience that may lead to higher client retention. - **Supports Impulse Buying:** Encourages more purchases by allowing buyers to readily add or delete things. - **Operational Efficiency:** Streamlines the purchase process, making it more efficient for both consumers and the platform.
GWO-11	Customers desire the opportunity to designate alternate delivery and invoicing addresses for flexibility.	Users	FR	- **Customer Convenience:** Offers flexibility in how and where orders are accepted, boosting customer service. - **Gift Purchases:** Facilitates giving presents directly to others, extending the usage of the site. - **Market Reach:** Supports different client demands, which is crucial for developing market presence.

				- **User pleasure:** Improves overall pleasure by handling personal or gift-related purchases effortlessly.
GWO-14	Customers want to select whether they get marketing materials to minimize unwanted solicitations.	Users	FR	- **Regulatory Compliance:** Ensures the platform complies to anti-spam rules and privacy standards. - **Customer Control:** Empowers users to regulate their contact with marketing materials, boosting trust and satisfaction. - **Marketing Efficiency**: Increases the efficacy of marketing activities by targeting users who opt-in, assuring improved engagement and response rates.
GWO-18	The Marketing Director recommends for the establishment of an offers or discount page to notify consumers.	Marketing Director	FR	- **Market Competitiveness:** Helps keep competitive by enticing consumers with incentives. - **Sales Enhancement:** Drives sales and clears inventory via timely promotions and discounts. - **Customer Retention:** Aids in maintaining consumers by providing them frequent incentives to return. - **Brand Visibility:** Enhances visibility and market presence with appealing offerings that catch customer attention.
GWO-19	The Chief Accountant urges conformity with VAT rules to avoid any fines.	Accountant	FR	- **Financial Compliance:** Ensures conformity to tax regulations, avoiding fines and ensuring financial integrity. - **Stakeholder Trust:** Builds trust among stakeholders via open and legal financial processes. - **Business Reputation:** Supports a favorable corporate image by showing dedication to legal and ethical norms.
GWO-20	The Operations Director seeks to accept all forms of payment to grab a wide market.	CEO	FR	- **Market Accessibility:** Broadens the market by supporting diverse payment methods. - **Client Inclusivity:** Enhances client convenience by providing numerous payment methods.

| | | | | - **Global Reach:** Facilitates access into foreign markets with various payment preferences.
- **Trust Building:** Builds trust among new and current consumers by allowing their chosen payment methods. |
| | | | | |

3. B3 - MoSCoW/Timebox to prioritize the requirements.

According to System Concepts' personnel study, the development team consists of 5 persons, with 4 members working full-time and 1 member working part-time. Full-time workers are required to adhere to a fixed schedule of 5 days per week, with each day consisting of 8 hours of work, for a duration of 3 months. In contrast, part-time workers dedicate 4 hours every day to their job. This data will allow us to precisely assign jobs and calculate the duration needed for each, so improving our efficiency in planning.

- **Total effort:** (4*8 + 1*4 for 1 day) * 5 days per week * 4 weeks per month * 3 month = 2160 hours

Utilizing the concepts of Scrum, I've determined that each sprint covers a period of 2 weeks. With this insight, we can calculate that the development team's capacity for the project within each sprint is limited at 360 hours in total and 180 hours each week.

3.1. TimeBox

ID	Requirement	Break tasks	Estimation (main.hour)
GWO-1	In my work as an Order Handling Clerk, I intend to migrate to internet-based administration for telephone payments, decreasing dependency on paper-based methods.	1. Develop user authentication and permission mechanism (50 main.hours) 2. Develop backend logic and API endpoints for handling orders and submission (30 main.hours) 3. Design wireframes/mockups for managerment order pages (10 main.hours) 4. Implement frontend interface for order management (80 main.hours) 5. Design wireframes/mockups for order tracking and status updates (10 main.hours) 6. Implement notification system for order updates (30 main.hours) 7. Test, debug, and deploy feature to production environment (50 main.hours)	260

