2022

Documentation

E-COMMERCE SYSTEM DOCUMENTATION

MNCEDISI SIBEKO

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Declaration

This is to certify that this project is my original work. No part of this work has been submitted elsewhere or partially or fully for the award of any other degree or diploma. Any material reproduced in this project has been properly acknowledged.

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Mncedisi Sibeko

(Owner)

Problem Statement – Project Overview

In today's technologically advanced world, e-commerce systems are fast growing as many businesses are implementing online shopping as a service over having physical stores. Due to it's convenience and simplicity e-commerce stores are going to be around for a long time.

The objective for this project is to develop an e-commerce system where an end-user can purchase the items listed (whether it's books, computers, mobile phones, electronics and/or home appliances) on the system through the internet. Online web stores, such as Amazon and eBay have gained huge popularity over the years because a person can buy almost everything at these stores.

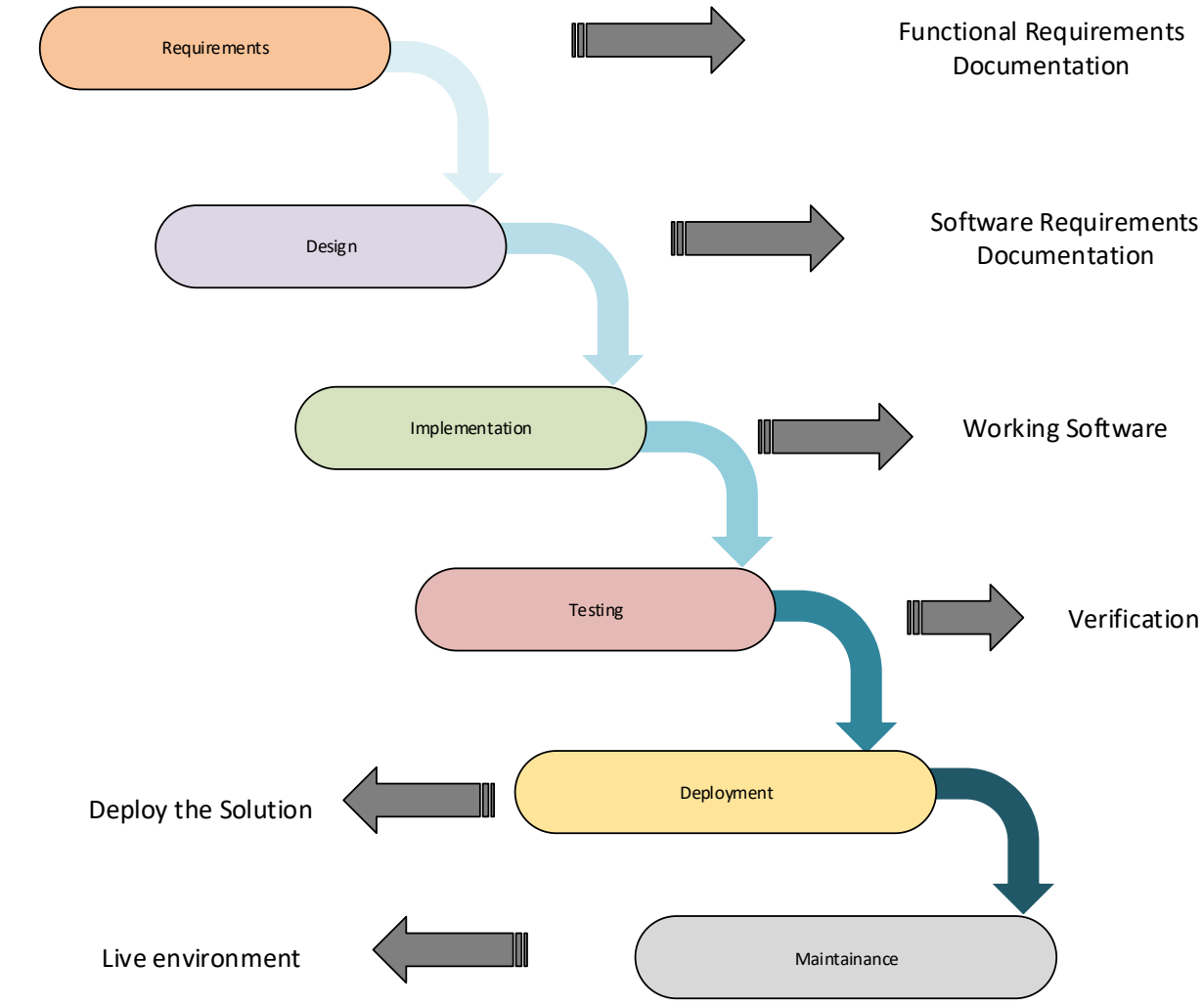
An online store follows a process where the customer browses through the catalogue of the items listed and selects a product of interest. The items selected by the customer are all collected in the shopping cart awaiting checkout. During this phase of the process, the customer will be prompted to fill out the billing address, shipping address, a shipping option, and payment information such as credit card details. When all of this is done, an email will be sent for confirmation with all the order details stated in the email.

