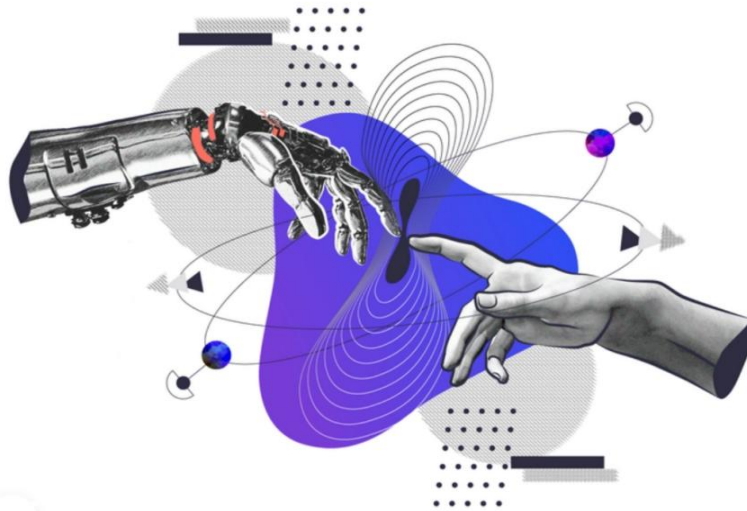


School name



Alliance with  Education

COMP1789 Requirements Management



Student Name: NGUYEN NHAT MINH ANH

Student ID: 001357204 / GCS200658

Class: TCS2305

Tutor name: Nguyen Quoc Khanh

Submission Date: 16th April 2024

COMP1787 (2023/2024)	Requirements Management	Contribution: 100% of course
Module Leader: Dr. Aditi Rawal	Coursework Term 2 (collabs)	Deadline Date: TBC
This coursework will be marked anonymously YOU MUST NOT PUT ANY INDICATION OF YOUR NAME IN YOUR SUBMISSION ONLY YOUR ID		
This coursework should take an average student who is up to date with tutorial work approximately 50 hours		
Learning Outcomes: <ol style="list-style-type: none"> 1. Analyse and compare current approaches to requirements management within a development environment. 2. Assess the impact of stakeholders and organisational culture on the development of effective requirements and system development. 3. Relate issues associated with risk, quality, and Legal/Social/Ethical/Professional (LSEPI) to a practical scenario. 		
<p>Plagiarism is presenting somebody else's work as your own. It includes copying information directly from the Web or books without referencing the material; submitting joint coursework as an individual effort; copying another student's coursework; stealing or buying coursework from someone else and submitting it as your own work. Suspected plagiarism will be investigated and if found to have occurred will be dealt with according to the procedures set down by the University.</p> <p>All material copied or amended from any source (e.g. internet, books) must be referenced correctly according to the reference style you are using.</p> <p>Your work will be submitted for electronic plagiarism checking. Any attempt to bypass our plagiarism detection systems will be treated as a severe Assessment Offence.</p>		

Coursework Submission Requirements

- An electronic copy of your work for this coursework should be fully uploaded by 11.30pm (local time) on the Deadline Date.
- The last version you upload will be the one that is marked.
- For this coursework you must submit a single PDF document. In general, any text in the document must not be an image (i.e. must not be scanned) and would normally be generated from other documents (e.g. MS Office using "Save As .. PDF").
- There are limits on the file size (see the relevant course Moodle page).
- Make sure that any files you upload are virus-free and not protected by a password or corrupted otherwise they will be treated as null submissions.
- You must NOT submit a paper copy of this coursework.
- All coursework must be submitted as above. Under no circumstances can they be accepted by academic staff.

The University website has details of the current Coursework Regulations, including details of penalties for late submission, procedures for Extenuating Circumstances, and penalties for Assessment Offences.

See: <https://www.gre.ac.uk/policies/undergraduate-and-postgraduate-taught>

Detailed Specification

This coursework must be undertaken individually. To start working on the assigned tasks, carefully read the attached case study. Then, complete the given deliverables according to the instructions below.

Important instructions

Avoid Copying:

- Don't use other students' previous work as a template. It will be detected and could lead to lower grades or even zero marks.
- Refrain from including content from classmates or other unauthorized sources. This can result in a deduction of marks.

Focus on Relevant Information:

- While the case study is crucial, don't copy the entire thing into your report. Only include the sections you've personally worked on.

Deliverables

There are **three** sections to this coursework. Make sure that you complete all sections.

Assessment Criteria

Section A – 20% of the marks

Section B – 40% of the marks

Section C – 30% of the marks

Conclusion and Assumptions – 5%

Use professional standard and formatting, professional writing style, language, and use Harvard style of referencing. – 5%

Case Study: "Green Groceries Online Platform"

Green Groceries is a medium-sized company specializing in organic and locally sourced grocery products. The company has gained a solid reputation over the past five years, primarily through collaborations with local farmers and eco-conscious suppliers. With a desire to expand its market reach and make sustainable products more accessible, Green Groceries aims to launch an online platform within the next three months.

Green Groceries doesn't have an in-house software development department and prefers to outsource its software projects. The company has experienced challenges in the past with traditional 'waterfall' projects, and after careful consideration, they have chosen System Concepts (SC) to develop their online platform using SCRUM and Agile concepts.

Green Groceries Personnel:

CEO and Founder - The visionary behind the project and the primary decision-maker. Committed to the project's success and actively involved in the planning and execution.

Financial Controller - Interested in the project, with a tendency to strive for perfection. Despite a busy schedule, aims to participate actively in meetings.

Operations Manager - An experienced professional with a background in Agile software development from a previous role. Responsible for the logistics and distribution teams and willing to allocate resources for the project.

Chief Accountant - Represents the Financial Controller in meetings and has the authority to make decisions on their behalf. Well-versed in the company's various departments.

Logistics Manager - Unable to commit directly but willing to empower a representative from the logistics team to make decisions on their behalf.

Marketing Manager - Engaged in the project, certified as a Workshop Facilitator and Agile Project Manager. Willing to contribute insights from a marketing perspective.

About System Concepts:

System Concepts, a reputable Agile software development consultancy, will be responsible for implementing the online platform. The company follows the DSDM Atern framework and assigns dedicated teams to each project. They can work on-site or off-site, offering flexibility in project execution.

System Concepts Personnel:

Millie - A skilled programmer with expertise in web development and effective communication skills.

Peter - An excellent web developer known for expertise but occasionally engages in disagreements with clients.

Anita - Possesses strong web development skills and is also involved in volunteer work for the homeless.

Cheryl - Experienced as a Team Leader in Agile development projects, well-versed in web development.

Pat - Available part-time throughout the project, with a good understanding of web development and testing.

