Project Report

ONLINE SHOPPING

A UML PROJECT REPORT

Submitted by
ABIR MAJUMDER [RA2111026010185]
S SAINADH [RA2111026010204]

Under the guidance of
Professor Abirami

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SRM UNIVERSITY

(Under Section 3 of UGC Act, 1956)

BONAFIDE CERTIFICATE

Certified that this project report titled "**ONLINE SHOPPING SYSTEM** " is the bonafide work of "**ABIR MAJUMDER [RA2111026010185] & S SAINADH [RA2111026010204]"** who carried out the UML project work under our supervision. Certified further, that to the best of our knowledge the work reported herein does not form any other project report or dissertation on the basis of which a degree or award was conferred on an earlier occasion on this or any other candidate.

SIGNATURE **SIGNATURE**

Professor Abirami

GUIDE **HEAD OF THE DEPARTMENT**

Signature of Internal Examiner Signature of External Examiner

ABSTRACT

The Online Shopping system is a web based application intended for online retailers. The main objective of this application is to make it interactive and its ease of use. It would make searching, viewing and selection of a product easier. It contains a sophisticated search engine for user's to search for products specific to their needs. The search engine provides an easy and convenient way to search for products where a user can Search for a product interactively and the search engine would refine the products available based on the user's input. The user can then view the complete specification of each product. They can also view the product reviews and also write their own reviews. The application also provides a drag and drop feature so that a user can add a product to the shopping cart by dragging the item in to the shopping cart. The main emphasis lies in providing a user- friendly search engine for effectively showing the desired results and its drag and drop behavior.

ACKNOWLEDGEMENT

We would like to express our deepest gratitude to our guide, Professor Abirami for her valuable guidance, consistent encouragement, personal caring, timely help and providing me and my team with an excellent atmosphere for doing mini project. All through the work, in spite of her busy schedule, she has extended cheerful and cordial support to us for completing this uml project work.

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PROBLEM DESCRIPTION

Problem Description : Problem Statement This projects aims to develop an online shopping for customers with the goal so that it is very easy to shop your loved things from a extensive number of online shopping sites available on the web. With the help of this you can carry out an online shopping from your home. Here is no compelling reason to go to the crowed stores or shopping centres during festival seasons. You simply require a PC or a laptop and one important payment sending option to shop online.
To get to this online shopping system all the customers will need to have a email and password to login and proceed your shopping . The login credentials for an online shopping system are under high security and nobody will have the capacity to crack it easily. Upon successful login the customers can purchase a wide range of things such as mobiles, books, apparel, jewellery, infant care, gifts, tools, etc. can be dispatched using online shopping system. Not just these, you can also purchase from outside nations by few clicks on your mouse. And of course you will get your requested ordered items at your door step.
It is simple. You will pick your favourite items from variety of online shopping sites looking at cost and quality. No need to go physical shops with this you will have more time to spend with your family It Just need a computer and a payment making options like net banking, credit card, debit card or Almost a wide range of things can be brought through online shopping system. You can purchase goods from foreign places from your bedroom and you will get your goods at your home. It is extremely secure. Customer service is accessible.

Software Requirement Specification:

1. **Introduction:**

1.1. **Purpose: -**

The purpose of this application is to synchronize the online shopping system with your device and display various features like return policy, fast delivery.

1.2. **Document Conventions:** -

N/A

1.3. Indented Audience and Reading Suggestion: -

This document should be read by developers, users, project managers and testers. The developers should read every section to ensure that there is an understanding of the project. The main sections for the customers to review are section Project Scope, Assumptions and section Features.

1.4.Project Scope: -

The main aim of the project is to help the customer to manage their funds properly and make it easy for them to keep a check on their expenditure at frequent intervals. This helps the user to plan their expenses and keep track of it.

1.5. References: -

None

2. **Overall Description:**

2.1. Product Perspective: -

The online shopping system provides a simple mechanism for the user to synchronize their account and manage it on the go. The application does not require the user to sign in to their account every time when they need to check; once authenticated the software securely links your account to your device.

2.2. Product Functions: -

The Application includes a range of functions that enables the customer to manage their account and to keep track on their expenditures seamlessly. Secure Online shopping system through Two-Step Verification via an Authenticator App. Ultra-Secure Personal Wallet System to bank super-fast without worrying much about logging into your bank account for every transaction you make. Smart Transaction History Analyser. Intelligent Background Transaction Fetcher to synchronise bank statement on a regular interval.

2.3. User Classes and Characteristics: -

Any adult who possesses a shopping system and a compatible smart phone will be comprise the user audience. Business people who constantly want to monitor fund and transact frequently will be the target demographic. Anybody who is conscious about their expenditure and wants to have proper track of it will be the general user audience.

2.4. Operating Environment: -

The Application will operate in the following operating environment:

- **Android OS**
- **IOS**

2.5. Design and Implementation Constrains: -

C++ programming language and the Android APL. So, the Android variant is compatible with android devices running Android 4.1 or above with a minimum RAM of 1 GB. The Application's iOS variant is created using Objective C++ programming language and the iOS APL. So, the iOS variant is compatible with iOS devices running iOS 7 or above. For Language support expect, from the basic English language pack the user can download and enable the languish of their choice from the list of available languages

within the application. For connection stream TCP/IP is used as it is the common gateway for internet applications.

2.7. Assumptions and Dependencies: -

• The bank will provide full control for the app over the users' account.
• The app remains stable and compatible with Android 4.0 and greater.
• The app will be completely functional.

3. External Interface Requirement:

3.1. User Interface: -

The look and feel must be simple and elegant for users to like it. The app will follow the colour code of the casino in which the user holds the account. The font size is appropriate and the clumsy symbols are synchronized.

3.2. Hardware Interface: -

The app primarily runs on smart phones. So, the interface through which the user interacts should be touch enabled for the communication purpose, the program needs these protocols to be installed: TCP for the client to connect to the server in online mode. Since the bank client runs behind a security system, the appropriate parts must be port forwarded or port triggered for customer to connect.

3.4. Communication Interface: -

Setting up the server into server mode requires that there will be open ports for accepting connections from the customer. The connection between the customer and the server uses Connection-oriented communication, via TCP/IPTransfer Control Protocol/Internet Protocol, implements reliable delivery of messages Connection oriented communication makes programming easier because the protocol includes

mechanisms for detecting and handling error and an acknowledgement mechanism between customer and server.

4. **System Features:**

4.1. Customers: -

Basically, customer is the user who wants to shop in the online shopping system. For customer they required to enter the name, phone number, age, email and address. In customer, there are two types: one the new user and the one is existing user.

