

Document Revision History

Revision # Date

0.1 03/10/24

Table of Contents

- 1. Introduction
 - 1.1 Purpose
 - 1.2 Scope
- 2. System Overview
 - 2.1 Project Perspective
 - 2.2 System Context
 - 2.3 General Constraints
 - 2.4 Assumptions and Dependencies
- 3. Functional Requirements
 - 3.1 Features
 - 3.2 Use Cases
 - 3.3 Data Modeling and Analysis
 - 3.4 Process Modeling
- 4. Non-Functional Requirements
- 5. Logical Database Requirements
- 6. Other Requirements
- 7. Approval

1. Introduction

1.1 Purpose

This document provides a detailed analysis of the software requirements for *TechBarter*, a sustainable online marketplace designed for buying, selling, and recycling electronic devices. The document outlines functional and non-functional requirements to ensure clarity in development, addressing what the system will achieve for its target users and stakeholders.

1.2 Scope

The *TechBarter* platform aims to create a robust marketplace for tech enthusiasts focused on sustainability. It will allow users to list, purchase, and recycle electronic devices while fostering a community dedicated to eco-friendly practices. The scope covers:

- Development of an online marketplace for tech products
- Creation of a community hub and recycling program
- Implementation of visual sales analytics

Out of Scope:

- Mobile application development (initially limited to web platform)
 - Features outside of tech product transactions
 - International transactions and multi-currency support (limited to local markets)
-

2. System Overview

2.1 Project Perspective

TechBarter is a new, self-contained system that combines an online marketplace with sustainability-focused initiatives, tailored for the needs of environmentally-conscious tech enthusiasts. It is built to support users within the local market, with the goal of fostering a sustainable tech community.

2.2 System Context

The *TechBarter* platform is part of a larger eco-friendly initiative, emphasizing recycling and responsible consumption within the technology sector. By partnering with third-party recycling organizations and integrating analytical insights, *TechBarter* directly supports environmental sustainability goals while also providing a secure and engaging platform for transactions.

2.3 General Constraints

- Compliance with e-commerce and recycling regulations.
- Platform availability on web browsers only (initially no mobile app).
- Integration with secure third-party payment processors.

2.4 Assumptions and Dependencies

- Users will have reliable internet access.
 - Basic tech knowledge is assumed for platform navigation.
 - Integration of third-party services, including payment and data analytics.
 - Compliance with local recycling laws and regulations.
-

3. Functional Requirements

3.1 Features

Feature 1: User Registration and Authentication

- **Introduction:** Allows users to register and securely log into the platform.
- **Inputs:** User credentials (username, email, password).
- **Processing:** Authentication and authorization using secure protocols.
- **Outputs:** Access to user account and profile.

Feature 2: Product Listing and Transaction Management

- **Introduction:** Users can list tech items for sale, purchase items, and complete transactions.
- **Inputs:** Product information (title, description, price, images), buyer details.
- **Processing:** Listing display, secure transaction processing.
- **Outputs:** Successful transaction records, order confirmation for buyers and sellers.

Feature 3: Visual Sales Analytics

- **Introduction:** Provides visual reports on sales data to sellers.
- **Inputs:** Sales data and transaction records.
- **Processing:** Data analysis and visualization.
- **Outputs:** Interactive reports for sales performance tracking.

Feature 4: Recycling Program Integration

- **Introduction:** Allows users to recycle electronics through third-party partnerships.
- **Inputs:** User's recycling request.
- **Processing:** Request submission and coordination with recycling partners.
- **Outputs:** Confirmation of recycling process initiation.

Feature 5: Community Hub

- **Introduction:** Forum for users to discuss and engage on sustainability and tech topics.
- **Inputs:** User posts, comments.
- **Processing:** Community engagement moderation.
- **Outputs:** Interactive community space with user-generated content.

