**SWINBURNE UNIVERSITY OF TECHNOLOGY**

**HO CHI MINH CAMPUS**

**COS20031 - Computing Technology Design Project**

**Topic**

# REQUEST FOR PROPOSAL (RFP) FOR B2B2C ECOMMERCE PLATFORM SYSTEM


**INSTRUCTOR: Hang Sam Nang**

**STUDENT NAMES:**

**Nguyen Quoc Thang**

Le Huu Tuong

Tran Thanh Minh

Nguyễn Quốc Thắng

Trinh Quy Khang

Nguyen Do Nhat Nam

Tran Thai Duy Khang


**HO CHI MINH CITY – September 2023**

# Table of contents

**Team Home Page** ..... **2**

**Project Plan** ..... **5**

**Persona - System owner** ..... **11**

**Persona - Business owner** ..... **13**

**Persona - Consumer** ..... **15**

**Roles and Responsibilities** ..... **17**

**Risk Assessment** ..... **24**

**Empathy Map** ..... **28**

**Product requirements** ..... **30**

**Initial ER Diagram** ..... **39**

**Appendix 1: My user manual** ..... **43**

**Appendix 2: Meeting notes** ..... **49**

Meeting notes - Sep 9, 2023 ..... 50

Meeting notes - Sep 11, 2023 ..... 51

Meeting notes - Sep 18, 2023 ..... 52

Meeting notes - Sep 25, 2023 ..... 52

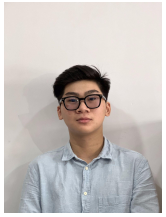
# Team Home Page

## Welcome to G05👋

We aim to get HD and try to collaborate with each other member effectively.

| 📈Team metrics |
| --- |
| **Join Jira**<br>Updated Sep 7, 2023<br>ON TRACK |
| **Create Team Agreement**<br>Updated Sep 7, 2023<br>ON TRACK |
| **Create Team Proposal**<br>Updated Sep 11, 2023<br>ON TRACK |

| ✨About G05-20031 |
| --- |
| Our team is focused on designing and building a database infrastructure to store RFPs for B2B2C e-commerce systems. We are undertaking this project to create a robust platform aimed at connecting businesses with consumers, increasing efficiency, and productivity in the exchange of buying and selling products and services offered by various enterprises. |

| 📸**Meet the team** | | |
|---|---|---|
| Nguyen Quoc Thang Scrum Master | Nguyen Do Nhat Nam Resources Manager | Tran Thanh Minh Developer/ Manager |
|  Tran Thai Duy Khang Developer | Le Huu Tuong Project Manager | Trinh Quy Khang Developer |

| 🎉Latest updates | 🔍Where to find us | 🌟Featured resources |
|---|---|---|
| - Update meeting note<br>- On going with project proposal | 💬Fb: Duy Khang<br>✉️khangttdsws00444@fpt.edu.vn<br>📱0906616363 | 🔗 **Linkedin**<br>🔗 **Youtube**<br>🔗 **Module in Dashboard** |

## 📅 Our calendar

Recent meeting note of our team

| Sep 11, 2023 | Sep 18, 2023 | Sep 25, 2023 |
|---|---|---|
| • Join Jira<br>• Create Team Agreement | • Create User Manual.<br>• Create a Project Plan.<br>• Create Roles and Responsibilities and Team Home Page.<br>• Risk Assessment Matrix.<br>• Create Persona | • Create Empathy Map<br>• Create Meeting Note<br>• Create Product Requirement<br>• Initial ER diagram |

# Project Plan

| | |
|---|---|
| **Driver** | • Tran Thai Duy Khang |
| **Approver** | • Hang Sam Nang |
| **Contributors** | • Nguyen Quoc Thang<br>• Nguyen Do Nhat Nam<br>• Tran Thanh Minh<br>• Trinh Quy Khang<br>• Tran Thai Duy Khang<br>• Le Huu Tuong |
| **Informed** | • Nguyen Quoc Thang - Nguyen Do Nhat Nam - Tran Thanh Minh |
| **Objective** | To develop a comprehensive and scalable B2B2C Ecommerce Platform System that allows businesses to list and sell products to consumers while efficiently managing their operations. The system also enhances user experience by improving security, compliance, and scalability to accommodate future growth. |
| **Due date** | October 2, 2023 |
| **Key outcomes** | • Improve customer experience.<br>• Increase sales and revenue.<br>• Reduce costs and improve efficiency.<br>• Scalability and flexibility |
| **Status** | IN PROGRESS |

## 🤔Problem Statement

In the context of Vietnam's rapidly expanding B2B2C e-commerce market, Coomarki sees an urgent need to develop an innovative B2B2C e-commerce platform system to create efficiency in direct connection. communication between businesses and end consumers (B2C). The platform aims to streamline the buying and selling of products and services, addressing various challenges in the current market environment:

- **Limited vendor integration:**
  B2C systems need integration between many different data systems including systems from businesses, suppliers and payment gateways. Therefore, it will be difficult to create close cooperation with businesses

- **Fragmented customer experience:**
  Consumers often experience a fragmented shopping journey marked by inconsistencies in product availability, pricing and delivery options across Coomarki's diverse online and offline channels. This fragmentation can erode consumer trust and loyalty.
- **Ineffective order fulfillment:**
  Coomarki struggles to optimize its order fulfillment process, which can lead to long delivery times and a lack of transparency in inventory management. Such inefficiencies contribute to customer dissatisfaction and loss of customer trust in businesses.
- **Data silos and lack of analytics:**
  The lack of a unified data management system in Coomarki creates silos of data across different departments. This lack of data integration hinders an organization's ability to extract meaningful insights from data, making it difficult to make informed data-driven decisions.
- **Competitive landscape:**
  Coomarki faces increasingly stiff competition from both domestic and international B2B2C e-commerce giants. To maintain and increase market share, it is important to increase a company's digital presence and enhance customer engagement strategies to stay competitive.
- **Complex legal environment:**
  Vietnam's evolving regulatory landscape for e-commerce poses a series of challenges, including compliance, tax reporting and data protection. Coomarki must address these complexities effectively to ensure operational compliance while also adhering to local regulations.

In this dynamic market landscape, the lack of effective B2B2C e-commerce platforms can lead to ineffective connections between businesses and customers, leading to missed opportunities and reduced revenue potential. Failure to address these issues could cause Coomarki and its partner businesses to fall behind their competitors.

Therefore, the successful implementation of a B2B2C e-commerce project is expected to bring several positive results:

- Increase sales for businesses that cooperate with Coomarki.
- Revenue growth for Coomarki through successful project implementation.
- Enhance user experience for consumers, leading to improved customer satisfaction and loyalty.
- Comply and ensure project security, ensure protection of sensitive data, and comply with regulatory requirements.

- Addressing these challenges is critical for Coomarki to thrive in Vietnam's B2B2C e-commerce market and establish itself as a leader in this rapidly growing industry.

## 🎯 Scope

| | |
|---|---|
| **Must have:** | • Product catalog management.<br>• Order management.<br>• Customer relationship management (CRM).<br>• Payment processing.<br>• Security. |
| **Nice to have:** | • Marketing and promotions.<br>• Omnichannel support.<br>• Business intelligence and analytics. |
| **Not in scope:** | • Custom development.<br>• Third-party integrations.<br>• Ongoing support and maintenance. |

## 📅 Timeline

https://cos30021.atlassian.net/jira/software/projects/CG/boards/1/timeline

## Milestones and deadlines

| Milestone | Owner | Deadline | Status |
|---|---|---|---|
| Join Jira | Everyone | Sep 12, 2023 | DONE |
| Create Team Agreement | Everyone | Sep 12, 2023 | DONE |
| Create User Manual | Everyone | Sep 17, 2023 | DONE |
| Create Project Plan | Nhat Nam, Quoc Thang | Sep 17, 2023 | DONE |

| | | | |
|---|---|---|---|
| Create Roles and Responsibilities and Team Home Page | Duy Khang, Quy Khang | Sep 17, 2023 | REVIEW |
| Create Risk Assessment Matrix | Huu Tuong, Thanh Minh | Sep 17, 2023 | DONE |
| Create Persona | Everyone | Sep 17, 2023 | DONE |
| Create Empathy map | Quy Khang, Duy Khang | Sep 24, 2023 | IN PROGRESS |
| Create Initial ER diagram | Huu Tuong, Thanh Minh | Sep 24, 2023 | IN PROGRESS |
| Create Project Requirement | Quoc Thang, Nhat Nam | Sep 24, 2023 | IN PROGRESS |

## ⭐ Mission Statement

Our goal is to transform the B2B2C E-Commerce environment by creating a cutting-edge platform that links businesses and end consumers effortlessly, enabling them to succeed in the digital marketplace. Our mission is to develop a comprehensive and user-friendly platform that promotes quick transactions, stimulates company growth, and provides customers with a personalized and simple purchasing experience.