5. Other Non-Functional Requirements :

5.1. Performance Requirements: -

Checking the fact that the system must perform as every user expects. So, in every action-response of the system, there is no immediate delay. In case of opening transaction windows, popping of error messages and savings the settings or sessions there is delay much below 2 seconds. Also, when connecting to the server the delay is based on the distance between the main bank server and the customer and the configuration between them, so there is high probability that there will be a successful connection in less than 20 seconds.

5.2. Safety Requirements: -

the fact that all the customers must be attachable to one server, so there would be appropriate control of the test statistics and information. Also, in case of a potential loss of connection between the customer and the server, the customer's current transaction progress is lost. When Checking the customer finishes its transaction (by pressing the submit button) then its progress is sent to the server and logged. In case of potential server breakdown only the so far finished transactions are saved to the log file.

5.3. Security Requirement: -

This application uses objected oriented mechanisms to protect its data using methods. It also uses industrial grade security protocols to protect its customer's data. Thus, the log files are encrypted and heavily protected. 5.4. Software Quality Attributes: - Availability: Checking that the system always has something to function and always pop-up error messages in case of component failure. In that case the error messages appear when something goes wrong so to prevail availability problems.

Usability: Checking that the system is easy to handle and navigates in the most expected way with no delays. In that case the system program reacts accordingly and traverses quickly between its states. Functionality: Checking that the system provides the right tools for managing the user bank records, carrying out secure transactions and allocating budget monthly based on the account holder's transaction history.

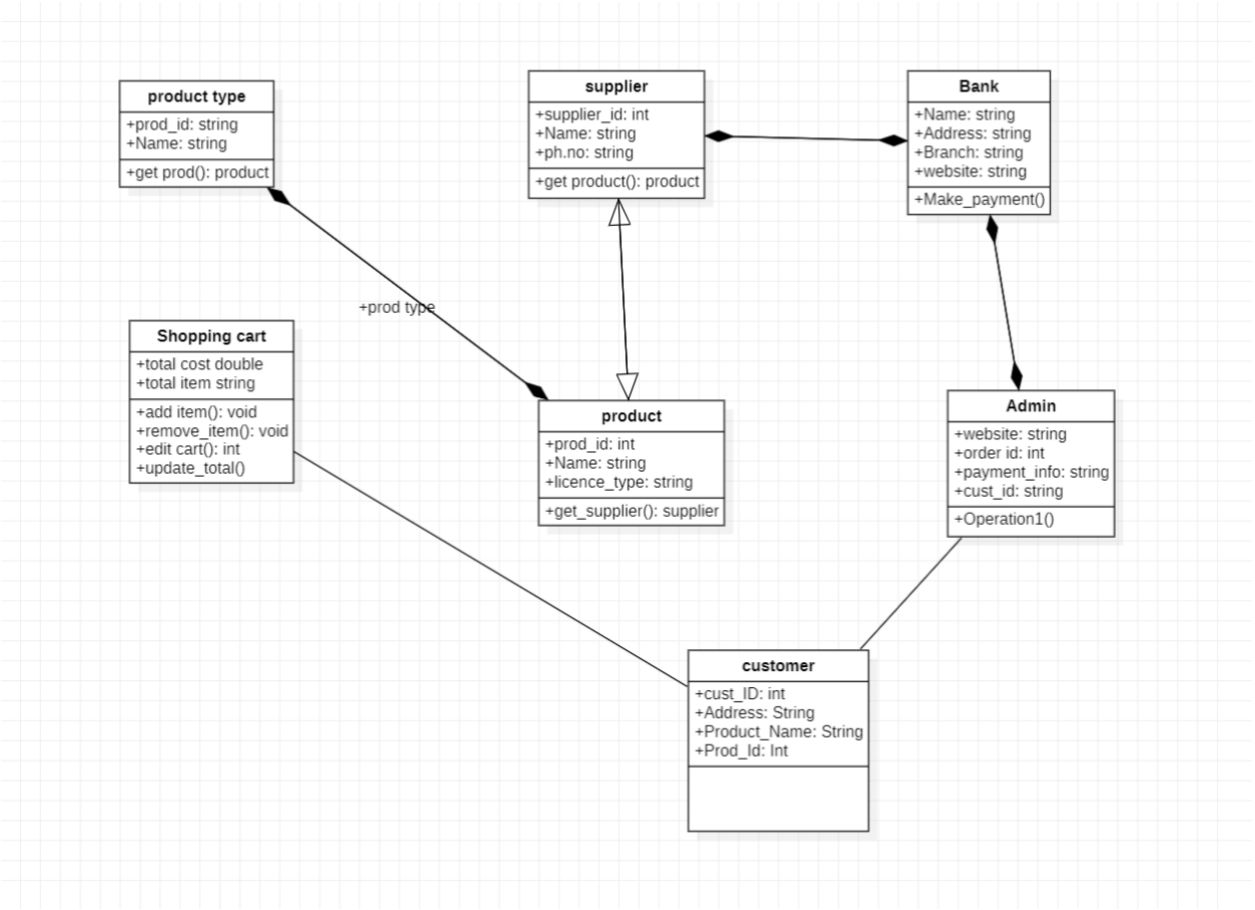
5.5. Business Rules: -

This includes: Only transaction below Rs. 50,000 can be done using the app. The app has a limit of amount that can be transacted by the user in one single day as laid down by the bank. If the customer is under aged, not all the features are available for them.

6. Other Requirements:

N/A

CLASS DIAGRAM


product type
+prod_id: string
+Name: string
+get prod(): product
supplier
+supplier_id: int
+Name: string
+ph.no: string
+get product(): product
Bank
+Name: string
+Address: string
+Branch: string
+website: string
+Make_payment()
+prod type
Shopping cart
+total cost double
+total item string
+add item(): void
+remove_item(): void
+edit cart(): int
+update_total()
product
+prod_id: int
+Name: string
+licence_type: string
+get_supplier(): supplier
Admin
+website: string
+order id: int
+payment_info: string
+cust_id: string
+Operation1()
customer
+cust_ID: int
+Address: String
+Product_Name: String
+Prod_Id: Int

The UML Class diagram is a graphical notation used to construct and visualize object-oriented systems. A class diagram describes the structure of a system such as Classes and their attributes, operations (or methods) and the relationships among objects. A class diagram is used to show the existence of classes and their relationships in the logical view of a system.

Basic components: The standard class diagram is composed of three sections:
Upper section: Contains the name of the class. This section is always required, to know whether it represents the classifier or an object.
Middle section: Contains the attributes of the class. Use this section to describe the qualities of the class. This is only required when describing a specific instance of a class.
Bottom section: Includes class operations (methods). Displayed in list format, each operation takes up its own line. The operations describe how a class interacts with data.