The collaboration between Green Groceries and System Concepts aims to deliver a robust online platform that aligns with the company's values of sustainability and accessibility. The Agile approach

is expected to address the challenges faced in previous projects, providing flexibility and responsiveness to changing requirements throughout the development process.

Table 1: Base lined list of requirements for the Web site

ID	Requirements
1	As an Order Handling Clerk, I want to use the website to process telephone purchases, replacing the paper-based system.
2	Maintain at least 20 office plants as part of the company's commitment to a green and healthy workspace.
3	As a customer, I want to be able to change my account details to ensure my most up-to-date information is recorded.
4	Organize a virtual celebration on the website for the CEO's birthday to showcase the company's fun and friendly culture.
5	As the Managing Director I want to be ensured that the site is Data Protection Act safe so that we do not get fined hundreds of thousands of pounds.
6	As a customer register an account.
7	As a Customer I want a choice of delivery slots so that I can arrange my diary appropriately.
8	As a customer, I want to be able to modify my shopping cart so that I can change my mind about what I want to buy.
9	The company should adopt pet-friendly policies to create a positive and inclusive work environment.
10	The system must be designed to handle a 30% increase in traffic during peak periods without degradation in performance.
11	As a customer, I want to enter separate delivery and invoice addresses so that I can receive bags when staying at a friend's house.
12	As a Customer I want to be able to change my account details so that my most up to date details are recorded.
13	As an Order Handling Clerk I want to use the Web site to process telephone purchases so that I can stop using the paper-based system.
14	As a customer, I want to choose whether or not I am sent marketing information to avoid receiving excessive junk mail.
15	All user data, including personal information and payment details, must be encrypted to ensure the highest level of security.
16	Maintain consistent branding elements and design across the website to reinforce their brand identity.
17	The development team should participate in a team-building event every quarter to foster collaboration and a positive work environment.
18	As the Marketing Director I would like an offers or discount page so that we can inform our customers of the aforementioned.
19	As the Chief Accountant I want to the Web site to adhere to legislation regarding VAT so we are not hit with a hefty fine.
20	As the Operations Director, I want to accept all forms of payment to capture the largest market possible.

Section A – Management Summary (20% of the marks)

The case study tells us that the Management Director has decided to recommend one of the approaches associated with Agile Methods to the team of System Concepts.

Produce a management summary explaining whether Agile framework would be an appropriate method to use for the project. Outline any advantages/drawbacks that you perceive. Give examples from the Case Study to support your answer.

Your answer should be in the region of 750-1000 words.

Section B – High level requirements analysis and MoSCoW prioritisation (40% of the marks)

Table 1 of the case study provides details of a Facilitated Workshop session run by the System Concepts consultants and attended by a number of the key staff in the organisation of **Green Groceries**. At the end of the session a list of 'Base line requirements' was produced.

This list requirements has some inappropriate requirements and needs to be sorted out to meet the criteria for a 'high level requirement' - remember, a high-level requirement should be a functional requirement that can be delivered to the user as part of an incremental approach using a timebox (or number of timeboxes).

Using the information given **throughout the case study** to help you, complete the following:

- B1. Review the 'base line requirements' list given in table 1.
 - B1.1 Identify any of the requirements that you feel are not appropriate to be considered at high level requirements, giving your reasons for this.
 - B1.2 Rewrite, and add to, the list to end up with a total of 8-10 'updated' high level functional requirements that you feel are required for building the system. Briefly justify the need for each of your high-level requirements against information you have gathered from the case study.

Your answer to B1 should be in the region of 500-750 words

- B2. Use the MoSCoW/Timebox rules to prioritise the requirements in your updated 'high level requirements list'.
 - B2.1. Produce an updated 'high level requirements list' clearly showing the prioritisation you have given to each of your requirements.
 - B2.2 Explain how you set about prioritising the requirements and justify your reasons for the decisions that you made.

Your answer to B2 should be in the region of 500 -750 words.

Section C – Legal, Social, Ethical and Professional issues (30% of the marks)

- C1. **Green Groceries** personnel needs to start considering Legal, Social, Ethical, and Professional Issues (LSEPI) in relation to its day-to-day operations. Produce a management summary identifying Legal, Social, Ethical, and Professional issues that a system developer for the

company would need to be aware of. Provide **one** practical examples from the case study that relate to **each** aspect of LSEPI identified.

Your answer to C1 should be in the region of 500 words

- C2. Produce a management summary outlining the purpose of a professional body, such as the British Computer Society. As a part of this, provide a practical example for each of the **four** BCS Code of Conduct sections to illustrate how the professional body may guide the choices and decisions of their members.

Your answer to C2 should be in the region of 500 words.

Conclusion and Assumptions – 5% (200 - 300 words approximately)

Harvard style and English proficiency – 5%

Grading Criteria

80% +	<ul style="list-style-type: none"> ○ An outstanding attempt demonstrating a genuinely unique and a deep understanding of the requirements of the assignment. ○ Demonstrate an outstanding understanding of the issues surrounding the application of Agile based methods to a development environment. ○ Demonstrate exceptional understanding of high-level requirements analysis and MoSCoW prioritisation. ○ Apply the MoSCoW rules thoroughly, demonstrating an outstanding understanding of the need for incremental delivery. ○ Demonstrate an outstanding understanding of the DPA principles and the practical role of the Data controller. ○ Demonstrate an outstanding understanding of the role of the professional and, in particular, the BCS code of conduct. ○ A deeply impressive demonstration of research, organisation, initiative, analysis, and application, worthy of publication with the required referencing.
70%- 79%	<ul style="list-style-type: none"> ○ An excellent attempt demonstrating a clear understanding of the requirements of the assignment. ○ Demonstrate a thorough understanding of the issues surrounding the application of Agile based methods to a development environment. ○ Demonstrate a thorough understanding of high-level requirements analysis and MoSCoW prioritisation. ○ Apply the MoSCoW rules sensibly, demonstrating a clear understanding of the need for incremental delivery. ○ Demonstrate a thorough understanding of the DPA principles and the practical role of the Data controller. ○ Demonstrate a thorough understanding of the role of the professional and, in particular, the BCS code of conduct. ○ Bring original thought to the argument;
60%- 69%	<ul style="list-style-type: none"> ○ Demonstrate a good to very good understanding of the issues surrounding the application of Agile based methods to a development environment. ○ Demonstrate a good understanding of high-level requirements analysis and MoSCoW prioritisation. ○ Apply the MoSCoW rules sensibly, demonstrating a good understanding of the need for incremental delivery. ○ Demonstrate a good understanding of the DPA principles and the practical role of the Data controller.