**Enabling Business Connectivity:**
We aspire to build a strong B2B2C Ecommerce Platform System that connects enterprises and consumers, enabling seamless communication and cooperation. Through increased exposure and accessibility, our platform will enable businesses to broaden their reach, develop new relationships, and achieve long-term success.

**Enhancing User Experience:**
We are committed to creating an engaging and intuitive user experience for both companies and consumers. Our platform will have a user-friendly layout, simplified navigation, and tailored suggestions to ensure that each user has a pleasant and easy buying experience.

**Driving Innovation and Scalability:**
We understand the increasing demands of businesses and customers, as well as the dynamic nature of the Ecommerce sector. To support future expansion and innovation,

our platform will be created with a scalable architecture, leveraging the latest technologies and best practices. We are devoted to consistently improving and increasing the capabilities of our platform in order to remain ahead of market trends.

**Ensuring Security and Trust:**
We place a premium on our users' security and privacy. Our platform will follow industry-leading security standards, including strong data encryption, secure payment gateways, and strict access restrictions. We will also put in place safeguards against fraud and counterfeiting, promoting a trustworthy and secure environment for both businesses and consumers.

**Delivering Reliable Support and Partnership:**
We recognize the value of continued assistance and engagement with our clients. Our dedicated support staff will be accessible to answer any questions, give technical assistance, and ensure the platform's seamless and effective installation. We want to develop long-term relationships with our clients, aiding them in accomplishing their business goals and propelling their success in the digital marketplace.

# Persona - System owner

| | |
|---|---|
| **Persona role** | System Owner |
| **Job description** | As the System Owner, Le Ba Tung is responsible for overseeing the management and optimization of the company's IT infrastructure and technology systems. Their role involves making strategic decisions related to technology investments, ensuring data security, and ensuring that the company's IT resources are aligned with its business objectives. |

## 🏢 Company

| | |
|---|---|
| **Company name** | TechSolution Inc. |
| **Company size** | Medium-sized, with approximately 500 employees. |
| **Industry** | Information Technology and Software Services |

## 👥 Demographic information

| | |
|---|---|
| **Gender** | Male |
| **Income** | High income, earning around $150,000 annually |
| **Education level** | Holds a Master's degree in Computer Science |

## 🖊️ Personal quote

In the world of technology, adaptability and innovation are the keys to success.

## 📜 Biography

He has a deep-rooted passion for technology that began during his childhood when he built his first computer from spare parts. His journey in the IT field started as a junior system administrator, and he gradually climbed the corporate ladder through his hard work, dedication, and continuous learning. Over the years, he has gained extensive experience in managing complex IT systems and has earned a reputation for his innovative solutions and strategic thinking.

| Professional goals | Motivators |
|---|---|
| • Tung's primary professional goal is to ensure that TechSolutions Inc. remains at the forefront of technological advancements in its industry. He aims to lead his team in implementing cutting-edge technologies that streamline operations, enhance cybersecurity, and drive growth. Additionally, he aspires to mentor emerging IT talents within the company. | • Tung is motivated by the opportunity to make a lasting impact on the success and security of TechSolutions Inc. He finds fulfillment in solving complex technology challenges and derives great satisfaction from seeing his team excel. He also values work-life balance and prioritizes spending quality time with his family. |
| **Challenges** | **Sources of information** |
| • Some of the challenges Tung faces include keeping up with rapidly evolving technology trends, ensuring the cybersecurity of the company's systems in the face of increasing threats, and balancing the demands of a high-pressure job with family life. | • To stay informed and updated in the tech industry, Tung relies on a variety of sources, including industry journals, tech news websites, attendance at conferences, and networking with other IT professionals. He also values the insights gained from collaborating with his IT team and seeking feedback from colleagues within the company. |

# Persona - Business owner

| | |
|---|---|
| **Persona role** | Business owner, Consultant |
| **Job description** | I am the owner and consultant of an ecommerce platform that offers various services and solutions for online businesses. I use the platform to provide guidance, support, and training for sellers and buyers who want to grow their online presence and sales. |

## 🏢 Company

| | |
|---|---|
| **Company name** | Intel |
| **Company size** | 10,000 employees |
| **Industry** | Technology and Hardware |

## 👥 Demographic information

| | |
|---|---|
| **Gender** | Male |
| **Income** | ~ 100,000,000 VND |
| **Education level** | Master |

## 🖊 Personal quote

The way to get started is to quit talking and begin doing.

# 📜 Biography

| Professional goals | Motivators |
|---|---|
| • I want to make my business's product the most trusted and reliable one in Southeast Asia and beyond.<br>• I want to help online businesses achieve their goals and overcome their challenges.<br>• I want to constantly learn and improve my skills and knowledge in ecommerce and related fields. | • I want to make my ecommerce platform the most trusted and reliable one in Southeast Asia and beyond.<br>• I want to help online businesses achieve their goals and overcome their challenges.<br>• I want to constantly learn and improve my skills and knowledge in ecommerce and related fields.<br>• I am passionate about ecommerce and how it can create opportunities and value for people.<br>• I like to help others and share my expertise and experience.<br>• I want to make a positive difference in the world and the environment. |
| **Challenges** | **Sources of information** |
| • I sometimes face competition from other competitors that offer similar or better services and solutions.<br>• I sometimes have difficulty with maintaining the quality and security of my business and its users' data.<br>• I sometimes struggle with finding and retaining qualified and talented staff for my platform. | • I use an ecommerce platform to communicate with my clients and partners, and to monitor and evaluate the performance and feedback of my platform and its users.<br>• I also use online resources, such as blogs, podcasts, webinars, and courses, to keep up with the latest trends and developments in ecommerce and related fields.<br>• I also attend events, such as conferences, workshops, and networking sessions, to meet and learn from other experts and professionals in the ecommerce industry. |

# Persona - Consumer

| | |
|---|---|
| **Persona role** | Customer, Student |
| **Job description** | I am a student who likes to shop online for clothes, accessories, and books. I use ecommerce platforms to find the best deals and compare different products. |

## School

| | |
|---|---|
| **School name** | Ho Chi Minh City University of Economics |
| **Major** | Business Administration |

## Demographic information

| | |
|---|---|
| **Gender** | Male |
| **Income** | None |
| **Education level** | University |

## Personal quote

Life is too short to wear boring clothes.
A book is a dream that you hold in your hand.

# Biography

| Professional goals | Motivators |
|---|---|
| • I aim to become a successful startup founder after the internship.<br>• I want to graduate with a high GPA and find a good job in marketing.<br>• I want to learn more about consumer behavior and how to create effective campaigns.<br>• I want to expand my network and meet new people in my field. | • I want to graduate with a high GPA and find a good job in marketing.<br>• I want to learn more about consumer behavior and how to create effective campaigns.<br>• I want to expand my network and meet new people in my field.<br>• I am passionate about marketing and how it can influence people's decisions.<br>• I like to challenge myself and learn new skills. |
| **Challenges** | **Sources of information** |
| • I lack some major knowledge and skills that are required for my internship and future career.<br>• I sometimes struggle with time management and balancing my studies and hobbies.<br>• I sometimes feel overwhelmed by the amount of information and options available online. | • I sometimes struggle with time management and balancing my studies and hobbies.<br>• I sometimes feel overwhelmed by the amount of information and options available online<br>• I use ecommerce platforms to read reviews, compare prices, and see ratings of different products.<br>• I also use social media, blogs, and online magazines to get inspiration and recommendations for products. |

# Roles and Responsibilities

## Overview

| | |
|---|---|
| **Team** | COS20031-G05 |
| **Team members** | Tran Thanh Minh, Nguyen Quoc Thang, Le Huu Tuong, Tran Thai Duy Khang, Nguyen Do Nhat Nam, Trinh Quy Khang |
| **Date** | 10/09/2023 |
| **Team mission** | Create an environment where businesses can connect to each others and customers can connect to businesses more efficient |

