

**COMP1787:**

**REQUIREMENTS MANAGEMENT**

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# Section A: Management Summary

## Introduction about the case study

In the age of technology 4.0, digital transformation has become an important step forward, contributing to the strong development of society, especially in the business sector. However, not all companies agree and adapt quickly to this technological revolution. Green Groceries, one of the businesses facing this challenge, despite having built a solid reputation in the local organic grocery sector over five years, still struggled to adapt and expand its business scale in the digital age.

So, to overcome these challenges without an in-house software development team, Green Groceries decided to partner with professional software developers. Instead of relying on internal development, they chose to outsource software projects, a wiser and more economical decision.

It is important to choose a software development partner that is trustworthy and knowledgeable about agile development methods. After a careful consideration process, Green Groceries chose System Concepts (SC) as the ideal partner for its project. With the promise of agility and efficiency through the application of SCRUM and Agile concepts, SC not only makes the project move stronger but also ensures the online platform can launch quickly within 3 months to help Green Groceries achieve success in the digital age.



Figure 1 Green Groceries

## Introduction the business goal

The Green Groceries Online Platform project's business goal is to expand the market and provide solid products for Green Groceries to sell. Having partnered with local farmers and environmentally conscious suppliers over the past year, Green Groceries aims to launch an online website in the next three months. The significance of this initiative is to leverage technology to create solid products that align with strong values and the company's future capabilities.

## Introduction the aim of project

The aim of the Green Groceries project is to establish a powerful and user-friendly online platform to expand the market reach of Green Groceries, a large-scale company. Reputable Medium Tissue specializes in organic and locally sourced grocery productsBuilding a solid reputation over the past five years through partnerships with local farmers and environmentally conscious suppliers, Green Groceries aims to leverage technology to create sustainable products. more accessible to a wider audience. By launching the online platform within the next three months, the project seeks to provide customers with a convenient and efficient way to purchase high-quality, environmentally friendly groceries while reinforcing its commitment to the company's commitment to sustainability and accessibility.

## Framework DSDM

DSDM is a rapid application development (RAD) methodology that supports rapid software development and project development platforms. The important thing about DSDM is that users must actively participate and the development team has the right to make decisions for the project. DSDM regularly focuses on product release work. DSDM uses the following methods: boxing time, MoSCoW Rules, create a template (Thao, 2018)

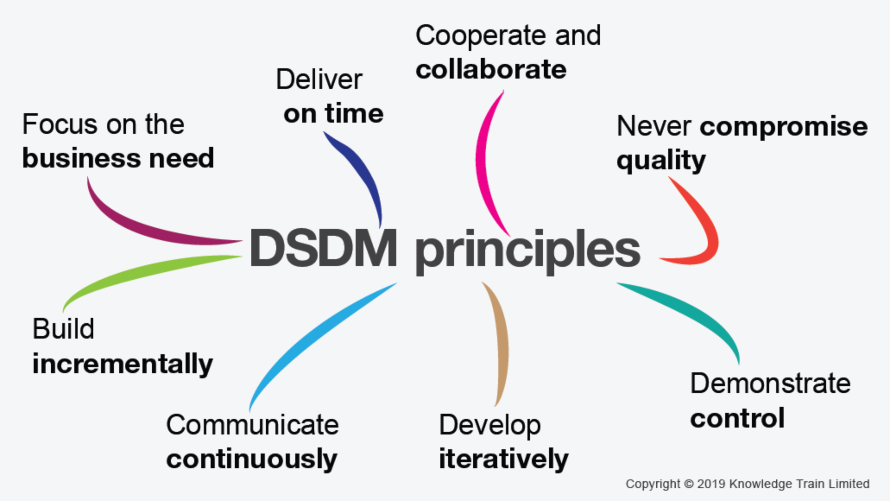


Figure 2 DSDM Framework

|  |  |
| --- | --- |
| Advantages | Disadvantages |
| * To meet changing requirements, deliveries are iterative. * Emphasize business value and needs. Encourage collaboration between teams and stakeholders. * Time-boxing ensures that the project stays on track. * Manage risks well throughout the project. | * Understand complexity, especially for new Agile teams. * Stakeholder engagement is very important. * It requires some documentation and may cost extra. * Not suitable for large-scale or distributed projects. * To perform effectively, skills and training are required. |

## Introduction about Development the online platform: Outsourcing, methodologies, framework, dev team.

### Outsourcing

In the information technology industry, outsourcing refers to the practice of contracting out or continuing to provide services or job duties to a third party. This position assigns the proper personnel to each company in order to address their specific issues and offer suitable solutions. Businesses may maximize their efficiency and save a lot of money and time by doing this. Developing software on demand, implementing network services, and creating information technology systems are just a few examples of the various tasks that can be outsourced. The benefits and drawbacks of outsourcing work in the information technology industry are outlined in the table below:

|  |  |
| --- | --- |
| **Advantages** | **Disadvantages** |
| * **Money Savings:** Payroll, benefits, and infrastructure costs can all be considerably decreased by outsourcing IT work to nations with cheaper labor. * **Access to specialist knowledge and skills:** Businesses can access a worldwide talent pool through outsourcing, giving them access to specialized knowledge and skills that might not be available internally. * **Concentrate on core activities:** Companies can concentrate on their core competencies and strategic goals by assigning non-core IT operations to outside vendors. * **Flexibility and scalability:** Outsourcing offers flexibility and scalability, enabling companies to quickly adjust IT resources in response to changing demand without requiring long-term agreements. * **Faster time to market:** By utilizing the experience and resources of outside suppliers, outsourcing can shorten project delivery schedules and hasten the time it takes for goods and services to reach consumers. | * **Quality issues:** If there are discrepancies in standards, procedures, or cultural norms, outsourcing may give rise to questions concerning the caliber of work produced by outside contractors. * **Communication difficulties:** Disparities in geography and culture can cause miscommunication, misinterpretations, and delays in project completion, which can affect teamwork and output. * **Risks to security**: When outsourcing IT tasks, particularly when working with foreign vendors, confidential information and intellectual property may be subject to security risks such as data breaches, leaks, and illegal access. * **Dependency on vendors:** If you rely too much on outside companies to provide essential IT services, you run the danger of losing control, becoming locked in to a vendor, and not being able to react quickly enough to changing business requirements. * **Legal and regulatory compliance:** Contractual commitments, data privacy regulations, and other complicated legal and regulatory requirements may all need to be navigated when outsourcing IT work. This can lead to a rise in the risks and expenses associated with compliance. |

### Dev Team

|  |  |  |
| --- | --- | --- |
| **Name** | **Role** | **Description** |
| Cheryl | Team Leader | Cheryl is the seasoned captain of our Agile ship. With a wealth of experience in leading web development teams, she ensures smooth sailing through efficient management and coordination. |
| Millie | Programmer | Millie is a web development whiz, armed with top-notch coding skills and exceptional communication prowess. She ensures seamless collaboration within the team, delivering stellar results every time. |
| Peter | Web Developer | Peter is the go-to guy for web development expertise. While he's known for his technical finesse, occasional client disagreements don't deter his commitment to delivering top-tier work. |
| Anita | Web Developer | Anita is a web development virtuoso with a heart of gold. When she's not crafting code, she's out making a difference through volunteer work for the homeless, showcasing her passion for both tech and humanity. |
| Pat | Developer | Pat may be part-time, but his web development and testing skills are full-time fantastic. Despite his limited availability, he's a dependable team player, offering invaluable insights and support throughout the project. |

## What is an applied framework? Why?

Green Groceries uses Scrum, an Agile framework. Scrum is a structured approach to project management, with defined tasks, customs, and artifacts to ensure that everything is clear, testable, and adaptable. We chose this framework because it strikes a balance between structure and flexibility, enabling teams to efficiently organize their work while adapting to changing requirements and priorities.

Scrum is an example of an application framework that provides an organized set of strategies and procedures for project execution. It facilitates effective collaboration and communication, as well as ensuring that teams and projects are consistent and aligned. Additionally, a framework provides a proven system for solving common problems in project management, such as task prioritization, risk management, and progress tracking.

## Benefit when applying SCRUM

The Green Groceries Online Platform project uses SCRUM to leverage experience, employ human resources, and manage time. First, SCRUM's time-framed iterations, known as sprints, give development activities a clear and structured timeline. This time constraint ensured that the project progressed steadily towards Green Groceries' goal of launching the website online within three months. SCRUM breaks the project into manageable chunks, allowing the team to focus on delivering high-priority features in each sprint, maximizing productivity, and ensuring timely delivery. Second, SCRUM encourages cross-functional and self-organizing teams to optimize human resource utilization. Each member, whether from Green Groceries or System Concepts, contributes based on their experience and abilities to effectively meet project needs. This collaborative approach gives team members a better understanding of ownership and responsibility. This leads to greater efficiency and higher-quality results. Furthermore, with SCRUM emphasizing empiricism and continuous improvement, the team's collective experience will improve. To improve future performance, the team regularly revisits the sprint retrospective process. This iterative learning process not only improves the team's capabilities but also encourages innovation and adaptation to meet ongoing project-related requirements and challenges. In summary, the company can effectively manage time, optimize the use of human resources, and use collective experience to ensure the project's delivery by incorporating SCRUM into the Green Groceríe Online Platform project.

## Benefit when applying Agile

In the Green Groceries Online Platform project, agile methods such as SCRUM will cooperate. An iterative and incremental Agile approach improves time management. By breaking the project into manageable sprints, each lasting several weeks, Agile ensures structured progress towards the goal of launching the online platform within three months. This allows for prioritizing features, delivering functional parts of the platform regularly, adapting to changes, maximizing productivity, and ensuring timely delivery. Agile supports self-organizing and cross-functional teams, optimizing the use of human resources. Green Groceries and System Concepts utilize their skills effectively to meet project needs. Collaboration among team members promotes knowledge sharing, a sense of ownership, and accountability, leading to better efficiency and higher-quality results. Agile methods also encourage continuous learning and improvement. Techniques like sprint retrospectives enable teams to reflect on processes, identify areas for improvement, and leverage collective experience to improve project outcomes. Agile encourages teams to innovate, solve problems creatively, and respond effectively to them. Ultimately, it strengthens capabilities and ensures project success by creating an environment for experimentation and adaptation. Overall, in the Green Groceries Online Platform project, the use of Agile methods such as SCRUM brought benefits such as improved time management and optimized usage. Human resources and experience enhancement Projects can progress efficiently, meet evolving requirements, and deliver value to stakeholders within the stipulated time through iterative and cooperative processes.