GWO-3	Customers desire the opportunity to amend their account data to verify the correctness of their information.	1. Create table in database structure for storing user account information (20 main.hours) 2. Develop backend logic and API endpoints for handling account data modifications (60 main.hours) 3. Design wireframes/mockups for profile page (10 main.hours) 4. Implement frontend interface for edit account information (80 main.hours) 5. Implement notification system for account data changes (30 main.hours) 6. Test, debug, and deploy feature to production environment (50 main.hours)	250
GWO-6	Customers desire to register accounts for simple access to services.	1. Develop backend logic and API endpoints for user registration (30 main.hours) 2. Design wireframes/mockups for user registration form (10 main.hours) 3. Implement frontend interface for user registration (40 main.hours) 4. Send confirmation email to newly registered users (50 main.hours) 5. Test, debug, and deploy feature to production environment (50 main.hours)	180
GWO-8	Customers seek the capacity to update their purchasing carts to simplify decision-making.	1. Create a database structure to store order information (20 main.hours) 2. Develop backend logic and API endpoints for cart management (60 main.hours) 3. Design wireframes/mockups for create and update purchasing carts (10 main.hours) 4. Develop frontend components for add products to cart (40 main.hours) 5. Develop frontend components for cart modification (80 main.hours) 6. Test, debug, and deploy feature to production environment (50 main.hours)	270
GWO-11	Customers desire the opportunity to designate alternate delivery and invoicing addresses for flexibility.	1. Design wireframes/mockups for adding and managing delivery addresses (10 main.hours) 2. Implement frontend components for inputting delivery addresses (50 main.hours) 3. Develop backend logic and API endpoints for storing and managing delivery addresses (50 main.hours) 4. Implement frontend components for checkout (100 main.hours) 5. Develop backend logic and API endpoints checkout and integrate payment gateway for online transactions (100 main.hours) 6. Test, debug, and deploy feature to production environment (50 main.hours)	360
GWO-14	Customers want to select whether they get marketing	1. Create backend logic and API endpoints for updating marketing preferences (30 main.hours)	130

		materials to minimize unwanted solicitations.	2. Design wireframes/mockups for managing marketing preferences (10 main.hours) 3. Implement frontend components for displaying marketing preference options (50 main.hours) 4. Test, debug, and deploy feature to production environment (40 main.hours)	
GWO-18		The Marketing Director recommends for the establishment of an offers or discount page to notify consumers.	1. Develop backend logic and API endpoints for retrieving and managing offers/discounts (30 main.hours) 2. Design wireframes/mockups for managing offers/discounts (10 main.hours) 3. Create admin dashboard for managing offers/discounts (40 main.hours) 4. Design wireframes/mockups for the offers or discount page of customer (10 main.hours) 5. Implement frontend components for displaying offers/discounts to customer (60 main.hours) 6. Add notification system to inform users about new offers/discounts (30 main.hours) 7. Test, debug, and deploy feature to production environment (50 main.hours)	230
GWO-19		The Chief Accountant urges conformity with VAT rules to avoid any fines.	1. Develop backend logic and API endpoints for VAT calculation and submission (50 main.hours) 2. Add inputting and managing VAT-related data (30 main.hours) 3. Develop frontend components for displaying VAT information to users (10 main.hours) 4. Test, debug, and deploy feature to production environment (50 main.hours)	140
GWO-20		The Operations Director seeks to accept all forms of payment to grab a wide market.	1. Develop backend logic and API endpoints for payment by mutiple options to customer (160 main.hours) 2. Design wireframes/mockups for selecting and completing payment methods during checkout (10 main.hours) 3. Implement frontend components for selecting and completing payment methods during checkout (30 main.hours) 4. Test, debug, and deploy feature to production environment (100 main.hours)	300

3.2. MoSCoW

ID	Requirement	MoSCoW	Reason for prioritization	Effort	SUMMARY (man.hour)	Scale
GWO-1	In my work as an Order Handling Clerk, I intend to migrate to internet-based administration for telephone payments, decreasing dependency on paper-based methods.	Must have	- **Replaces Outdated Methods:** Shifts from paper-based to internet-based management, boosting efficiency. - **Essential for Operations:** Critical to guarantee accurate and continuous order processing. - **Aligns with Business efforts:** Supports efforts to modernize operations and enhance market reach. - **Immediate Need:** Vital for the fundamental functioning of managing orders properly. - **Strategic for Project Aim:** Directly contributes to developing an accessible online platform for clients.	260	1320	**62.26%**
GWO-3	Customers desire the opportunity to amend their account data to verify the correctness of their information.	Must have	- **Maintains Data Accuracy:** Essential for proper and up-to-date client information. - **Improves User Experience:** Allows consumers to modify personal data as required. - **Reduces Service Complaints:** Prevents discontent by satisfying customer expectations. - **Supports Customer Service Goals:** Enhances reputation for responsive customer service. - **Aligns with Project Aim:** Ensures the platform is user-friendly and stable.	250		
GWO-6	Customers desire to register accounts for	Must have	- **Enhances Customization:** Enables individualized offerings and user interaction. - **Boosts Loyalty:** Registered users are likely to return, enhancing client retention.	180		