Rules: Class name must be unique to its enclosing namespace. The class name begins in uppercase and the space between multiple words is omitted. The first letter of the attribute and operation names is lowercase with subsequent words starting in uppercase and spaces are omitted. Since the class is the namespace for its attributes and operations an attribute name must be unambiguous in the context of the class. Attribute specification format: visibility attributeName : Type [multiplicity] = DefaultValue {property string}. Operation specification format: visibility operationName (parameterName: Type): ReturnType {property string}

Our online shopping system is basically used for shopping through an online platform for giving the users an online experience of the shopping. It consists of 7 classes having different functions as product type, product, supplier, bank, admin, customer, shopping cart.

Our program starts with the product type class used for selecting the type of product. Attributes present in this class are prod_id (string type) and Name (string type). Operations performed in this class are registering new users and signing in of existing user.

Then the programs control goes to the product class, it consists product id (long int type) and name (String type) and license type(string type) as its attributes. Methods to performed by this is product details , name and license of the product.

Then the program control goes to the supplier class for the supplier details.

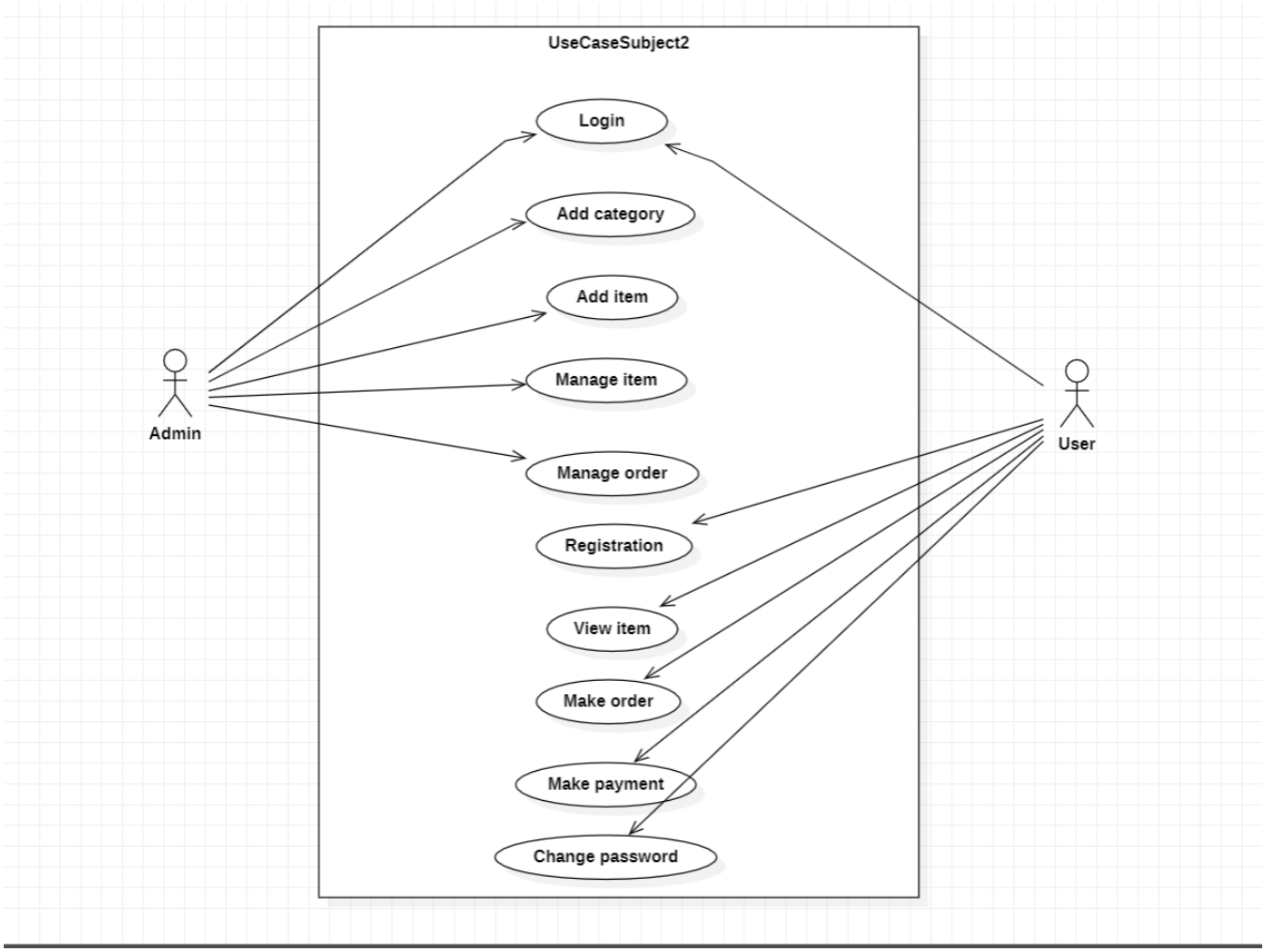
Then the programs go to Bank class for bank details of the customer.
In which it includes 4 attributes which are name(string type), address(string type), branch(string type), website(string type).
Operations performed in this class are making payment for the product purchase.

Then the program control goes to the admin class in which it consists 4 attributes which are website(string type), order id(long int type), payment info(string type), customer id(string type).

Then the program control goes to the customer class in which it consists 4 attributes customer id(long int type), product name(string type), address(string type), product id(long int type).

Then the program control goes to the shopping cart in which finally every details of the purchase are there. It consists 2 attributes and 4 operations.
Total cost and Total items are attributes in it.
Adding, removal, edit, updation of the items are operations which can be performed in it.