## Benefit when applying DSDM

The Green Groceries Online Platform project applied DSDM (Dynamic Systems Development Methodology) with several key benefits. First, DSDM's iterative approach breaks the project into manageable phases, helping to meet the tight three-month deadline. This ensures the timely delivery of the online platform. Second, DSDM encourages collaboration between development teams and stakeholders, leading to faster and better decision-making. Third, to ensure that the project brings real value to Green Groceries and can still meet market needs, DSDM prioritizes features based on business needs. Ultimately, DSDM fosters empowered cultures and teams for continuous growth, facilitating greater capability and resilience in the face of difficulty. Overall, DSDM allows projects to grow efficiently, adapt to change, and achieve maximum value within the stipulated time.

## Study about feasibility of the project

Implementing methodologies such as SCRUM, AGILE, and DSDM in the Green Groceries Online Platform project has the potential for both advantage and achievement. Agile and SCRUM agile approaches enable systematic and flexible project advancement. Projects are divided into modular components that may be easily modified to adapt to changing requirements and market conditions, instead of being bound by a rigid blueprint. This expedites the progress of the project and ensures that the most critical components receive the highest priority.

The SCRUM methodology, which is both detailed and value-focused, guarantees that the project will deliver tangible benefits to the organization and its customers. Demonstrate the ability to efficiently develop a functioning and captivating product by prioritizing and implementing the most valuable features and functionality at the outset.

In the end, the structure and control of DSDM establish a logical and essential operational framework for the project. DSDM not only enhances the optimization of risk and resource management but also guarantees strict adherence to processes and norms. This facilitates the efficient and predictable advancement of tasks.

To summarize, the Green Groceries Online Platform project provides prospects and promise when integrating SCRUM, AGILE, and DSDM methodologies. The project is highly likely to succeed and provide value to both the organization and the client through its flexibility and focus on delivering value.

Overall, the combination of SCRUM, AGILE, and DSDM methods provides a feasible and promising opportunity for the Green Groceries Online Platform project. With flexibility, value focus, and discipline, the project has all the necessary conditions to succeed and deliver significant value to the business and customers.

# Section B: High level requirements analysis and MoSCoW prioritization

## B1 - Review baseline requirements

### Section B1.1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirements ID** | **Requirement Description** | **Stakeholder** | **FR/NFR** | **Reason** |
| GG-2 | In order to showcase our commitment to an environmentally friendly and conducive work environment, the company will ensure the presence of a minimum of 20 office plants. | Staff | NFR | Although having office plants might enhance the overall ambiance of a workplace, it is often not considered an essential necessity at a senior level. High-level criteria should prioritize essential capabilities or objectives that are clearly aligned with the company's mission or the providing of its product or service. |
| GG-4 | Commence a virtual celebration on our website to demonstrate our company's cheerful and inclusive culture in honor of the CEO's birthday. | Staff | FR | Organizing a virtual celebration on the company's website to commemorate the CEO's birthday is categorized as a functional need as it explicitly outlines a specific function or feature that the website must possess. According to the criterion, the website must have the ability to host virtual events. This feature has a direct effect on the capacities of the website and serves the objective of fostering the company's culture by making virtual festivities easier. |
| GG-5 | To evade substantial penalties, as the Managing Director, I aim to guarantee that our website complies with the provisions of the Data Protection Act. | Director | NFR | Adhering to legislation such as the Data Protection Act is crucial, albeit it is more of a detailed guideline rather than a broad obligation. High-level criteria should encompass a wider scope and focus on strategic objectives, such as guaranteeing the security and privacy of data in all operational activities. |
| GG-7 | As a consumer, I require delivery timing alternatives to effectively coordinate my calendar. | Customer | FR | This statement qualifies as a functional requirement as it clearly delineates a particular function that the product or service must satisfy. In this instance, the stipulation is that the product or service must provide many choices for the schedule of delivery. This has a direct impact on the service's performance and fulfills a specific consumer need, enabling them to efficiently manage their calendar. |
| GG-9 | Implement pet-friendly policies to establish a work climate that is more inclusive and welcoming. | Staff | NFR | Although it is crucial to promote tolerance and optimism in the workplace, having pet-friendly policies is more of a cultural preference rather than a fundamental necessity. High-level requirements generally refer to broad aims or features that directly affect business goals. |
| GG-10 | Design the system to be capable of handling a 30% surge in traffic during peak hours without encountering any latency. | Staff | NFR | Ensuring that a system can effectively manage a higher volume of traffic is essential. However, it may not be suitable to define a specific percentage increase as a broad need. High-level criteria should prioritize scalability and performance without delving into detailed measurements. |
| GG-15 | To ensure maximum security, it is recommended to encrypt all user data, including payment and personal information. | Staff | NFR | Ensuring the encryption of user data is of utmost importance for maintaining security. However, it is typically regarded as a specific requirement rather than a broad one. High-level requirements should prioritize overarching goals such as safeguarding data integrity, rather than getting caught up in individual implementation intricacies. |
| GG-16 | In order to strengthen our brand recognition, it is important to ensure that all branding and design elements on the website are uniform and cohesive. | Staff | NFR | Ensuring consistent branding is crucial for establishing brand identification, although it primarily serves as a design guideline rather than a top-level mandate. High-level requirements should prioritize overarching business objectives rather than getting caught up in specific design aspects. |
| GG-17 | Coordinate quarterly team-building initiatives for the development team to cultivate collaboration and promote a positive work atmosphere. | COO | NFR | Although it is important to promote teamwork and create a positive work atmosphere, the responsibility of arranging team-building activities lies mostly with the management rather than being a top-level necessity. High-level requirements should prioritize overall objectives rather than individual employee tasks. |

