Dhirubhai Ambani Institute of Information and Communication Technology

IT – 632 Software Engineering

Prof. Saurabh Tiwari.

Used Goods Buying and Selling Platform

ThriftKart

By: -

202112068	BHATT RUTVI SAMIR
202112023	EKANSH GUPTA
202112051	JADHAV SHAILESH SUNILBHAI
202012033	KHUSH SHAH
202112062	SHAH NAJU MANISH
202112012	KUNAL SINGH KAPOOR
202112011	ANANNYASHREE SHARMA
202112029	SAKSHAM JAIN
202112044	KHATRI MOHAMADSULTAN GULAMABBAS
202112095	SANJEEV SINGH BHADOURIA
202112116	SHAH GATHA DILIP

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INTRODUCTION

The broad definition of e-commerce transactions refers to the selling and buying of products and services over computer-mediated networks while the end process of payment and delivery is managed offline. Electronic Commerce (e-commerce) is defined as the conduct of commerce in goods and services, with the assistance of telecommunications and telecommunications-based tools such as the Internet. E-commerce is often used in a much broader sense, to mean essentially the same as “electronic business” (EB). E-commerce encompasses many areas, which include electronic catalogues that refer to means whereby sellers can communicate their offerings to potential buyers.

ThriftKart is an E-commerce (virtual) store, where customers can browse the catalog and select products of interest. Customers directly buy used goods without any intermediary service over the internet. It allows users to search for products based on different categories, add in cart or save in wish-list. It provides online as well as offline (Cash on Delivery) payment options for registered users. The main idea is to develop a web-based interface for e-commerce of used goods, the user-friendly interface will make the shopping experience pleasant for the users. This project is an attempt to provide the advantages of online shopping to customers of physical stores for buying used goods.

SCOPE OF THE PROJECT

This system is designed to provide quality service to the customers and to allow admin a quick and easy means to setup and perform sales and other core business over the internet. It also allows admin to track the e-commerce data on the site, for improving business strategies. The system allows the users to create a free account and update their details as and when required. It also allows users to save products in a wishlist which provides a better experience of searching and buying products at any other time. The current system is confined only to shopping for old products categorically. It allows users to filter products, based on their needs, budget, trend, etc. It can be extended to have an easy to use check out process, with availability of convenient paying options such as UPI, credit, debit, net banking, Cash on delivery, etc. Users can have multiple shipping and billing information saved, which can be updated any time with ease. During the checkout process, users can easily select any of their available shipping options, as well as mode of payment, providing the best buying experience. This system also provides users with records of their previously bought items, tempting them to buy again, thus improving the business in the best way possible. Users can track their orders any time they want and download their order invoice any time, which reduces the risk of losing their billing information, for return/replacement purpose. Feedback is the essence of any system, hence this system comes with contact us features which helps in smooth interaction between a customer and the admin.

REQUIREMENTS

FUNCTIONAL REQUIREMENTS

Identification of functional requirements: The Functional Requirements describes the functionality of a system that how a system should react to a particular set of inputs and what should be the corresponding output. The above problem statement gives a breif description of the proposed system. And after analysing, we might easily identify some of the basic functionality of the system:

RN	DESCRIPTION
FR1	Ability to add/edit all personal information
FR2	Allow customers to set default shipping and billing addresses.
FR3	Provide "remember me next time" auto-login functionality (future scope).
FR4	Ability to view “pre-shipping” order status.
FR5	Provide progress bar for filling out first time registration (future scope).
FR6	Customer authentication using OTP sent on their emails.
FR7	Customers can view the product in a categorized way.
FR8	Top-selling/ Top Rated products will be shown on the homepage of the customer.
FR9	Ability to search on product name, keywords, description text, item number, partial item number and/or category keyword.
FR10	Customers can give the rating to the purchased products, and can also add some comments about the product.