3.2 Use Cases

Use Case 1: Register and Log In

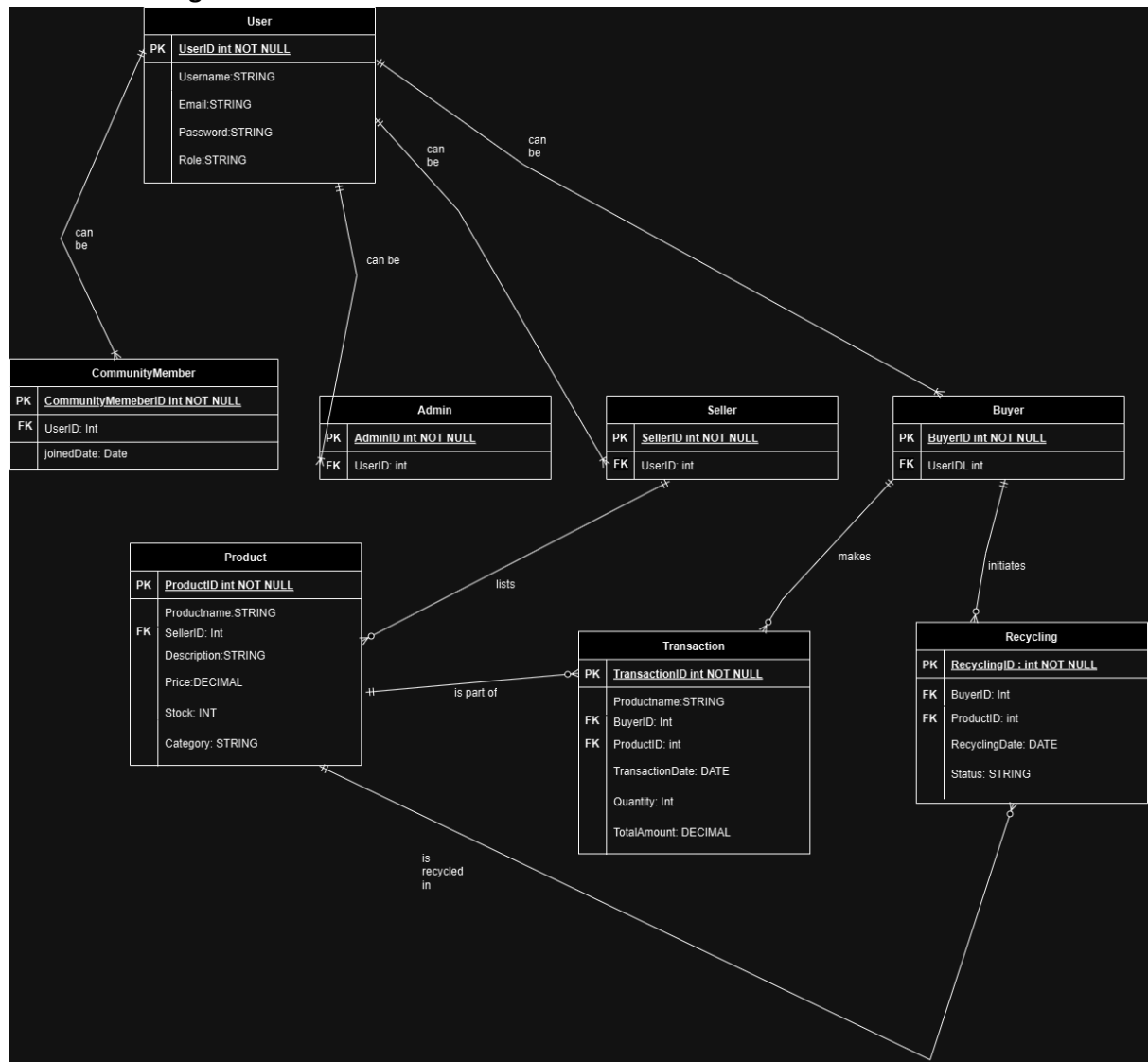
- **Actors:** New User, Returning User
- **Description:** User creates an account or logs into an existing one.
- **Preconditions:** Access to the platform's registration and login pages.
- **Postconditions:** User gains access to the account dashboard.