For the purpose of this project I will develop an Online store which will be selling used cars. I will be using C# for the back-end development, Angular for the Front-end and Microsoft SQL Server for the Database.

Tools:

- Visual Studio 2022
- Microsoft SQL Server Management Studio 2014
- Visual Studio Code
- Microsoft Visio

Software Development Life Cycle (SDLC)



Functional & Non Functional Requirements:

Functional Requirements

***Customer Register/Create Account*:** When using the e-commerce application for the first time, you have the option to create an account (if no account exists) to browse freely with no restrictions. The registration will be a simple process only requiring basic information about you, banking details for the customer will be needed only when making a purchase.

***Login*:** The login process will follow the basic procedure of requiring only your Username and Password to grant you access. The system will be able to differentiate between which end-user is an Administrator and a Customer, this is to grant certain privileges to the deserving user in order to allow them to fulfill their purpose when using the e-commerce application.

***Customer + Visitor Browse Store*:** For the purpose of the e-commerce application, we will define a 'Customer' as an end user who has an existing account on the database, a 'Visitor' will be defined as an end-user who is browsing the e-commerce with no existing account on the database and will be prompted to create and should they find interest in an item displayed on the store. With this functional Requirement, both the Customer and Visitor should be able to browse the store and items displayed regardless of having an account or not.

***CRUD*:** The ability to perform CRUD (Create, Read, Update, Delete) privileges, this means they handle which items are added to the e-commerce system and which items should be removed once the sale of the item/s is finalized or should there be any other reason for the removal of the item/s.

***Customer Complete Checkout*:** The checkout process encompasses the specific steps a customer must take when completing an ecommerce purchase. The checkout process is the grand finale for an ecommerce website. It is where the prospect finalizes choices about the product, selects any add-ons, confirms shipping options, then provides payment.

Non Functional Requirements:

Security: Security comes with utmost importance if the e-commerce application will be dealing with monetary transactions, users' financial and sensitive data. Using an SSL (Secure Sockets Layer) certificate and data privacy policy will create trust among the users for your website and convert the customers into brand advocates. It is also considered for the different admin roles by which you can control who can create, see, copy, change or delete information.

Usability: Regardless of the size of the application, the website of your business should be easy to use for even a non-technical user. Do you know that a general user takes just 0.05 seconds to figure out whether the website is worth its time or not? Thus special attention has to be given to the design of the homepage, and an easy checkout to get past those milliseconds of doom.

