

Green Way

A Path Towards Sustainable Living and Environmental Stewardship



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Introduction

This document was written for my organization & IT course to analyze the company I chose **Green Way**. **Green Way** is dedicated to making the world more sustainable by promoting eco-friendly lifestyles and plant-based diets. The goal is to understand how the company operates and uses technology especially its mobile app to help people learn about environmental issues and make better choices.

The report is structured as follows:

- 1- Introduction
- 2- Business Model Canvas
- 3- Process Description
- 4- Screen Design
- 5- Information Analysis
- 6- Requirement Analysis
- 7- BPMN Process

I chose **Green Way** because I'm passionate about sustainability and eco-friendly habits and products and believe that small lifestyle changes can greatly impact the environment. **Green Way's** focus on eco-friendly habits and plant-based diets aligns with my values. I was interested in learning more about how they use technology to educate and inspire people to make more environmentally conscious decisions.



1 Company

Description

1.1

Green Way is a company dedicated to making the world more sustainable by promoting eco-friendly living and plant-based diets. We believe that small actions can lead to big changes and we aim to inspire people to make environmentally conscious choices in their daily lives. Our key product is a mobile application that educates users about important environmental topics through fun and engaging quizzes.

In our app, users can participate in quizzes designed to teach them about sustainability, climate change and other environmental topics. By answering 20 questions correctly, they can win rewards such as free plant-based meals or eco-friendly products. These rewards are delivered straight to their door (doorstep), making it easy for users to enjoy the benefits of their efforts while making a positive impact on the environment.

Our business partners with local plant-based food producers and environmentally friendly delivery services to provide these rewards. This partnership helps support local businesses, reduce the use of animal products, and lower carbon emissions, all while encouraging healthier, sustainable lifestyles. Our headquarters is in **Rotterdam, The Netherlands** and we have about **200 employees** dedicated to making sustainable living accessible and rewarding for everyone.

To access all features, users pay a small subscription fee of 1 euro. This fee allows them to take as many quizzes as they want and continue earning rewards. With this approach, Green Way hopes to build a community of people who are informed, motivated and committed to making choices that are good for both their health and the planet.



Vision, Mission and Strategy

1.2

1.2.1 Vision

At Green Way, we want to make a future where living sustainably is a normal part of everyday life. We're focused on encouraging people to make choices that are good for the planet like eating plant-based foods and lowering their impact on the environment.

Our goal is to grow by building a strong community, working with local businesses and offering rewards that motivate people to adopt eco-friendly habits. In the future, we want to make a real difference by helping more people live in a way that benefits both them and the Earth. Our direction is clear: **we aim to make sustainability easy and rewarding for everyone!**



1.2.2 Mission

Our mission is to make sustainable living simple and rewarding for everyone. We help people to learn about important environmental issues and show them how easy it can be to make small changes that have a big impact like eating more plant-based foods and reducing waste.

We offer fun ways to learn and give real rewards such as free plant-based meals for making choices that are good for the environment. By supporting local businesses that share our values, we also help strengthen communities!

All in all, we exist to create a healthier, more sustainable world. **Our mission** is to help people live better lives, protect the environment and move toward a greener future for everyone!



1.2.3 Strategy

Green Way has developed a focused **strategy** centered around three key areas:

- 1- Education
- 2- Partnerships
- 3- Rewards

Education: We will continue to use our mobile app to teach people about sustainability through fun and engaging quizzes. By making learning easy and enjoyable, we'll help users understand how they can make eco-friendly choices in their daily lives.

Partnerships: We will collaborate with local plant-based food producers and environmentally conscious businesses. These partnerships will allow us to offer valuable rewards and support local economies while promoting a sustainable lifestyle!

Rewards: Our app will offer valuable and tangible rewards like free plant-based meals and eco-friendly products. By motivating users with these rewards, we encourage them to make more sustainable choices in their daily lives.



Internal organizational structure

1.3

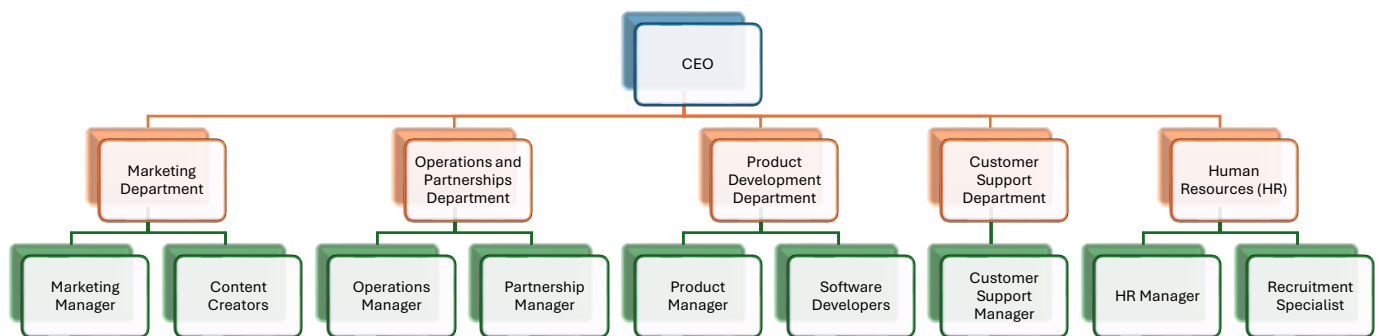


Figure 1.3 Internal Organizational Structure of Green Way

Founder/CEO: The Founder is responsible for overall Tasks, strategy and key decision-making.

Marketing Department: The Marketing Department focuses on creating campaigns and content and building partnerships to spread awareness about eco-friendly lifestyles.

Operations and Partnerships Department: OPD (Stands for Operations and Partnerships Department) manages relationships with plant-based food producers and eco-friendly delivery services, guaranteeing smooth logistics and meaningful partnerships.

Product Development Department: The Product Development Department is in charge of maintaining and improving the mobile app guaranteeing it provides a seamless user experience while offering up-to-date information on environmental topics.

Customer Support Department: The Customer Support Department is focused on providing excellent service, handling user queries and guaranteeing the application.

Human Resources Department: The HR Department in Green Way is responsible for hiring and training new team members, managing employee well-being and ensuring everyone follows company policies. The HR Manager oversees recruitment and employee support and ensures a positive work environment for all staff.

External Organizational Structure

1.4

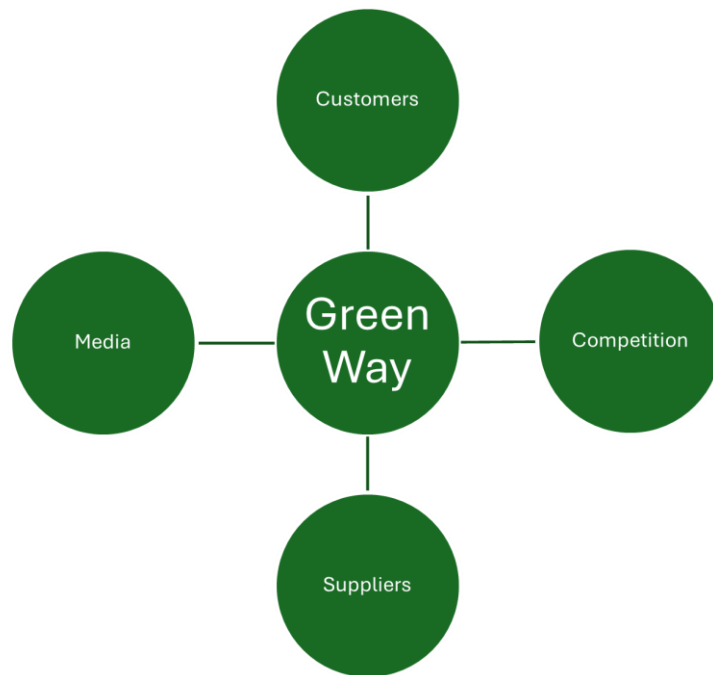


Figure 1.4 External Organizational Structure Green Way

Suppliers: Green Way collaborates with local suppliers who provide plant-based meals and eco-friendly products. These suppliers help us to deliver quality rewards to our users and align with our mission of reducing the environmental impact of food production.

Media: We use various social media platforms such as Facebook, Instagram, LinkedIn and environmental blogs to promote our app and engage with users. By partnering with these media, we guarantee our message reaches a broader audience and creates awareness about sustainable living.

Competition: Green Way competes with other applications and services which promote sustainability and plant-based diets and eco-friendly products, including educational apps and eco-friendly reward platforms.

Customers: Our customer base includes individuals interested in eco-friendly living, such as environmental enthusiasts, students and users who want to reduce their carbon footprint. These users engage with the app through quizzes and benefit from the rewards system.