	<ul style="list-style-type: none"> ○ Demonstrate a good understanding of the role of the professional and, in particular, the BCS code of conduct. ○ Bring some original thought to the argument;
50%- 59%	<ul style="list-style-type: none"> ○ A fair attempt demonstrating an effective understanding of the assignment. ○ Demonstrate understanding of some of the issues surrounding current development methodology approaches. ○ Demonstrate understanding of some of the issues surrounding the application of Agile based methods to a development environment. ○ Demonstrate understanding of some the issues relating to high level requirements analysis and MoSCoW prioritisation. ○ Apply the MoSCoW rules in a sensible way demonstrating some understanding of the need for incremental delivery. ○ Demonstrate an understanding of the DPA principles and the practical role of the Data Controller. ○ Demonstrate an understanding of the role of the professional and, in particular, the BCS code of conduct. ○ Identify some practical examples relating to the above
40%- 49%	<ul style="list-style-type: none"> ○ Demonstrate a basic understanding of the issues surrounding the application of Agile based methods to a development environment. ○ Demonstrate a basic understanding of high-level requirements analysis and MoSCoW prioritisation. ○ Apply the MoSCoW rules in a basic way. ○ Demonstrate a basic understanding of the DPA principles and the practical role of the Data controller. ○ Demonstrate a basic understanding of the role of the professional and, in particular, the BCS code of conduct.
Below 39%	<ul style="list-style-type: none"> ○ Demonstrate a poor understanding of the issues surrounding the application of Agile based methods to a development environment. ○ Poor understanding of the requirements of the assignment. ○ Possibly some confusion and much irrelevant material. ○ Lack of clarity on the MoSCoW rules. ○ Demonstrate an inadequate understanding of the DPA principles and the practical role of the Data controller. ○ Demonstrate inadequate understanding of the role of the professional and, in particular, the BCS code of conduct.

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ASSIGNMENT

Section A – Management Summary

Agile Methodologies and Green Groceries Online Platform

1. Introduce:

Green Groceries wants to expand its market reach by launching an online platform, thus it has to take a creative and inclusive approach to development. The Management Director's preference for an Agile approach highlights a calculated choice to capitalize on its flexible, iterative character in order to drive the project toward success. With particular references to the case study, this research assesses the applicability of Agile frameworks and looks at both their possible advantages and disadvantages in the context of the Green Groceries project.

2. Advantages of Agile Methodologies:

a) Enhanced Collaboration and Stakeholder Engagement:

_Agile encourages continuous communication between the project stakeholders, such as the CEO, Financial Controller, and Marketing Manager, and the development team. Agile makes sure that all opinions are heard through frequent sprint planning meetings, review sessions, and daily scrums, ensuring that the project is in line with Green Grocery's strategic goals and consumer expectations. Given that Green Grocery encourages collaboration and the inclusion of stakeholders in its programs, this collaborative approach is essential to its success.

b) Flexibility and Responsiveness to Change:

_The digital economy is always changing due to quick changes in customer tastes and advances in technology. Agile's iterative method ensures that the online platform stays competitive and current by allowing adjustments depending on user input or changes in corporate strategy. Agile, for example, makes it easier to add new features or modify current ones—such as improving the user interface in response to input from customers—without causing the project's schedule to go behind schedule.

c) Incremental Delivery of Value:

_Agile focuses on delivering functional features in brief cycles, which helps Green Groceries swiftly provide value for both stakeholders and consumers. Crucial features like delivery slot selection and account management may be released early to allow for early feedback, which promotes continual improvement and better aligns the platform with user demands.

3. Drawbacks and Mitigation Strategies:

While Agile methodologies offer numerous advantages for the Green Groceries online platform project, several challenges necessitate careful management and strategic planning:

a) Danger of Scope Creep:

_When new concepts and features arise, agile's adaptability can occasionally result in an expansion of the project's scope. Green Grocery may reduce this by using strict task prioritizing, separating must-haves from nice-to-haves using the MoSCoW technique, and making sure that important features are kept front and center.

b) Dependency on Stakeholder Involvement:

_The success of Agile projects heavily relies on continuous stakeholder engagement, which may be challenging given the varying schedules and commitments of Green Groceries' personnel. Establishing a clear communication plan and utilizing digital collaboration tools can ensure consistent involvement and decision-making.

c) Complexity in Managing Distributed Teams:

_Managing dispersed teams can be difficult since System Concepts offers the ability to operate both on- and off-site. Coordination may be improved by using Agile project management tools that show the tasks and progress of each team member. Consistent team relationships and project alignment may be achieved through regular video conference stand-ups and sprint reviews.

d) Resistance to Change within the Organization:

_People who are used to traditional project management techniques may be resistant to adopting Agile alternatives. Fears can be allayed by holding training sessions that emphasize the advantages of Agile and by using change management techniques. Activating Agile advocates inside the company may also help the adoption and cultural transition go more smoothly.

4. Why choose Agile?

_Agile was selected for the online platform project at Green Grocery because it places a high value on adaptability and the capacity to act fast in the face of change—two critical attributes in the frequently changing e-commerce industry. Agile, in example, makes it easier for projects to produce products through iterative cycles so that end customers' feedback may be incorporated practically instantly. This reduces risk and maximizes resource utilization while also assisting the development team in quickly responding to technical difficulties or requirements changes. In addition, it guarantees that the finished product genuinely satisfies client expectations. Furthermore, strong consensus and a strong commitment to the project are strengthened by the close involvement of stakeholders throughout the development process, which enhances the accuracy and quality of the final output. Agile is more than just a technique; it's a mindset that helps Green Groceries develop its platform sustainably and intelligently while adapting to changing market and business needs.

5. Case Study Insights:

_Agile approaches may be applied in a rich environment thanks to the case study. For example, the variety of positions held by Green Grocers' employees, ranging from marketing to logistics, is a reflection of the cross-functional team structure in Agile and encourages a comprehensive approach to the platform's growth. This alignment is further supported by System Concepts' engagement, whose staff members have familiarity with Agile methodologies, guaranteeing a cooperative effort toward the project's goals.

_Furthermore, even though they are not directly related to the platform's core functionality, the specific requirements listed, like the "virtual celebration for the CEO's birthday" (Requirement 4) and the "adoption of pet-friendly policies" (Requirement 9), demonstrate

Agile's ability to prioritize and take into account a wide range of stakeholder values and aspects of the company culture during the development process.

6. Conclusion:

_The Agile methodology is a particularly appropriate method for developing the Green Groceries web platform because of its focus on flexibility, stakeholder involvement, and incremental value delivery. The approach's benefits in promoting teamwork, adapting quickly to changes, and providing results early on are in line with the project's objectives. Green Groceries may effectively negotiate the intricacies of entering the digital marketplace by utilizing Agile approaches to manage their inherent issues, such as scope creep and the requirement for constant stakeholder interaction. This analysis highlights the Agile framework's ability to provide a successful project conclusion that is in line with Green Groceries' goals and values. It is backed up by particular instances from the case study.