USE CASE DIAGRAM



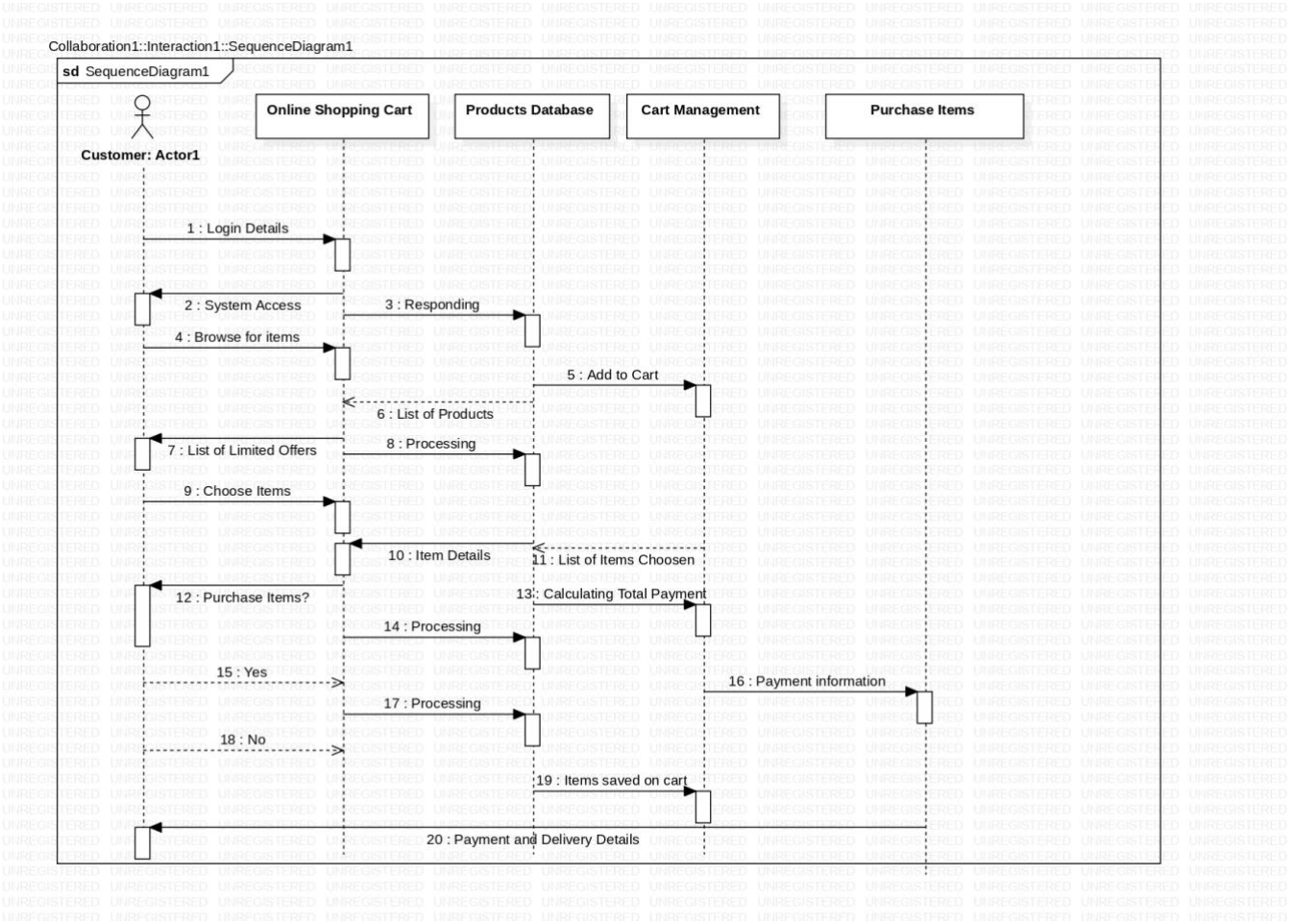
Use case diagrams give us that capability. Use case diagrams are used to depict the context of the system to be built and the functionality provided by that system. They depict who (or what) interacts with the system. They show what the outside world wants the system to do.

Notation: Actors are entities that interface with the system. They can be people or other systems. Actors, which are external to the system they are using, are depicted as stylized stick figures.

In this online shopping system the user has the access for login, registration, viewing the items, make or place the order, make payment, change password.

And the admin has the access to login, add category, add items, manage items and managing the orders for the app and customers.

SEQUENTIAL DIAGRAM



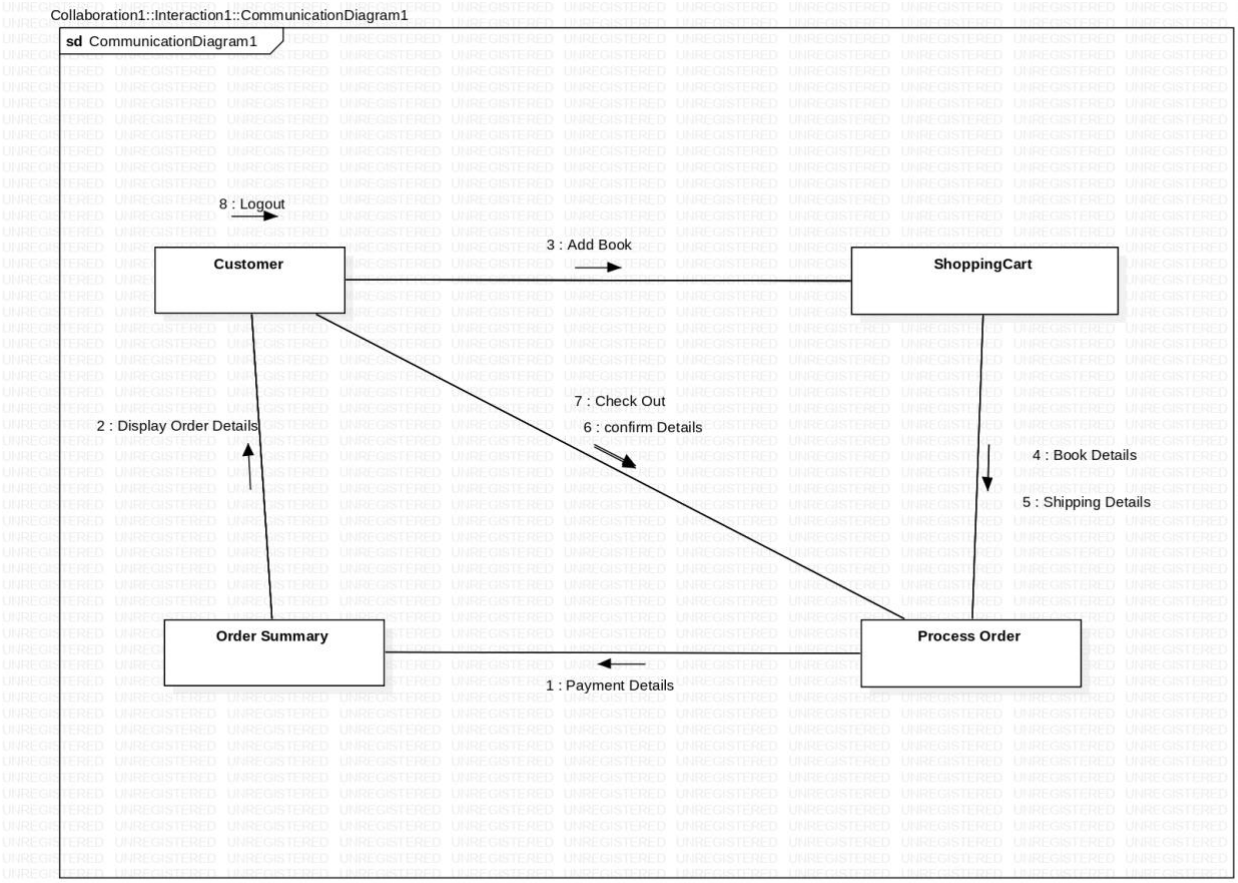
A sequence diagram simply depicts interaction between objects in a sequential order i.e., the order in which these interactions take place.