2 Business Model Canvas (BMC)

Business Model Canvas

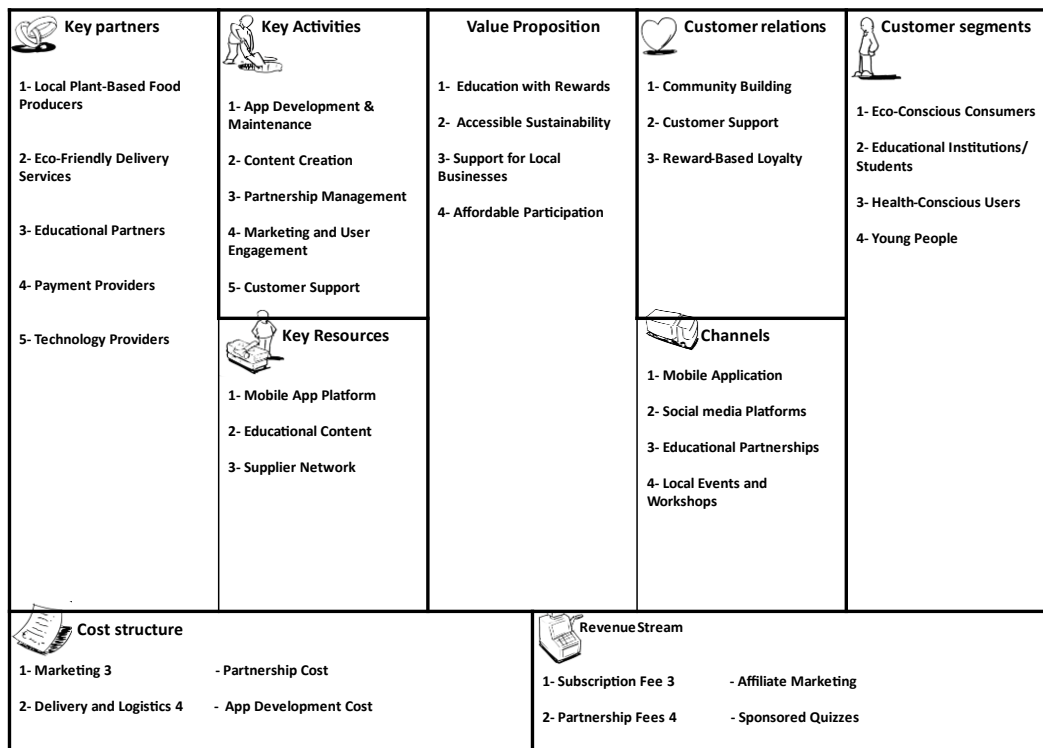


Figure 2. Business Model Canvas (BMC)

Customer segments 2.1

Green Way is for people who care about the environment and want to live in an eco-friendly way. This includes people who are interested in plant-based diets, reducing waste and making better choices for the planet. We also focus on students, young people and health-conscious people who want to learn about the environment and get rewards at the same time.

Value proposition 2.2

What makes **Green Way** special is that we make learning about the environment fun and rewarding. People use our application to take quizzes about topics like sustainability and climate change. When they answer questions correctly, they get real rewards like free plant-based diets or eco-friendly products. We stand out because we combine learning with rewards that help people make eco-friendly choices.

Key activities 2.3

Our main activities are making sure the app works well, creating interesting quizzes about the environment, working with local food businesses to provide rewards and helping users with any questions or issues. These things help us keep people interested in our app!

Key Partners 2.4

We work with several important partners like local plant-based food producers who provide the meals, eco-friendly delivery services that bring rewards to users and people who help us create educational content for the quizzes. These partners help us run our business smoothly.

Key Resources 2.5

The most important things for us are our app, the local suppliers who provide the food and products, the quizzes we make to teach people about the environment, and the technology that keeps the app running. These are what we need to make everything work.

Channels 2.6

We reach people mainly through our app where they can learn, take quizzes and earning rewards. We also use social media like Instagram and Facebook to let people know about Green Way and get them interested in joining.

Customer Relations 2.7

Building relationships with our users by making the application fun and rewarding. The quizzes and rewards encourage people to keep using the app. We also make sure we are always available to help users with any issues they may have.

Cost Structure 2.8

Green Way's costs include app development, content creation, marketing, and logistics for delivering rewards. We also have expenses related to managing partnerships with local suppliers and eco-friendly delivery services as well as providing customer support.

Revenue Structure 2.9

Our revenue comes from user subscription fees (1 euro), sponsored quizzes, partnerships with local suppliers and affiliate marketing. These income streams allow us to fund operations and continue offering rewards and educational content to users.

3 Requirements Analysis

IT System (product) 3.1

Green Way needs a robust IT system to effectively manage the educational quizzes, reward distribution and user interactions within the app. This system will be designed to integrate seamlessly with the business processes, ensuring that users can participate in quizzes, track their progress and redeem rewards smoothly.

The IT system must focus on the following key stakeholders:

- 1- **Users:** System should offer a user-friendly interface, allowing customers to easily access quizzes, earning rewards and managing their accounts. It needs to provide a smooth experience, from answering questions to receiving rewards to keeping users engaged and satisfied.
- 2- **Local Partners (Suppliers):** The system will integrate with local plant-based food suppliers and eco-friendly delivery services. It will track orders and manage the logistics of delivering rewards to users' doorsteps, ensuring timely and eco-friendly deliveries.
- 3- **Green Way Staff:** System will also serve internal needs, providing data to manage user progress, tracking subscriptions and handling customer support queries. This will allow the team to monitor app performance, respond to user concerns and maintain smooth business operations!

Why this IT System is Necessary:

is important because it helps **Green Way** manage everything in one place, like running quizzes, giving rewards and keeping track of users. It makes things easier for users by ensuring they can quickly get rewards and enjoy the app. It also helps the company work better with local suppliers and manage deliveries smoothly. By having everything organized in this system, **Green Way** can run more efficiently and keep users happy and satisfied.



Stakeholder onion

3.2

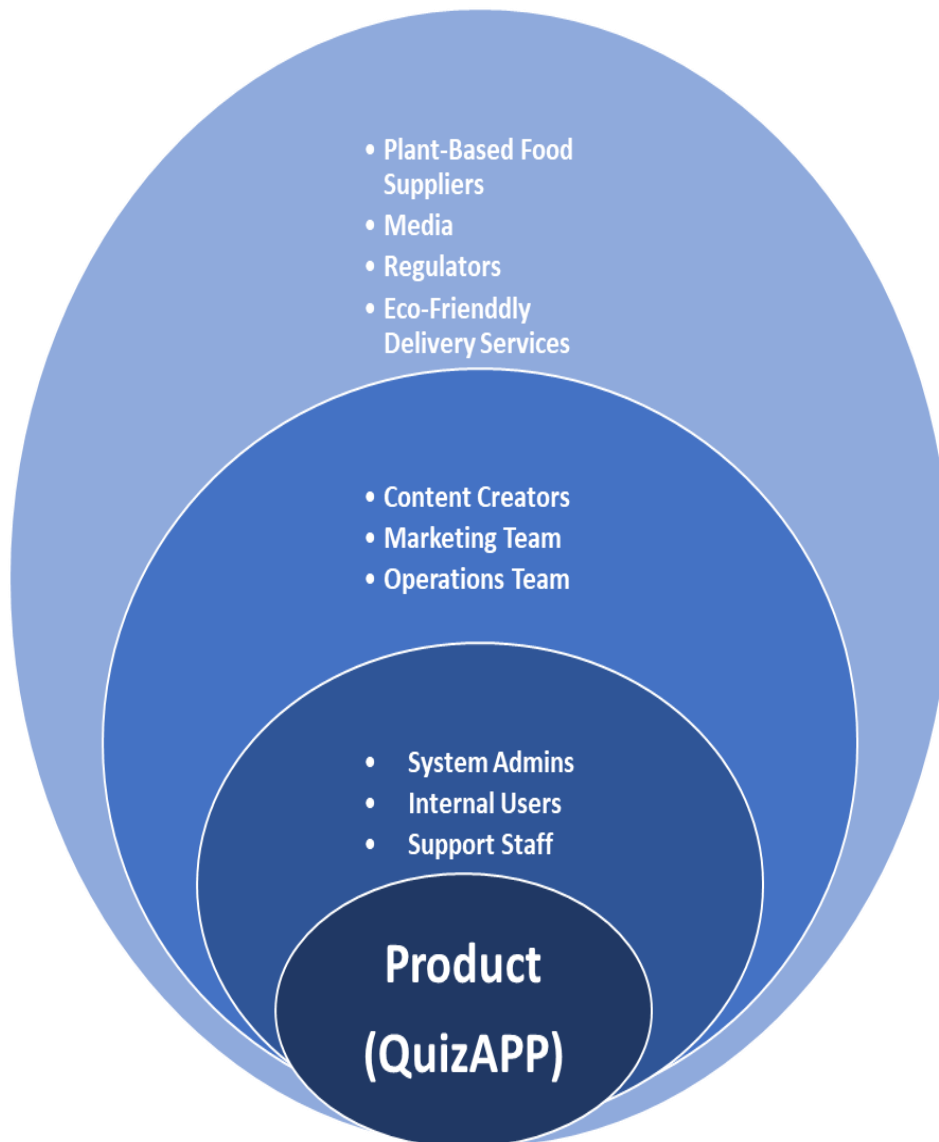


Figure 3.2 Stakeholder Onion

3.2.1 Business System

This layer includes the key stakeholders who interact directly with Green Way's app and guarantee it functions smoothly. Each stakeholder plays a critical role in ensuring the app delivers value to users and operates effectively.

- 1- **System Admins:** The system admins manage the technical side of the app. They guarantee that the app runs without issues, handles updates and fixes bugs. Their main goal is to keep the app running smoothly.
- 2- **Internal Users:** The internal users in Green Way include employees who actively interact with the app to manage its various features. This includes content creators and the operations team, who work behind the scenes to ensure that quizzes are up-to-date and rewards are delivered smoothly.
- 3- **Support Staff:** The support staff helps users with issues or questions about the app. Their goal is to provide excellent customer service, ensuring that users are satisfied and any problems are quickly resolved.

3.2.2 Comprehensive system (within the organization)

The second layer includes stakeholders within **Green Way** who don't interact directly with the application but still benefit from its success. Their work supports the overall functioning of the business and helps **Green Way** grow.

- 1- **Marketing Team:** The marketing team's main goal is to promote **Green Way** and attract new users. They create campaigns, manage social media and work with influencers to spread the word about the app.
- 2- **Content Creators:** Content creators are responsible for developing educational quizzes and other materials within the app. **Their goal** is to provide engaging and accurate information on sustainability and the environment that keeps users interested.
- 3- **Operations Team:** The operations team **manages logistics** such as working with suppliers and delivery services to ensure that rewards are provided to users on time. They make sure that everything behind the scenes runs smoothly even though they don't use the app directly.

3.2.3 Broader environment (outside the organization)

This outer layer includes stakeholders not part of **Green Way** but still play a critical role in the app's success and are strongly interested in outcomes.