Section B – High level requirements analysis and MoSCoW prioritisation

B1. Review of Baseline Requirements:

_It's critical to distinguish between what makes up high-level criteria and those that can be overly operational or particular after going over the baseline requirements for the Green Groceries online platform mentioned in Table 1. High-level requirements should specify the essential features and goals that are required for the platform to succeed, with an emphasis on overarching, strategic objectives as opposed to specific implementations.

B1.1 Identification of Inappropriate High-Level Requirements:

_Due to their particularity or lack of direct bearing on the essential operations of the online platform, a few of the requirements listed might not be suitable to be considered high-level requirements:

ID	Requirement	Details	Explain
RQ-2	Maintain at least 20 office plants	While fostering a positive work environment is important, the specification of maintaining office plants does not directly impact the development or operation of the online platform. This requirement is more related to internal office environment standards and does not influence customer experience or platform functionality.	This requirement does not align with the strategic objectives of the online platform. Its focus on the physical work environment is tangential to the core goals of enhancing user experience and operational efficiency in a digital context.
RQ-4	Organize a virtual celebration for the CEO's birthday	Celebrating company milestones and fostering a strong company culture are valuable, but dedicating platform resources to organize a virtual celebration for the CEO's birthday does not contribute to the platform's primary goal of selling products or improving customer service.	This requirement falls outside the scope of high-level functional needs for the platform. It is more appropriately handled through internal communication tools or event planning processes rather than the e-commerce platform itself.
RQ-9	Adopt pet-friendly policies to create a positive work environment	This has no direct impact on the platform's functional or user-facing aspects, just like office plants do.	Although beneficial for workplace morale, this requirement does not address the online platform's development or operational efficiency. It is unrelated to the digital customer engagement or the e-commerce process and, therefore, is not a high-level requirement for the platform.

_Although beneficial for the internal culture of the organization, these criteria are not in line with the strategic goals of creating an online platform that will improve consumer interaction and operational efficiency.

B1.2 Updated High-Level Functional Requirements:

The case study insights and the necessity of concentrating on strategic objectives have led to the formulation of the revised high-level requirements that follow:

ID	Requirement	Details	Explain
1.	Effective Order Processing System	To take the place of paper-based procedures, guaranteeing quick and accurate order processing and raising customer satisfaction.	By enabling more seamless transactions, the main goal is to optimize operations and enhance the client experience.
2.	Data Protection Compliance	Verify that the platform complies with all applicable data protection laws, protecting client data.	In e-commerce, trust is crucial. In addition to avoiding fines, compliance increases client confidence.
3.	Scalable Infrastructure	Plan the system to accommodate more users, accounting for a minimum of 30% increase in activity during peak hours.	Crucial for preserving service quality as the platform expands, guaranteeing a steady user experience without compromising performance.
4.	Flexible Delivery Slot System	Allow customers to choose delivery times, enhancing convenience and satisfaction.	Promptly addresses client demands for adaptability, which might boost conversion rates and foster customer loyalty.
5.	Comprehensive Account Management	Enable customers to easily manage their account details, including personal information and preferences.	Promotes a tailored buying experience, increases user engagement, and empowers users.
6.	Advanced Security Measures	To safeguard user information and transactions, put strong security procedures in place.	Trust and regulatory compliance are ensured by safeguarding consumer data, which is a crucial consideration for online transactions.
7.	User-Friendly Interface Design	Give the platform's design a high priority on usability in order to accommodate a diverse user base, including those with impairments.	Ensuring a great user experience and expanding one's reach require accessibility and usability.
8.	Multiple Payment	Accept a range of payment options to meet the needs of every client and	Offering a variety of payment methods

	Choices	improve accessibility.	guarantees that no prospective client is turned away for lack of their chosen mode of payment.
9.	Feedback and Support System	Provide avenues for clients to provide their opinions and obtain assistance, hence promoting ongoing development.	Iterative development benefits greatly from user feedback, and quick resolution of issues raised by users increases their level of satisfaction.
10.	Environmental and Social Responsibility Features	Draw attention to Green Groceries' dedication to sustainability with features like details on the origin of their products and choices for eco-friendly packaging.	Complies with the brand's core principles and satisfies consumers' increasing need for environmentally friendly and morally conscious products.

_Incorporating these justifications into its development strategy, Green Groceries transforms its online platform into more than just a marketplace; it becomes a manifestation of its core values and dedication to customer satisfaction. This strategic framework for outlining high-level requirements directs the project towards the company's vision of providing accessible, eco-friendly, and user-focused online shopping. Such a thorough analysis and alignment with business objectives are key to driving Green Groceries towards a standout online presence.

B2. MoSCoW Prioritization and Justification:

B2.1 Produce an updated 'high level requirements list' clearly showing the prioritisation you have given to each of your requirements.

_Presumption: Let us assume that the project development team has eight persons who work eight hours a day, five days a week, for a duration of three months.

_Overall estimate effort: 8 members, 8 work hours per day, 5 days per week, 4 weeks, 3 months, equals 3840 hours.

ID	Requirement	Estimate time (Hours)	Team Members	Hours / member	Estimate effort (Man-Hours)	Break Task
1.	Effective Order Processing System.	800	3	~267	$800 * 3 = 2400$	Design: Architecture planning; Development: Database and API; Testing: Unit tests
2.	Data Protection Compliance.	700	2	350	$700 * 2 = 1400$	Research: Legal requirements; Implementation: Security protocols
3.	Scalable Infrastructure.	700	2	350	$700 * 2 = 1400$	Design: Cloud architecture; Testing: Load testing
4.	Flexible Delivery Slot System.	100	1	100	$100 * 1 = 100$	Development: Slot allocation logic; Testing: User acceptance testing
5.	Comprehensive Account Management.	100	1	100	$100 * 1 = 100$	Development: Profile management features; Integration: Third-party services
6.	Advanced Security Measures.	872	3	~290	$872 * 3 = 2616$	Implementation: Encryption methods; Testing: Penetration tests
7.	User-Friendly Interface Design.	400	2	200	$400 * 2 = 800$	Design: UI/UX mockups; Development: Front-end coding

8.	Multiple Payment Choices	100	1	100	$100 * 1 = 100$	Integration: Payment gateways; Testing: Transaction flow
9.	Feedback and Support System.	68	1	68	$68 * 1 = 68$	Implementation: Feedback form; Integration: Customer service platform
10.	Environmental and Social Responsibility Features	0	0	0	No man-hours allocated.	N/A

_Total work hours per week per person:

$8 \text{ hours/day} \times 5 \text{ days/week} = 40 \text{ hours/week}$

_Total work hours per month per person:

$40 \text{ hours/week} \times 4 \text{ weeks/month} = 160 \text{ hours/month}$

_Total work hours per person for the entire project:

$8 \text{ hours/day} \times 5 \text{ days/week} \times 4 \text{ weeks/month} \times 3 \text{ months} = 8 \text{ hours/day} \times 5 \text{ days/week} \times 12 \text{ weeks} \times 3 \text{ months} = 8 \text{ hours/day} \times 60 \text{ days} = 480 \text{ hours/person}$

_Total work hours for the Team:

$480 \text{ hours/person} \times 8 \text{ members} = 3840 \text{ hours}$

_Now, let's sum up all the man-hours:

$2400 + 1400 + 1400 + 100 + 100 + 2616 + 800 + 100 + 68 = 8984 \text{ man-hours}$

_Describe the Break Task:

- ✓ Design (Architecture Planning): In order to provide user-friendly interfaces, the UI/UX is laid out using Adobe XD. A scalable system architecture is planned utilizing cloud-based infrastructure such as AWS, and foundational designs are made to be resilient and flexible.
- ✓ Development includes writing code using contemporary tools; React is used to create user-friendly front-end interfaces, Node.js is used to create effective back-end services, and PostgreSQL or MongoDB is selected based on the type of data that has to be stored. Seamless integration is facilitated by RESTful API architecture.

Testing (Unit Tests): To ensure the system's dependability and security posture, extensive unit testing is conducted using frameworks like Jest, which are complemented by load testing conducted with JMeter and security assessments conducted with OWASP ZAP.
- ✓ Research: Committed to making sure the project complies with external standards and laws, such as the GDPR for data protection, by carefully going over technical documentation and compliance guidelines.
- ✓ Implementation: focuses on integrating security principles, such as OAuth for safe authentication methods, HTTPS for secure communication, and encryption for data protection, into the system.
- ✓ Integration: Expands system capabilities without requiring significant internal work by integrating third-party APIs and services, such as Firebase for extra backend services or Stripe for payment processing.

_Observations:

- ✓ Flexibility: As the project develops, it may be necessary to make changes to the work breakdown and hours per person, which are estimates.
- ✓ Collaboration: The division of labor may change when team members must work together on some activities, such as design and testing.
- ✓ Prioritization: In order to guarantee that crucial features are built first, tasks are ranked according to the MoSCoW classification.

_This table offers a comprehensive project roadmap, detailing not only what must be done and by whom, but also the particular areas of emphasis within each need. This degree of specificity helps guarantee that every facet of the project is well-planned and taken into consideration.

_Timebox Plan for the 3-Month Project Timeline: (Start date: 16/01/2024 - End date: 16/04/2024)

_Month 1: Foundation and Critical Systems (Start date: 16/01/2024 - End date: 12/02/2024)

1. Effective Order Processing System

- Design (Week 1-2)

- +Architecture planning: 3 days
- +Data models: 3 days
- +API endpoints planning: 2 days

- Development (Week 3)

- +Database implementation: 4 days
- +API development for order management: 3 days

- Testing (Week 4)

- +Unit tests for API endpoints: 2 days
- +Integration testing: 2 days

2. Data Protection Compliance

- Research (Week 1-2)

- +Legal requirements analysis: 4 days
- +Compliance requirements identification: 4 days

- Implementation (Week 3-4)

- +Security protocols implementation: 6 days
- +Review and adjustments: 2 days

_Month 2: Scalability and Security (Start date: 13/02/2024 - End date: 12/03/2024)

1. Scalable Infrastructure

- Design (Week 1)
 - +Cloud architecture layout: 3 days
 - +Disaster recovery planning: 2 days

- Testing (Week 2)
 - +Load testing: 5 days

2. Advanced Security Measures

- Implementation (Week 3)
 - +Encryption methods: 3 days
 - +Security protocols: 2 days

- Testing (Week 4)
 - +Penetration tests: 5 days

3. Multiple Payment Choices

- Integration (Week 3)
 - +Begin integration with payment gateways: 3 days

_Month 3: Enhancements and User Experience ((Start date: 13/03/2024 - End date: 16/04/2024)

1. Flexible Delivery Slot System

- Development (Week 1)
 - +Slot allocation logic: 4 days
- Testing (Week 2)
 - +User acceptance testing: 4 days

2. Comprehensive Account Management

- Development (Week 1)
 - +Profile management features: 3 days
 - +Integration with third-party services: 2 days

3.Feedback and Support System

- Implementation (Week 3)
 - +Feedback form: 2 days
 - +Integration with customer service platform: 2 days

4. User-Friendly Interface Design






















- Design and Development (Week 3-4)
 - +UI/UX mockups: 3 days
 - +Front-end coding: 4 days

















5. Multiple Payment Choices (Continued)

- Testing (Week 4)
 - +Transaction flow testing: 3 days

_Time plan:

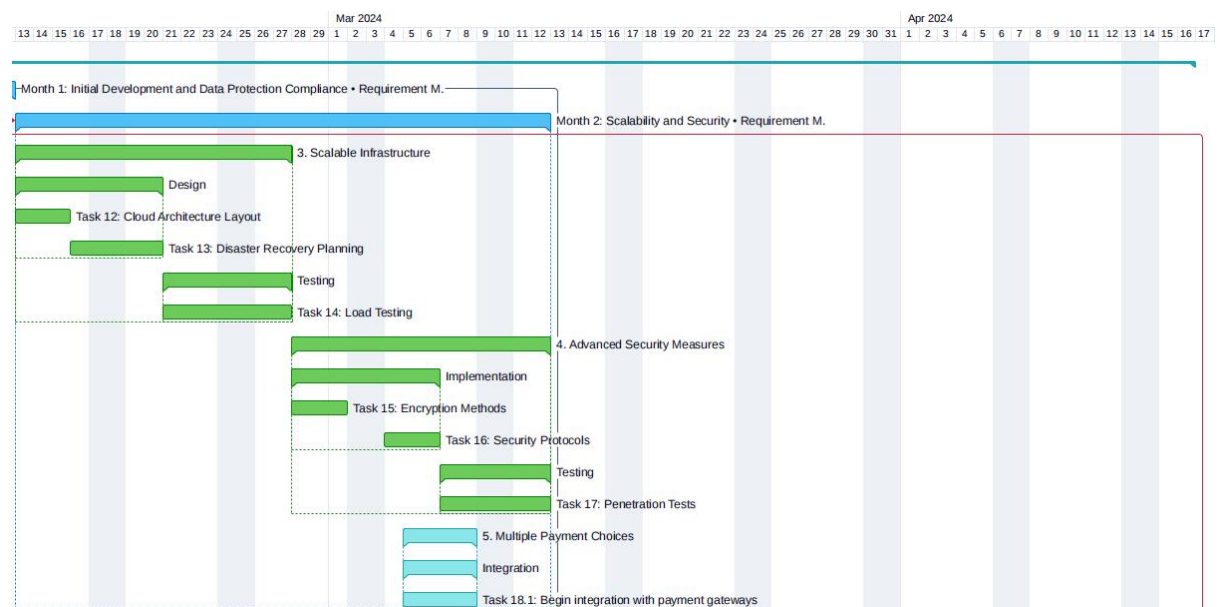
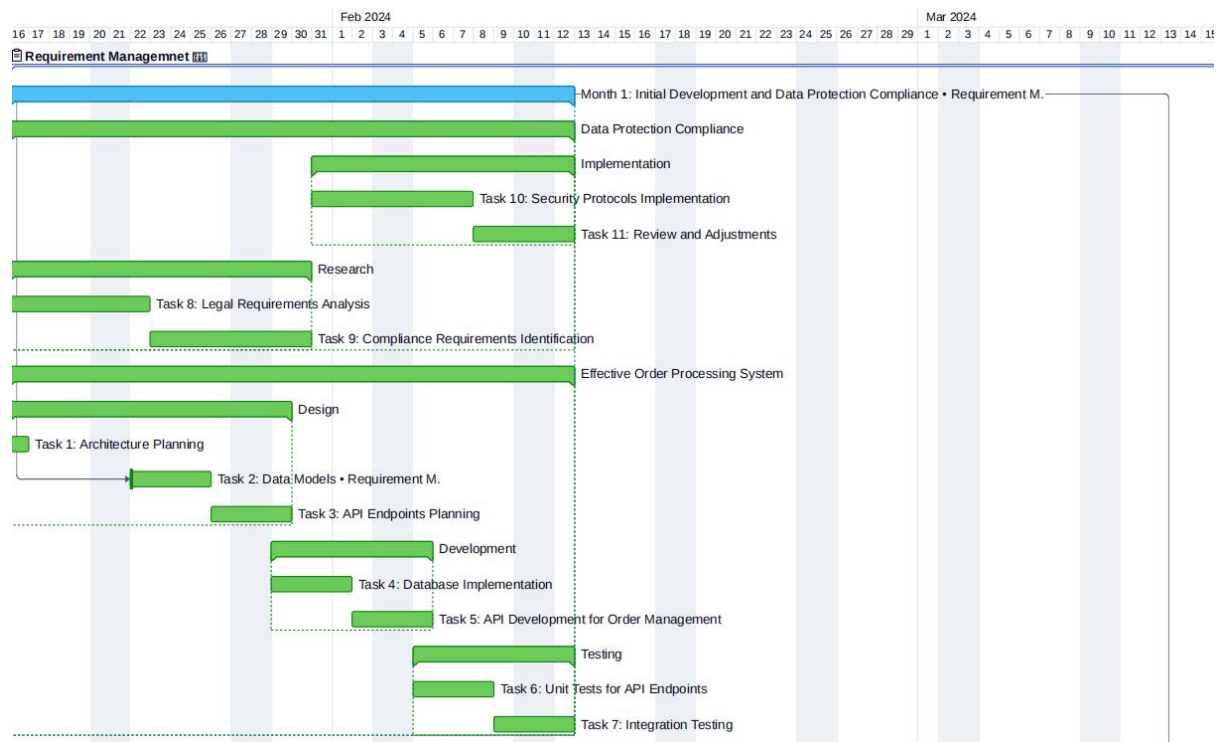
Name ↑	Status	Start date	Due date	Impact
▼ Requirement Managemnet 🚀	New	16/01/2024	16/04/2024	
▼ Month 1: Initial Development and Dat...	New	16/01/2024	12/02/2024	Medium
> 1. Effective Order Processing System	Completed	16/01/2024	12/02/2024	High
> 2. Data Protection Compliance	Completed	16/01/2024	12/02/2024	Medium
▼ Month 2: Scalability and Security	New	13/02/2024	12/03/2024	High
> 3. Scalable Infrastructure	Completed	13/02/2024	27/02/2024	Medium
> 4. Advanced Security Measures	Completed	28/02/2024	12/03/2024	High
> 5. Multiple Payment Choices	In progress	05/03/2024	08/03/2024	Low
▼ Month 3: Enhancements and User Exp...	New	13/03/2024	16/04/2024	High
> 10 .Multiple Payment Choices (Co...	In progress	10/04/2024	16/04/2024	Low
> 6. Flexible Delivery Slot System	Completed	13/03/2024	28/03/2024	Medium
> 7. Comprehensive Account Manag...	Completed	13/03/2024	21/03/2024	Medium
> 8. Feedback and Support System	In progress	29/03/2024	05/04/2024	Low
> 9. User-Friendly Interface Design	Planned	29/03/2024	16/04/2024	Low

	Name	Status	Start date	Due date ↑	Impact
1	✓ Requirement Managemnet 	 In progress			
2	✓ Month 1: Initial Development and Data F	 New	16/01/2024	12/02/2024	Medium
3	✓ Data Protection Compliance	 Completed	16/01/2024	12/02/2024	Medium
4	✓ Research	 Completed	16/01/2024	30/01/2024	Medium
5	Task 8: Legal Requirements A	 Completed	16/01/2024	22/01/2024	Medium
6	Task 9: Compliance Requirem	 Completed	23/01/2024	30/01/2024	Medium
7	✓ Implementation	 Completed	31/01/2024	12/02/2024	Medium
8	Task 10: Security Protocols In	 Completed	31/01/2024	07/02/2024	Medium
9	Task 11: Review and Adjustm	 Completed	08/02/2024	12/02/2024	Medium
10	✓ Effective Order Processing System	 Completed	16/01/2024	12/02/2024	High
11	✓ Design	 Completed	16/01/2024	29/01/2024	High
12	Task 1: Architecture Planning	 Completed	16/01/2024	16/01/2024	High
13	Task 2: Data Models	 Completed	22/01/2024	25/01/2024	High
14	Task 3: API Endpoints Plannir	 Completed	26/01/2024	29/01/2024	High
15	✓ Development	 Completed	29/01/2024	05/02/2024	High
16	Task 4: Database Implementa	 Completed	29/01/2024	01/02/2024	High
17	Task 5: API Development for	 Completed	02/02/2024	05/02/2024	High
18	✓ Testing	 Completed	05/02/2024	12/02/2024	High
19	Task 6: Unit Tests for API End	 Completed	05/02/2024	08/02/2024	High
20	Task 7: Integration Testing	 Completed	09/02/2024	12/02/2024	High