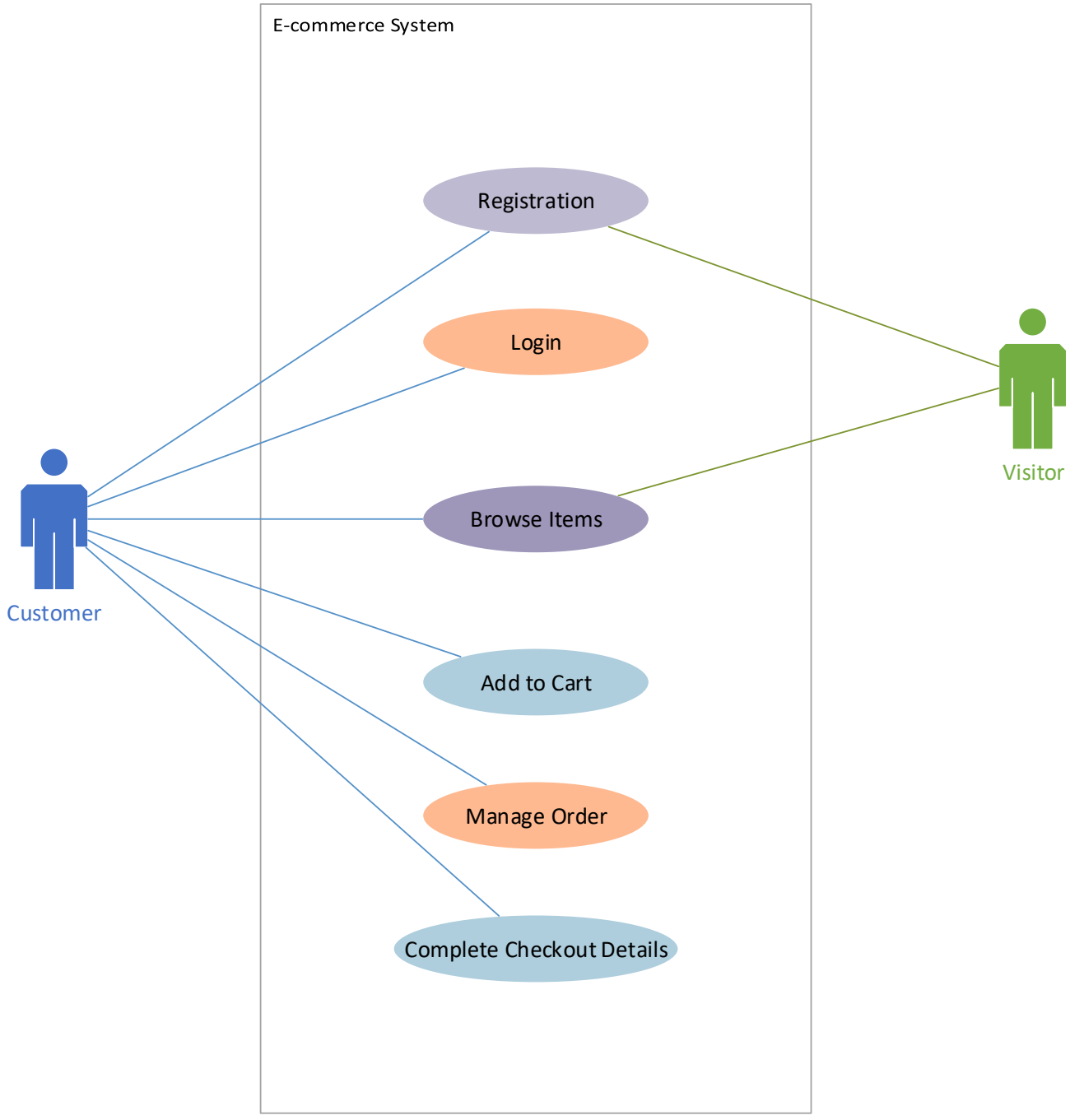
Performance: For increasing the traffic on the website, special attention must be given to the performance in the non-functional requirements documentation. The focus should be on loading the e-commerce store as fast as possible regardless of the number of integrations and traffic on

your website. A speed benchmark can be set up, maximum SKUs which we want to add, or any other performance indicator best for the business.