FR11	Average of all the ratings will be shown with all the comments/feedback.
FR12	Registration Page allows user to create an account (user get access to login functionality).
FR13	Registering users gives email, fname, lname and password.
FR14	Login Page It allows user to login (user get access to the checkout page and payment functionality).
FR15	Payment can be done online (done while purchasing product) and offline (after receiving the product).
FR16	Payment status and transaction id (online purchase) will be maintained.
FR17	Product will be delivered to the default address, given during registration.
FR18	Customers can select a custom address for the particular delivery.
FR19	Shipping status will be shown to the customers which are updated by the admin.
FR20	Add card information like card number, expiry_date etc.
FR21	A user can add multiple card details and can set a single card_info to be used by default.
FR22	Adds details about address and the user's number.
FR23	A user can add multiple contact details and can set a single to contact_details to be used by default.
FR24	Adds a product in the shopping cart for a buyer, given the buyer Id.
FR25	Adds a product to the wishlist of a buyer, given the buyer id.
FR26	Reports of Top selling products, Total purchase, and category-wise product selling can be viewed by the admin.

FR27	Report can be of 1 month, 6 months or a year.
FR28	Admin can also able to view custom date range report.

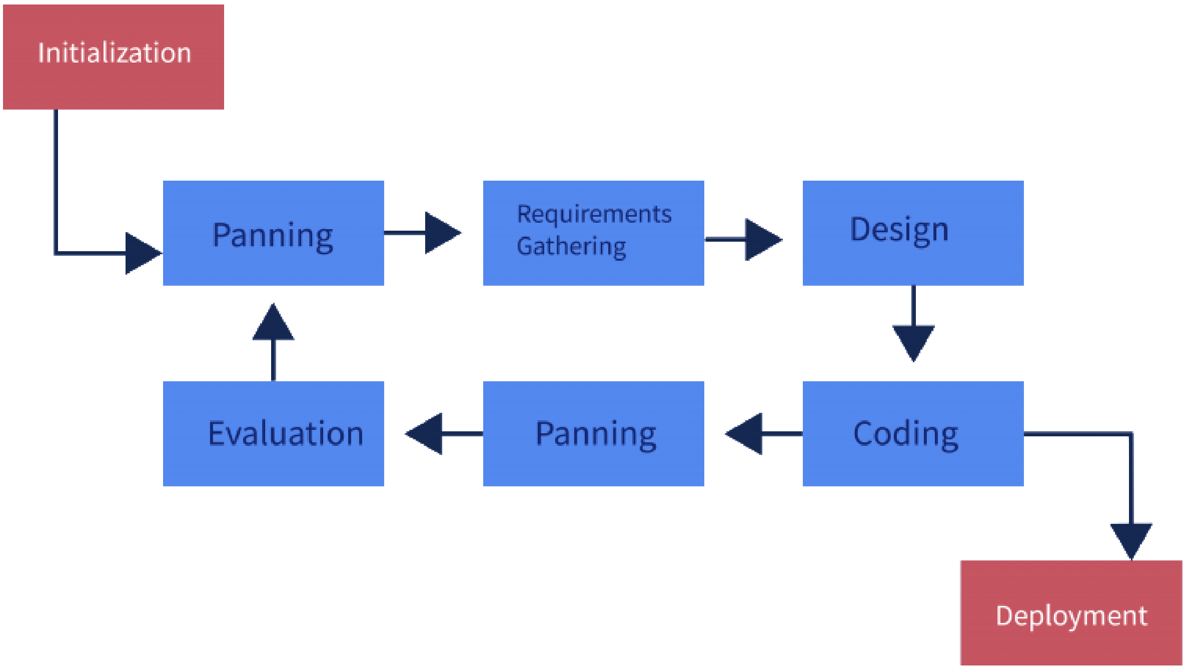
NON - FUNCTIONAL REQUIREMENTS

Identification of non-functional requirements: The non-functional requirements are not directly related what functionalities are expected from the system. However, NFRs could typically define how the system should behave under certain situations. It is a requirement that specifies criteria that can be used to judge the operation of a system, rather than specific behaviors. It will define constraints which affect how the system should do it.

RN	Comments	Description
NR1	Security	System should be able to provide authenticity and permissible access to data and operation.
NR2	Integrity	Integrity of data will be provided and operation can be done 24 * 7.
NR3	Performance	System should be able to handle multiple user requests parallely.
NR4	Scalability	Server should be able to handle a large number of requests without performance degradation.
NR5	Portability	System shall be independent of any operating system and will work on any browser.
NR6	Maintainability	Maintenance/Operations costs should be minimal for the website.
NR7	Reliability Requirement	The system should provide a reliable environment to both customers and owners. All orders should be reached at the admin without any errors.
NR8	Usability	Website should be easy to use, even for a non-technical person.