- 1- **Plant-Based Food Suppliers:** These suppliers provide plant-based meals and products that are offered as rewards through the app. **Their goal** is to expand their customer base by reaching **Green Way** users and promoting eco-friendly consumption.
- 2- **Media:** The media including blogs, social media platforms and influencers, help spread the word about **Green Way's** mission and engage a wider audience. **Their goal** is to promote sustainability while highlighting Green Way's unique value proposition.
- 3- **Regulators:** Regulatory bodies guarantee **that Green Way** complies with environmental, legal and business regulations. **Their goal** is to make sure that Green Way operates within the rules and continues promoting sustainability responsibly.
- 4- **Eco-Friendly Delivery Services:** These delivery services are responsible for getting plant-based meals and rewards to users in an eco-friendly manner. **Their main goal** is to support sustainable operations by using low-emission transportation and reducing the environmental impact of deliveries.

3.3 Requirements

For **Green Way**, the requirements of our IT system should follow the **S.M.A.R.T** to ensure that they are effective and achievable:

- 1- **Specific:** The system must allow users to participate in quizzes, track their progress and receiving rewards efficiently.
- 2- **Measurable:** We need to track the number of users, quiz completion rates and rewards delivered.
- 3- **Acceptable:** The system must be easy to use for both our team and users, guaranteeing a smooth experience!
- 4- **Realistic:** The system should be scalable, starting small but capable of growing as more users join.
- 5- **Time-based:** The system should be fully operational within six months of development.



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3.3.1 Objectives

Stakeholder	Objective
Internal Users	Their objective is to efficiently manage quizzes, ensure the app functions smoothly, and maintain a seamless user experience for those participating in quizzes and earning rewards.
System Admins	Ensuring the app runs smoothly, secure and resolves technical issues quickly. Their goal is to maintain the system's performance and stability.
Support Staff	Helping users with any issues, ensuring quick and helpful responses to keep users satisfied. They focus on providing excellent customer service.
Marketing Team	Their Task is to promote Green Way, attract new users and retain existing ones through effective campaigns and partnerships.
Content Creators	Creating engaging and accurate quizzes that educate users about the environment and align with the application's mission.
Operations Team	Guaranteeing smooth coordination with suppliers and delivery services so rewards are delivered efficiently to users.
Plant-Based Food Suppliers	Reaching more customers by providing high-quality, plant-based meals through Green Way's rewards system.
Eco-Friendly Delivery Services	Delivering rewards in an eco-friendly way, helping Green Way maintain its eco-friendly habits promise by minimizing the environmental impact of deliveries.
Regulators	Ensuring Green Way complies with all relevant laws and regulations especially regarding eco-friendly habits standards and user data protection.
Media	Helping spread awareness of Green Way, highlighting its mission and engaging with an eco-conscious audience.



3.3.2 Functional requirements

Stakeholder	Goal/Interest	Perspective and number	Functional Requirement
Internal Users	Internal users want a seamless and reliable experience when managing quizzes, content or support within the app.	U1	The app must provide internal users with easy access to management tools, allowing them to oversee quizzes, handle content updates and assist with user support efficiently ensuring smooth internal operations
System Admins	Their goal is to ensure the app runs smoothly without crashes or security issues.	B2	The system must include robust backend support to ensure high performance, regular updates and security fixes.
Support Staff	They aim to resolve user queries and provide helpful customer service quickly.	B3	The app should have an integrated customer service platform to manage user tickets and inquiries efficiently.
Marketing Team	Wanting to attract new users and retain existing ones through campaigns and social media.	B4	The application should include features for tracking marketing campaigns and providing data on user engagement.
Content Creators	Their goal is to produce quizzes that users enjoy and learn from that.	B5	The app should have a content management system That allows creators to upload and update quizzes.
Plant-Based Food Suppliers	They want to reach more and new customers by providing rewards through the application.	B6	The app must connect with the supplier's system to facilitate order placement and reward distribution.
Eco-friendly delivery services	Guaranteeing fast and eco-friendly deliveries to users for receiving rewards.	B7	The app must have a system for tracking reward deliveries and ensuring coordination with eco-friendly couriers.

These functional requirements align with each stakeholder's goal. For instance, users want a smooth application experience, so the requirements guarantee that the application allows easy access to quizzes and rewards. System admins require a stable platform to address back-end performance and security.

Each requirement is designed for directly supporting the stakeholder's specific goal, ensuring that the system works for everyone involved.

3.3.3 Non-functional requirements.

Stakeholder	Goal/Interest	Perspective	Non-functional Requirement
Internal Users	Internal users need a smooth and reliable system to access internal tools like quiz management, content updates and user support functions without interruptions.	U1	The system should ensure rapid performance with minimal downtime (99.9% uptime) and quick response times for internal tools like quiz management, content updates, and user support functions. It must also include secure data access to ensure privacy and protection of internal information.
System Admins	Ensuring the app runs securely and is always available without interruptions.	B2	The application should have a 99.9% uptime and Robust security protocols to protect user data and Ensure system stability.
Support Staff	Support staff want to provide quick and efficient help to users.	B3	Should include a user-friendly support system that allows users to submit queries and receive timely responses.
Plant-Based Food Suppliers	Suppliers want their products delivered efficiently to users as rewards.	B4	The system should guarantee seamless coordination Between the application and delivery services with Real-time tracking of orders.
Eco-Friendly Delivery Services	Guaranteed rewards were delivered on time and in an eco-friendly way.	B5	The app must be tracking delivery routes and Optimize them for speed and sustainability minimizing carbon footprint.

+ HOW NON-FUNCTIONAL REQUIREMENTS ACHIEVE THE GOALS?

For Internal users, non-functional requirements like system reliability and speed ensure they can manage quizzes, update content, and provide support without disruptions, helping them achieve their tasks efficiently.

For System Admins, having high system uptime and strong security ensures that the app is always available, secure and functions without issues, supporting their goal of keeping the application running smoothly.

For Support Staff, an integrated support system helps them provide timely assistance, guaranteeing that users are satisfied with the service.

For Plant-Based Food Suppliers, the coordination between the application and delivery services ensures that the supplier's products are delivered, supporting their goal of reaching users quickly.

For Eco-Friendly Delivery Services, optimizing delivery routes helps them reduce emissions and maintain the company's eco-friendly focus while ensuring timely deliveries.

4 Screen design

In my screen design for Green Way, I created an easy-to-use interface where users can participate in quizzes, answer questions and earn rewards like plant-based meals. I ensured system admins could manage the app and fix issues while support staff assisted users when needed.

(Wireframes Added for the User on Pages 28 & 29, Please look at these pages.)

4.1 Wireframes use case 1

4.1.1 Use case brief 1

Actor	Functional Requirement(s)	Scenario
Internal User	To manage quizzes, update content and handle user support effectively.	The internal user accesses the system's dashboard to create new quizzes, update existing ones and manage user inquiries. The system allows them to input questions, set rewards and resolve user issues smoothly without delays or technical issues. The system ensures data is saved, and content is live for external users quickly.
System Admins	Guaranteeing that the system is working smoothly and well.	The System Admins scout the app's performance. They get notifications if the app crashes or if there are any errors with quizzes or rewards. If any issue arises, the admin quickly fixes it to ensure the system stays online and secure for users.
Support Staff	To assist users with issues related to quizzes or rewards	The support team helps users resolve any issues such as problems with quizzes or reward delivery.

EXPLANATION FOR THE TABLE 4.1.1:

The table shows Green Way's steps when using the app to complete quizzes and get rewards. The main goal is to make sure users can take quizzes and earn rewards based on how well they do. The scenario explains how the app helps users choose a quiz, answer the questions and get rewards if they do well and receive a confirmation after selecting their reward.

4.1.2 Wireframes 1

All use case brief 1
See Next Page

PROJECT NR.

PAGE


DATE - -

INFORMATION

"Internal user" wireframe

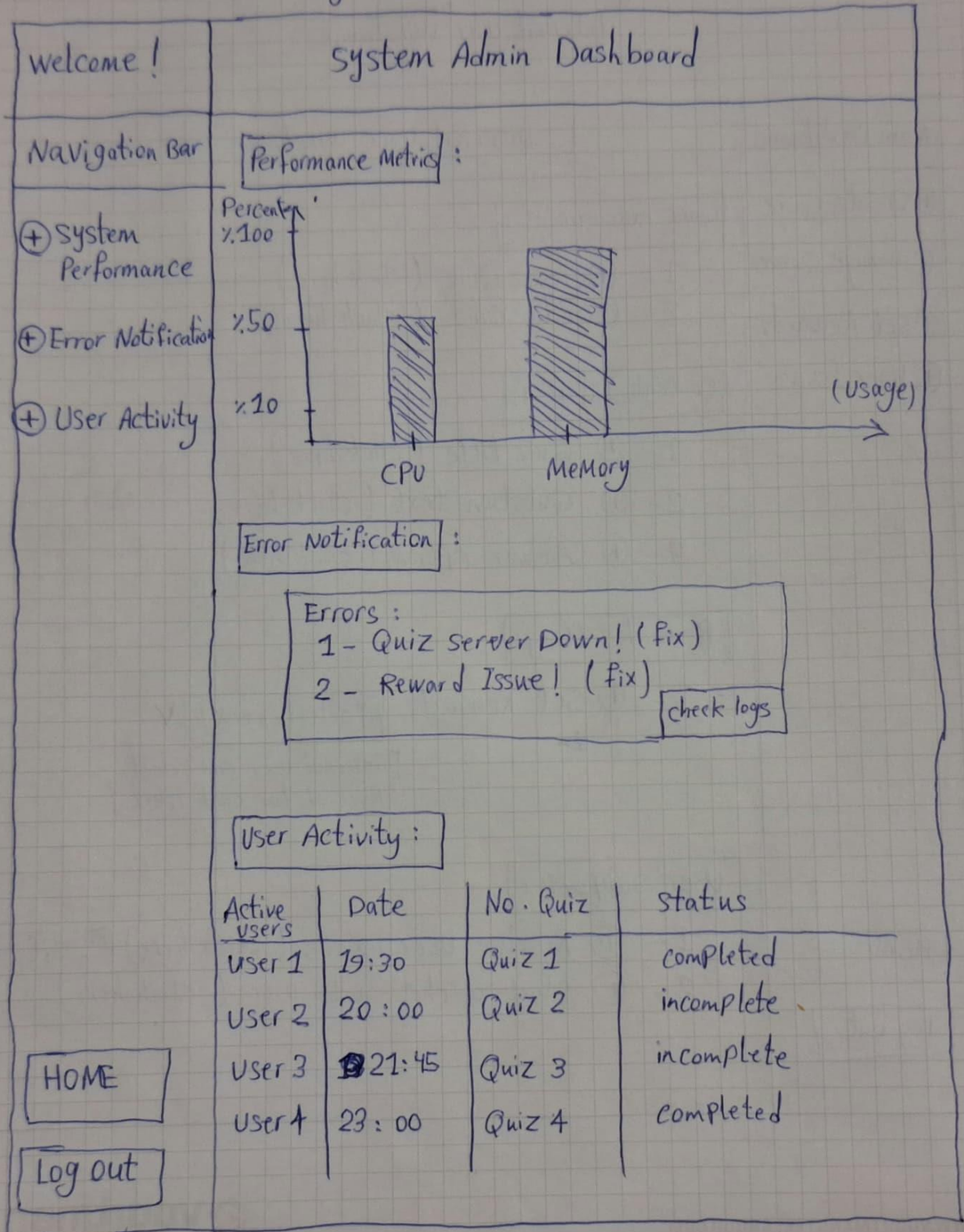
Main Dashboard	[Internal user wireframe]
⊕ Create Quiz ⊕ Manage Quizzes ⊕ Set Rewards ⊕ User Issues	<div>Quiz Managment :</div> <ol style="list-style-type: none"> 1 - ⊕ Create Quiz (click here) 2 - ⊕ Edit Quiz (click here) <div>Content Input :</div> <ol style="list-style-type: none"> 1 - ⊕ Quiz title (click here) 2 - ⊕ Question text (click here) 3 - ⊕ Answer options (click here) <div>Reward setting:</div> <ol style="list-style-type: none"> 1 - ⊕ Set Rewards [selection Box] V [Internal user can select Reward for each Quiz] <div>User support :</div> <ol style="list-style-type: none"> 1 - ⊕ Resolve User Issues (click here) Resolv Resolve 2 - ⊕ start a chat with user (click here)
<div>Home</div> <div>log out</div>	