▼ Month 2: Scalability and Security	 New	13/02/2024	12/03/2024	High
▼ 3. Scalable Infrastructure	 Completed	13/02/2024	27/02/2024	Medium
▼ Design	 Completed	13/02/2024	20/02/2024	Medium
Task 12: Cloud Architectur...	 Completed	13/02/2024	15/02/2024	Medium
Task 13: Disaster Recovery ...	 Completed	16/02/2024	20/02/2024	Medium
▼ Testing	 Completed	21/02/2024	27/02/2024	Medium
Task 14: Load Testing	 Completed	21/02/2024	27/02/2024	Medium
▼ 4. Advanced Security Measures	 Completed	28/02/2024	12/03/2024	High
▼ Implementation	 Completed	28/02/2024	06/03/2024	High
Task 15: Encryption Methods	 Completed	28/02/2024	01/03/2024	High
Task 16: Security Protocols	 Completed	04/03/2024	06/03/2024	High
▼ Testing	 Completed	07/03/2024	12/03/2024	High
Task 17: Penetration Tests	 Completed	07/03/2024	12/03/2024	High
▼ 5. Multiple Payment Choices	 In progress	05/03/2024	08/03/2024	Low
▼ Integration	 In progress	05/03/2024	08/03/2024	Low
Task 18.1: Begin integratio...	 In progress	05/03/2024	08/03/2024	Low

✓ Month 3: Enhancements and User Experi	New	13/03/2024	16/04/2024	High
✓ 10 .Multiple Payment Choices (Conti	In progress	10/04/2024	16/04/2024	Low
✓ Tesing	In progress	10/04/2024	16/04/2024	Low
Task 18.2: Transaction flow te	In progress	10/04/2024	10/04/2024	Low
✓ 6. Flexible Delivery Slot System	Completed	13/03/2024	28/03/2024	Medium
✓ Development	In progress	13/03/2024	20/03/2024	Medium
Task 19: Slot Allocation Logic	In progress	13/03/2024	20/03/2024	Medium
✓ Testing	In progress	21/03/2024	28/03/2024	Medium
Task 20: User Acceptance Tes	In progress	21/03/2024	28/03/2024	Medium
✓ 7. Comprehensive Account Manager	Completed	13/03/2024	21/03/2024	Medium
✓ Development	Completed	13/03/2024	21/03/2024	Medium
Task 21: Integration with Thir	Completed	19/03/2024	21/03/2024	Medium
Task 22: Profile Management	Completed	13/03/2024	18/03/2024	Medium
✓ 8. Feedback and Support System	In progress	29/03/2024	05/04/2024	Low
✓ Implementation	In progress	29/03/2024	05/04/2024	Low
Task 23: Feedback Form	In progress	29/03/2024	02/04/2024	Low
Task 24: Integration with Cus	In progress	03/04/2024	05/04/2024	Low
✓ 9. User-Friendly Interface Design	Planned	29/03/2024	16/04/2024	Low
✓ Design and Development	Planned	29/03/2024	16/04/2024	Low
Task 25: Front-End Coding	Planned	09/04/2024	16/04/2024	Low
Task 26: UI/UX Mockups	Planned	29/03/2024	08/04/2024	Low

_Gantt chart:



B2.2 Explain how you set about prioritising the requirements and justify your reasons for the decisions that you made.

MoSCoW	ID	Requirement	Explain
M (Must Have)	1.	Effective Order Processing System	The organization can handle orders reliably and effectively thanks to this technology, which serves as the foundation of the online platform. To automate and optimize processes, a successful order processing system must interface with shipping, payment, and inventory management systems. Customers will get their orders as expected as a result of this decreased chance of mistakes and delays, which is essential to the platform's legitimacy and smooth operation.
	2.	Data Protection Compliance	The privacy of data is critical in the digital era. Adherence to global rules such as the General Data Protection Regulation (GDPR) or comparable statutes affects not only the avoidance of fines but also the safeguarding of confidential user data against intrusions and breaches. Customers are reassured by this compliance that their data is handled safely, which promotes loyalty and confidence. This entails putting in place strong data encryption, safe data storage procedures, and open data usage guidelines for Green Grocery.
	3.	Scalable Infrastructure	The architecture of the platform needs to be built to scale with the company, able to handle increases in data volumes and traffic surges without sacrificing functionality. This entails putting load balancers in place, making sure databases are scalable, and utilizing cloud services that can dynamically assign resources depending on demand in real time. This kind of infrastructure guarantees a constant user experience even during periods of high traffic and fosters business expansion.
	6.	Advanced Security Measures	This goes beyond data protection compliance and includes a wider range of security procedures meant to defend the platform from online attacks. Examples of these procedures

			include using SSL encryption to transmit data, conducting frequent security audits, and putting firewalls and intrusion detection systems in place. Due to the many dangers associated with online transactions, keeping a high degree of security is essential to shielding the business and its clients from financial fraud and identity theft.
S (Should Have)	4.	Flexible Delivery Slot System	By giving customers the option to select delivery times that work with their schedules, this approach increases customer convenience. Although it's not essential for launch, it may provide you a competitive edge and greatly increase client happiness. A backend system that can dynamically track and update available delivery slots in real-time depending on logistical capabilities is needed to implement this.
	5.	Comprehensive Account Management	By allowing users to manage their preferences, order history, and personal information, this tool gives them more control over their purchasing experience. Recurring business and engagement are boosted via an intuitive account management interface. Users should be able to update their information safely and easily with this, since it should be developed with their privacy and usability in mind.
	7.	User-Friendly Interface Design	The secret to drawing in and keeping people is a well-designed interface. This includes elements that make the website easy to use, mobile-responsive design, accessibility for people with impairments, and an eye-catching layout that complements the brand's aesthetic. Iterative design methods that use user feedback to improve usability are recommended.
	9.	Feedback and Support System	In addition to improving service quality, direct routes for customer feedback and assistance offer insightful information about user demands and possible areas for development. This could involve user surveys, a helpdesk system, and live chat

			assistance. By putting such procedures in place, the business shows that it is dedicated to providing excellent customer service and ongoing development.
C (Could Have)	8.	Multiple Payment Choices	By providing a range of payment methods, such as bank transfers, digital wallets, and credit cards, you may reach a larger customer base and improve the checkout process. Although accommodating client choices is advantageous, it necessitates safe transaction processing and interaction with numerous payment gateways, both of which may be created gradually.
W (Won't Have this time)	10.	Environmental and Social Responsibility Features	Green Groceries' brand principles are in line with features that showcase the company's dedication to sustainability, such highlighting eco-friendly packaging alternatives or highlighting the eco-conscious activities of suppliers. These can be gradually added to platform upgrades after the main e-commerce features are operational and proven, albeit they are not necessary for the platform's initial functioning.

_The creation of the Green Groceries Online Platform is strategically linked with both immediate operational demands and long-term brand objectives when requirements are prioritized with the careful thought that has been provided. This strategy makes it easier to allocate resources optimally, concentrate development efforts, and implement a phased rollout plan that grows with the business and adapts to changing consumer expectations.