## Roles and responsibilities

| Roles | Responsibilities (what others think) | Responsibilities (what I think) | Characteristics | Assigned person |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| Scrum Master | • Motivate and inspire the team to achieve project goals.<br>• Provide guidance and support to team members.<br>• Resolve conflicts and ensure a positive working environment.<br>• Communicate progress and challenges to stakeholders.<br>• Make strategic decisions that align with the project's objectives. | • Lead by example and set a high standard for professionalism.<br>• Foster a culture of continuous improvement and learning.<br>• Develop and maintain relationships with key stakeholders.<br>• Champion the project's vision and goals.<br>• Act as a problem-solver when obstacles arise. | • Visionary: Able to envision the project's goals and outcomes.<br>• Communication Skills: Effective at conveying the project's vision and objectives to the team.<br>• Decision-Maker: Capable of making tough decisions when necessary.<br>• Delegation: Skilled at assigning tasks to team members.<br>• Time Management: Proficient in creating and managing project timelines.<br>• Team Player: Collaborative and able to work well with others. | Nguyen Quoc Thang |

| | | | | |
|---|---|---|---|---|
| Resource Manager | • Procure and manage resources, including tools, equipment, and materials.<br>• Monitor resource allocation and utilization.<br>• Identify potential resource bottlenecks and address them proactively.<br>• Collaborate with procurement and vendor managemen t teams.<br>• Stay updated on industry trends and new resource options. | • Continuously evaluate the cost-effectiven ess of resource allocation.<br>• Develop contingency plans for resource shortages or emergencies.<br>• Ensure that resources are well-maintaine d and in good working order.<br>• Collaboration with the team leads to optimize resource allocation for efficiency.<br>• Implement sustainable resource management practices. | • Resourceful: Always seeking new tools and solutions to improve project efficiency.<br>• Analytical: Capable of evaluating the effectiveness of tools and making recommendatio ns.<br>• Detail-Oriented: Ensures that all necessary tools are in place and functioning.<br>• Proactive: Takes the initiative to find and implement new tools as needed.<br>• Technical Proficiency: Understands the technical requirements of the project. | Nguyen Do Nhat Nam |

| | | | | |
|---|---|---|---|---|
| Developer | • Collaborate with system architects to design software solutions.<br>• Write clean, efficient, and maintainable code.<br>• Perform code reviews and provide constructive feedback to team members.<br>• Debug and troubleshoot software issues.<br>• Keep up-to-date with the latest developmen t technologies and best practices. | • Innovate and propose creative technical solutions to project challenges.<br>• Continuously assess and improve code quality and development processes.<br>• Mentor junior developers and share knowledge within the team.<br>• Contribute to the development of coding standards and best practices.<br>• Ensure that software components integrate seamlessly with other project elements. | • Technical Expertise: Possesses in-depth knowledge of software development.<br>• Problem Solver: Skilled at finding solutions to complex technical challenges.<br>• Innovative: Open to exploring new technologies and approaches.<br>• Attention to Detail: Ensures that software architecture and design are well-thought-out .<br>• Adaptable: Can make decisions regarding technology stacks and tools.<br>• Results-Driven: Focused on delivering high-quality software components. | Trinh Quy Khang/ Tran Thai Duy Khang |

| | | | | |
|---|---|---|---|---|
| Project Manager | • Develop and maintain project plans and schedules.<br>• Monitor project progress and identify potential delays.<br>• Communicate project status and risks to stakeholders.<br>• Coordinate and facilitate project meetings and discussions.<br>• Ensure that project documentation is accurate and up-to-date. | • Proactively identify and mitigate project risks and issues.<br>• Collaborate with cross-functional teams to align project activities.<br>• Foster a culture of transparency and open communication within the project.<br>• Empower team members to take ownership of their tasks and deliverables.<br>• Continuously assess project methodologies and make improvements as needed. | • Organized: Keeps track of project scope and requirements.<br>• Documentation Skills: Ensures that changes to project scope are properly documented.<br>• Budget Management: Capable of obtaining approvals for budget changes.<br>• Stakeholder Engagement: Works closely with stakeholders to define and meet project objectives.<br>• Problem Resolution: Skilled at resolving issues related to project deliverables. | Le Huu Tuong |

| | | | | |
|---|---|---|---|---|
| Quality Manager | • Define and enforce quality assurance and testing processes.<br>• Develop and maintain a quality managemen t system.<br>• Conduct regular audits to ensure compliance with quality standards.<br>• Collaborate with testing and QA teams to plan and execute testing phases.<br>• Monitor and report on key quality metrics and performance indicators. | • Continuously evaluate and improve the effectiveness of quality assurance processes.<br>• Foster a culture of quality throughout the project team.<br>• Identify and implement quality improvement initiatives.<br>• Collaborate with stakeholders to understand and meet quality expectations.<br>• Develop training programs to enhance the team's quality-related skills.<br>• Conduct root cause analysis and implement corrective actions for quality issues. | • Quality Focus: Prioritizes and promotes a culture of quality within the team.<br>• Communication Skills: Effectively communicates quality objectives and standards.<br>• Collaborative: Works closely with stakeholders to establish quality goals.<br>• Knowledgeable: Ensures team members understand and adhere to quality standards.<br>• Detail-Oriented: Pays close attention to quality guidelines and criteria. | Tran Thanh Minh |

| | | | | |
|---|---|---|---|---|
| | | • Stay updated on industry best practices and emerging trends in quality management. | | |

# Risk Assessment

## Background

Within the team, teamwork is very important and needs to be strengthened throughout numerous activities. However, there are risks that we need to assess and consider solutions to solve or mitigate it so that it can have the minimum effects on the team.

## Risks management

Risk rating

| LOW | MEDIUM | HIGH | EXTREME |
|---|---|---|---|
| • Acceptable<br>• Ok to proceed.<br>• Unlikely to occur | • As low as reasonably practicable<br>• Take mitigation efforts.<br>• Sometimes occur | • Generally unacceptable<br>• Seek support.<br>• High chance to occur | • Intolerable<br>• Place event on hold<br>• Often occur |

| LIKELIHOOD | SEVERITY | | | |
|---|---|---|---|---|
| | **ACCEPTABLE**<br>*Little to no effect on event* | **TOLERABLE**<br>*Effects are felt, but not critical to outcome* | **UNDESIRABLE**<br>*Serious impact to the course of action and outcome* | **INTOLERABLE**<br>*Could result in disaster* |

| | | | | |
|---|---|---|---|---|
| **IMPROBABLE**<br>*Risk is unlikely to occur* | • Change the topic | | • Member doesn't check other member's work | • Members are not contributing.<br>• All the data and documents related to the project are lost.<br>• Leader abuse with power<br>• Fraud/Damage the team documents and workspace |
| **POSSIBLE**<br>*Risk will likely occur* | • Member is late for the meeting and class | • Ineffective contribution | • Members provide below standard quality of work.<br>• Unequal contribution among all members<br>• Lack of commitment | • Conflict between members when discussing ideas |

| | | | | |
|---|---|---|---|---|
| **PROBABLE**<br>*Risk will occur* | • Personal devices of members are broken and can't continue to work for the project. | • Member is not watching the tutorial for using Jira/Confluence<br>• Inadequate resources<br>• Inadequate leadership<br>• Lack of groupthink (contribute the innovative points to the project) | • Members keep being absent from meetings and classes.<br>• Members submit the work for the deadline lately<br>• Poor communication can lead to mistakes<br>• Lack of organization can lead to poor planning and unclear goals | • A person/People leave team/dropping out due to personal reason |

# Action items

Here is the list of actions that can mitigate the risk or reduce the consequences of the mentioned risks:

**Mitigating Risk of Member Non-Contribution:**

- Establish clear roles and responsibilities for team members.
- Conduct regular team meetings to ensure everyone's engagement.
- Assign a team lead or mentor to support fewer active members.
- Implement a performance review system to address non-contribution.

**Mitigating Risk of Data and Document Loss:**

- Implement a robust data backup and recovery system.
- Use version control for documents and ensure regular backups.
- Train team members in data security best practices.

**Mitigating Risk of Fraud or Damage to Documents and Workspace:**

- Implement strict access control and authentication measures.