### Section B1.2

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Requirements ID** | **Requirement Description** | **Stakeholder** | **FR/NFR** | **Reason** |
| GG-1 | As an Order Handling Clerk, I aim to utilize the website for the purpose of processing telephone purchases, replacing the current paper-based approach. | Sale Staff | FR | This criterion is considered high-level since it specifically aims to convert the process of handling telephone purchases from a paper-based system to an online system through the website. It improves efficiency and accessibility for Order Handling Clerks by streamlining the procedure. |
| GG-3 | As a customer, I desire the ability to modify my account details in order to guarantee that the most current information about me is accurately recorded. | Users | FR | This requirement is considered high-level because it clearly defines a goal: enabling consumers to change their account details for the purpose of maintaining correct records. Customers benefit from having control over their information, which guarantees its accuracy and currency. |
| GG-6 | Customers create an account on the website. | Users | FR | This need is considered high-level since it specifies a fundamental capability, which is the ability for customers to create an account on the website. Customers benefit from personalized features, such as saved preferences and order history, which enhance their overall experience. |
| GG-7 | Customers are provided with a selection of delivery time slots to organize their schedules accordingly. | Users | FR | This requirement is considered high-level as it clearly defines a crucial functionality: providing clients with the option to select delivery time windows that best fit their schedules. Customers are benefited by the service as it provides them with flexibility and control over the timing of their orders, hence increasing convenience and happiness. |
| GG-8 | Customers have the ability to make changes to their shopping carts while they are in the process of making a purchase. | Users | FR | This criteria is considered high-level as it emphasizes a crucial functionality: enabling customers to make changes to their shopping carts while they are in the midst of making a purchase. Customers are provided with flexibility and convenience, allowing them to modify their purchases before finalizing their purchase, resulting in a more seamless shopping experience. |
| GG-11 | As a customer, I desire the ability to input distinct delivery and invoice addresses in order to facilitate the receipt of bags when staying at a friend's residence. | Users | FR | This need is considered high-level as it highlights an important feature, which is the ability for customers to provide distinct delivery and billing addresses. Customers profit from the service by gaining convenience, as it allows them to receive orders at other locations, such as a friend's home, without any difficulty. |
| GG-14 | As a consumer, I desire the ability to opt-in or opt-out of receiving marketing materials in order to prevent the inundation of unsolicited promotional mail. | Users | FR | This criteria is considered high-level because it specifically targets a fundamental functionality: providing consumers with the ability to decide whether they want to receive marketing materials. The advantage comes in empowering consumers to have control over their inbox, minimizing unwanted commercial mail, and augmenting their overall satisfaction with the service. |
| GG-18 | As the Marketing Director, I request the creation of a dedicated page for offers and discounts to effectively communicate this information to our clients. | Marketing Director | FR | This need is considered high-level since it clearly defines a crucial feature, which is the creation of a separate page specifically for displaying deals and discounts. The advantage is in its ability to enable the Marketing Director to efficiently convey promotional information to clients, hence enhancing engagement and potentially stimulating sales. |
| GG-19 | As the Chief Accountant, I desire for the website to comply with VAT legislation in order to avoid a substantial penalty. | Accountant | FR | This criteria is considered high-level due to its importance in achieving a critical objective: ensuring the website adheres to VAT legislation. The advantage is in its ability to assist the Chief Accountant in reducing the likelihood of significant fines, thereby protecting the financial stability and reputation of the organization. |
| GG-20 | As the Operations Director, my objective is to maximize market penetration by accepting all means of payment. | CEO | FR | This criteria is considered high-level since it emphasizes a strategy objective: to accept all types of payment in order to maximize market penetration. The advantage is in its ability to enable the Operations Director to expand the consumer base by catering to diverse payment preferences, ultimately leading to increased sales and facilitating a seamless shopping experience for customers. |

## B2 - High level requirements list

### Section B2.1

|  |  |
| --- | --- |
| **Aspect** | **Description** |
| Project Time | 3 months |
| SCRUM | 6 sprints, each sprint is 2 weeks |
| Dev Team (4 full-time dev, 1 part-time dev) |  |
| Total Effort | 2160 man.hours |
| Spring Effort | 360 man.hours |

The table above describes the key elements of the project, focusing on project duration, SCRUM methodology, and the composition and efforts of the development team. The table clearly outlines the project's implementation over a three-month period, organized into six sprints of two weeks each, in accordance with SCRUM principles. There are five members on the development team: four are full-time developers, and one is a part-time developer. The team needed 2,160 man-hours, taking into account the number of working days per week and the number of weeks per month throughout the project. Additionally, each sprint requires an estimated 360 hours of public effort. This information helps stakeholders better understand project progress, team composition, and expected workload. This helps establish effective planning and management strategies.