Use Case 2: Post a Product Listing

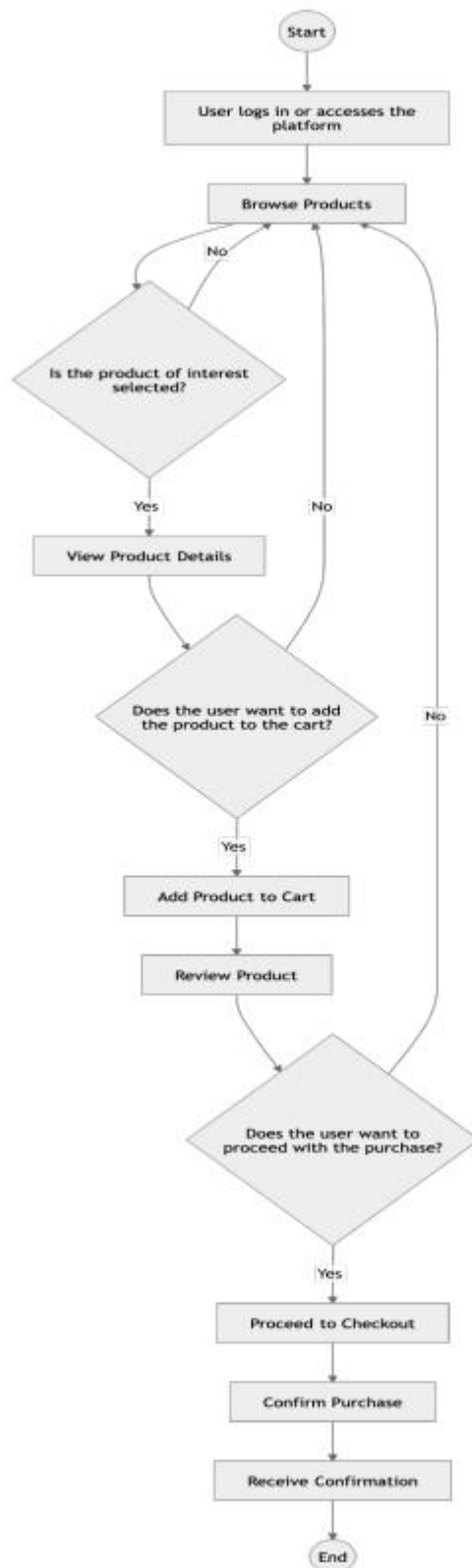
- **Actors:** Registered User (Seller)
- **Description:** User posts a tech item for sale on the platform.
- **Preconditions:** User is logged in and navigates to the product listing page.
- **Postconditions:** New product listing appears on the marketplace.