- Regularly monitor document and workspace activities for anomalies.
- Create redundancy for critical documents and data.

**Mitigating Risk of Meeting and Class Punctuality Issues:**
- Establish a clear meeting schedule and communicate it in advance.
- Implement reminders for meetings and classes.
- Set consequences for repeated lateness.

**Mitigating Risk of Ineffective Contribution and Poor-Quality Work:**
- Develop a peer review system for work quality assessment.
- Encourage open communication for feedback and improvement.

**Mitigating Risk of Unequal Contribution and Lack of Commitment:**
- Monitor team workload distribution regularly.
- Conduct periodic team performance reviews.

**Mitigating Risk of Conflict During Idea Discussions:**
- Establish guidelines for constructive discussions.
- Encourage diversity and inclusion in idea generation.

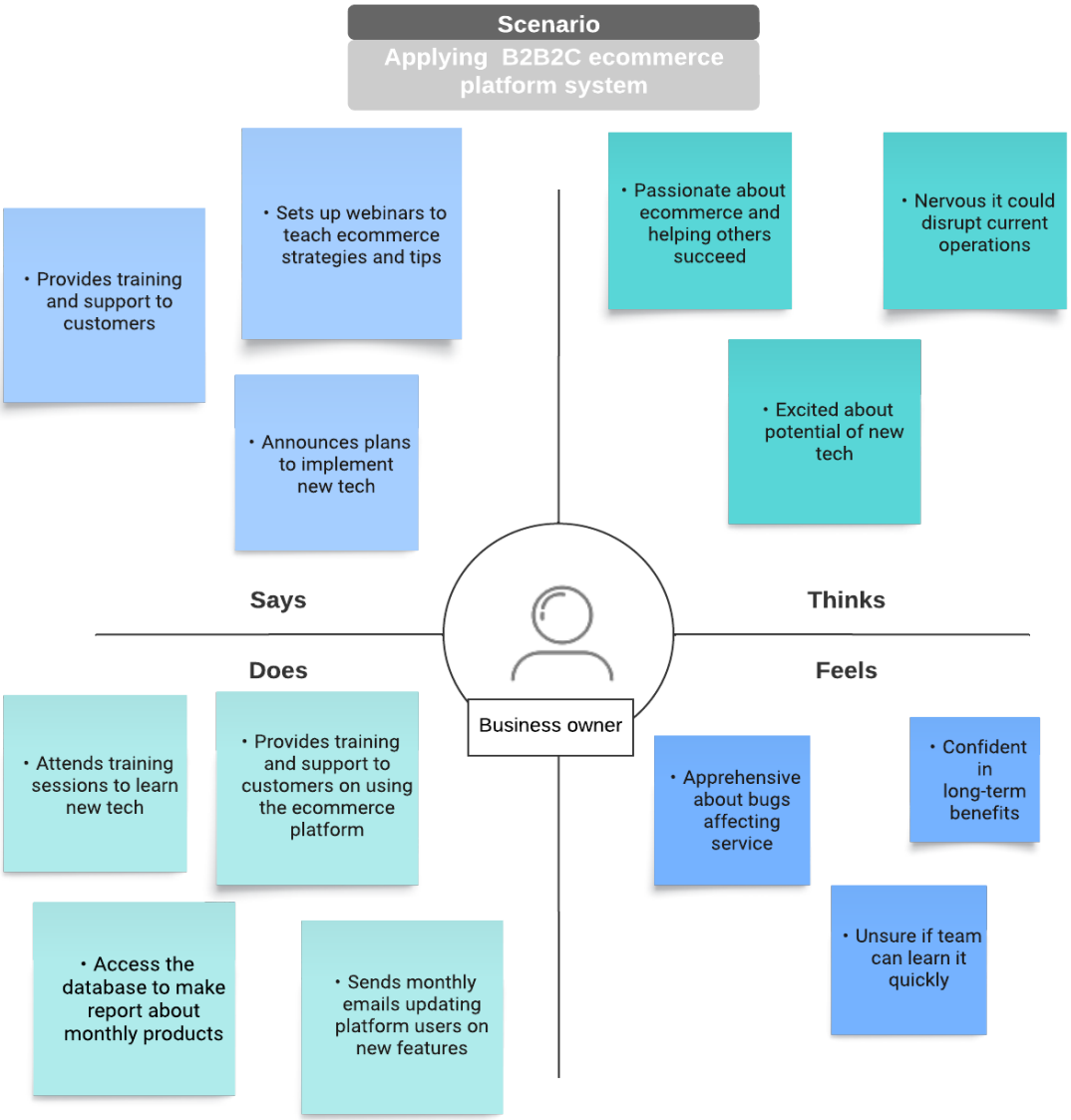
**Mitigating Risk of Inadequate Tool Utilization (Jira/Confluence):**
- Provide mandatory training on Jira and Confluence.
- Create easy-to-follow documentation for tool usage.
- Offer continuous support and help channels.

**Mitigating Risk of Lack of Groupthink and Innovation:**
- Promote a culture of idea sharing and innovation.
- Set up brainstorming sessions and reward innovative ideas.

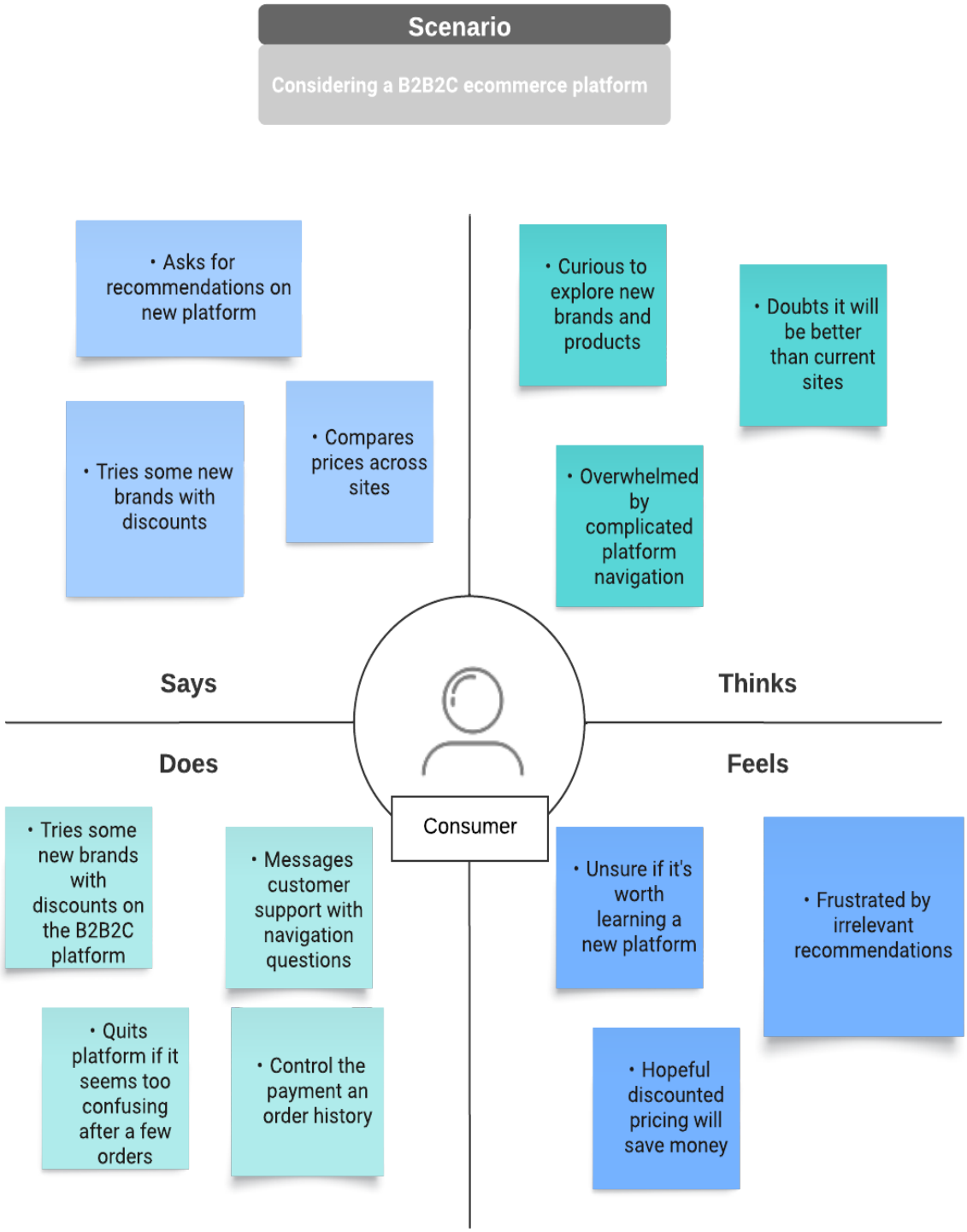
**Mitigating Risk of Member Absenteeism and Late Submissions:**
- Implement a clear attendance policy.
- Set up automated reminders for meetings and deadlines.
- Encourage proactive communication for expected absences.