_Summary:

+Must Have (M) Total Estimated Time: 3072 hours

+Should Have (S) Total Estimated Time: 668 hours

+Could Have (C) Total Estimated Time: 100 hours

+Won't Have (W) Total Estimated Time: 0 hours

_MoSCoW rule 80:20

- ✓ Applying the 80:20 rule to the "Green Groceries Online Platform" requirements time and effort estimation table, we will concentrate on allocating resources so that a maximum of 20% of the requirements can generate 80% of the project's value. This means that while spending less time and energy on and getting rid of "Could Have" requirements, we will place a high priority on "Must Have" requirements and a few key "Should Have" requirements. Needs "Won't Have this time" absolutely.

_Total effort for 4 requests (1, 2, 3, 6) (20% of request): 3072 conforms to the 80:20 rule

_Total effort for remaining requirements (4, 5, 7, 8, 9): 768 conforms to the 80:20 rule

- ✓ This guarantees that while "Could Have" and "Won't Have this time" requirements are taken into consideration, resources and efforts are concentrated on the most important and core aspects of the project. later on, assisting in the efficient management of resources and maintaining projects within the allocated budget and timeline.

Section C – Legal, Social, Ethical and Professional issues

C1. Legal, Social, Ethical, and Professional Issues in Green Groceries Online Platform Development

_Navigating the complex terrain of legal, social, ethical, and professional issues (LSEPI) while developing the Green Groceries online platform involves more than just compliance—it also entails integrating these ideas into the foundation of the work. This all-encompassing strategy guarantees that the platform not only complies with laws and guidelines but also has a beneficial effect on stakeholders and society.

1. Legal Aspects:

- ✓ The creation and functioning of the web platform are fundamentally dependent on legal compliance. Complying with accessibility standards is crucial, even beyond data protection. Website accessibility for people with disabilities is guaranteed by laws like the Web Content Accessibility Guidelines (WCAG). For Green Groceries, this entails building the platform so that users of different skill levels can utilize it, expanding its

market reach and reaffirming its dedication to inclusivity. Furthermore, to guarantee that the platform functions within the bounds of the legal framework established by national and international laws, compliance with e-commerce regulations—which control online sales, consumer rights, and digital marketing—is essential.

2. Social Impact:

- ✓ The Green Groceries platform's social aspect includes its role in encouraging sustainable living and bolstering regional economies. The website provides a market place for locally sourced and organic products, therefore mitigating carbon emissions and bolstering the livelihoods of local farmers and producers. In addition, the platform's societal effect may be increased by addressing social concerns like nutrition and food security. To enhance the platform's ability to function as a catalyst for social change, it might be beneficial to integrate instructional materials regarding sustainable eating habits or collaborate with neighborhood initiatives to increase accessibility to nutritious food alternatives.

3. Ethical Practices:

- ✓ Fair trade standards and ethical sourcing are two aspects of Green Groceries' supply chain management that are guided by ethical principles. It is essential to be transparent about the sourcing process, worker treatment, and environmental effects of products. Additionally crucial are ethical advertising methods. This entails giving clients with accurate product descriptions and refraining from making deceptive promises in order to build credibility and trust. Regarding user privacy, going above and above what is required by law to safeguard client information shows a dedication to moral principles and builds client confidence.

4. Professional Responsibility:

- ✓ Upholding the highest standards of professional behavior for the development team is part of the professional component. This entails ongoing education and adjustment to new approaches and technology that might improve the effectiveness, security, and user experience of the platform. In order to further the field as a whole, professional accountability also entails information exchange and mentoring both inside the team and outside it. Assisting professional organizations like the BCS not only provide a structure for moral behavior but also presents chances for certification and professional growth, which increases the team's potential and the project's success.

_The creation of the Green Groceries online platform serves as an example of ethical business practices in the digital world by taking these LSEPI factors into account. Green Groceries sets a standard for how technology can be used to create positive societal impact, foster consumer trust, and promote sustainability while upholding the highest standards of professionalism and ethical conduct. This is achieved by incorporating legal compliance, social responsibility, ethical practices, and professional excellence into every aspect of the project. This all-encompassing strategy guarantees that the platform will be profitable while simultaneously making a positive impact on a more ethical, just, and sustainable society.

C2.The Role of the British Computer Society (BCS) in Guiding Professional Conduct

_Through a thorough analysis of the BCS Code of Conduct, we investigate the complex role that professional associations, in this case the British Computer Society (BCS), play in influencing the behavior and choices made by IT professionals. This investigation offers a fuller, more comprehensive picture of how the BCS's tenets may direct the group creating the Green Groceries online platform.

1. Public Interest:

- ✓ The BCS places a strong emphasis on the necessity of taking the public interest into account in all professional undertakings. There are several ways in which this approach might be applied to the Green Groceries platform. Ensuring the platform is completely accessible to those with disabilities is not just a matter of regulatory compliance; it also serves the public interest by increasing the accessibility of sustainable products to a broader audience. An additional illustration would be the dedication to reducing the carbon footprint of the platform, which might entail selecting green hosting options or increasing server efficiency. These deeds show a commitment to society's overall well-being and are consistent with the BCS's emphasis on making a constructive contribution to the public good.

2. Duty to Relevant Authority:

- ✓ This concept calls for acting with professionalism while interacting with clients or employers. In the case of Green Grocery, this might entail providing open and honest updates on the advancements and difficulties encountered during the platform's growth, guaranteeing that all choices are taken with the company's best interests in mind. For instance, even though the firm leadership initially wanted a certain feature,

the development team has a responsibility to advise against it if installing it would seriously delay the project without adding proportionate value. This obligation includes counseling the business on upholding moral and legal requirements, especially in situations where it would be less expensive or easier to disregard them.

3. Duty to the Profession:

- ✓ IT workers have an obligation to uphold and promote the integrity and reputation of their field. This might take the shape of the Green Groceries team participating in or funding tech community events, making contributions to open-source projects that help other developers working on related e-commerce platform projects, or sharing their lessons learned and best practices. Such endeavors support the BCS's objective of developing a cooperative and highly trained IT profession by enhancing both the team's and the company's reputations as well as the professional community.

4. Professional expertise and Integrity:

- ✓ This concept emphasizes the significance of acting honorably and within one's area of expertise. This implies that in order to construct the platform for the Green Groceries project, the development team has to make sure they are utilizing technologies and processes that they are skilled in. It also entails being truthful about capabilities and schedules, refraining from making exaggerated claims about features or projecting delivery timeframes. In order to maintain a high level of expertise, the team should either bring in specialists or undergo the appropriate training when new, potentially helpful technologies are discovered. Integrity also entails recognizing the confidence that users have placed in the platform by making sure that any data handled by it is handled with the highest security and privacy respect.

_The Green Groceries platform team ensures its success and integrity as well as the ethical practices, professional development, and social welfare of the IT industry by adhering to the BCS Code of Conduct's standards. Their method is the epitome of how IT projects should be managed; it combines technological know-how, moral awareness, and professional responsibility to foster excellence, creativity, and trust in both the tech sector and society at large.

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