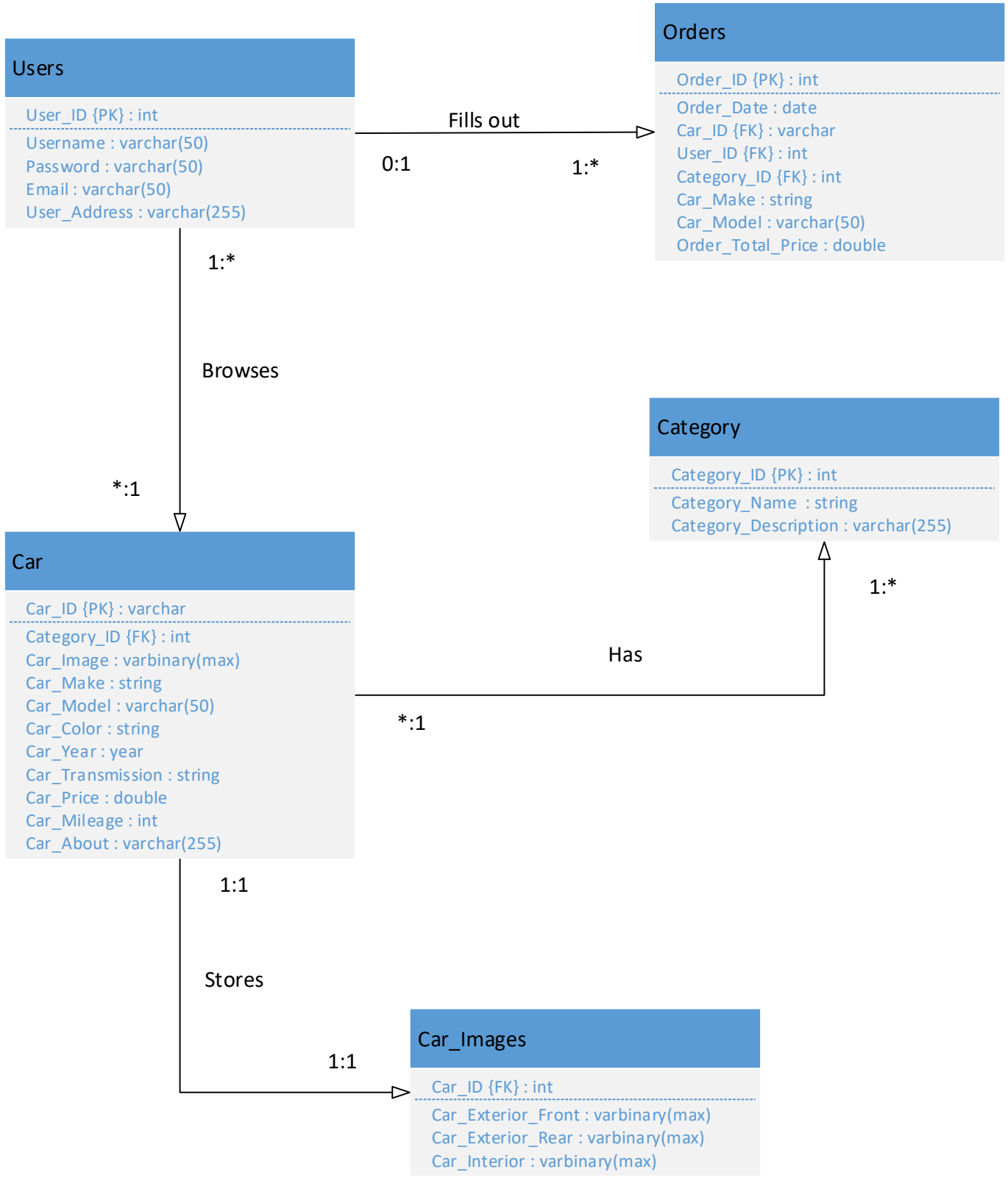
Maintainability: The operational costs for maintenance are the tricky part of planning a business budget. Thriving the website maintenance from the initial development means cutting the time & cost to determine and resolve the faults of the system in the future.

Scalability: Last but not the least, you have to look for a future-proof solution considering the scalability. It will define how the website can grow and increase its features and functionality without impacting the performance of your website. You must be able to add more memory, servers, or disc space for making more transactions on your website. On the server side, while entering new markets you may need to add localization features. Overall, this NFR accounts for painless business expansion and has both hardware and software implications.