**Mitigating Risk of Poor Communication and Lack of Organization:**
- Use project management tools for task tracking and goal setting.
- Conduct regular progress and goal-setting meetings.

# Empathy Map




Empathy Map for Business Owner




Empathy Map for Consumer

# Product requirements

| | |
|---|---|
| **Release** | Nov-25-2023 |
| **Epic** | CG-1 - Group: Join Jira Done<br>CG-7 - Group: Create Team Agreement Done<br>CG-36 - Group: Create Team Proposal Done |
| **Document status** | ACTIVE |
| **Document owner** | Thanh Minh |
| **Designer** | Nhat Nam & Quoc Thang |
| **Tech lead** | Duy Khang |
| **Technical writers** | Quy Khang |
| **Quality Assurance** | Thanh Minh |

## Objective

The main goal of this project is to design and develop an optimal and efficient database system in a B2B2C e-commerce platform system. This system aims to create a close, strong cooperative relationship between businesses and customers, allowing businesses to clearly identify needs and achieve efficiency in listing and selling products and services.

**Database Design:**

- Analyze the functional requirements of the system to create a database that aligns with the requirements.
- Identify and construct data tables for the following entities: User, Business, Product, Order, CartItem, Review, Notification, Payment, SupportTicket.

**Data Storage:**
Implement several efficient data storage mechanisms capable of storing and processing large volumes of data while allowing for scalability and enhanced data handling.

**Data Security and Data Protection:**
Implement robust security measures to ensure the safety of business and customer information, including encryption, access control, and authentication mechanisms.

**Integration with Other Systems:**
Support integration with various third-party systems, such as electronic payment gateways, shipping systems, and inventory management systems.
**Backup and Recovery:**
Develop and deploy backup procedures to ensure data safety and the ability to recover lost data in the event of unforeseen incidents.

# Success metrics

| Goal | Metric |
|---|---|
| • Create a robust and efficient database system capable of handling substantial transaction volumes and user data. | • The platform must efficiently handle growing user numbers, product catalogs, and data volumes without significant latency or performance issues, ensuring a smooth user experience. |
| • The company is implementing strict security measures to safeguard user data, including personal information, payment details, and transaction records. | • The database should use robust encryption, secure access controls, and ensure compliance with data protection regulations like GDPR or CCPA for data protection. |
| • The platform allows multiple B2B clients to operate while maintaining data segregation and isolation. | • The database system should feature a multi-tenancy architecture, allowing each B2B client to have its own isolated data storage, logically separated to prevent data leakage or access conflicts. |
| • The goal is to create a versatile and adaptable database structure that can accommodate various product types and attributes. | • The database should facilitate efficient product catalog management by storing various product information like SKU, pricing, descriptions, images, variants, and inventory levels. |

| | |
|---|---|
| • Create a database system that streamlines order processing and inventory management for both B2B and B2C transactions. | • The database should enable real-time order management, tracking, fulfillment, maintain accurate inventory records, handle stock updates, and support inventory synchronization across multiple channels. |
| • The system provides comprehensive data analysis and reporting capabilities to provide actionable insights into business performance, customer behavior, and market trends. | • The database should offer advanced analytics and reporting capabilities, enabling the generation of reports, visualization of data, and complex queries for obtaining valuable insights. |
| • The system should facilitate seamless integration with external systems like payment gateways, shipping providers, and third-party applications. | • The database should enable seamless integration with external systems, facilitating efficient data exchange for payments, shipping, customer information, and order status updates. |

# Assumptions

**User-Friendly Interface:**
Customers expect an easy-to-use and simple interface that provides for a smooth purchasing experience. The platform should offer easy-to-use product categorization, search capability, and a quick checkout procedure.

**Mobile Responsiveness:**
Customers want the platform to be completely responsive and suited for mobile devices, given the rising usage of smartphones and tablets for online shopping. It should deliver a consistent and compelling user experience across all screen sizes.

**Personalization and Customization:**
Customers value individualized recommendations, customized product recommendations, and a configurable interface. The platform should be capable of analyzing user data and delivering customized content and offers depending on personal preferences and browsing history.

**Secure Payment Processing:**
Customers want a safe and dependable payment processing system. To ensure secure transactions, the platform should allow several payment methods, provide encryption for sensitive data, and adhere to industry-standard security measures.

**Product Information and Reviews:**
Customers rely on product information that is accurate and informative, such as descriptions, specs, photos, and user reviews. The platform should have a sophisticated product management system that enables firms to properly exhibit their offers and helps customers to make educated purchase decisions.

**Seamless Inventory Management:**
Customers demand inventory updates in real time to assure product availability. To give correct inventory information and prevent clients from purchasing out-of-stock products, the platform should interface with corporate processes.

**Efficient Order Fulfillment and Shipping:**
Customers desire quick order processing, accurate fulfillment, and dependable delivery alternatives. To match client expectations, the platform should interface with logistics providers and provide capabilities such as order tracking, shipment alerts, and different delivery alternatives.

**Customer Support and Engagement:**
Customers prefer responsive customer care channels that handle their questions and problems, such as live chat, email, or phone. Customers should be engaged through features such as loyalty programs, targeted promos, and social sharing options.