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See next page

"System Admin" Wireframe



PROJECT NR.

PAGE

DATE

INFORMATION

Support staff wireframe

Dashboard

⊕ User Issues

⊕ Resolve ticket

⊕ chat with user

HOME

log out

Support staff

Issue List :

1- ⊕ User Name (click here)

2- ⊕ Issue Description (click here)

3- ⊕ Status (click here)

chat :

1- chat with the user (click here)

Search :

🔍 Search Bar

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4.2 Wireframes use case 2

4.2.1 Use case brief 2

Actor	Functional Requirement(s)	Scenario
Content Creators	To create educational quizzes	Content Creators upload new quizzes on plant-based living and guarantee that the application is up-to-date and relevant for users.
Marketing Team	Promoting the app and attracting new users	Running a campaign to raise awareness about the application focusing on eco-friendly rewards and the benefits of eco-friendly living.
Operations Team	Oversee the delivery of rewards and logistics	Operations team manages logistics of delivering rewards and ensuring timely and eco-friendly deliveries from suppliers to users.

4.2.2 Wireframes 2

PROJECT NR.

INFORMATION

Content creators wireframe

Dashboard View	Content creator 1
<p>⊕ Create New Quiz (click here)</p> <p>⊕ Quiz details inputting (click here)</p> <p><input type="button" value="Save"/> → <input type="button" value="Publish"/></p>	
<p>⊕ Create New Quiz (click here)</p> <p>⊕ Quiz details inputting (click here)</p> <p><input type="button" value="Save"/> → <input type="button" value="Publish"/></p>	

Wireframes 3 (For the user):

Please see the next page (Page29):

Wireframes (User Enter the Quiz APP)
(when user want to Participate in the Quiz)

Welcome to the "Green Way"

login Page

Enter Username

Enter Password

login Forget Password?

or

login with google account

Dont have an account? sign up

①

Welcome Kiarash!

Home

Profile

logout

Quiz Selection

+ Quiz list (click that)

1- [Quiz¹ title]
[Description]
[start Quiz]

2- [Quiz² title]
[Description]
[start Quiz]

②

[Quiz 1 title]

Instructions

1- You have 20 minutes

2- You have to Answer All 20 Questions correctly

~~XXXXXXXXXX~~

← Back start Quiz

③

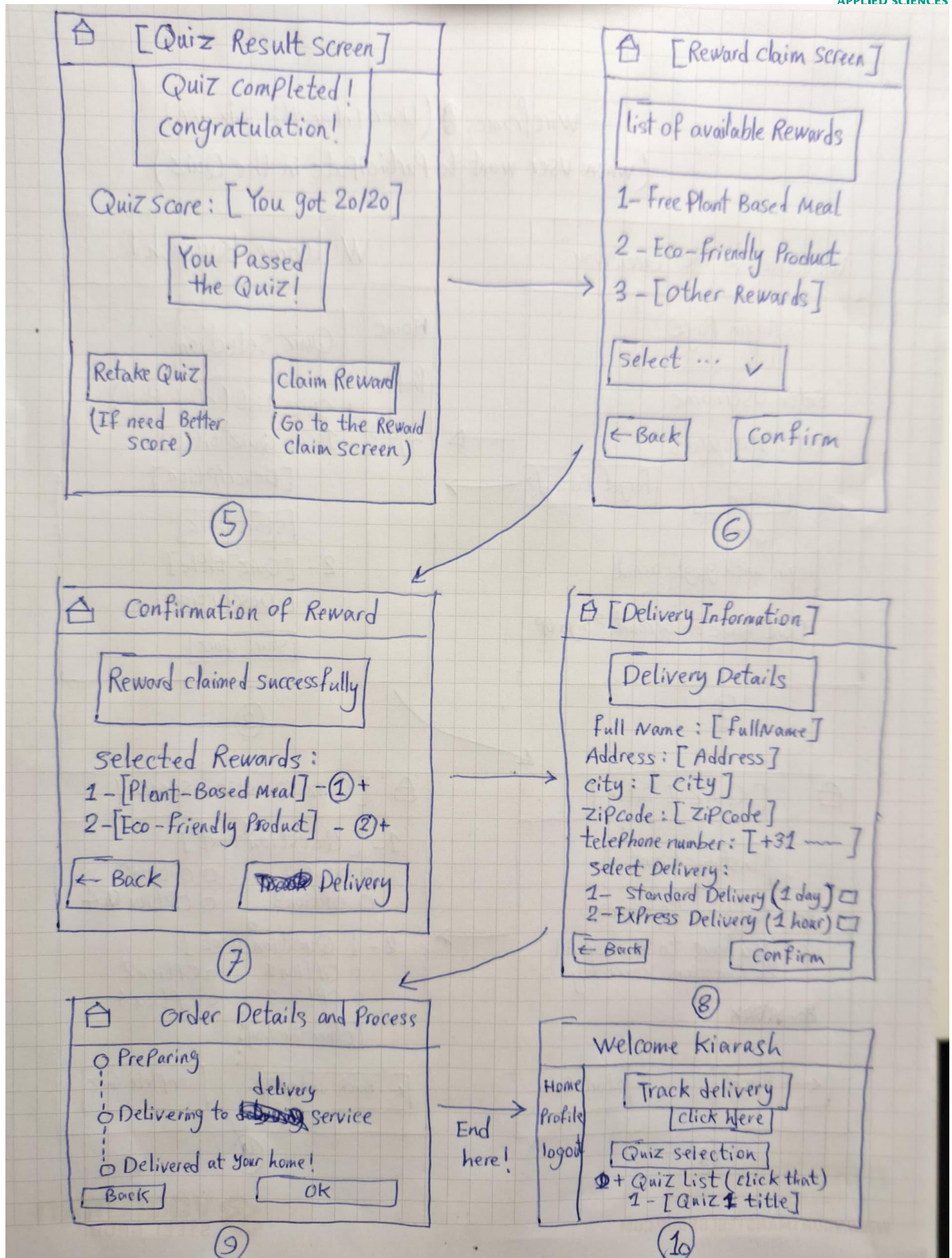
[Quiz Question screen]

1- [Question¹ text]
o option1 o option2
o option3 o option 4

2- [Question² text]
o option1 o option2
o option3 o option 4
[Other Question]:

← Back Instructions complete Quiz

④



5 Information Analysis

To perform an information analysis for the Green Way app, we'll take a close look at how the quiz system operates. This will involve identifying the necessary information that must be recorded, how it flows through the system and ensuring that all interactions work smoothly.

- **Description of The Quiz System:** The Green Way app allows users to take quizzes about environmental topics. Each quiz consists of 20 questions. Once the user answers the questions, their score is calculated. If they score well enough, they can choose rewards like eco-friendly products which are delivered to their door.

- **How We'll Analyze It:**

- 1- Data Flow:

- We will examine how quiz questions are presented to users, ensuring that they are displayed accurately and on time. Additionally, we will review how user answers are captured and sent back to the system for scoring.

- 2- User Input:

- We will guarantee that the system correctly captures and saves the user's answers.
 - We will also verify that users can modify their answers before submitting the quiz if needed.

- 3- System Output:

- We will analyze how the application displays the quiz results after completion.
 - We will review how rewards are offered to users based on their quizzes.

- 4- Error Handling:

- We will evaluate what happens if something goes wrong like if the user loses internet connection or doesn't complete the quiz.
 - We will look into how the application notifies users of the issue and guides them to resolve it.

- 5- Performance:

- We will ensure that the system can handle multiple users taking quizzes at the same time without slowing down or crashing.

By following this approach, we will ensure that the quiz system operates smoothly, captures user data accurately and offers a seamless experience for both quizzes and rewards.

5.1 Entities

1- User

The User entity represents the individuals who use your system. These are people who will take quizzes and claim rewards. For each user, the system stores important details like a User ID (to identify them), Username (for logging in), Email and Password for security. The system also tracks the user's Reward status to see if they're eligible for rewards and their Quiz history shows which quizzes they've completed.