	simple access to services.		- **Facilitates Marketing:** Allows for tailored marketing based on user history. - **Supports Business Strategy:** Critical for creating long-term consumer connections. - **Essential for Functionality:** Foundation for user accounts and service access.			
GWO-8	Customers seek the capacity to update their purchasing carts to simplify decision-making.	Must have	- **Improves Shopping Experience:** Allows real-time cart updates, facilitating decision-making. - **Increases Sales:** Prevents cart abandonment and boosts conversion rates. - **Necessary for Checkout:** Essential for a flawless, user-friendly purchase procedure. - **Directly Impacts Revenue:** Linked to good sales methods and client happiness. - **Supports Business Goals:** Aligns with efforts to make purchasing easy and accessible.	270		
GWO-11	Customers desire the opportunity to designate alternate delivery and invoicing addresses for flexibility.	Must have	- **Offers Flexibility:** Addresses varied client demands for delivery and invoicing. - **Expands Customer Base:** Attracts a varied audience with flexible service possibilities. - **Enhances User Satisfaction:** Meets unique client preferences and expectations. - **Supports Market Expansion:** Essential for accommodating a bigger client group. - **Aligns with Business Aims:** Crucial for creating an inclusive and adaptable buying experience.	360		

GWO-14	Customers want to select whether they get marketing materials to minimize unwanted solicitations.	Should have	- **Respects User Preferences:** Allows consumers to restrict receipt of marketing material. - **Builds Trust:** Demonstrates dedication to privacy and customer-centric practices. - **Improves User Experience:** Minimizes aggravation from unsolicited messages. - **Supports Ethical Marketing:** Aligns with fair and customer-respecting practices. - **Enhances Brand Image:** Positions the organization as sensitive of client demands.	140	370	**16.98%**
GWO-18	The Marketing Director recommends for the establishment of an offers or discount page to notify consumers.	Should have	- **Attracts Customers**: Acts as an incentive with promotions and discounts. - **Boosts Sales:** Enhances engagement and drives purchases. - **Supports Marketing Strategies:** Integral for successful advertising initiatives. - **Aligns with Business Goals:** Helps in keeping client attention and loyalty. - **Adds Value:** Provides a high return on investment via increased traffic.	230		
GWO-19	The Chief Accountant urges conformity with VAT rules to avoid any fines.	Could have	- **Ensures Compliance:** Avoids legal penalties related with VAT non-compliance. - **Supports Financial Management:** Important for correct accounting and audits. - **Reduces Risk:** Minimizes financial and reputational threats to the company. - **Non-critical yet Important:** Can be postponed without harming core operations. - **Future-Proofs Business:** Prepares the foundation for potential mandated requirements.	140	440	**20.75%**

GWO-20	The Operations Director seeks to accept all forms of payment to grab a wide market.	Could have	- **Captures Larger Market:** Accepts multiple payments to appeal to more clients. - **Meets Customer Needs:** Addresses preferences for varied payment alternatives. - **Supports Revenue Goals:** Directly influences sales by reducing payment restrictions. - **Deferred Priority:** Important but may be done after vital features. - **Resource-Intensive:** Requires extensive setup and integration, justifying its classification.	300		
Summary			**Total effort**		**2120**	**100%**

- o **Must have:** 2120 (Hour) * 62.26% = 1320 (Hour)
- o **Should have:** 2120 (Hour) * 16.98% = 360 (Hour)
- o **Could have:** 2120 (Hour) * 20.75% = 440 (Hour)

SCRUM technique involves the organization of activities into sprints, where each sprint is dedicated to fulfilling a specific set of criteria. In the Green Groceries project, tasks will be assigned to sprints according to their importance, beginning with the Must Have criteria, then the Should Have, and finally the Could Have. The priority adheres to the MoSCoW criterion, with a ratio of about **Musthave:Should have:Could have ~ 60:20:20**. This method prioritizes the most essential features, ensuring that they are handled first and maximizing the value delivered. By following SCRUM principles, the project team may effectively oversee development iterations, adjust to evolving needs, and produce a top-notch product within the designated timeframe.

3.3. Sprint and MoSCoW

	180 man.hours/ week	Sprint 1		Sprint 2		Sprint 3		Sprint 4		Sprint 5		Sprint 6	
		week 1	week 2	week 3	week 4	week 5	week 6	week 7	week 8	week 9	week 10	week 11	week 12
Must have	GWO-1												
	GWO-3												
	GWO-6												
	GWO-8												
	GWO-11												
Should have	GWO-14												
	GWO-18												
Could have	GWO-19												
	GWO-20												

Section C: Legal, Social, Ethical and Professional issues

Data security is vital in any digital company operation, especially in platforms like Green Groceries, where personal and financial data are handled and stored regularly. Understanding the what, how, and why of data management is critical for compliance, trust, and operational integrity.