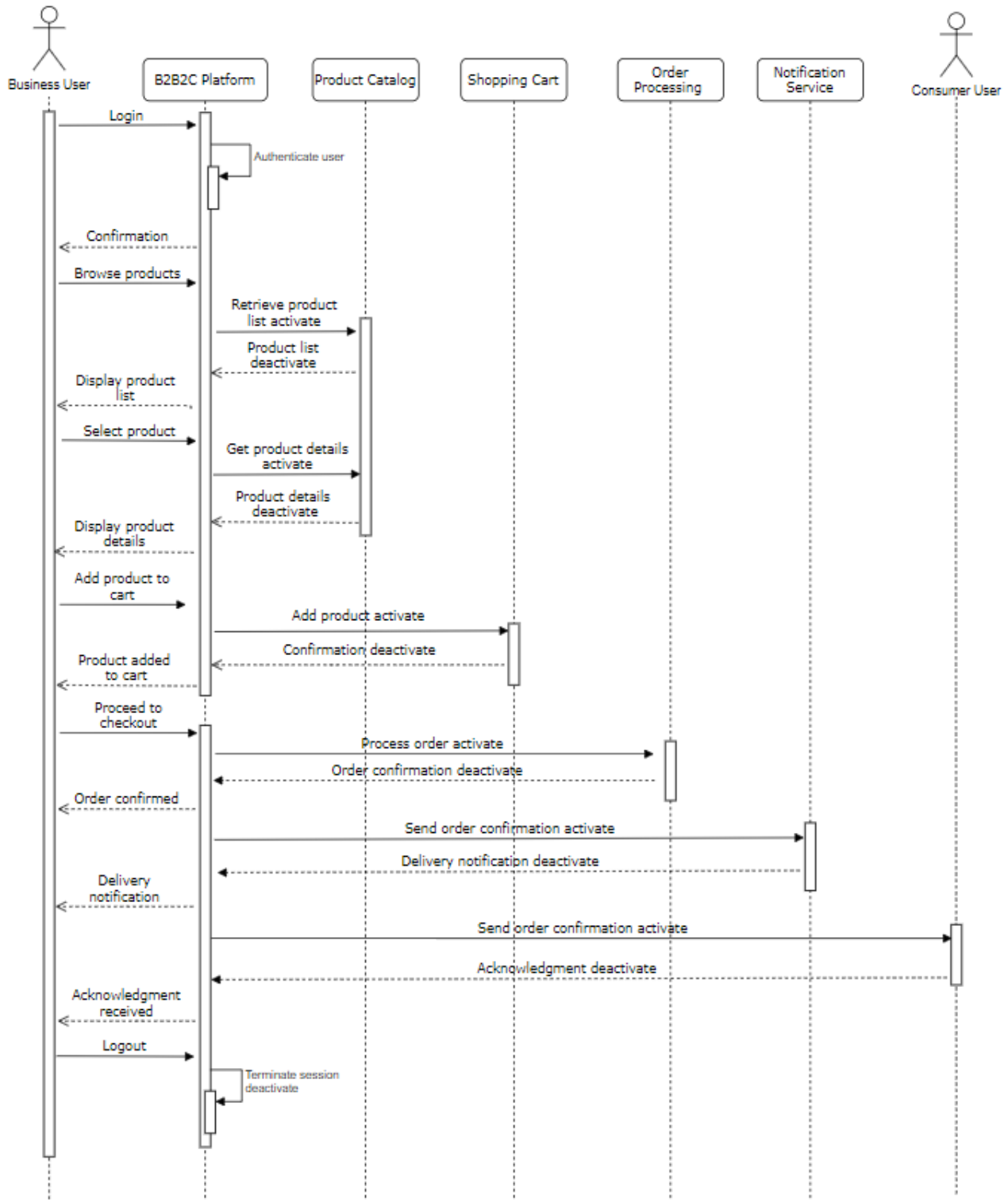
# Milestones

# Requirements

| Requirement | User Story | Importance | Jira Issue |
|---|---|---|---|
| All members join Jira and Confluence | To make sure that everyone has joined this place to work | HIGH | CG-1 - Group: Join Jira Done |
| Create Team Agreement | Everyone must join to fully fill the team agreement. | MEDIUM | CG-7 - Group: Create Team Agreement Done |

| | | | |
|---|---|---|---|
| Create Project Proposal | Everyone must join to fully fill the project proposal. | HIGH | CG-36 - Group: Create Team Proposal Done |
| Complete all tasks on time | To make sure everyone can work hard and balance time. | HIGH | |

# User interaction and design




**UML Sequence Diagram**

# Open Questions

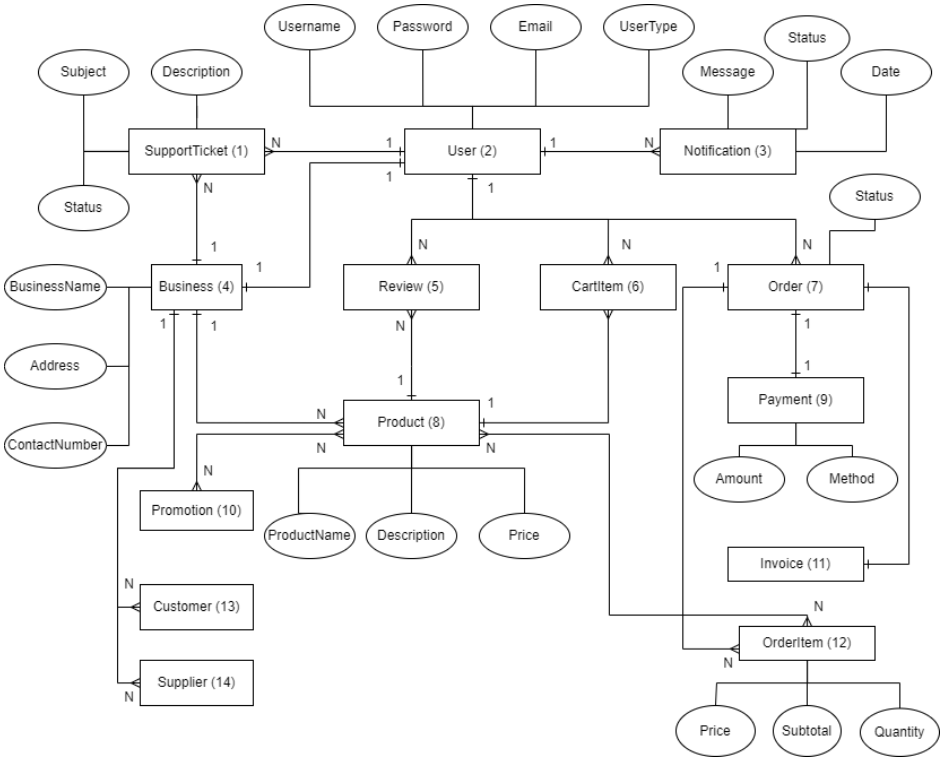
| Question | Answer | Date Answered |
|---|---|---|
| What type of data needs to be stored in the database of the B2B2C system? | Personal information of users, businesses, detailed product information, notifications to users, and detailed payment information for each order. password and password will be encrypted. | 27 Sep 2023 |
| How to organize and manage data effectively in the system? | Plan in detail and carefully and build appropriate data management strategies and tools. The table is connected via foreign key so the connection will be tighter. | 27 Sep 2023 |
| How to deal with system change and evolution? | Test and evaluate the system with changes, store documents about system changes. At the same time, also make plans for data transfer and system upgrades. | 27 Sep 2023 |
| How to achieve efficiency in managing the connection and consistency between databases? | To manage connections and consistency between databases, we may create a central management system to create links between databases. | 27 Sep 2023 |
| How to optimize the security of information and data of customers and businesses? | Regularly assess the system's security, make preparations for anticipated problems, implement security measures, and adhere to network security standards when encrypting data. | 29 Sep 2023 |
| How to manage information of each version update and update transaction history information ? | They will use a version control system to monitor upgraded versions, use issue tracking systems like Jira to track the update status of the system, use data storage systems, and transaction math | 27 Sep 2023 |

# Out of Scope

- **Integration with 3rd parties:** Problems may arise when linking with some 3rd parties such as electronic payments.
- **Shipping service provider portal**: shipping can have budget issues and operational difficulties so we will add it in future updates.
- **Solve inventory problems**: Difficult problems in the inventory resolution process such as real time, the need to postpone and receive goods back from customers.
- **Offline mode**: We may add offline mode in some updates, allowing users to access certain features.
- **Integrated multi-language support:** I will initially provide native languages. However, in the future we may update additional languages and localizations to improve user experience for many countries and regions in the country.