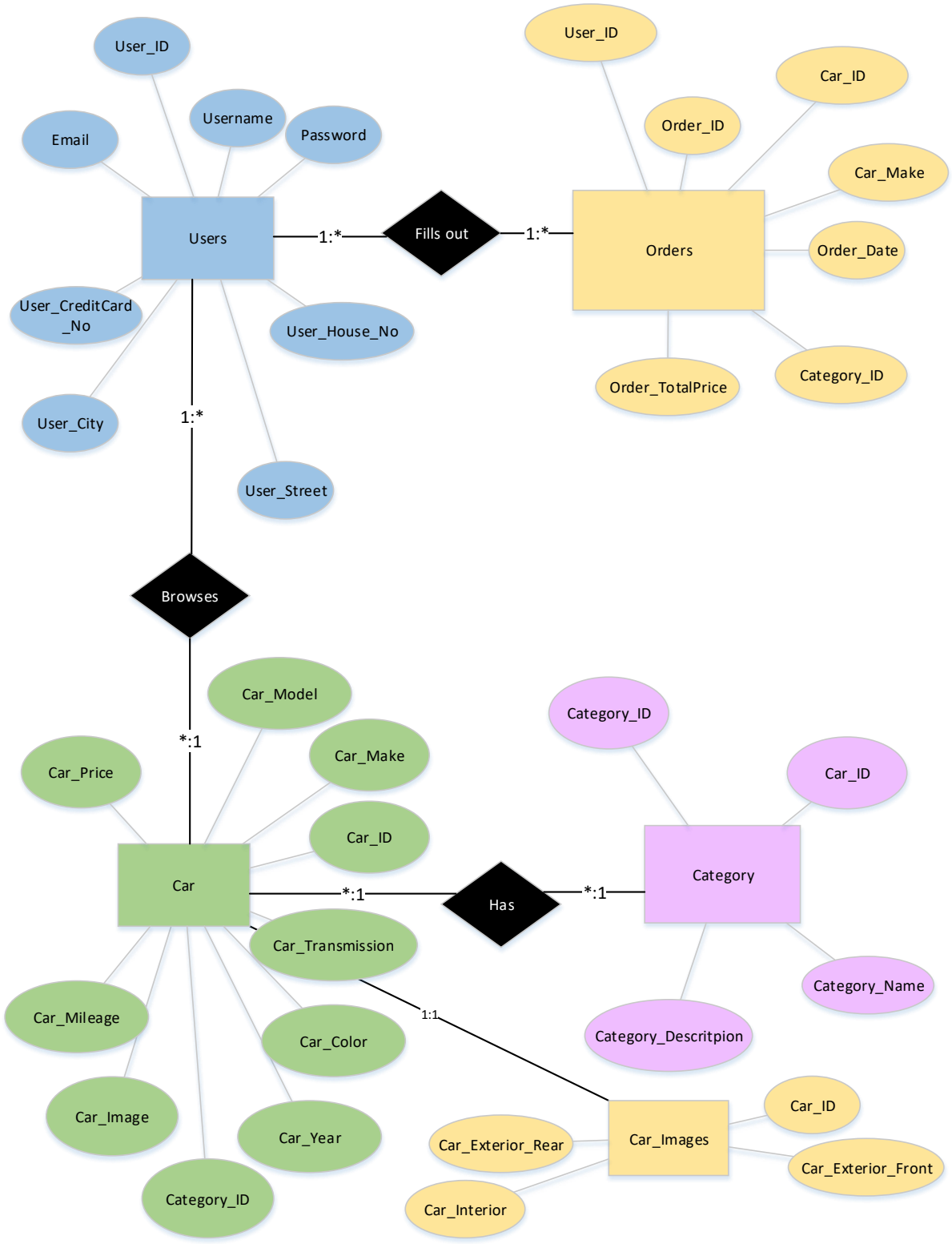
Use Case Diagram:



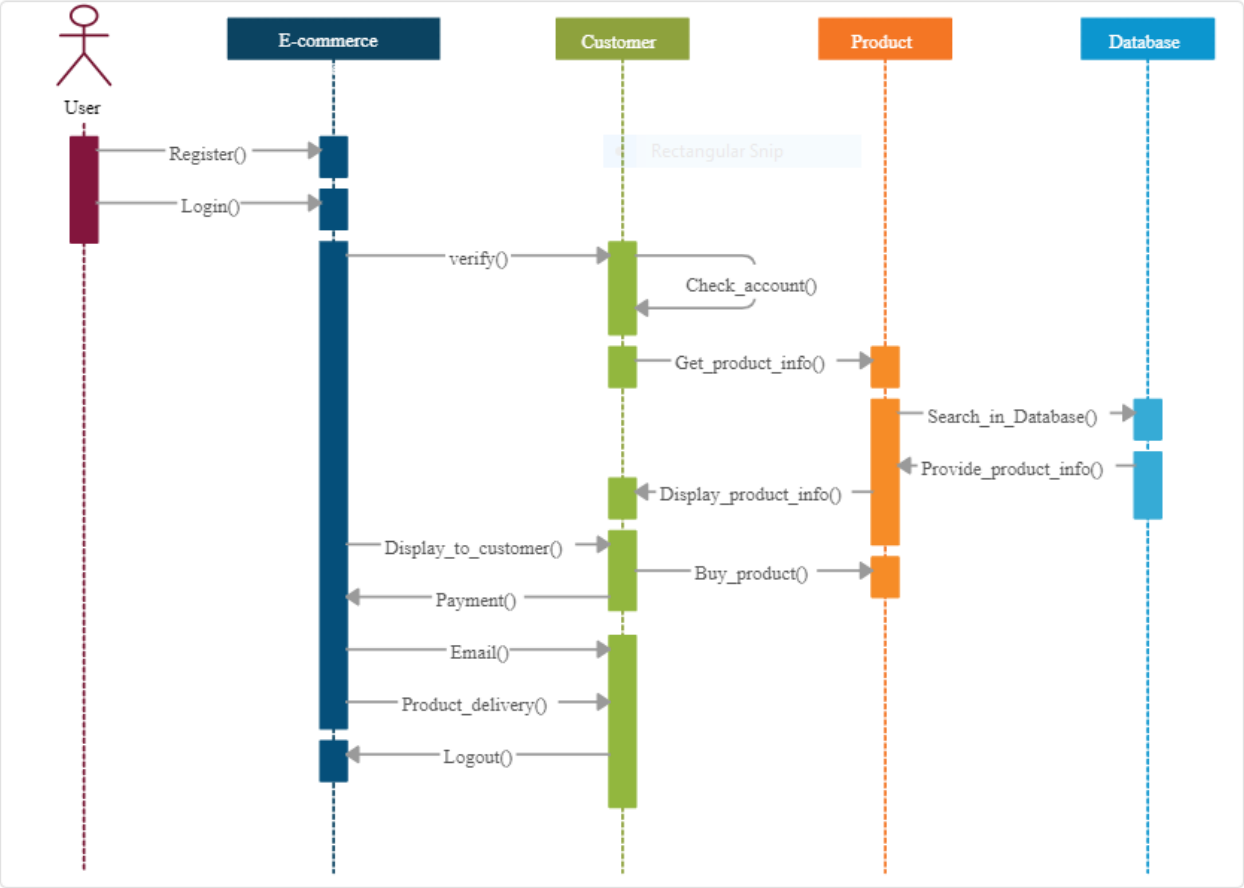
Entity Relationship Diagram (ERD)