What Data Will Be Collected: Green Groceries gathers data required for order processing and customer service development, including customer names, addresses, contact details, payment information, and purchase history. This collection offers the individualized shopping experience and fast order fulfillment.

How to Store Data: Data storage at Green Groceries is controlled by secure, encrypted databases that offer security against illegal access and data breaches. Regular audits and changes to security policies assist ensure data integrity and safety.

How to Process Data: Data processing at Green Groceries conforms to concepts of simplicity and need. Only the data essential for specified business goals is handled, and all processing operations are matched with legal requirements and ethical principles. Processing is transparent, with consumers informed about how their data is utilized.

How to Transfer Data: Transferring data inside Green Groceries and to other parties (such delivery providers) is performed over secured channels. Agreements and procedures are in place to guarantee that third parties comply with equivalent or greater data protection requirements.

Purpose for Data Usage: The key aims of data utilization at Green Groceries are order processing, customer service enhancements, direct marketing, and company analytics. All uses are fully stated to clients, ensuring conformity with their expectations and permission.

This new portion matches with your structure and combines more clearly the components of data management essential to Green Groceries, based on the proposed format and criteria from your teacher. This should give a more systematic and intelligible method to handling data protection in your paper.

1. ## C1 - Legal, Social, Ethical, and Professional Issues (LSEPI)
   1.1. ### Legal Problems

Data Privacy: This means making sure personal information is handled, protected and used in accordance with law to safe-guard individual rights. For instance: Green Groceries anonymize customer data before using it in market research to comply with GDPR and thus protect their privacy but still give meaningful insights.

Security and Fraud Detection: This area deals with measures that prevent unauthorized access and fraudulent activities. For example: Two-factor authentication of Green Groceries makes users have an SMS-based identification when they are accessing their accounts, a condition that highly improves security.

Compliance with Financial Regulations: It is important to ensure that all financial activities are aligned with the legal standards so as not to be penalized and create trust. A case in point is this; Green Groceries employs PCI DSS compliant payment gateways for all online transactions which guarantees protection of financial data.

Intellectual Property and Licensing: The issue of intellectual property demands companies to obtain essential licenses for third-party materials as part of its management.Example: The corporation guarantees any third-party software utilized, including inventory management solutions, is legally licensed, preventing legal concerns.

Conditions of Service and User Agreements: These contracts are vital in alerting users about the conditions under which services are offered. Example: Green Groceries periodically updates these publications to reflect current practices and ensure consumers are properly informed.

Consumer Protection: This encompasses rules and activities that defend the buyer's rights and assure fair treatment. Example: Green Groceries provides a clear and readily accessible refund policy, boosting customer confidence and compliance.

1.2.   Social Issues

Impact to All Citizens: This focuses on the consequences corporate operations have on the community and environment. Example: By procuring items locally, Green Groceries helps local farmers, decreasing environmental impact and strengthening the local economy.

Accessibility: Ensuring all clients can access services, especially those with impairments. Example: The company's website contains alt language for photos and compatibility with screen readers, making it accessible to visually challenged visitors.

Technical Education for Consumers: Educating customers on technology and safe behaviors protects them and promotes their involvement. Example: Green Groceries gives information on safe internet buying methods via their website and newsletters.

E-commerce and Privacy: In the digital purchasing era, ensuring clients understand how their information is handled is vital. Example: Transparent disclosure regarding data collection and usage is available in Green Groceries' privacy policy.

Security knowledge: Raising knowledge about security best practices among clients helps avoid fraud. Example: The firm sends out frequent emails with security recommendations, helping clients secure their accounts.

Transparency and Trust: Building trust via transparent disclosure regarding procedures and rules. Example: Detailed disclosures on how customer data is safeguarded are made accessible on the company's website.

1.3.   Ethical Issues

Fairness: Ensuring fair treatment for all stakeholders, including workers, consumers, and partners. Example: Green Groceries implements anonymized recruiting techniques to remove prejudice and enhance fairness in employment.

Protect Consumer: This involves preserving consumer rights to privacy, safety, and fair treatment. Example: Green Groceries' no-questions-asked refund policy empowers customers and assures their pleasure and confidence.

Protect Business Data and Information: Safeguarding sensitive information from unwanted access and breaches. Example: Access to important business information at Green Groceries is limited to authorized individuals only, employing encrypted data storage.