# Initial ER Diagram

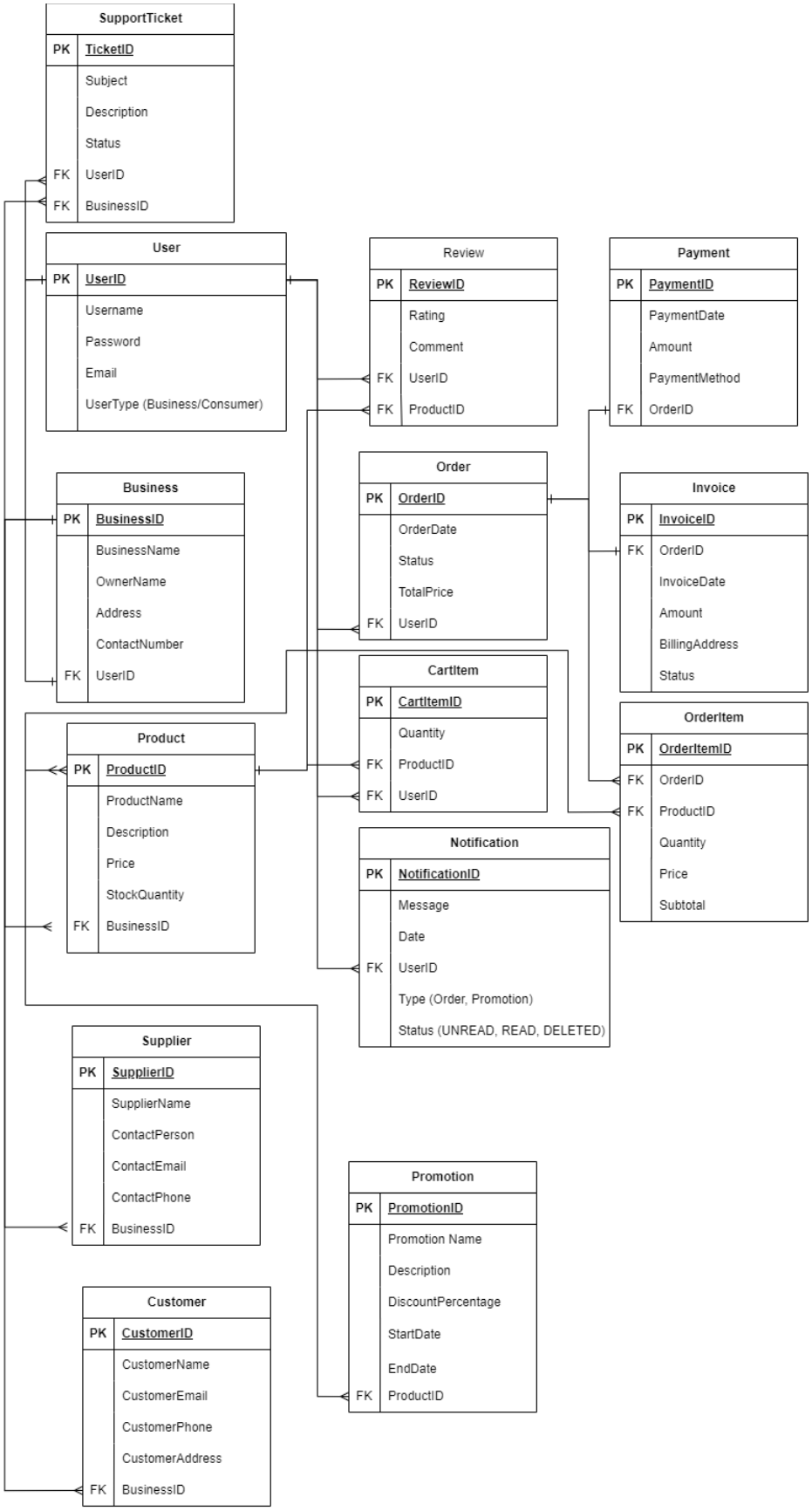
## Concept Relationship Diagram




Concept Relationship Diagram

## Entity Relationship Diagram

*Note: Foreign Key (FK), Primary Key (PK)*


SupportTicket
PK TicketID
Subject
Description
Status
FK UserID
FK BusinessID
User
PK UserID
Username
Password
Email
UserType (Business/Consumer)
Review
PK ReviewID
Rating
Comment
FK UserID
FK ProductID
Payment
PK PaymentID
PaymentDate
Amount
PaymentMethod
FK OrderID
Order
PK OrderID
OrderDate
Status
TotalPrice
FK UserID
Invoice
PK InvoiceID
FK OrderID
InvoiceDate
Amount
BillingAddress
Status
Business
PK BusinessID
BusinessName
OwnerName
Address
ContactNumber
FK UserID
CartItem
PK CartItemID
Quantity
FK ProductID
FK UserID
OrderItem
PK OrderItemID
FK OrderID
FK ProductID
Quantity
Price
Subtotal
Product
PK ProductID
ProductName
Description
Price
StockQuantity
FK BusinessID
Notification
PK NotificationID
Message
Date
FK UserID
Type (Order, Promotion)
Status (UNREAD, READ, DELETED)
Supplier
PK SupplierID
SupplierName
ContactPerson
ContactEmail
ContactPhone
FK BusinessID
Promotion
PK PromotionID
Promotion Name
Description
DiscountPercentage
StartDate
EndDate
FK ProductID
Customer
PK CustomerID
CustomerName
CustomerEmail
CustomerPhone
CustomerAddress
FK BusinessID

Entity Relationship Diagram

# Explanation of ERD

Here are the explanation of the use of different entities in the ERD and later on will be used for designing the database for the Ecommerce platform system:

- **User**: The User table will contain all the credential information of the consumers and businesses for logging into the B2B2C Ecommerce platform system.
- **Business**: This table will house the essential business details, allowing the platform owner to validate whether a business is suitable for using the platform. The table is also uniquely identified by UserID as foreign key.
- **Product**: Within this table, comprehensive product details will be stored. Both businesses and consumers can access this information to make purchase decisions. The Product table is further identified by the BusinessID as a foreign key, providing clarity on the product's owner.
- **Order**: The Order table serves as a repository for order-related details from all clients. Orders can be organized based on their status, and each order is associated with a UserID, providing insight into the ordering user.
- **CartItem**: This table will maintain records of all items stored in a user's shopping cart. It is identified by both the ProductID and UserID as foreign keys, allowing for the tracking of which user placed the order and which product is involved.
- **Review**: Within this table, user reviews, ratings, and comments about various products are stored. Reviews are linked to users and products through the UserID and ProductID foreign keys, facilitating a comprehensive feedback system.
- **Notification**: The Notification table will house all user notifications and is associated with users via the UserID foreign key.
- **Payment**: This table will store payment details for each order, with the OrderID serving as the foreign key, connecting payments to specific orders.
- **SupportTicket**: This table is designed to record all user-generated support requests. The optional BusinessID foreign key allows for associations with businesses when applicable.
- **Customer**: This table is designed to record the customers who have bought the products of the business and use the BusinessID for the foreign key.
- **Supplier**: This table is designed to record the multiple suppliers of the business.
- **OrderItem**: This table is designed to record the ordered item’s details.
- **Invoice**: This table is designed to store the detailed invoice of each order.

Explanation of relationship in the ERD:

- **User - Business (One-To-One)**: Only one user can be associated with one business.

- **Business - Product (One-To-Many)**: One business can have multiple products.
- **User - Order (One-To-Many)**: One user can place multiple orders.
- **User - CartItem (One-To-Many)**: One user can have multiple cart items.
- **User - Review (One-To-Many)**: One user can write multiple reviews and ratings.
- **User - Notification (One-To-Many)**: One user can receive multiple notifications.
- **Order - Payment (One-To-One)**: One order can only have one payment.
- **User - SupportTicket (One-To-Many)**: One user can create multiple support tickets.
- **Business - SupportTicket (One-To-Many)**: One business can be associated with multiple support tickets and is requested from the consumers so this column is optional.
- **Business - Customer (One-To-Many)**: This relationship signifies that a single business can have numerous customers, reflecting the fact that businesses cater to a wide clientele.
- **Business - Supplier (One-To-Many**): In this context, the relationship denotes that one business can establish connections with multiple suppliers. This illustrates that businesses often engage with multiple entities to source their products or materials.
- **Promotion - Product (Many-To-Many)**: This association demonstrates that various promotions can apply to multiple products, and conversely, multiple products can be linked to multiple promotions. This showcases the flexibility of promotions being applicable to a range of products.
- **Order - OrderItem (One-To-Many)**: This relationship signifies that a single order can encompass multiple items. It underscores the idea that an order can consist of various products or services.
- **Order - Invoice (One-To-One)**: In this scenario, each order is uniquely associated with one invoice. This ensures a one-to-one correspondence between an order and its corresponding invoice, simplifying the billing process.
- **Product - OrderItem (Many-To-Many)**: This association illustrates the versatility where one product can be included in multiple order items, and conversely, one order item can be linked to multiple products. This highlights the dynamic nature of product inclusion in various order items.

# Appendix 1: My user manual

**Tran Thanh Minh**

| | |
|---|---|
| Environments I like to work in | - School<br>- Home<br>- Coffee shop |
| Preferred working hours | - Weekdays: 7pm - 9pm<br>- Weekend: All day |
| Communication preferences | - Online/Offline Meeting<br>- Messaging |
| Preferred ways to receive feedback | - Direct Message<br>- Face-to-Face meeting |
| Things I need | - Researching resources related to project |
| How I learn best | - Quiet place |
| Things I struggle with | - Writing long essays<br>- Citing<br>- Researching information |
| Things I love | - Coding front end |
| My favorite saying | - Learning by doing |
| Experience | - Front-end (HTML/CSS, JavaScript, ReactJs, NextJs)<br>- Back-end (NestJs/TypeScript, PHP)<br>- Database (MongoDB, MySQL) |
| Other things I want you to know about me | - Ambi-vert |

## Nguyen Do Nhat Nam

| | |
|---|---|
| Environments I like to work in | - Home<br>- School<br>- Coffee shop |
| Preferred working hours | - Weekdays: 8am - 9pm<br>- Weekend: 12am - 9pm |
| Communication preferences | - All kinds of communications |
| Preferred ways to receive feedback | - All kinds of way to receive |
| Things I need | - Improve learning skills |
| How I learn best | - Home alone |
| Things I struggle with | - Focusing<br>- Learning<br>- Balance time |
| Things I love | - Coding |
| My favorite saying | - Learning forever |
| Experience | - Know and have participated in writing a lot of code for web applications<br>- Know about HTML and CSS |
| Other things I want you to know about me | - Vulnerable |