Firstly the customer creates or login to his portal using his login id. Then the app grants access to the user if it correct otherwise it won't. Then If it responds correctly it will further take to the product database. Then the customer can browse for items in the online shopping system app.Then the add to card option gets available for the customer.

Then the product database shows the list of products. Then the list of the limited offers and the processing of the product items is shown by the app. Then the customer can choose the items. Then the item details appear. Then the list of chosen items appears. Then the list of the items to be purchase appears. Then the total calculated payment to be done appears. Then the processing of the item appears and if select yes the order processes with the payment information. And if no then it won't process further. And if yes again the payment is done and the delivery details appears with the bill.

COLLABORATION DIAGRAM

Collaboration Diagram depicts the relationships and interactions among

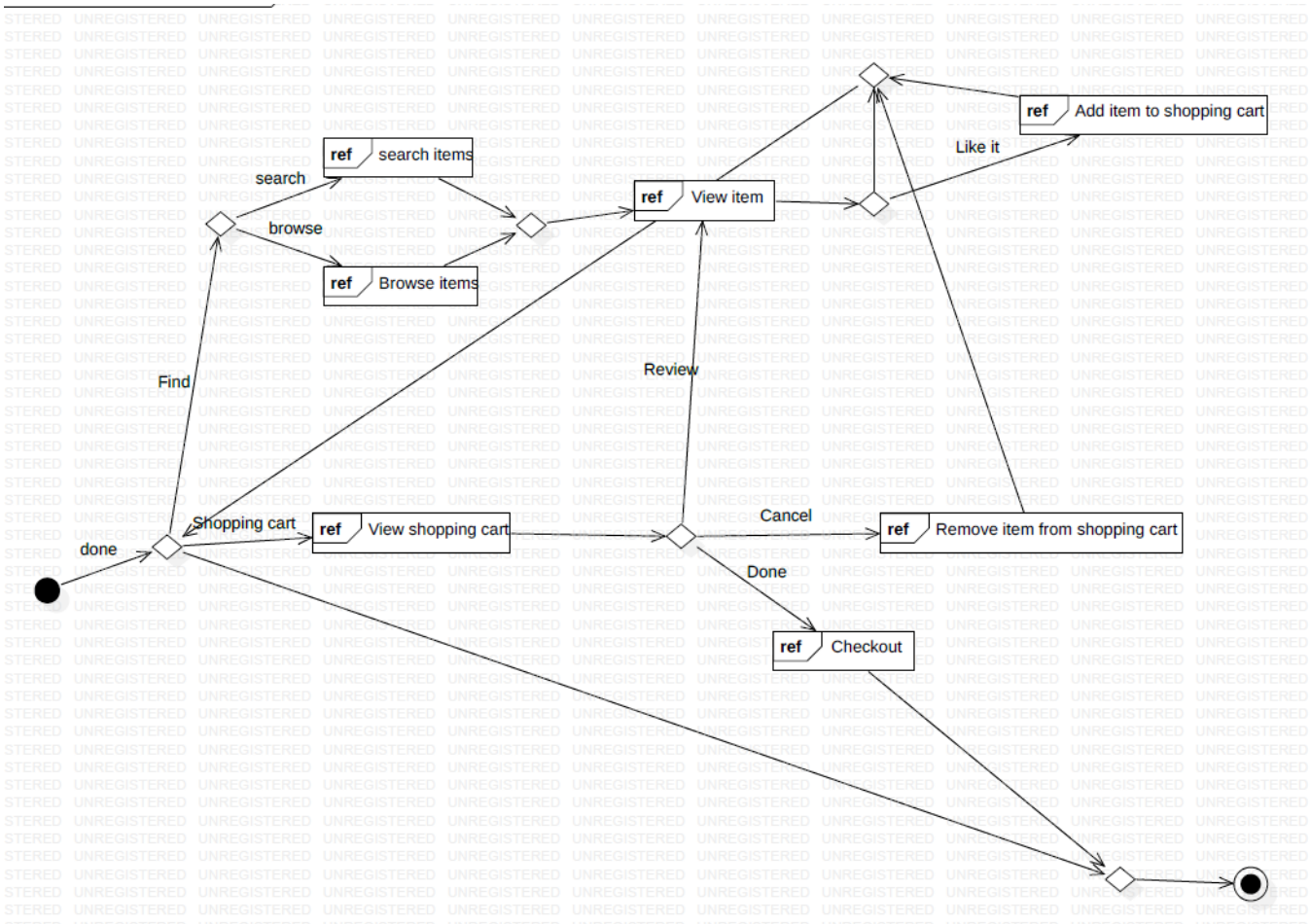


software objects. They are used to understand the object architecture within a system rather than the flow of a message as in a sequence diagram. They are also known as “Communication Diagrams.” In the collaboration diagram, the method call sequence is indicated by some numbering technique. The number indicates how the methods are called one after another.

It is also called as a communication diagram. It emphasizes the structural aspects of an interaction diagram - how lifeline connects.
Its syntax is similar to that of sequence diagram except that lifeline don't have tails. Messages passed over sequencing is indicated by numbering each message hierarchically. Compared to the sequence diagram communication diagram is semantically weak. Object diagrams are special case of communication diagram. It allows you to focus on the elements rather than focusing on the message flow as described in the sequence diagram. Sequence diagrams can be easily converted into a collaboration diagram as collaboration diagrams are not very expressive.

Firstly the customer creates or login to his portal using his login id. Then the app grants access to the user if it correct otherwise it won't. Then If it responds correctly it will further take to the product database. Then the customer can browse for items in the online shopping system app.Then the add to card option gets available for the customer. Then the product database shows the list of products. Then the list of the limited offers and the processing of the product items is shown by the app. Then the customer can choose the items. Then the item details appear. Then the list of chosen items appears. Then the list of the items to be purchase appears. Then the total calculated payment to be done appears. Then the processing of the item appears and if select yes the order processes with the payment information. And if no then it won't process further. And if yes again the payment is done and the delivery details appears with the bill.