PROCESS MODEL

Iterative Process Model



1. Requirement and Planning Stage:
During this phase, scope of the project is decided and technical requirements are gathered and evaluated for feasibility.

2. Design Stage:
In this stage, the project flow and the system design is decided with the help of Use - Case Diagram and the Requirements (Functional and Non - Functional Requirements) followed by UI Design.

3. Coding Stage:
All of the requirements, planning, and design plans are executed and coded. During the code development, they must implement a unit test at each level which will followed by the testing stage.

4. Testing Stage:
In this stage the developer and the tester has to ensure that any bugs created while coding are fixed and no new bugs are created. We can also check in with the project stakeholders to run some tests and inquire about any feedback they may have.

5. Evaluation Stage:

In this stage evaluation for all the previous stages is done. The system is examined by the development team, and other teams responsible for developing the project to see if the outcomes satisfy their expectations.

Reason For Choosing Iterative Process Model:

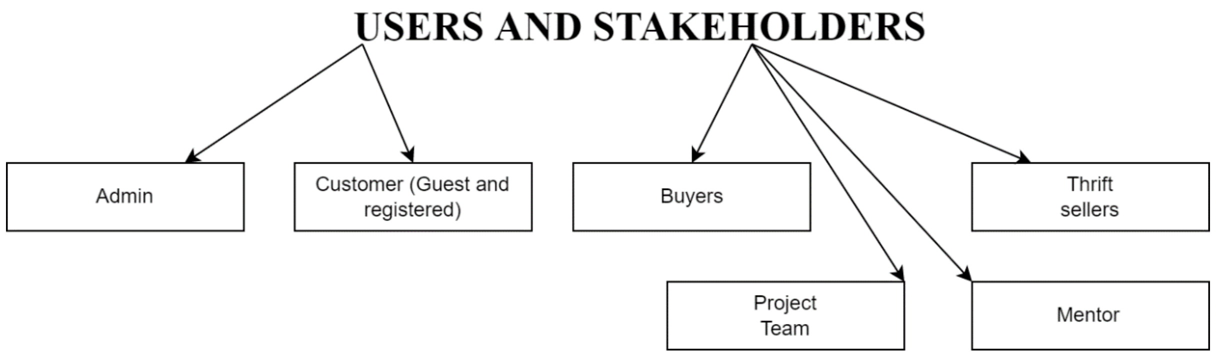
- ✓ Requirements of the system are clearly defined and understood for the early stages.

- ✓ Some functionalities or requested enhancements may evolve with time.

- ✓ In an iterative model we are building and improving the system step by step. Hence, we can track the defects at the early stages. This avoids the downward flow of the defects.

- ✓ After going through all the stages a new requirement plan is implemented as a part of the next iteration.

DEFINING THE USERS AND STAKEHOLDERS OF THE PROJECT



USE CASE DIAGRAM

Click here to view the Diagram

Sign Up

Use Case name	**Sign Up**
Brief Description	A user who wants to purchased something from website, must have to register by filling appropriate details
Actors	Guest User
Pre condition	The user must have fill all the details in form and should have unique email id which should not be already registered
Post condition	If user registered successfully then should be redirected to login, else no change in state
Basic Flow	1. System will request the user to fill out the form 2. Email will be sent to user & system will verify the email 3. Successful registration will be notify
Alternative Flow	1. If email id already registered then it will redirect it to login 2. If any details are not filled accordingly to it was asked then account not created notification will be sent and user may restart the process

Sign In

Use Case name	**Sign In**
Brief Description	To access the system and features user have to log in into the system by using valid email id and password
Actors	Registered User , Admin
Pre condition	User must have registered
Post condition	If entered credentials are valid details redirect to relevant homepage or else no change in current state
Basic Flow	1. System will ask user to enter credentials 2. System will authenticate the credentials 3. Redirected to relevant homepage
Alternative Flow	1. If credential are not valid or empty than system will notify the user with the error message 2. And user can restart the process