## Nguyen Quoc Thang

| | |
|---|---|
| Environments I like to work in | - School<br>- Home<br>- Coffee shop ( without people ) |
| Preferred working hours | - Weekdays: 10 pm - 12pm<br>- Weekend : 7am - 12am ( only Saturday ) |

| | |
|---|---|
| Communication preferences | - Online/Offline Meeting<br>- Face to face<br>- Messaging |
| Preferred ways to receive feedback | - Face-to-face<br>- Confluence |
| Things I need | - Improving coding |
| How I learn best | - Alone<br>- Quiet place |
| Things I struggle with | - Writing English<br>- Learning<br>- Focusing<br>- Balance time<br>- Communicate |
| Things I love | - Coding<br>- Reading book |
| My favorite saying | - Study, study more |
| Experience | - Have experience coding basic web applications include front-<br>- Knowledge of html and css |
| Other things I want you to know about me | - Introvert<br>- Vulnerable |

## Le Huu Tuong

| | |
|---|---|
| Environments I like to work in | - Home<br>- Cafe |
| Preferred working hours | - Weekdays: 10 pm - 12pm<br>- Weekend : 7am - 12am |
| Communication preferences | - All kinds of communications |
| Preferred ways to receive feedback | - Direct Message<br>- Face-to-Face |

| | |
|---|---|
| | - Confluence |
| Things I need | - Clear Project Goals and Objectives |
| How I learn best | - Alone |
| Things I struggle with | - Skill Gaps<br>- Lack of Resources |
| Things I love | - Coding<br>- Gaming |
| My favorite saying | - No pain, no gain |
| Experience | - Experience in coding for web applications, including front-end and back-end development<br>- Proficient in HTML, CSS |
| Other things I want you to know about me | - Prefer not to say |

## Trinh Quy Khang

| | |
|---|---|
| Environments I like to work in | - Home<br>- School<br>- Coffee shop |
| Preferred working hours | - Weekdays: 9am - 10pm<br>- Weekend: 10am - 11pm |
| Communication preferences | - All kinds of communications |
| Preferred ways to receive feedback | - Direct Message<br>- Face-to-Face<br>- Confluence |
| Things I need | - Improving coding skill<br>- Improving tasks management skill |
| How I learn best | - Quiet place<br>- Alone |

| | |
|---|---|
| Things I struggle with | - Balance time<br>- Communicate<br>- Writing long essays |
| Things I love | - Coding<br>- Hanging out |
| My favorite saying | - The purpose of our lives is to be happy |
| Experience | - Experience in web development (HTML, CSS)<br>- Understand and can apply basically JS and PHP |
| Other things I want you to know about me | - Nothing |

## Tran Thai Duy Khang

| | |
|---|---|
| Environments I like to work in | - Home<br>- School<br>- Coffee shop |
| Preferred working hours | - Weekdays: 9am - 10pm<br>- Weekend: 10am - 11pm |
| Communication preferences | - All kinds of communications |
| Preferred ways to receive feedback | - All kinds of way to receive |
| Things I need | - Improving coding |
| How I learn best | - Alone |
| Things I struggle with | - Writing long essays<br>- Wake up early |
| Things I love | - Coding<br>- Cooking |
| My favorite saying | - Half of a truth is a lie |

| | |
|---|---|
| Experience | - Experience with HTML/CSS |
| Other things I want you to know about me | - Nothing<br>- Lazy boy |

# Appendix 2: Meeting notes

## 📋 Overview

| Team | G05 |
|---|---|
| **Participants** | • Tran Thanh Minh<br>• Trinh Quy Khang<br>• Tran Thai Duy Khang<br>• Nguyen Quoc Thang<br>• Le Huu Tuong<br>• Nguyen Do Nhat Nam |

## ☁️ Meeting Dates

| Date | Discussion Topic |
|---|---|
| • Sep 9, 2023 | • Technology topic discussion<br>• Joining Atlassian service |
| • Sep 11, 2023 | • Project Planning and Task Management in Jira |
| • Sep 18, 2023 | • Relational Database Basic<br>• Assigning tasks |
| • Sep 25, 2023 | • Relational Modelling Basics |

# Meeting notes - Sep 9, 2023

## Date

09 Sep 2023

## Participants

- Tran Thanh Minh
- Tran Thai Duy Khang
- Nguyen Do Nhat Nam
- Nguyen Quoc Thang
- Le Huu Tuong
- Trinh Quy Khang

## Goals

- Having a topic related to technology field
- Everyone has received instructions to create Atlassian and join Jira and Confluence.

## Discussion topics

| Time | Item | Presenter | Notes |
|---|---|---|---|
| 30 minutes | Topic discussion | Tran Thanh Minh | • Choosing topic and research about relevant details, information to understand it |
| 10 minutes | Instruction to join Atlassian service | Nguyen Quoc Thang | • Assign members to create Atlassian account and join Jira<br>• Assign Thanh Minh to create the project so that everyone can join |

## Action items

- Every member join Jira
- Thanh Minh create project for members to join
- Every member watch tutorial for using Atlassian service

## Decisions

- Quoc Thang will assign tasks weekly
- Thanh Minh is ensure the quality of work

# Meeting notes - Sep 11, 2023

## Date

11 Sep 2023

## Participants

- Nguyen Quoc Thang
- Nguyen Do Nhat Nam
- Le Huu Tuong
- Tran Thanh Minh
- Trinh Quy Khang
- Tran Thai Duy Khang

## Goals

- Discussion about each page.
- Assign tasks.

## Discussion topics

| Time | Item | Presenter | Notes |
|---|---|---|---|
| 2 hours | Project Planning and Task Management in Jira | All | **Create Team Proposal:**<br>• Create User Manual.<br>• Create a Project Plan.<br>• Create Roles and Responsibilities and Team Home Page.<br>• Risk Assessment Matrix.<br>• Create Persona |

## Action items

- User Manual & Persona: for all members
- Project Plan: Quoc Thang & Nhat Nam.
- Roles and Responsibilities and Team Home Page: Duy Khang & Trịnh Khang.
- Risk Assessment Matrix: Thanh Minh & Huu Tuong

## Decisions

- Quoc Thang will assign tasks weekly
- Thanh Minh is ensure the quality of work

# Meeting notes - Sep 18, 2023

## Date

18 Sep 2023

## Participants

- Tran Thai Duy Khang.
- Nguyen Quoc Thang.
- Nguyen Do Nhat Nam.
- Le Huu Tuong.
- Tran Thanh Minh.
- Trinh Quy Khang.

## Goals

- Find out how to draw entity-relationship (ER) diagrams in http://diagrams.net .
- At the end of the clip "Maintain a consistent structure", Adam Wilbert is left with two tables: Invoices and Line Items. See if you can draw the structure using http://diagrams.net .
- Integrate http://diagrams.net into your Confluence site.

## Discussion topics

| Time | Item | Presenter | Notes |
|---|---|---|---|
| 3 hours | Relational Modelling Basics | All | • Create Empathy map.<br>• Create Initial ER diagram. |

## Action items

- Create Empathy Map : 2 Khang
- Create Project Requirement : Quoc Thang - Nhat Nam
- Create Initial ER diagram : Huu Tuong - Thanh Minh

## Decisions

- Thanh Minh is ensure the quality of work
- Quoc Thang will assign tasks weekly

# Meeting notes - Sep 25, 2023

## 📅 Date

25 Sep 2023

## 👥 Participants

- Nguyen Quoc Thang
- Nguyen Do Nhat Nam
- Le Huu Tuong
- Tran Thanh Minh
- Trinh Quy Khang
- Tran Thai Duy Khang

## 🥅 Goals

- Discussion about each page.
- Assign tasks

## 🗣️ Discussion topics

| Time | Item | Presenter | Notes |
|---|---|---|---|
| 30 mins | Identifiers and Relationships | All | • Fix and complete Empathy Map.<br>• Fix and complete Initial ER diagram. |

## ✅ Action items

- Fix and complete Empathy Map: 2 Khang
- Fix and complete Initial ER diagram: Huu Tuong - Thanh Minh