2- Quiz

A Quiz is a collection of questions that the user answers. Each quiz is given a Quiz ID for identification, along with a Quiz Name for example, "Sustainability Quiz" and a Quiz Category (to classify quizzes, like "environment"). The system also knows the Number of Questions to determine how many questions are in each quiz.

3- Question

The Question entity holds each question in a quiz. Each question has a Question ID and Question Text (the actual question). It also stores the Correct Answer so the system can score the user's answers. The Quiz ID links each question to its parent quiz.

4- Answer

The Answer entity represents the answers users submit to quiz questions. For each answer, the system stores an Answer ID the actual Answer Text provided by the user and whether the answer was correct using Is Correct (True or False). The system also links the answer to the question it belongs to with Question ID and to the user who submitted it using User ID.

5- Reward

The Reward entity handles the rewards that users can earn after completing quizzes. Each reward has a Reward ID and a Reward Name for example "Plant-based Meal". The Reward Type describes what kind of reward it is, such as a product or service, and the Availability Status keeps track of whether the reward is available for users to claim.

6- UserReward:

The User Reward entity tracks when a user claims a reward. It has a unique User Reward ID for each claim and links the User ID to show who claimed it, and the Reward ID to show what reward was claimed. It also tracks the Date Redeemed, which records when the user claimed the reward.

7- Quiz Attempt

The Quiz Attempt entity represents each attempt a user makes to complete a quiz. For each attempt, the system stores an Attempt ID to uniquely identify the attempt, along with the Attempt Date to record when the attempt was made. The entity also stores the user's Score for that attempt. Each Quiz Attempt is linked to both the User and the Quiz that was attempted, allowing the system to track how well a user performed on a specific quiz over time.

8- Reward Criteria

The Reward Criteria entity defines the conditions that must be met for a user to be eligible to claim a specific reward. Each reward is based on certain criteria, such as completing a quiz or achieving a specific score. The Reward Criteria entity includes a unique Criteria ID and a Description that explains what the criteria involve. This entity is linked to the Reward entity through the relationship "Is Based On," which means that each reward is tied to one or more criteria that users need to fulfill before they can claim the reward.

5.2 Associations

- 1- **User and Quiz:** A user can take multiple quizzes, and each quiz can be taken by multiple users. This is a many to many relationships.
- 2- **Quiz and Question:** Each quiz contains multiple questions, and each question belongs to a specific quiz. This is a one-to-many relationship.
- 3- **Question and Answer:** Each question can have multiple answers, and each answer belongs to one specific question. This is a one-to-many relationship.
- 4- **User and Reward:** A user can earn multiple rewards, and each reward can be claimed by multiple users. This is a many-to-many relationship.
- 5- **User Reward and Reward:** A user reward links a user to a specific reward they've earned, showing a connection between users and the rewards they've received.
- 6- **User and Answer:** A user can submit multiple answers and each answer is submitted by one user.
- 7- **Reward Criteria and Reward:** Each reward is based on specific criteria, but each criterion can apply to multiple rewards.
- 8- **User and Quiz Attempt:** A user can have multiple attempts on different quizzes and each quiz attempt is associated with one user.
- 9- **Quiz and Quiz Attempt:** A quiz can have multiple attempts by different users but each attempt belongs to one specific quiz.

These relationships help guarantee that users can interact with the system, take quizzes, answer questions, and earn rewards effectively.

5.3 Entity model

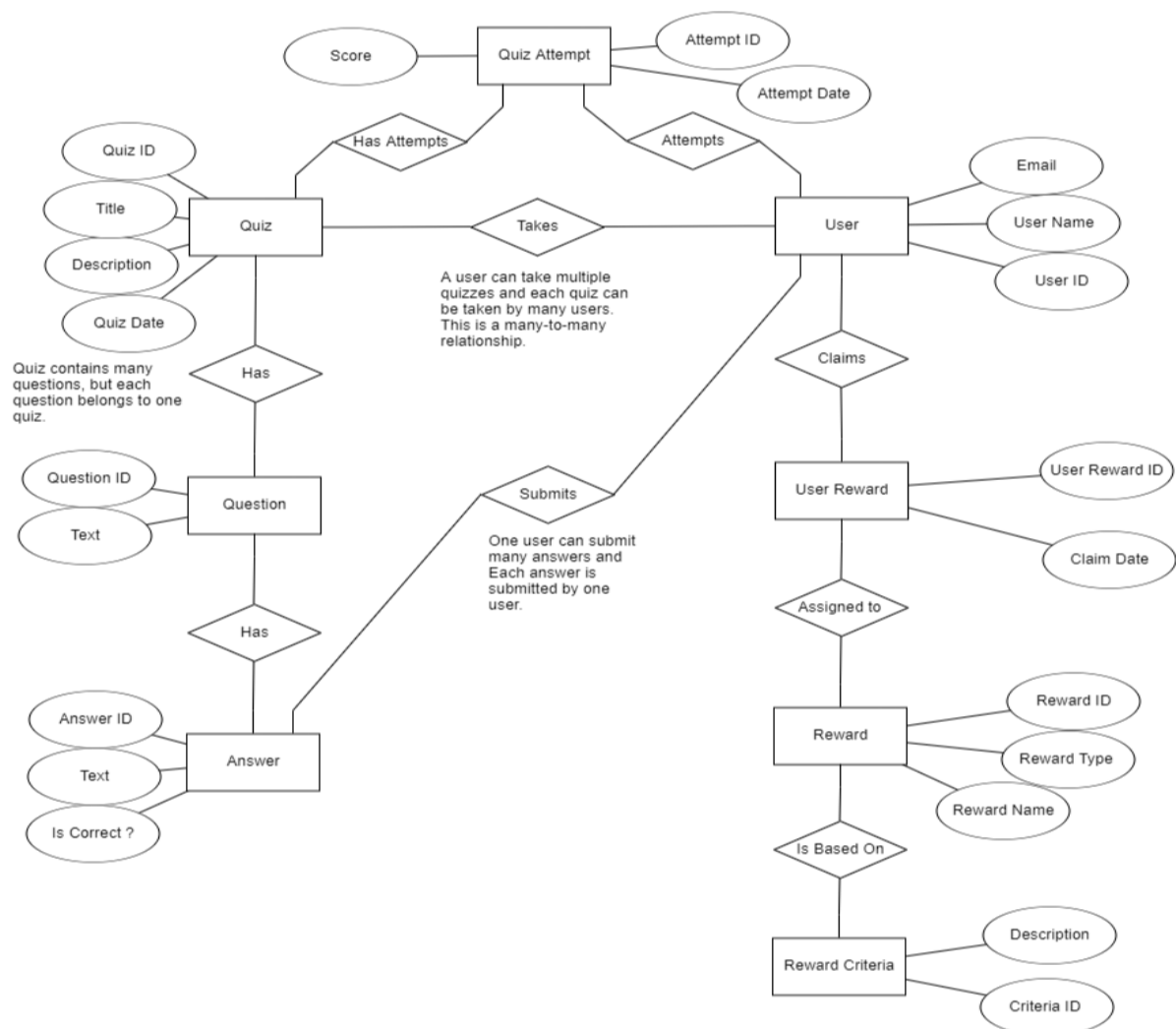


Figure 5.3 Entity Model

6 Process descriptions

For **Green Way**, we follow a simple process for how users take quizzes and receive rewards. Here's how it works:

- 1- **Starting the Quiz:** Users log into the Green Way app and pay 1 euro for the subscription fee and choose a quiz and the app shows them all the available quizzes.
- 2- **Answering the Quiz:** Users complete the quiz by answering the questions. The app checks their answers and saves their results.
- 3- **Choosing a Reward:** After finishing the quiz, the app calculates their score. If they pass, users can pick a reward such as eco-friendly products.
- 4- **Sending the Reward:** Once the user picks a reward, the app informs the operations team to deliver the reward to the user using eco-friendly delivery methods.
- 5- **Monitoring the System:** The system admin makes sure everything runs smoothly, fixing any problems and ensuring no quizzes or rewards are delayed.

NO	Activity	Actor	Operations With Data	Result
1	User Login	User	<i>The user logs into the app with credentials and pays 1 euro for the subscription fee</i>	The user successfully logged in.
2	Quiz Selection	User	<i>User selects a quiz from the quiz section</i>	Quiz is selected.
3	Load Quiz Questions	System	<i>System retrieves and displays 20 questions</i>	Questions loaded for the user.
4	Submit Answers	User	<i>User answers all the questions and submits responses.</i>	Answers submitted.
5	Answer Evaluation	System	<i>System evaluates if all answers are correct and provides feedback</i>	If answers are correct, move to the reward phase otherwise, retry.
6	End of Process	System	<i>The process ends when all answers are correct or feedback is provided.</i>	Process completed with feedback or reward eligibility.

Figure 6, Process Table

6.1 Process 1

(This Section (6.1: HRM Process) Deleted from The Assignment)

6.1.1 Description of Process 1

Starting and Completing the Quiz Process (Green way Quiz App Process):

Starts when a user logs into the Green Way app, chooses a quiz, completes it and either moves to the reward phase or repeats the quiz if the answers are incorrect. The steps for this process are as follows:

- 1- **User Login:** The user accesses the Green Way app by entering their login credentials (like username and password). Once logged in, the user is prompted to pay the 1-euro subscription fee to access the quiz.
- 2- **Quiz Selection:** The user navigates to the quiz section of the app. The app displays available quizzes, and the user selects the quiz they wish to take.
- 3- **Load Quiz Questions:** The system retrieves the quiz questions from the database. Each quiz contains a set of 20 questions that will be displayed one at a time to the user.
- 4- **Submit Answers:** After the user has answered each question, they submit their responses for evaluation. The answers are collected and sent to the system for verification.
- 5- **Answer Evaluation:** The system evaluates the user's answers to determine if they are correct. Each answer is compared with the correct answer stored in the system's database.
- 6- **Retry Quiz (If applicable):** If any of the answers are incorrect, the system prompts the user to retake the quiz. The user is taken back to the quiz section to retry until all answers are correct.
- 7- **Submit Answers After Retrying (If applicable):** The user submits their answers again after re-attempting the quiz. The system re-evaluates the answers.
- 8- **End of Process:** Once all answers are correct, the quiz is completed, and the system saves the quiz results. The user receives feedback on their performance, and the system prompts the user to move to the reward phase.