STATE CHART DIAGRAM


ref search items
search
browse
ref Browse items
ref View item
ref Add item to shopping cart
Like it
Find
Review
done
Shopping cart
ref View shopping cart
Cancel
ref Remove item from shopping cart
Done
ref Checkout

A state diagram is used to represent the condition of the system or part of the system at finite instances of time. It's a behavioural diagram and it represents the behaviour using finite state transitions. State diagrams are also referred to as State machines and state-chart Diagrams.

So, the main usages can be described as:

- To model object states of a system.
- To model reactive system. Reactive system consists of reactive objects.
- To identify events responsible for state changes.
- Forward and reverse engineering.
- Before drawing a state chart diagram, we must have clarified the following points: Identify important objects to be analysed. Identify the states. densify the events.

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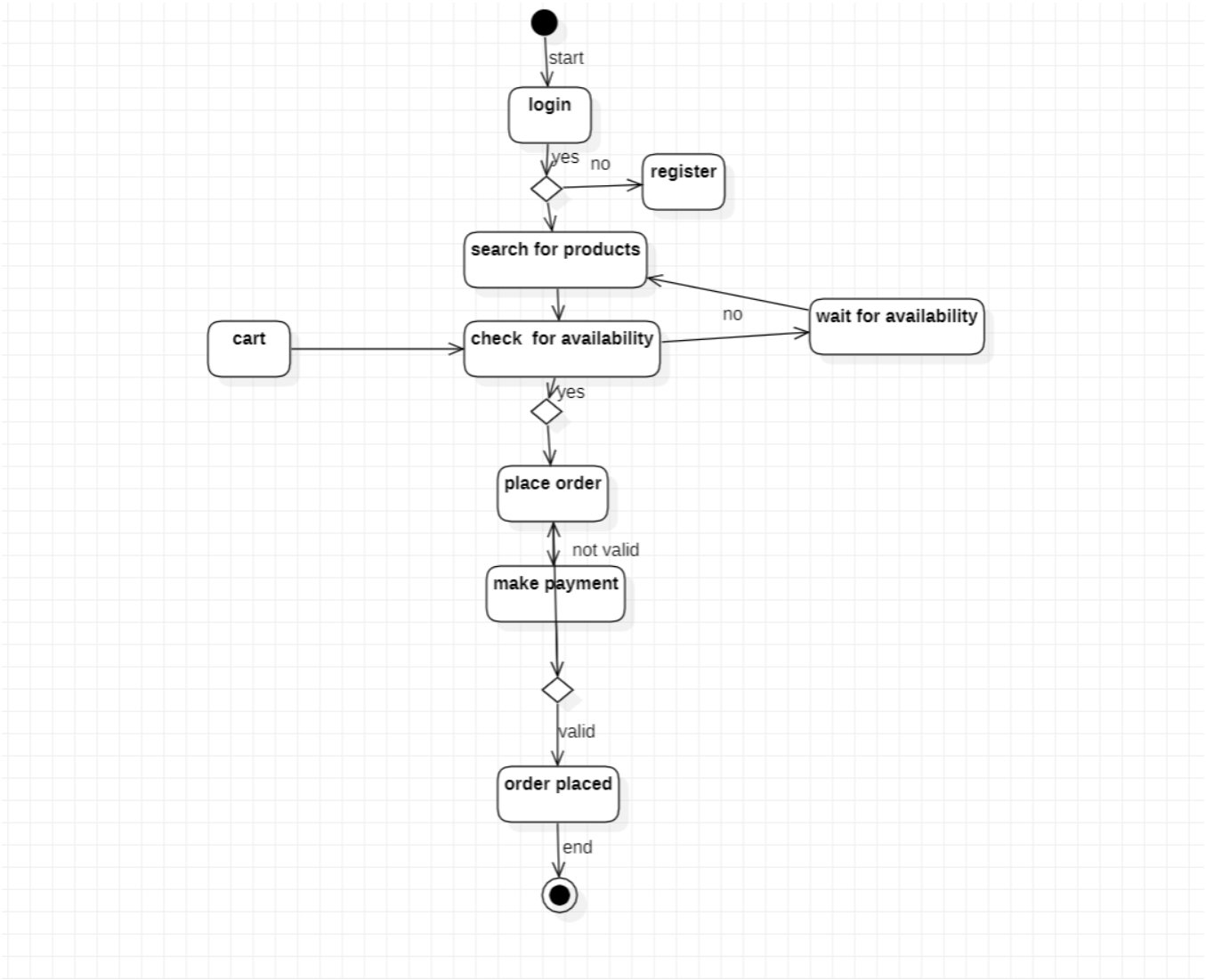
ACTIVITY DIAGRAM


start
login
yes
no
register
search for products
wait for availability
no
cart
check for availability
yes
place order
not valid
make payment
valid
order placed
end

Activity diagram is UML behaviour diagram which emphasis on the sequence and conditions of the flow: -

- It shows a sequence of actions or flow of control in a system.
- It is like to a flowchart or a flow diagram.
- It is frequently used in business process modelling. They can also describe the steps in a use case diagram.
- The modelled Activities are either sequential or concurrent.

Benefits: -

- It illustrates the logic of an algorithm.
- It describes the functions performed in use cases.
- Illustrate a business process or workflow between users and the system.
- It Simplifies and improves any process by descriptive complex use cases. • Model software architecture elements, such as method, function, and operation.