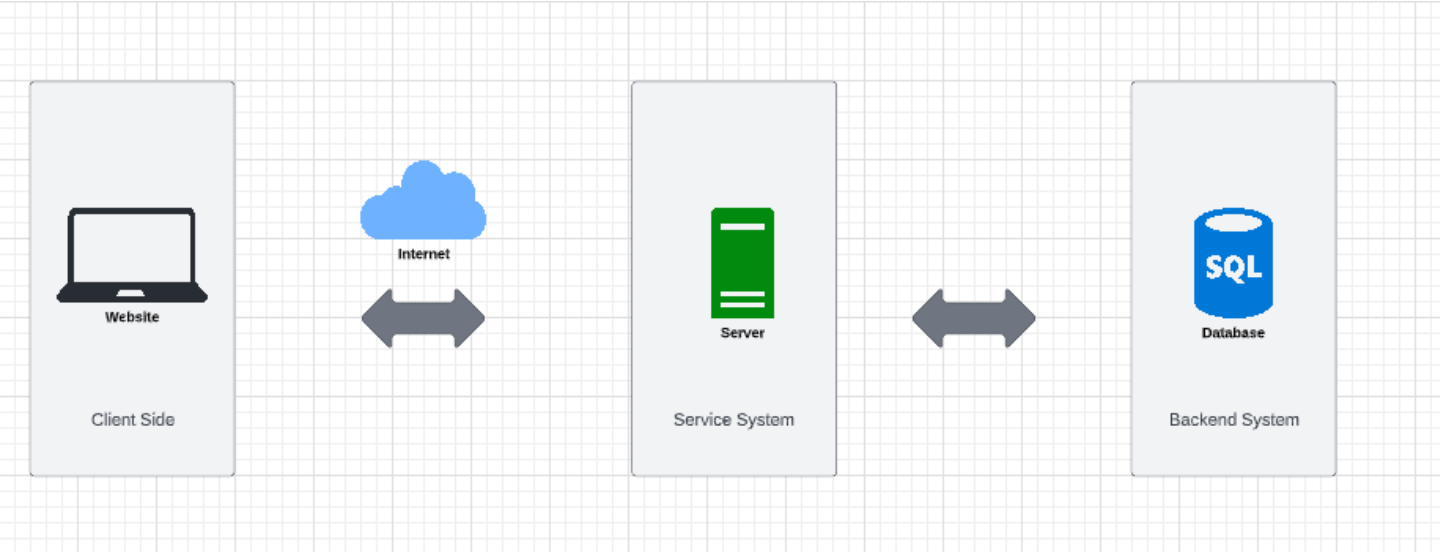
Class Diagram:



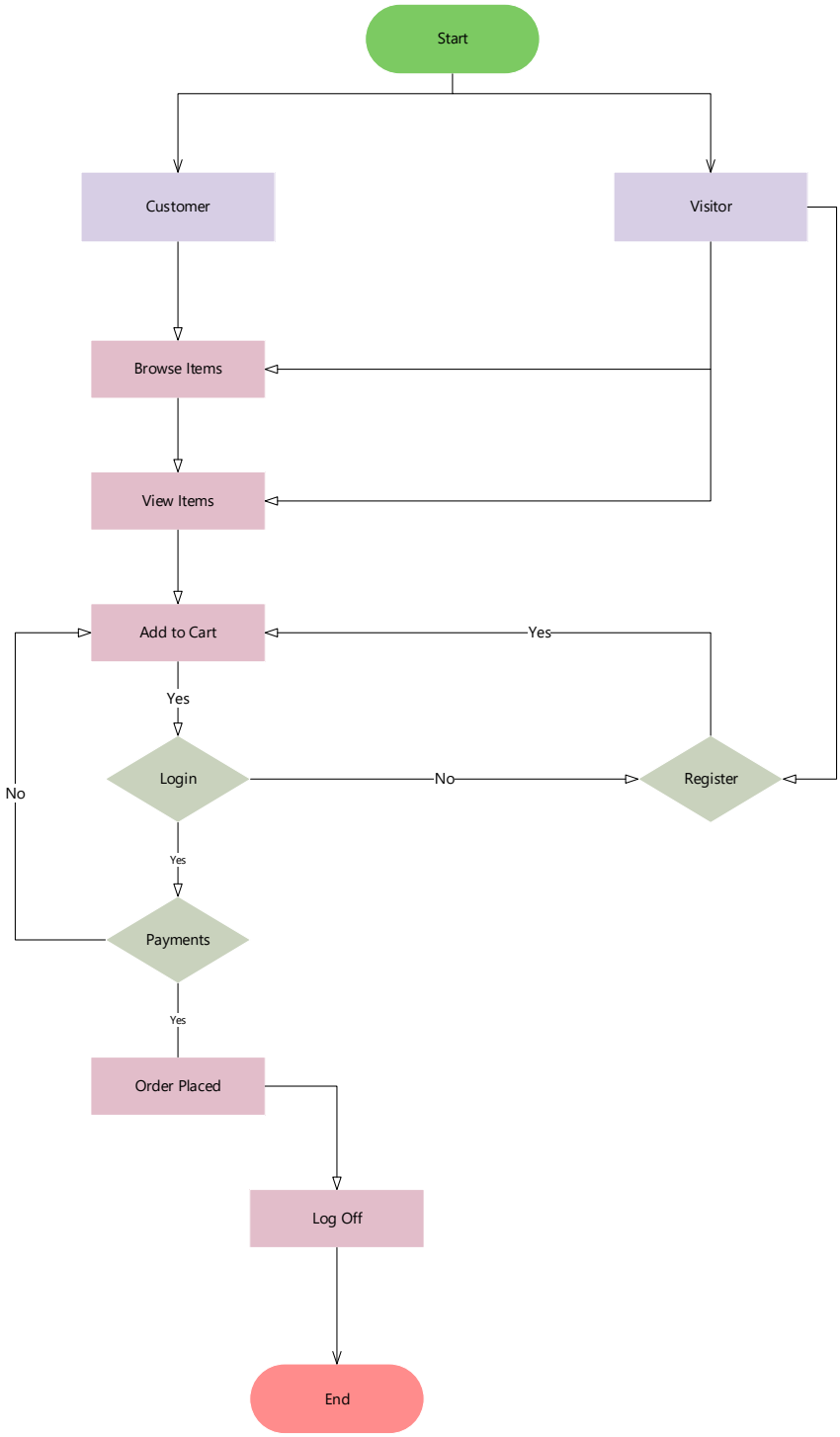
Sequence Diagram:



Architecture Diagram:



Flowchart Diagram:



References:

Community, 2021. E-Commerce website functional and non-functional requirements with list & examples. [Online]
Available at: https://community.nasscom.in/communities/mobile-web-development/e-commerce-website-functional-and-non-functional-requirements [Accessed 19 April 2022].

cPrime, 2018. *What is Agile? What is Scrum?*. [Online]
Available at: https://www.cprime.com/resources/what-is-agile-what-is-scrum/
[Accessed 19 April 2022].