6.1.2 BPMN diagram of process 1

PROCESS 1 IN THE PICTURE:

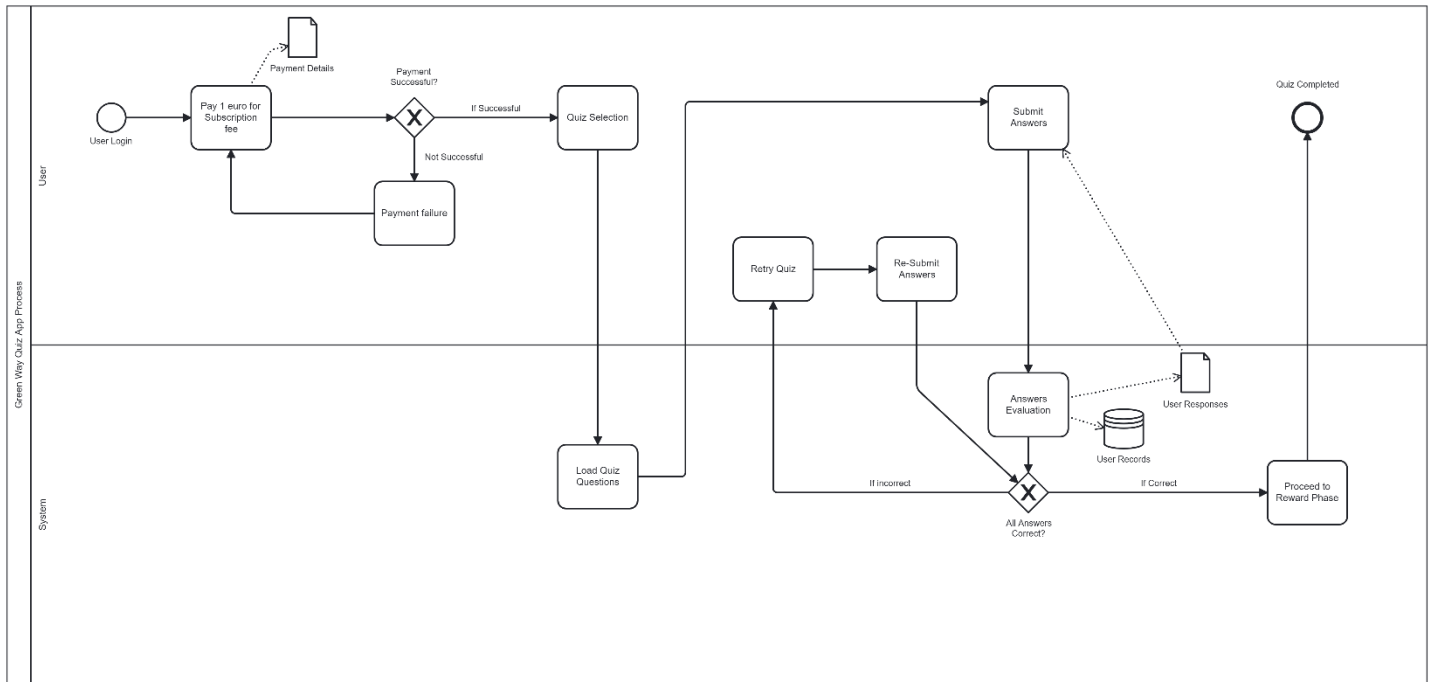


Figure 6.1.2 BPMN Diagram 1

6.2 Process 2

6.2.1 Description of Process 2

Reward Eligibility and Claim (Reward Claim Process):

This process starts once the user has successfully completed the quiz by answering all 20 questions correctly. The user is now eligible to claim a reward, and the system guides them through the process of selecting and confirming their reward. The first step start from:

- 1- Display Reward Options:** Once the system confirms that all answers are correct, the user becomes eligible for a reward. The system then presents a list of available rewards from which the user can choose.
- 2- Select Reward:** The user views the available reward options and selects one reward from the list. The reward options are based on what is available for the quiz the user has completed.
- 3- Confirm Reward:** Once the user selects a reward, the system processes this selection and prepares to assign it to the user. The system confirms that the reward has been successfully claimed and assigns it to the user's profile.
- 4- Notify User of Reward Confirmation:** After the reward is confirmed and assigned, the system sends a notification to the user confirming that the reward has been successfully claimed and will be delivered soon.
- 5- Display Confirmation:** After confirming the reward claim, the system displays a final confirmation message within the app interface, informing the user that their reward has been successfully claimed and will soon be delivered. This step ensures that the user sees immediate confirmation within the app.
- 6- End of Process:** The reward claiming process concludes. The system has confirmed and notified the user, and the user can now exit the reward claim process.

6.2.2 BPMN diagram of Process 2

(Connected from The Process 1 BPMN Diagram from “Quiz Completed” in Process 1 to Reward Eligibility Confirmed)

PROCESS 2 IN THE PICTURE:

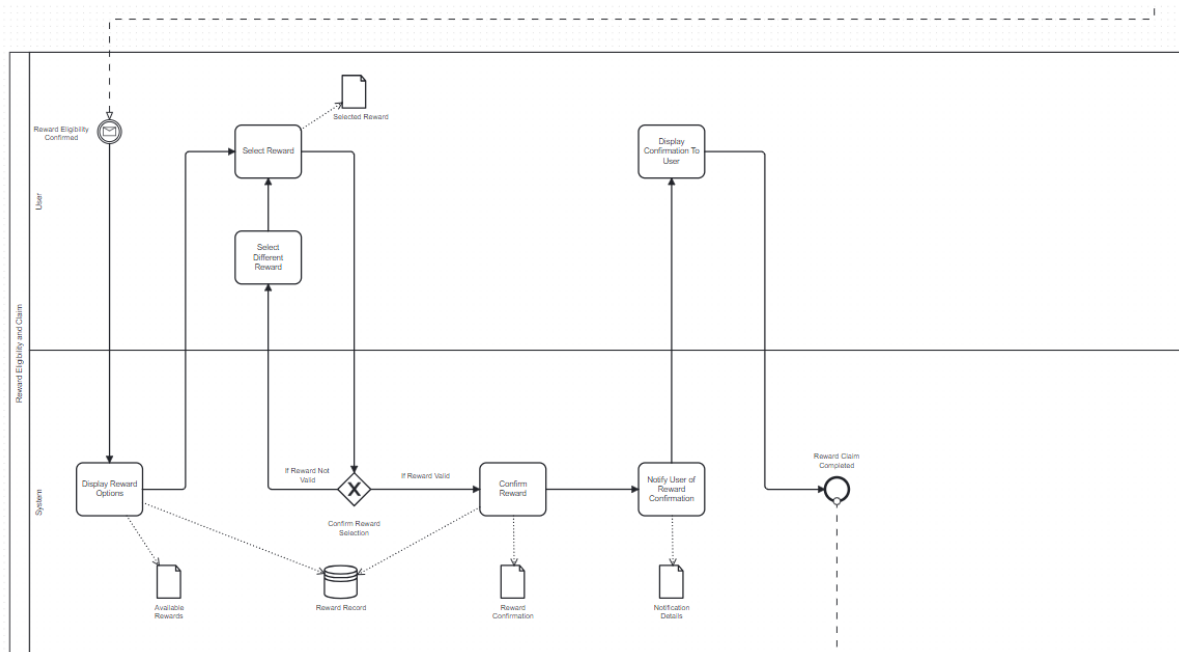


Figure 6.2.2 BPMN Diagram 2

PROCESS 1 & 2 IN THE PICTURE:

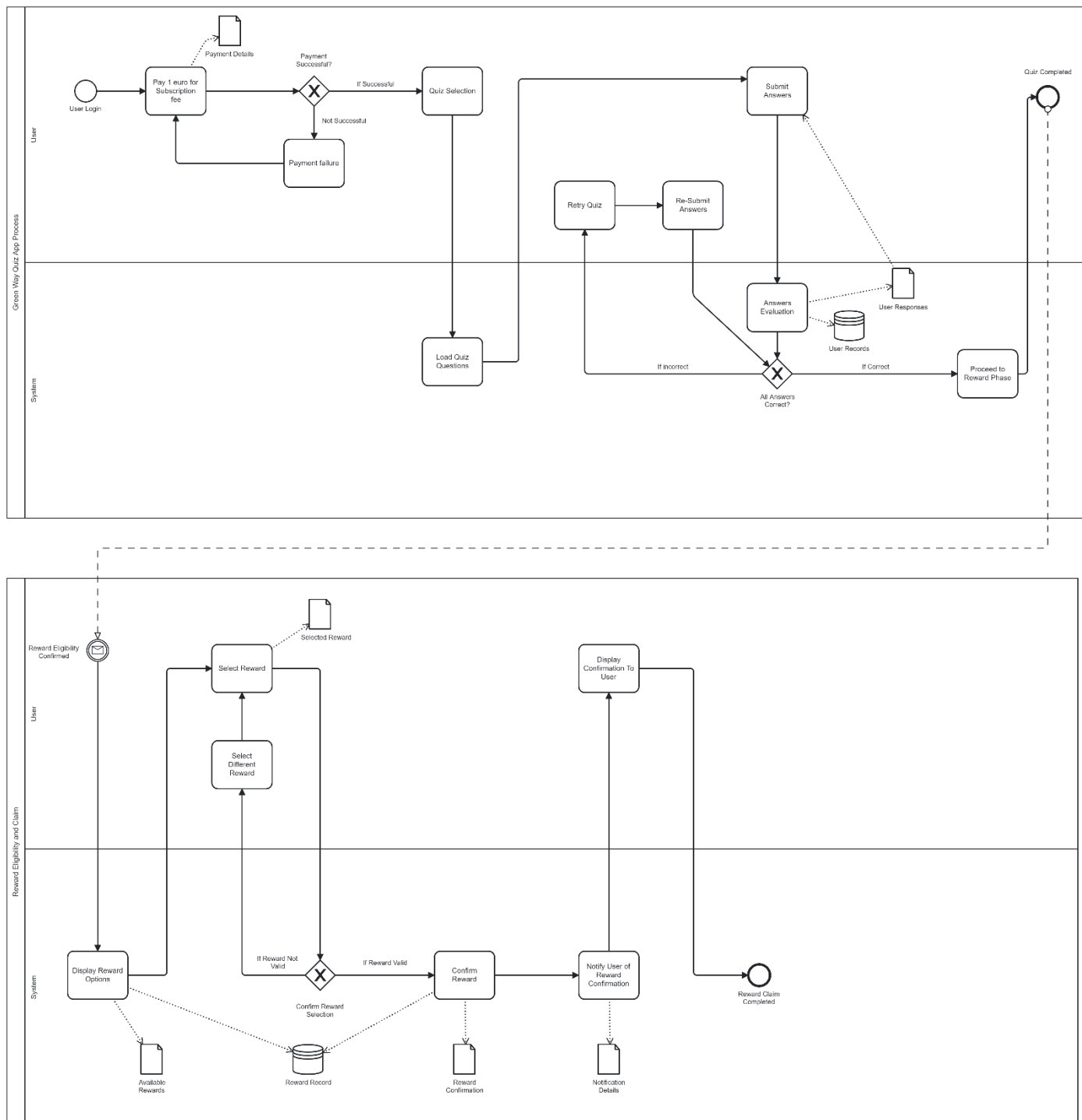


Figure BPMN Diagram 1&2

6.3 Process 3

6.3.1 Description of Process 3

Reward Delivery Process:

Once the user has successfully claimed a reward, the system initiates the process of delivering it to the user. This process is designed to ensure that the reward is prepared, dispatched, and received with clear communication to the user at each step. Detailed steps of the process:

- 1- **Notify Operations Team:** The system automatically sends a notification to the operations team, providing the details of the selected reward and prompting them to begin preparing the reward for dispatch.
- 2- **Confirm Notification Receipt:** The operations team acknowledges the receipt of the notification and confirms that they are starting the preparation process.
- 3- **Prepare Reward:** The operations team physically prepares the selected reward (like packaging, quality checks, etc.) based on the user's selection.
- 4- **Notify System of Prepared Reward:** The operations team informs the system that the reward is ready for dispatch.
- 5- **Schedule and Dispatch Reward:** The system schedules the delivery of the prepared reward. It selects a delivery service (courier) and provides the necessary details such as user address and preferred delivery time (if applicable).
- 6- **Dispatch Reward:** The operations team hands over the reward to the chosen courier or dispatch system, and the system updates the user that the reward has been dispatched.
- 7- **Track Delivery:** The system tracks the delivery progress and updates the user with real-time notifications regarding the status (for example Out for Delivery, Delivery Attempted).
- 8- **Notify User of Delivery:** The user is notified once the reward has been delivered to the provided address. The system prompts the user to confirm receipt of the reward.
- 9- **Confirm Delivery:** The user confirms via the app that they have successfully received the reward. They may also provide feedback or raise issues if the reward has not been received or is damaged.
- 10- **Notify System of Delivery Confirmation:** Once the user confirms delivery, the system updates the reward status to "Delivered" and closes the delivery process.
- 11- **Close Delivery Case:** After receiving confirmation from the user, the system closes the reward delivery case. This marks the entire reward claim and delivery process as complete.
- 12- **End of Process:** The reward delivery process is now complete. Both the user and the operations team receive final confirmation that the reward has been successfully delivered.

6.3.2 BPMN diagram of process 3: Reward Delivery Process

PROCESS 3 IN THE PICTURE:

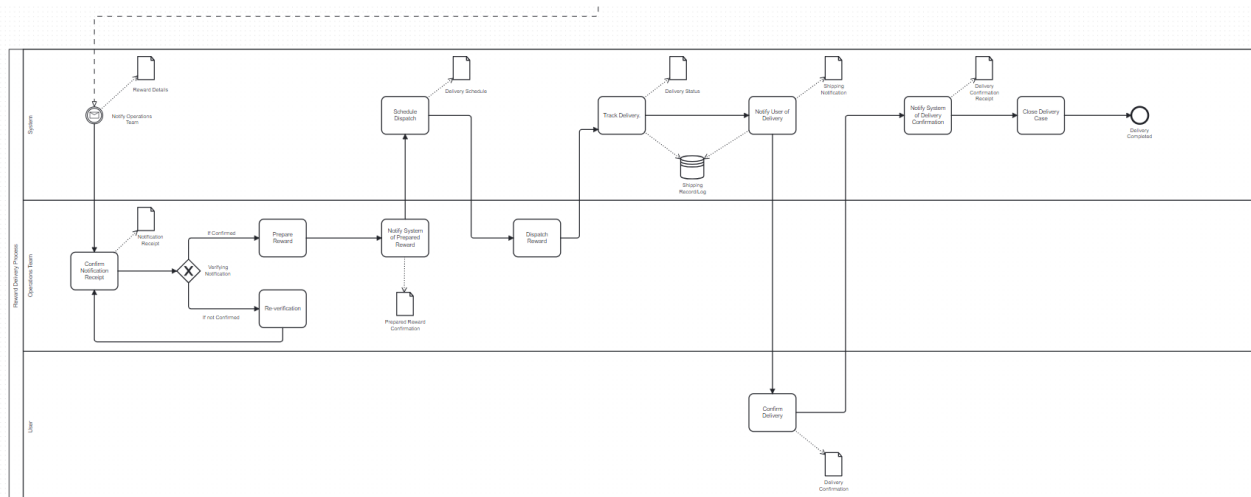


Figure 6.3.2 BPMN Diagram 3

PROCESS 1,2 AND 3 IN THE PICTURE:



(PLEASE GO TO THE NEXT PAGE)

7

System integration

At **Green Way**, system integration helps all the parts of our app work smoothly together. This includes linking the quiz system, user management and reward delivery processes. By connecting these systems using BPMN, we can make sure that data flows easily between teams like product development and marketing.

This **lets us** automate things like notifying users when they finish a quiz or are eligible for rewards. We can even add chatbots to handle user questions and track deliveries. This integration improves the overall user experience, ensures data accuracy and helps our team work more efficiently.

7.1 Adapted process

The **automated system** we built fits perfectly with our business processes, especially for managing quizzes, rewards and customer support. The system automatically handles the entire flow from users taking quizzes to getting their scores and claiming rewards. It also links the product development and operations teams to make sure rewards are sent out smoothly.

This **automation** helps track user engagement, like how marketing can see quiz participation and reward redemptions in real time. Customer support can also manage queries better with automated notifications and updates. In short, this integration improves our workflow, cuts down on errors, and gives users a better experience.

7.1.1 Description Adapted Process 1

In this **adapted process**, the system automates the steps for users starting and completing a quiz. The goal is to streamline the quiz process and improve user experience by integrating the system to automatically handle quizzes, save results, and determine if users have answered correctly. By automating the quiz evaluation and result saving, the new system reduces manual errors and ensures all user actions are captured accurately. The integration also allows the quiz system to notify the user immediately after they complete the quiz, especially if they have answered all 20 questions correctly, prompting them to the next steps for reward eligibility.

The **main changes** include automating the quiz flow, guaranteeing answers are evaluated instantly and connecting the user to the reward claim process automatically if all answers are right.

1- User Login:

The process starts when the user logs into the Green Way app by entering their username and password and paying 1 euro for the subscription fee.

2- Select Quiz:

Once logged in, the user navigates to the quiz section of the app and selects a quiz they want to take.

3- Load Questions:

After selecting the quiz, the system loads and displays 20 quiz questions one at a time for the user to answer.

4- Submit Answers:

The user answers each question and submits their answers. This continues until all 20 questions are answered and submitted.

5- Check Answers:

After submission, the system automatically checks if all 20 answers are correct.

6- Decision Point:

- If **all answers are correct**, the user moves on to the reward phase.
- If **any answer is incorrect**, the system informs the user that they need to take the quiz again. The user is prompted to retry the quiz until all answers are correct.

7- Retry Quiz (If needed):

If the user has incorrect answers, they will go back and retake the quiz until they get all answers correct.

8- End of Process:

Once all answers are correct, the system saves the quiz results, and the user receives feedback confirming they have completed the quiz.

7.1.2 BPMN diagram new process 1

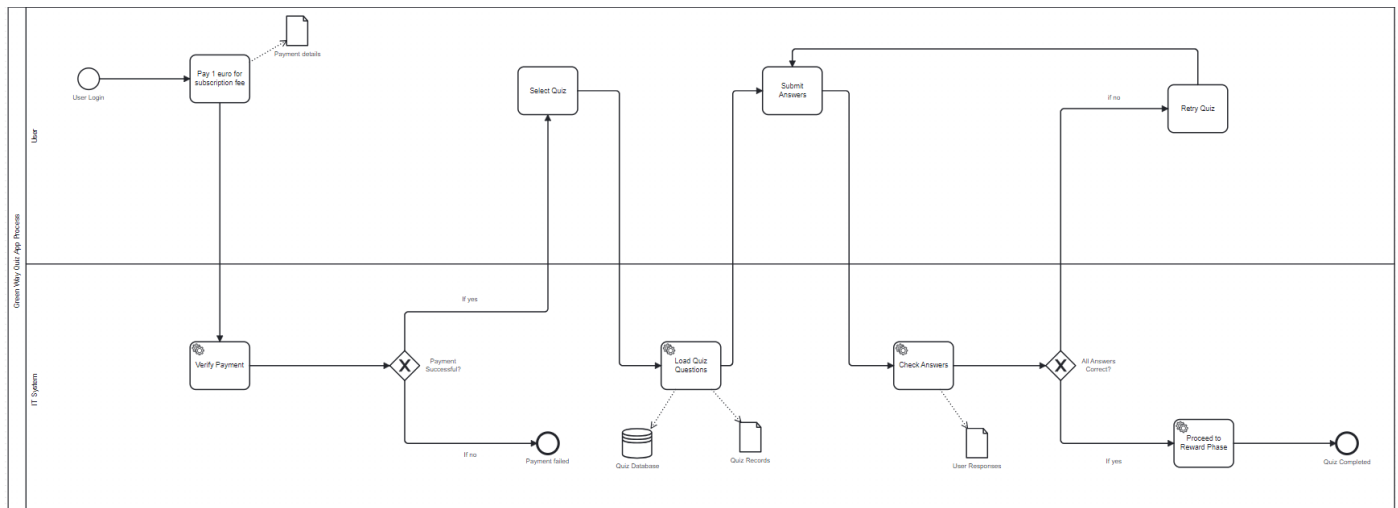


Figure 7.1.2 Adapted BPMN diagram 1

7.1.3 Description Adapted Process 2

Once the user completes the quiz and gets all the answers right, the system manages everything.