1.4. Professional Issues

Compliance with Standards and Regulations: Adhering to industry and regulatory standards assures quality and safety in operations. Example: Green Groceries undertakes frequent security assessments to conform to OWASP principles for cybersecurity.

Testing for Quality Assurance: Rigorous testing assures that goods and services fulfill quality and safety requirements. Example: The organization has introduced automated testing techniques to frequently check for system vulnerabilities.

Security and Data Protection: Robust procedures are essential to safeguard data from cyber attacks and breaches. Example: Customer payment information is encrypted at Green Groceries to avoid data theft.

By carefully resolving these concerns, Green Groceries not only satisfies its legal and ethical requirements but also strengthens its reputation and develops enduring trust with its stakeholders. This comprehensive approach is crucial for sustaining operational integrity and sustainable company practices.

2. C2 – Management Summary: Purpose of Professional Bodies and BCS Code of Conduct

2.1. Introduction about BCS Code of Conduct

The British Computer Society (BCS), also known as The Chartered Institute for IT, maintains a Code of Conduct that delineates the professional standards demanded of its members. This code guarantees that IT professionals perform properly and ethically within their individual positions, regardless of their membership grade or geographical place of employment. It helps to enhance the integrity of the profession by directing members in protecting the welfare of the public, complying to applicable laws, and honoring professional relationships (BCS, 2022).

2.2. Four Codes of Conduct in BCS and Examples

Public Interest

Members shall emphasize public health, security, and the well-being of others, especially the environment. They are supposed to prevent prejudice and encourage equitable access to information technology.

Example: In a case study involving a big IT business, a BCS member campaigned for inclusive software design that supports accessibility for persons with impairments, directly encouraging social inclusion and adhering to this code by addressing public health and well-being.

Professional Competence and Integrity

BCS members are obligated to execute duties exclusively within their regions of competence and to continually upgrade their professional abilities. They must avoid dishonest techniques and respect varied opinions.

Example: A project manager at a software development business, who is a BCS member, refused to embark on a project employing a technology new to them without first taking the requisite training. This action supported the code's focus on preserving professional competence and integrity (BCS, 2022).

Duty to Relevant Authority

Members must execute their professional obligations conscientiously, prevent conflicts of interest, and keep secret material until legally required to release it.

Example: When a BCS member noticed a contradiction between a client's request and ethical practice, they openly disclosed the matter to their management and abstained from progressing until an ethical resolution was obtained, indicating conformity with this code.

Duty to the Profession

BCS members are committed to boost the reputation of the IT profession. This involves contributing to the creation of professional standards and promoting the professional progress of peers.

Example: A senior IT expert routinely arranges free workshops and seminars for novice IT professionals. By doing so, the consultant helps other members' professional growth and protects the profession's reputation as instructed by the BCS Code of Conduct (BCS, 2022).

Conclusion and assumptions made

Conclusion

The study done in Section A supports the applicability of Agile techniques for Green Groceries, largely owing to the method's versatility and emphasis on iterative development. This is particularly advantageous in the competitive and dynamic retail sector, where reacting rapidly to customer requirements and market developments is vital. Agile's focus on

customer participation ensures that product development stays aligned with user expectations and company objectives, boosting overall project results.

In Section B, the revised high-level requirements analysis and successful prioritization utilizing the MoSCoW technique underline the necessity of a focused and strategic approach to project scope management. This guarantees that only the most necessary capabilities that give value to Green Groceries are created first, sticking strictly to the project schedules and resource allocations.

Section C's insights into legal, social, ethical, and professional challenges underscore the significance of incorporating these dimensions into system creation from the start. This integration not only secures the organization from legal and ethical hazards but also fortifies its brand by ensuring activities conform with the highest standards of professionalism and social responsibility.

Assumptions

The findings made from each section hinge on three essential assumptions:

The dynamic nature of the retail business and its needs continue to be ideal for Agile techniques. It is expected that the flexibility and customer-centric approach of Agile would immediately help to handling the quick changes and competitiveness in the industry.

The high-level criteria identified and selected in the guided workshops properly represent the main demands of Green Groceries. This assumption is crucial for the success of the project, as it pertains to the alignment of the project deliverables with the strategic business goals of the firm.

Compliance with legal, social, ethical, and professional norms is believed to be effectively managed by continual adherence to rules like the BCS Code of Conduct. This guarantees that all system development activities are handled responsibly, avoiding risks associated with non-compliance and unethical actions.

These assumptions are based on the case study data and the strategic analysis completed during the project. Continuous validation and modification of these assumptions via feedback channels and project reviews are advised to ensure project relevance and effectiveness..

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