|  |  |  |  |
| --- | --- | --- | --- |
| **Num** | **Requirement** | **Break Task** | **Estimation (man.hour)** |
| 1 | As an Order Handling Clerk, I aim to utilize the website for the purpose of processing telephone purchases, replacing the current paper-based approach. | 1. Evaluate the system based on existing evidence. The frontend evaluates user interactions and workflows. Final part: data flow analysis and system architecture  2: Design a database schema for phone sales records, including the following: relationships and database tables.  3: Build a web interface to process phone purchases. Frontend designers design the order processing user interface (UI) components. The final part is to implement the API to send and process orders. | 300 |
| 2 | As a customer, I desire the ability to modify my account details in order to guarantee that the most current information about me is accurately recorded. | 1. Design user interface for account modification: Frontend - Create UI wireframes and design layouts for account settings.  2. Implement backend logic to update account details: Backend - Develop server-side code to handle account updates and database interactions. | 150 |
| 3 | Customers create an account on the website. | 1. Frontend  -Create a user interface (UI) wireframe and design the local layout for account settings.  2. Backend: Develop server coding to handle account updates and interactive databases. | 240 |
| 4 | Customers are provided with a selection of delivery time slots to organize their schedules accordingly. | 1. UI design: The front interface design integrates calendar and delivery time frame selection.  2. Backend: Implement logic to manage available slots and schedule deliveries. | 180 |
| 5 | Customers have the ability to make changes to their shopping carts while they are in the process of making a purchase. | 1. Frontend: create an interface shopping cart that can add and remove items.  2: Backend: develop server-side logic to handle shopping cart operations and update cart content. | 135 |
| 6 | As a customer, I desire the ability to input distinct delivery and invoice addresses in order to facilitate the receipt of bags when staying at a friend's residence. | 1. Frontend: Design an address entry form with many options.  2: Backend: Create logic for managing and storing multiple user addresses. | 225 |
| 7 | As a consumer, I desire the ability to opt-in or opt-out of receiving marketing materials in order to prevent the inundation of unsolicited promotional mail. | 1. Frontend: Design a settings page with opt-in and opt-out marketing communication options.  2: Backend: create an API for users and database interaction. | 180 |
| 8 | As the Marketing Director, I want to request the creation of a dedicated page for offers and discounts to effectively communicate this information to our clients. | 1. Frontend: Design the page layout with sections displaying prices and offers.  2: Backend: Provides logic that allows retrieving and displaying promotions from the database. | 200 |
| 9 | As the Chief Accountant, I want the website to comply with VAT legislation in order to avoid a substantial penalty. | 1. Research—research related to VAT laws and regulations related to website operations.  2: Frontend: Related pages display VAT information. 3: Backend: Create logic to calculate and display the VAT amount on invoices and receipts. | 210 |
| 10 | As the Operations Director, my objective is to maximize market penetration by accepting all means of payment. | 1. Research and create a payment gateway.  2. Backend: Explore payment gateways and integration options.  3. Frontend: test payment gateway integration and user payment flow  4. Backend: Performs integration testing and ensures that payment processing works properly. | 300 |
| **Summary** |  | **Total Effort** | **2130** |

### Section B2.2

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Requirement** | **MosCoW** | **Reason for prioritization** | **Effort** | **SUMMARY(man.hour)** | **Scale** |
| As an Order Handling Clerk, I aim to utilize the website for the purpose of processing telephone purchases, replacing the current paper-based approach. | Must have | Transitioning from paper-based to online processing is crucial for efficiency and accuracy in order handling. | 300 | 1065 | 50% |
| As the Chief Accountant, I want the website to comply with VAT legislation in order to avoid a substantial penalty. | Must have | Complying with VAT legislation is crucial for legal compliance and financial security. | 210 |
| Customers create an account on the website. | Must have | Account creation is fundamental for user engagement and personalized services. | 240 |
| Customers are provided with a selection of delivery time slots to organize their schedules accordingly. | Must have | Offering flexible delivery options enhances customer experience and satisfaction. | 180 |
| Customers have the ability to make changes to their shopping carts while they are in the process of making a purchase. | Must have | Dynamic shopping cart functionality is essential for seamless and convenient transactions. | 135 |
| As a customer, I desire the ability to input distinct delivery and invoice addresses in order to facilitate the receipt of bags when staying at a friend's residence. | Should have | Address input flexibility enhances user experience but can be deferred if necessary. | 225 | 405 | 28% |
| As a consumer, I desire the ability to opt-in or opt-out of receiving marketing materials in order to prevent the inundation of unsolicited promotional mail. | Should have | Managing marketing preferences is important for user control but can be deferred if necessary. | 180 |
| As the Marketing Director, I want to request the creation of a dedicated page for offers and discounts to effectively communicate this information to our clients. | Should have | Communicating offers and discounts is important for marketing but can be deferred if necessary. | 200 |  |
| As the Operations Director, my objective is to maximize market penetration by accepting all means of payment. | Could have | While accepting all payment methods is crucial for growth, it's not immediately necessary for launch. Starting with common methods suffices initially. | 300 | 450 | 21% |
| As a customer, I desire the ability to modify my account details in order to guarantee that the most current information about me is accurately recorded. | Could have | Though vital for user satisfaction, it's not critical for launch. Implementing it later can optimize resource allocation. | 150 |