Manage Product

Use Case name	**Manage Product**
Brief Description	Admin can add the product and their description , update product details and can remove the products
Actors	Admin
Pre condition	User must be admin and logged in to the system
Post condition	If use case successfully ended then Product details should be updated in system
Basic Flow	1. System will display the added product 2. User can select operation (add/update/delete) , according to that will redirected to particular operation page 3. User have to fill appropriate details if asked 4. If all the details or operations are correct then details will be updated
Alternative Flow	1. If user filled wrong details or done invalid operation 2. Then related error message will be shown and data will not be updated

Search

Use Case name	**Search**
Brief Description	User can search the products and according to that result will be shown
Actors	Registered user,Admin
Pre condition	User must logged in to the system
Post condition	If product is available then it should be show to user
Basic Flow	1. User will choose to search for product 2. User will guided to select required criteria to search for the product 3. According to that criteria if product will available then it must be displayed to user
Alternative Flow	1. If user filled wrong details or products are not available then according to that error message will be shown to the user.

Manage Account

Use Case name	**Manage Account**
Brief Description	User can update profile details, add account details and can see order details for their account
Actors	Registered user
Pre condition	User must be log in to the system
Post condition	If use case successfully ended then profile details should be updated in system or details should be displayed according to request
Basic Flow	1. System will display the profile details in profile tab 2. User can select operation (update profile or add card details ,view order details) , according to that they will redirected to particular operation page 3. User have to fill appropriate details if asked 4. If all the details or operations are correct then details will be updated or displayed
Alternative Flow	1. If user filled wrong details or done invalid operation 2. Then related error message will be shown and data will not be updated or displayed

Manage cart

Use Case name	**Manage cart**
Brief Description	User add or remove products from the cart
Actors	Registered user
Pre condition	User must be log in to the system and product should be available
Post condition	If use case successfully ended then cart will be updated
Basic Flow	1. User will select product or select add cart option 2. Quantity will be asked and added in to the cart 3. If user select remove from cart option then product will removed from the cart
Alternative Flow	1. If product is not available then error message should be display and should not be added into the cart

Checkout

Use Case name	**Checkout**
Brief Description	User can start the shipping process for the product added into the cart
Actors	Registered user
Pre condition	User must be log in to the system and product should be already added into the cart
Post condition	If use case successfully ended then order will be placed
Basic Flow	1. User will process the checkout 2. Shipping address will be asked or it will select default 3. Payment option should be select 4. according to that if payment was done then order will be placed
Alternative Flow	1. If payment is not done or canceled then user can select other option or redirect to the beginning 2. If product is not available then message should be display and should not be ordered

Report

Use Case name	**Report**
Brief Description	User or admin can view the report
Actors	Registered user,Admin
Pre condition	User must logged in to the system, For Registered user some order should be done in that period Or for Admin some purchase should be done in that period
Post condition	If report is available then it should be show to users
Basic Flow	1. Registered User will choose to view order details / Admin will guided to select required criteria to generate report 2. According to that criteria if report are available then it must be displayed to user
Alternative Flow	1. If user selected wrong date range then redirected to select again 2. If orders or purchase transaction not done in given range of date then appropriate message will be shown

Feedback

Use Case name	**Feedback**
Brief Description	User can give feedback for product and admin can view it
Actors	Registered user,Admin
Pre condition	User must logged in to the system, User must have purchased the product before giving feedback
Post condition	If purchase authentication is done feedback should be updated in to the system
Basic Flow	1. After user have purchased the product , rating option will be given 2. User can give the rating or can update if already given 3. Admin can view that rating
Alternative Flow	1. If user have not purchased product then they will be notified and ask for the purchase the product first

TECH STACK

SOFTWARE INTERFACE

The following will be the technology stack used in this application:

Tools	Technologies
UI/UX Design	PhotoShop
Backend	NodeJS , Express,Js, JavaScript
Frontend	HTML, CSS, JavaScript, ReactJs
Database	MongoDB
Version Control System	GitHub
IDE	Visual Studio Code
Category	Web Application