It automatically shows the user a list of rewards to pick from. The user can easily select a reward like a plant-based product and the system will confirm their choice and assign it to their account without any hassle. Notifications are also sent to the user to let them know when their reward is confirmed. This process is designed to be quick and smooth, ensuring there are no delays. If the user runs into any issues while claiming their reward, customer support is automatically alerted to help.

The Key change is that everything related to claiming and giving out rewards is now automated, making it more efficient and ensuring users get their rewards quickly without any delays.

In simple language, the steps are:

1- Check Quiz Completion:

The process begins when the user completes the quiz with all 20 correct answers.

2- Display Reward Options:

Once the user has answered everything correctly, the system shows a list of available rewards for the user to choose from.

3- Select Reward:

The user looks through the reward options and picks one reward from the list.

4- Confirm Reward:

After the selection, the system confirms the user's choice and assigns the reward to their account.

5- End of Process:

The user sees a confirmation message that their reward has been successfully claimed, and the process is complete.

7.1.4 BPMN diagram new process 2

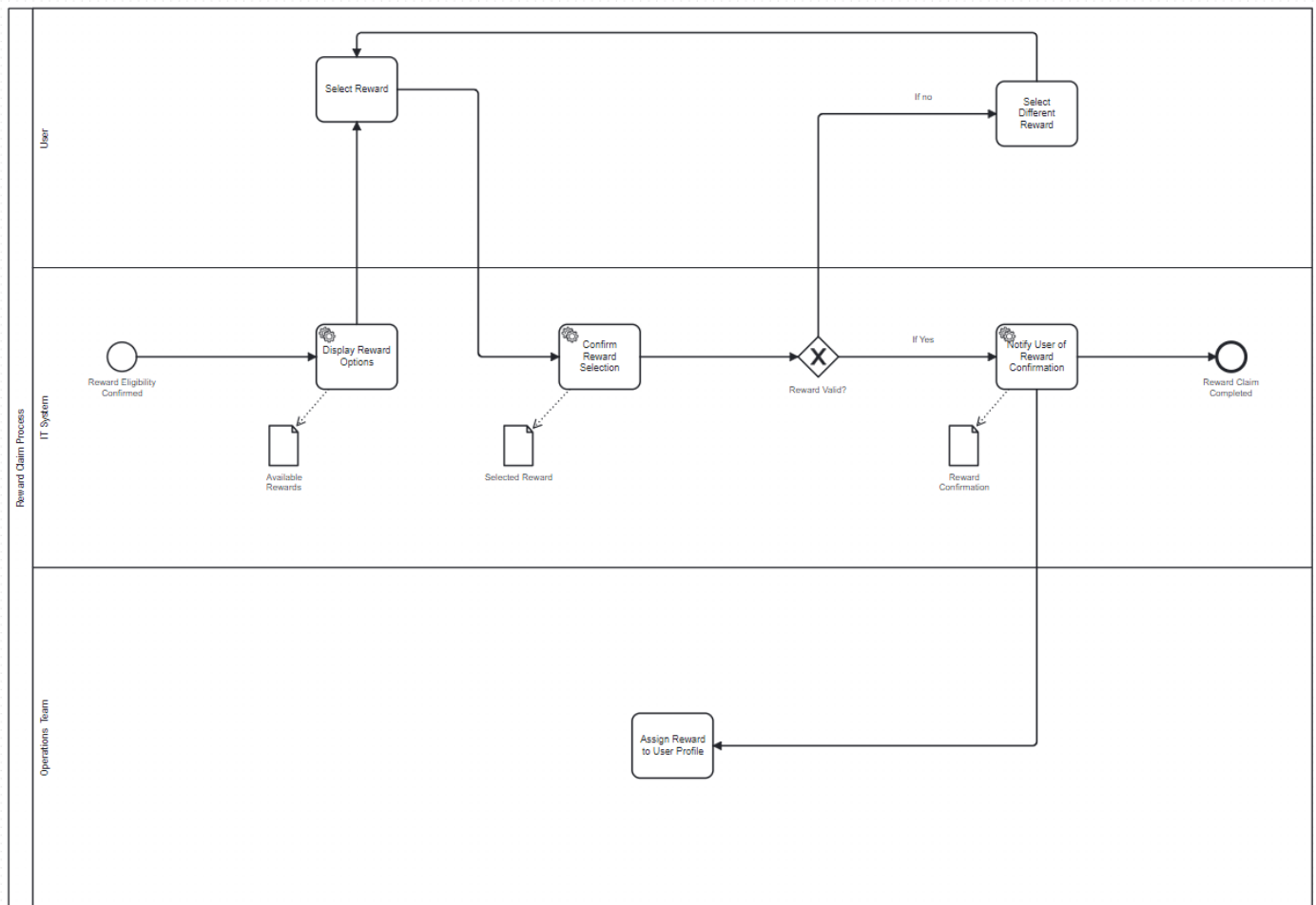


Figure 7.1.4 Adapted BPMN diagram 2

8 Traceability

At Green Way, everything we do is connected to our goal of making eco-friendly living fun and rewarding. The assignments and models we've created all work together to make our processes efficient, clear and user-friendly.

Vision, Mission and Strategy:

Our Mission is to help people live in an eco-friendly way through education, partnerships and rewards. We want to teach people about eco-friendly habits through quizzes and motivate them with real prize and rewards like plant-based meals and products. This idea flows directly into the models we have built like the BPMN diagrams which show exactly how our quizzes, reward and delivery system work.

For instance, after users complete a quiz, the system automatically checks their answers and if they pass, moves them to the reward phase. This aligns perfectly with our strategy of **education, partnerships and rewards**, ensuring the process is smooth and automated.

Internal and External Structures:

Our internal structure the teams like Marketing, Operations and Customer Support is closely linked to the BPMN models. Each team has a role:

- 1- Marketing brings in new users who take the quizzes.
- 2- Operations ensures rewards are delivered on time; a process shown in the BPMN models.
- 3- Customer Support steps in when users face issues.

The external structures, which includes partners like food suppliers and delivery services also plays a role in the BPMN models. These partners help fulfill rewards and their involvement is mapped out in the reward claim process.

Business Model Canvas (BMC):

The business model canvas shows all the different parts of Green Way's business fit together. We work with local food suppliers and delivery services to provide rewards and the BPMN models show how we automate these processes.

For example:

Customer Support is an important part of our BMC and the BPMN diagrams show how support is alerted if a user has any issues during the quiz or reward process.

Operations like delivering rewards are also highlighted in both the BMC and BPMN MODELS, showing how these steps are automated and handled efficiently by the system.

Stakeholder Onion:

The Stakeholder Onion diagram explains who is involves in our processes, both internally and externally:

System Admins and Internal Users manage the app, while External Partners like delivery services help get rewards to users.

The BPMN models show how all these roles work together, ensuring everything runs smoothly from quiz completion to reward distribution.

(Next Page)

Functional Requirements and Scenario:

The **Functional Requirements** table outlines the roles and responsibilities of key stakeholders like internal users, system admins and the operations team. These requirements match what happens in the BPMN models:

- 1- **Internal users** manage the quizzes and rewards.
- 2- **System admins** ensure the system runs smoothly.
- 3- **The Operations Team** ensures rewards are delivered, all of which is shown in the BPMN models.

BPMN Models:

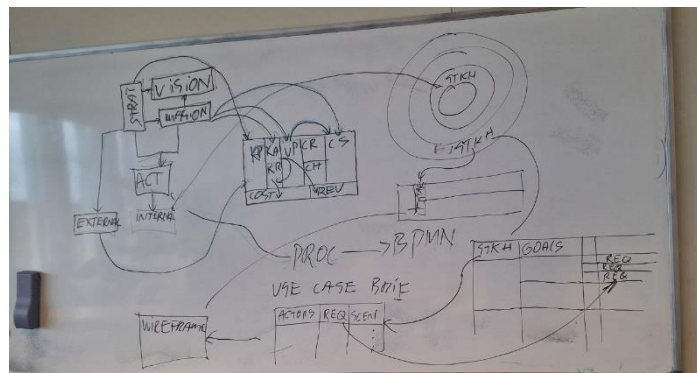
The **BPMN Models** are at the core of how we visualize our processes. They show how different parts of the business interact in an organized way with the IT System automating key steps like quiz selection, answer checking and reward delivery.

For example, a user logs in, selects a quiz and completes it. The system checks their answers and if correct, moves them to the reward phase where they can choose a reward. If there's a problem, customer support gets notified. This whole process is automated in the BPMN models, saving time and reducing errors.

Conclusion:

In summary, all the Tasks and models in Green Way are connected. Our **mission, vision, and strategy** drive everything we do and the **BPMN models** help us see how each part of the business whether it's teams, systems or partners comes together to achieve our goals. The models make it easy to understand how our business processes flow, from quiz completion to rewards, making everything efficient, organized and user-friendly.

By integrating the **IT system** into our business processes, we have automated key steps, making the entire process faster, more reliable and scalable. This traceability ensures we can easily see how every part of Green Way is connected, allowing us to provide a better experience for our users, support our partners and continue growing toward our mission of making sustainable living easy and rewarding.



9 References

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Thank you so much for your Attention!