# Section C: Legal, Social, Ethical and Professional issues

## Section C1: Legal, Social, Ethical and Professional issues

### Data Protection

#### What data will be collected

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Data will be collected** | **Data fields include** | **Explain** |
| 1 | Customer data containing personal details | The dataset will include data fields such as complete name, email address, phone number, and delivery address. | The objective of collecting this data is to facilitate the Green Groceries online system's interaction and communication with clients. For example, maintaining the customer's name and address in the records will allow Green Groceries to accurately deliver the products to the correct address and avoid any potential shipping risks. In addition, collecting email addresses enables the quick and effortless communication of information to customers regarding new products, enticing offers, or updates on their orders. This enhances the user's purchasing experience while simultaneously strengthening the relationship with clients. |
| 2 | Information pertaining to the transactional interactions between customers and the system. | The dataset will include data elements such as order time, specific payment type, product information and quantity, and anticipated delivery time. | The objective of gathering transaction information is to retain data regarding the platform's purchase procedure, including payment and order histories. This data is useful for tracking purchases, delivering efficient customer service, and safely managing transactions. By maintaining a record of customer orders, Green Groceries may create personalized recommendations using previous purchases, enhancing the overall shopping experience for the consumer. This enhances the convenience and pleasure of online purchase, benefiting both customers and businesses. |
| 3 | Security-related data | This dataset will contain data fields such as encryption keys and security event logs. | Green Groceries use security data to find effective data protection measures that safeguard against cyberattacks targeting their entire system and consumer information. In addition, monitoring and documenting security incidents enables the timely detection and resolution of problems, hence improving the reliability and trustworthiness of the system for users. |
| 4 | The data consists of statistical analysis data. | The dataset may contain statistics on system traffic, customer demographics, user demographics, and the effectiveness of SEO keywords. |  |
| 5 | Employee data inside the company | The dataset of this table may encompass account information, job history particulars, and personal characteristics of the employee,... |  |

#### How to storage data

Efficient data storage is critical for Green Groceries' online platform to ensure smooth operations, fast access, and the ability to grow as the company grows. Customer information, product details, orders, payment records, and inventory data are some of the types of data the platform must store. Therefore, businesses can use a cloud-based storage solution such as Amazon Web Services (AWS) S3 or Google Cloud Storage. These platforms provide reliable, scalable, and secure hosting options. Green Groceries can benefit from storage flexibility, automatic backups, and strong security measures when using cloud storage. Additionally, the use of a relational database management system (RDBMS), such as PostgreSQL or MySQL, to store structured data and a NoSQL database, such as MongoDB, to store unstructured data can provide flexibility.

#### How to process data

Green Groceries needs efficient data processing to manage inventory, optimize delivery routes, and analyze customer behavior. Effective data processing results in quick decisions and better business operations. As a result, businesses can use technologies such as Apache Hadoop for big data processing and storage, Apache Kafka for real-time data streaming, and Apache Spark for large-scale data processing. These technologies will allow Green Groceries to efficiently process large amounts of data, perform complex analyses, and derive valuable insights. Additionally, using frameworks like TensorFlow or PyTorch to integrate machine learning algorithms can help better process data and enable analytics systems to predict and make recommendations tailored to the user's experience.

#### How to transfer data

An efficient data transfer mechanism is needed for seamless communication between different parts of the online platform and integration with external systems such as logistics providers and payment gateways. Therefore, RESTful APIs—application programming interfaces—can be used for communication between different platform modules. This allows for lightweight and efficient data transmission via the HTTP (S) protocol. To ensure reliability and scalability, use message-queuing systems such as RabbitMQ or Apache Kafka for asynchronous communication between microservices. uses secure data transfer protocols such as HTTPS and TLS to encrypt data in transit, protecting against unauthorized access and ensuring that your data is kept safe. Additionally, to effectively monitor, control, and secure APIs, use API management platforms like Apigee or Kong.

#### Purpose for data usage

For Green Groceries to optimize service, optimize operations, and improve customer satisfaction, they must understand the purpose of using data. Companies can identify trends, preferences, and areas for improvement by analyzing data usage patterns. Therefore, the solution may include the use of powerful data analytics and reporting tools to track and analyze sales performance, inventory turnover, product popularity, and customer interactions. customer's cooperation. Present insights in an easy-to-understand way using data visualization techniques like charts and dashboards. To ensure compliance with data privacy regulations such as GDPR and CCPA, conduct regular data audits and prioritize data security measures to protect critical data. Additionally, to find growth initiatives and innovation opportunities, use data-driven decision-making processes.

### Legal

1. **Data Privacy**

It is important to protect the privacy of user data. All personal data and payment information are secured using strong encryption protocols. Additionally, regulations such as the Data Protection Act are complied with. This gives customers confidence when they know their information is protected.

1. **Security and Fraud detection**

Green Groceries must implement strict security measures to prevent fraud and protect customer transactions when using this online shopping platform. The platform protects businesses and customers by identifying and mitigating any suspicious activity using advanced fraud detection technologies.

1. **Compliance with financial regulation**

To avoid penalties and maintain financial integrity, Green Groceries must comply with financial regulations, such as VAT laws. providing secure payment options while expanding the market audience and enhancing the platform's reputation.

1. **Guideline clearly, easy accessing**

When implementing the Green Groceries platform, clear and accessible user instructions are critical for a seamless experience. By providing intuitive navigation, simple account management tools, and transparent trading processes, users can navigate the platform with ease, promoting positive engagement and satisfaction.

1. **Intellectual property and license**

Protecting a company's intellectual property and ensuring compliance with licensing requirements is critical. The platform promotes creativity and innovation by using appropriate protocols and respecting copyright laws.

1. **Terms of Service and User Agreements:**

To establish trust and accountability, terms of service and user agreements must be clear and easy to understand. Articulating user rights and responsibilities will make things clearer, reducing disputes and improving user relationships.

1. **Consumer Protection**

To build customer trust and loyalty, strong safeguards are necessary. By addressing issues such as product quality assurance, disputes, and refunds, the platform demonstrates its commitment to customer satisfaction and enhances its reputation and credibility in the market.

### Social

1. **Impact to all citizens:**

By providing an easy way to access organic and locally sourced grocery products, the Green Groceries online platform can have a positive impact on people. People, especially those living in places with limited access to such products, can benefit from more sustainable options available through the platform.