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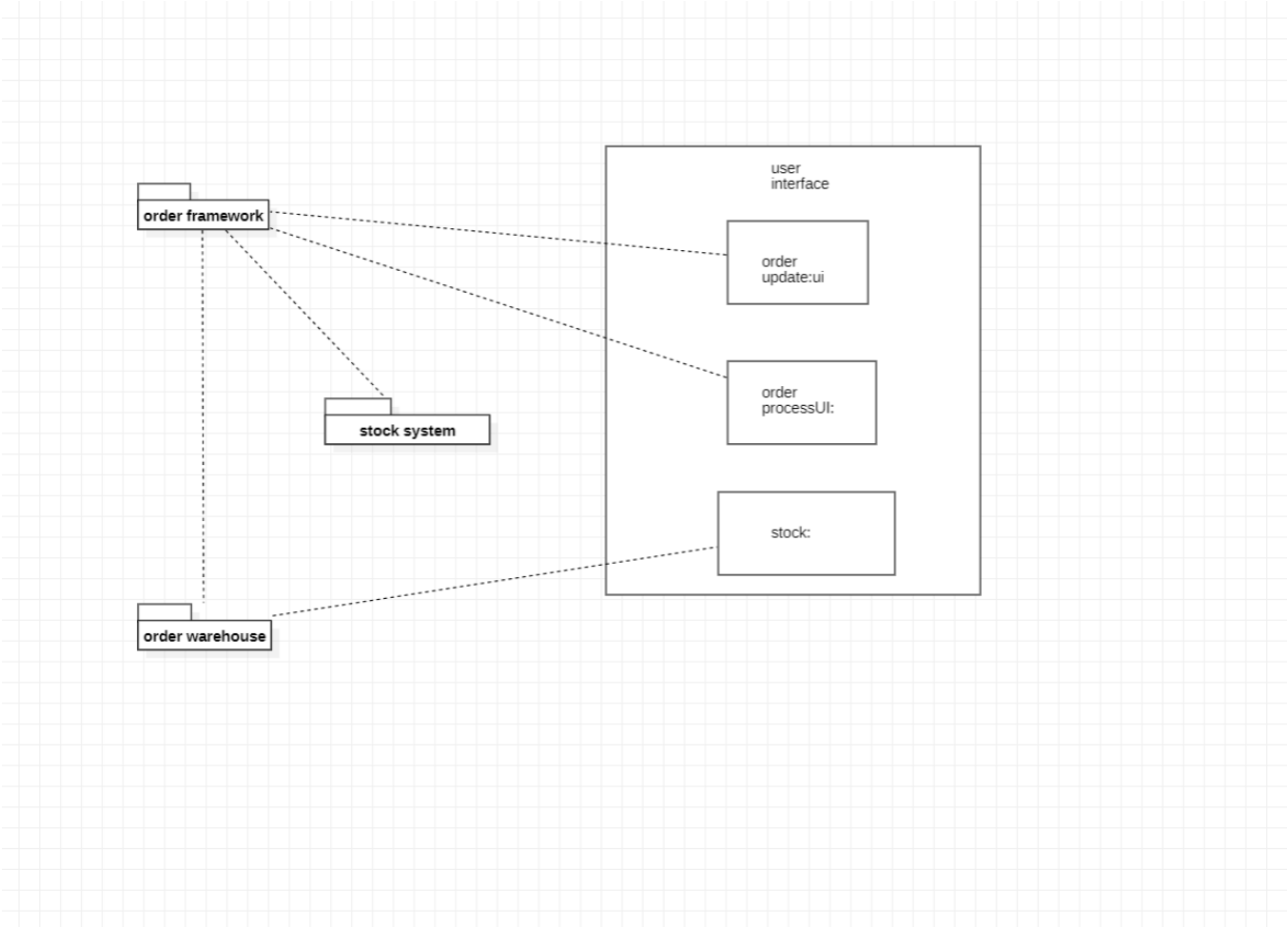
PACKAGE DIAGRAM



All the interrelated classes and interfaces of the system when grouped together form a package. To represent all these interrelated classes and interface UML provides package diagram. Package diagram helps in representing the various packages of a software system and the dependencies between them. It also gives a high-level impression of use case and class diagram.

Purposes: -

- To provide static models of modules, their parts and their relationships
- To present the architectural modelling of the system

- To group any UML elements
- To specify the logical distribution of classes
- To emphasize the logical structure of the system
- To offer the logical distribution of classes which is inferred from the logical architecture of the system

Uses: -

- To illustrate the functionality of a software system.
- To illustrate the layered architecture of a software system.
- The dependencies between these packages can be adorned with labels / stereotypes to indicate the communication mechanism between the layers.

Our online shopping system is basically used for shopping through an online platform for giving the users an online experience of the shopping. It consists of 7 classes having different functions as product type, product, supplier, bank, admin, customer, shopping cart.

Our program starts with the product type class used for selecting the type of product. Attributes present in this class are prod_id (string type) and Name (string type). Operations performed in this class are registering new users and signing in of existing user.

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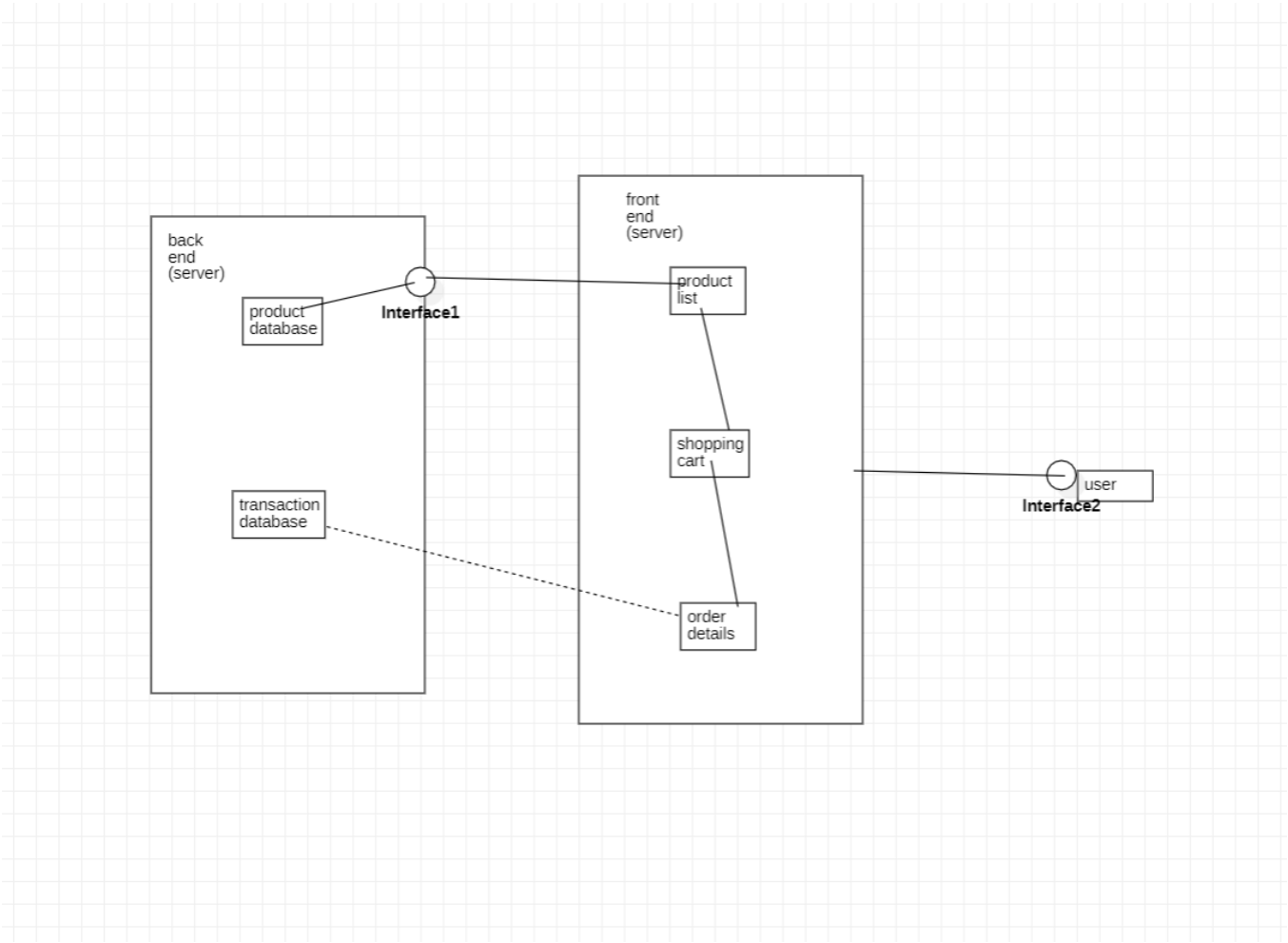
COMPONENT DIAGRAM