3.3 Data Modeling and Analysis

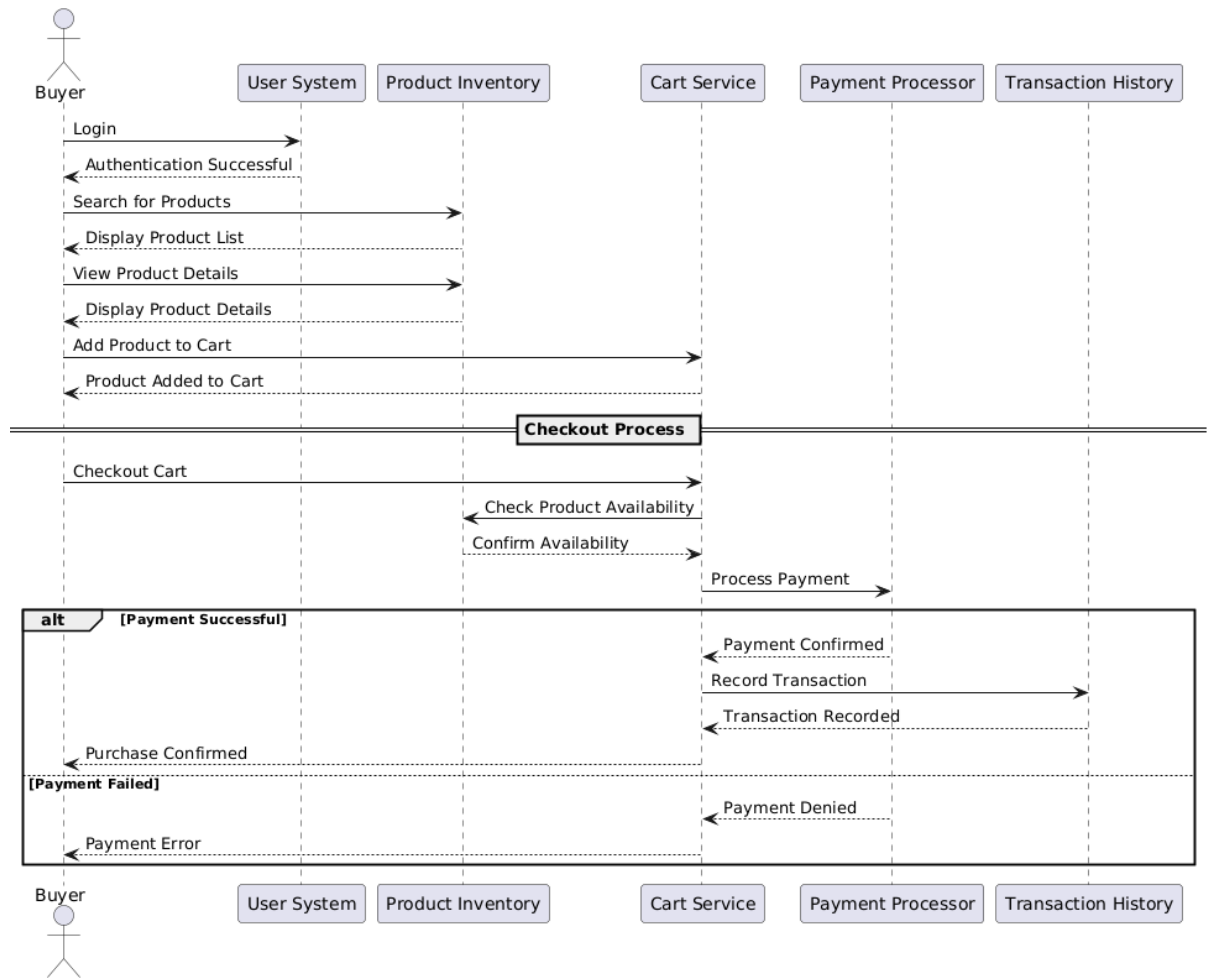
- **Data Model Diagram:**



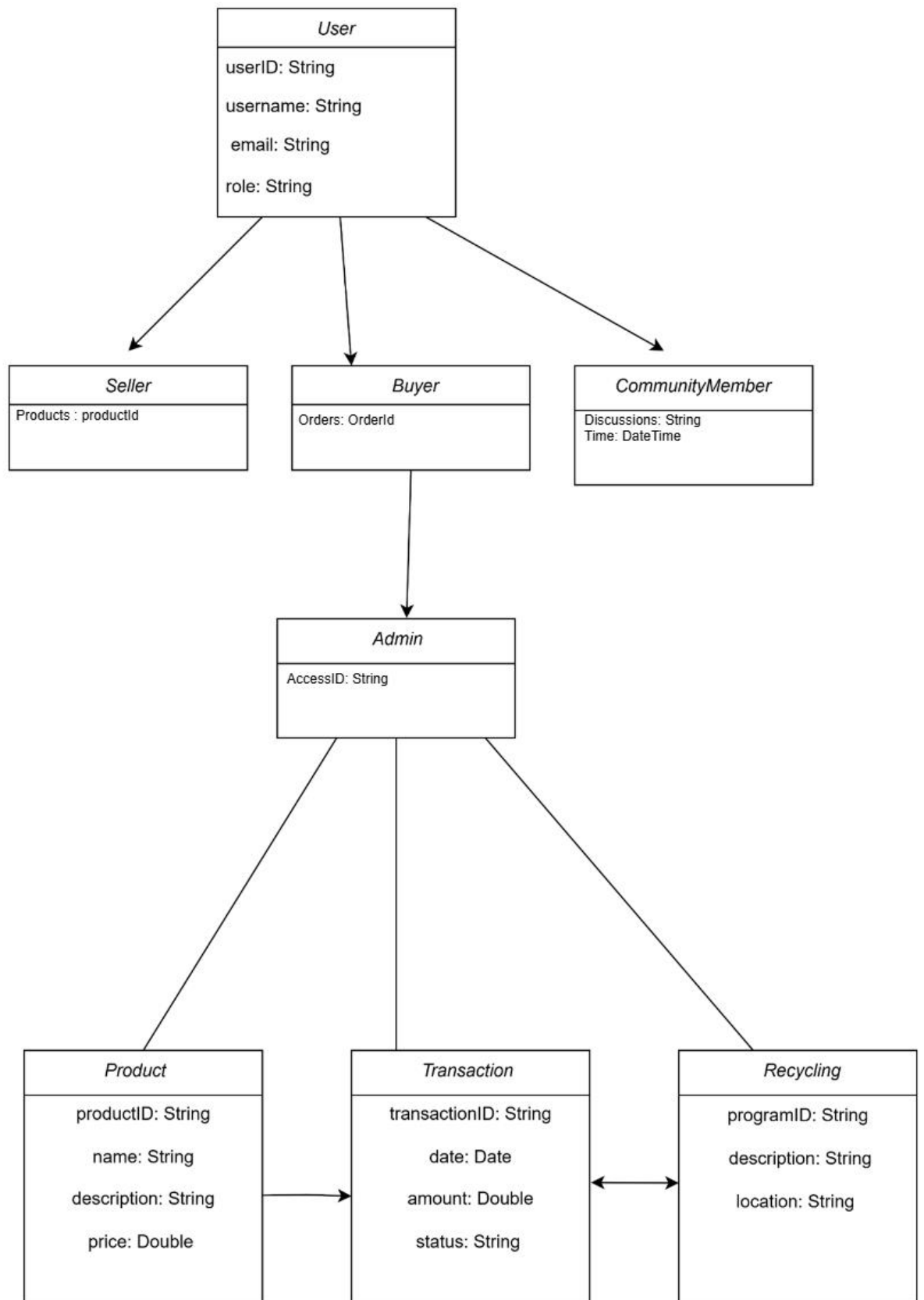
- **Activity Diagrams:**
-



-
- Sequence Diagrams:

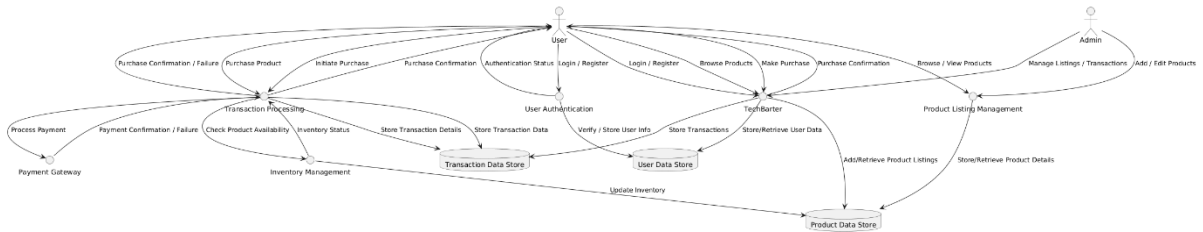


- **UML Class Diagram:**



3.4 Process Modeling

- **Data Flow Diagram:**



S

4. Non-Functional Requirements

- **Performance:** 95% of transactions should complete in less than 2 seconds.
- **Reliability:** System uptime should exceed 99%.
- **Availability:** Platform should be accessible 24/7, with minimal downtime for maintenance.
- **Security:** All transactions should be encrypted and secure.
- **Maintainability:** System should support easy updates and maintenance.
- **Portability:** Accessible across common web browsers.

5. Logical Database Requirements

- **Data Formats:** User data, product listings, transactions, and community posts.
- **Storage Capabilities:** Sufficient storage for user profiles, listings, transaction records.
- **Data Integrity:** Ensure accurate transaction data and user records.

6. Other Requirements

No additional requirements specified.

7. Approval

The signatures below indicate their approval of the contents of this document.

PROJECT ROLE	NAME	SIGNATURE	DATE SIGNED
Leader	Nishita Sachdev	N.S	2024-11-08
Member	Hardik Kumar	H.K	2024-11-08
Member	Ashish Rajan Sherry	A.R.S	2024-11-08
Member	Sandra Antony	S.A	2024-11-08
Member	Tanmay Panchal	T.P	2024-11-08

This structured document follows the provided template and reflects the detailed requirements, functional specifications, and project objectives for *TechBarter*. If you'd like any specific sections expanded or additional use cases, data models, or diagrams created, let me know!