1. **Accessibility:**

The Green Groceries online platform must have a user-friendly interface so that everyone can access it. These features include clear navigation paths, screen reader compatibility, and adjustable font sizes to accommodate users with disabilities or limited technical proficiency.

1. **Technical Education for Consumers:**

Green Groceries may provide educational resources such as instructional videos, step-by-step guides, and online support forums to help them understand and effectively use online platforms. With these resources, consumers can feel more confident and comfortable using the platform.

1. **E-commerce Security Awareness:**

The Green Groceries online platform should prioritize consumer awareness by implementing strict security measures and educating consumers about the potential risks associated with online shopping. To protect sensitive information and prevent unauthorized access, this includes using a secure payment gateway, HTTPS encryption, and multi-factor authentication.

1. **Transparent and Trust:**

The success of an online platform depends on maintaining transparency with customers. This can be achieved by Green Groceries by providing clear and detailed product information, transparent pricing, and honest communication about sourcing and environmental impact. Additionally, Green Groceries can enhance trust and loyalty by actively soliciting customer feedback and promptly resolving issues.

### Ethical

1. **Fairness:**

Ensure that Green Groceries conducts all transactions and activities on its website in a fair and transparent manner, without discriminating against any individual. Therefore, one way to ensure that all products and services presented on the platform comply with fair and ethical standards is to implement review and monitoring mechanisms. Ensure that all audiences receive fair and clear treatment by providing clear and unambiguous information about the product ranking and selection process.

1. **Protect Consumer:**

Ensure that the legal rights of shoppers are protected by implementing comprehensive regulations and consumer protection measures. Therefore, consumer protection includes flexible refund policies, effective dispute resolution, and product quality assurance. Create a safe and trustworthy online shopping environment by providing clear and transparent information about consumer protection policies on the platform.

1. **Protect Business Data:**

Ensure the secure and reliable protection of all Green Groceries business data from leakage or misuse. Prevent and detect any information security breaches or threats early by implementing strong security measures such as data encryption, access control, and continuous monitoring. We train employees on data security and safe practices for online work, enhancing their awareness of the risks associated with business data security.

### Professional

1. **Compliance with standards and regulations**:

Due to the nature of Green Groceries' business, compliance with relevant standards and regulations, such as data protection laws and e-commerce regulations, is very important. Platforms must comply with standards such as GDPR (General Data Protection Regulation) to protect customer data and ensure legal compliance.

1. **Quality Assurance (QA) Testing:**

Implementing thorough QA testing is essential to identify and fix any bugs or issues in the online platform before launch. This includes functional testing, usability testing, performance testing, and security testing to ensure a seamless and secure user experience.

1. **Security and data protection:**

Due to the sensitive nature of customer data, strong security measures must be in place to protect against cyber threats and data restrictions. This includes implementing encryption, access controls, and regular security testing to keep customer information secure and maintain trust.

### LSEP issues in Green Groceries project:

1. **Local - Data Protection Compliance:**

For businesses to maintain trust and avoid legal consequences, data protection is paramount in today's digital landscape. For example, British Airways faced a serious data breach due to inadequate data protection measures, resulting in heavy fines, demonstrating the importance of strict compliance with regulations. data protection. Greengrocers must prioritize data protection compliance to prevent breaches. Additionally, greengrocers may face issues with transparency in the sourcing process and ensuring that consumer data is handled ethically. Strict security, encryption protocols, and regular audits protect customer data and ensure GDPR compliance. To achieve this, Green Groceries should partner with cybersecurity experts to perform a thorough review of their website's security measures. Industry-standard encryption protocols, access controls, and regular security audits help comply with data protection laws and reduce the risk of data breaches. By proactively addressing data protection issues, Green Groceries strengthens its position as a responsible and ethical supplier in the market by proactively addressing issues related to data protection.

1. **Social - Transparent and Trust**

In today's market, where customers increasingly care about ethical and transparent businesses, building trust is essential to a brand's success. The activities of outdoor retailer REI are a prime example. REI has built a loyal customer base based on shared trust and values by openly sharing its sustainability efforts, supply chain practices, and community activities. Likewise, Green Groceries must ensure that their activities are public, especially regarding the sourcing and management of organic and locally sourced products. However, issues such as ensuring fair labor practices, verifying organic certification, and minimizing environmental impact are significant obstacles in the complex world of food supply chains. If brands fail to address these issues, consumers may lose trust in them. To address these issues, Green Groceries must have comprehensive transparency across the supply chain, including certification, auditing, and stakeholder engagement. Green Groceries can win the trust of discerning consumers and solidify its position as a responsible leader in the organic grocery industry by demonstrating its commitment to ethical sourcing and practicing transparency.

1. **Ethical - Protect Consumer**

The actions of Airbnb, a popular online marketplace for lodging and travel experiences, are a tangible example of ethical customer protection. Airbnb has put in place strict anti-discrimination policies and enhanced safety procedures to address issues related to discrimination and customer safety. Airbnb not only minimizes harm but also strengthens the trust and loyalty of its community by prioritizing the well-being and rights of its users. To protect customers, Green Groceries faces a number of ethical issues. The risk of misrepresenting the organic and locally sourced nature of products is a prominent issue. Any discrepancies in product labeling or sourcing can lead to a loss of trust and reputation due to increased consumer awareness and demand for authenticity. Additionally, Green Groceries is concerned with minimizing negative environmental impacts throughout the supply chain and treating suppliers fairly. Greengrocers can use several methods to solve these problems. To ensure the authenticity of organic certifications and transparency in sourcing practices, green grocers must first establish rigorous testing and verification processes. Continuous supplier auditing and auditing can assist in identifying and rectifying any ethical lapses in the supply chain. Promoting open communication and collaboration with suppliers can strengthen ethical integrity, ensuring fair labor standards and environmental sustainability. Green Groceries is able to build a loyal customer base based on trust and integrity by prioritizing consumer protection and ethical business practices.