Based on the analysis of the problem description of the system, identify the major subsystem. Group the individual packages and other logical entities in the system to provide as separate components. Then identify the interfaces needed for components interaction. If needed, identify the subprograms which are part of each of the components and draw them along with their associated components. Use appropriate notations to draw the complete component diagram.

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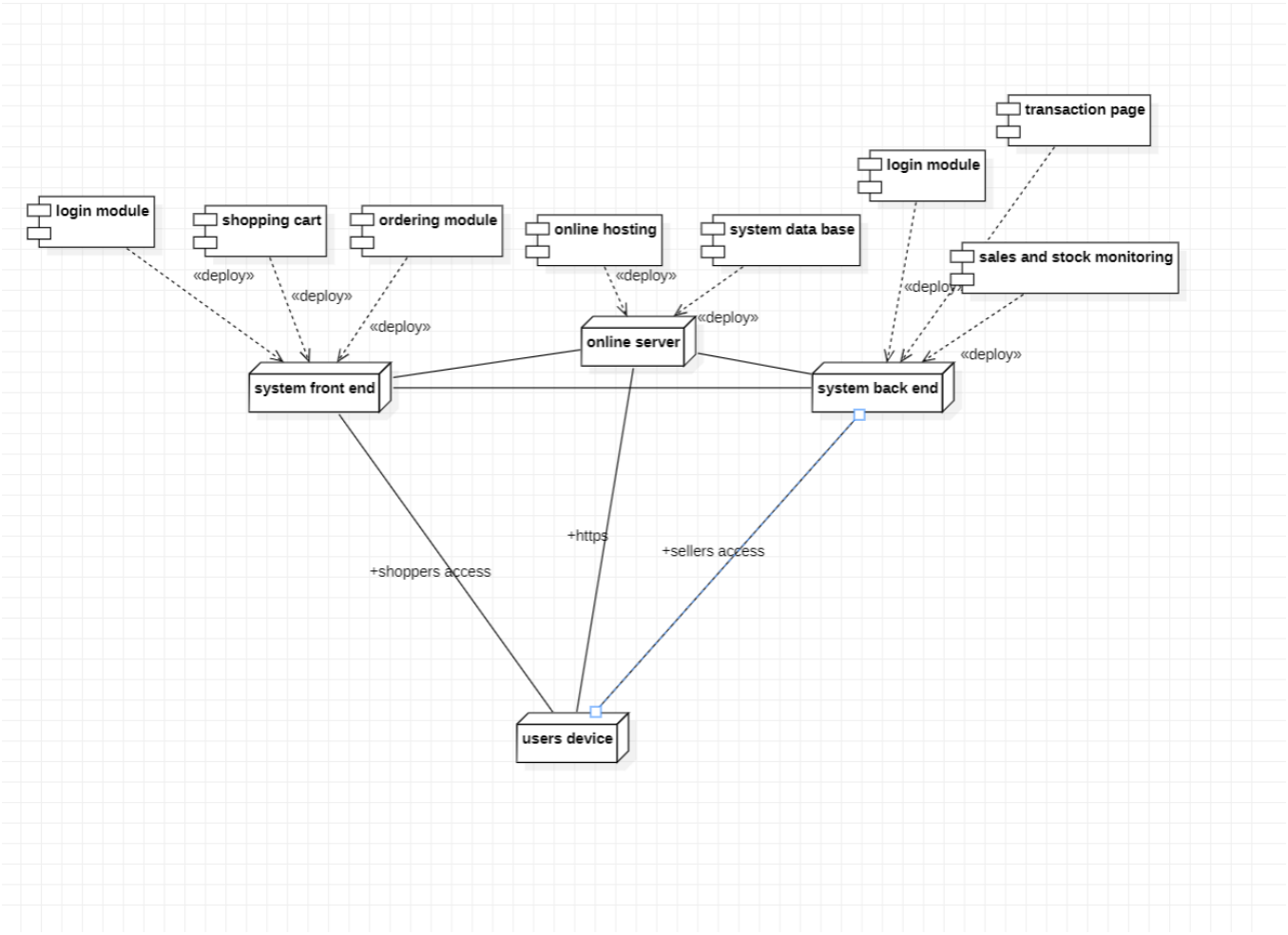
DEPLOYMENT DIAGRAM


transaction page
login module
login module
shopping cart
ordering module
online hosting
system data base
sales and stock monitoring
«deploy»
«deploy»
«deploy»
«deploy»
«deploy»
«deploy»
«deploy»
online server
system front end
system back end
+https
+shoppers access
+sellers access
users device

Identify the hardware components and processing units in the target system. Analyse the software and find out the subsystem, parallel execution of modules, server-side components, client-side components, business logic components, backend database servers and software and hardware mapping mechanism to map the software components to be mapped with appropriate hardware devices. Draw the hardware components and show the software components inside them and also show the connectivity between them.

Application: -

- To model the network and hardware topology of a system
- To model the distributed networks and systems
- Implement forwarding and reverse engineering processes
- To model the hardware details for a client/server system
- For modelling the embedded system

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CONCLUSION

In the report, we will introduce a brief about online shopping system, and then, the current state of online shopping and internal description of online shopping will be shown. The advantage and disadvantage of online shopping will be discussed in the surrounding community.

There is no doubt that online shopping is one of the most popular shopping system in the world. Generally speaking, online shopping system apps can be found in anywhere in the world. Therefore, online shopping system app is not only an entertainment place for people but also relevant to the hospitality industry and it is as well as a significant aspect contained by the national finance and economics.

Moreover, with the development science and technology, improve the management has become more important to online shopping system to create more entertainment facilities to meet the needs of the people, to stimulate the economy development.

REFERENCE

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THANK YOU