1. **Professional - Quality Assurance Testing**

In the professional standards sector, quality testing is important to ensure that products and services are reliable and functional. For example, large software companies like Microsoft perform rigorous testing of their products to ensure a stable user experience, resolve issues and bugs before release, and maintain a good reputation. Likewise, Green Groceries must prioritize quality testing of their website to ensure optimal performance and customer satisfaction. However, if left unaddressed, issues such as device compatibility, traffic peaks, and data security remain widespread. These issues can frustrate users and harm reputations. To address these issues, Green Groceries should perform quality tests that include testing functionality, usability, security, and performance under a variety of conditions. Green Groceries can minimize risk, provide a stable user experience, and strengthen its reputation as a trusted supplier in the competitive online market by investing in quality assurance.

## Section C2: BCS Code of Conduct

### Introduce about BCS Code of Conduct

The guiding set of principles and standards for cinematographers is the BSC (British Society of Cinematographers) Code of Conduct, which ensures professionalism, integrity and ethical behavior in the film industry. This Code describes the responsibilities and expectations of videographers to their profession, colleagues, clients, and community. It promotes respect for creative expression, diversity and inclusion while maintaining the highest standards of quality and professionalism.

Various aspects of cinema are included in the BSC Code of Conduct. These include technical proficiency, artistic integrity, personal relationships, and industry collaboration. It emphasizes the importance of learning and professional development, encouraging cinematographers to stay aware of industry practices, creative trends and technological advances.



Figure 3 BCS Code of Conduct

BSC's Code of Conduct includes the following key principles:

1. **Public Interest**

This principle emphasizes the responsibility of IT professionals to prioritize wellbeing, safety, and environmental protection. IT professionals must have due regard for public health, privacy, security, and general welfare to ensure that their actions and decisions do not pose a risk or harm to the environment or individuals. In addition, they must carry out their professional activities fairly and with integrity while respecting the legitimate rights of third parties. Furthermore, IT professionals have a responsibility to promote diversity and inclusion in every aspect of their work and adhere to the principles of equality and non-discrimination. They must prevent any form of discrimination based on gender, sexual orientation, race, religion, age, or disability. They must also focus on ensuring that everyone in society has access to This principle emphasizes the ethical responsibility of IT professionals to support the development and inclusivity of the entire sector of IT and society.

1. **Professional Competence and Integrity**

This principle underscores IT professionals' ethical duty to uphold their skills and integrity. They must work within their expertise, ensuring they possess the necessary skills. Professionals should refrain from making claims of expertise they lack to maintain honesty. Continuous learning is essential to keep up with technological advancements. Compliance with the law is crucial, requiring adherence to legal regulations in all professional activities. Valuing diverse perspectives and providing honest feedback fosters collaboration. Integrity is shown through refraining from harmful actions and rejecting bribery. These principles highlight the importance of professionalism, competence, and ethics in the IT industry.

1. **Duty to Relevant Authority**

This principle highlights the ethical obligations of IT professionals in the BCS Code of Conduct. While exercising professional judgment, they must carry out their responsibilities diligently as required by the organization. Professionals should avoid conflicts of interest and take responsibility for their own work as well as that of their supervised colleagues. Ensure you obtain appropriate authorization before disclosing confidential information. Furthermore, we strictly prohibit misrepresenting a product's performance. These guidelines help you interact professionally, with integrity, and responsibly with employers or customers.

1. **Duty to the Profession**

This principle emphasizes the ethical responsibilities that IT professionals have. They must refrain from actions that could discredit the profession and protect its reputation. Professionals should actively participate in improving professional standards and enhancing the reputation of BCS, the Institute of Information Technology. In your professional relationships with professionals in various fields and members of the BCS, you should maintain integrity and respect. Additionally, professionals should support their colleagues in their professional development, encourage collaboration, and promote career growth. These principles that emphasize professionalism, integrity, and mutual support are important in the IT community.

### Code of Conduct for Green Groceries Project:

1. **Public Interest**

For example, to protect users' personal information during platform development, the team implements strict security measures, such as encryption of sensitive data and regular security testing. According to the principle of public interest, user privacy and security come first.

1. **Professional Competence and Integrity**

For example, the development team often participates in training sessions and workshops on web development and security practices. They communicate their expertise to Green Groceries in a transparent manner to ensure alignment and honesty of expectations.

1. **Duty to Relevant Authority**

For example, the development team strictly follows the organization's regulations and procedures on data protection when handling confidential data related to Green Groceries' customers. To demonstrate their commitment to the relevant authority, they obtain the necessary authorization before accessing or disclosing any sensitive information.

1. **Duty to the Profession**

For example, the development team actively participates in conferences and professional forums, sharing their knowledge and experience with colleagues in the IT community. They participate in open source projects and work together with other developers to improve industry standards and techniques, raising the profile of the IT industry.

# Section D: Conclusion

# References

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