

FINAL PROJECT

Requirements Analysis & Design (RAD)

By Students:

- 1. StudentID1 : Tạ Đình Nam - 519V0052**
- 2. StudentID2 : Lê Huỳnh Huyền Trang - 520C0156**

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Mr. Pham Thai Ky Trung

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Baby Hut

Abstract:

This document provides an in-depth analysis of Baby Hut, a baby equipment rental and sales company that wants to develop further, the proposed document with requirements modeled using the UML framework. The document is a collaboration between members of Team 10 in Mr. Trung's class.

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| <i>Requirements Analysis & Design</i> | <i>Baby Hut</i> |
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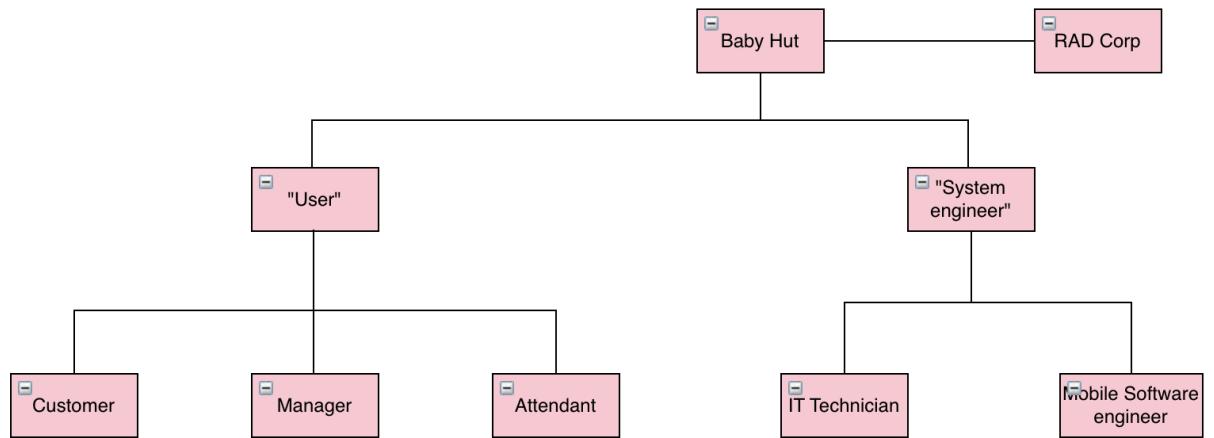
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Executive Summary

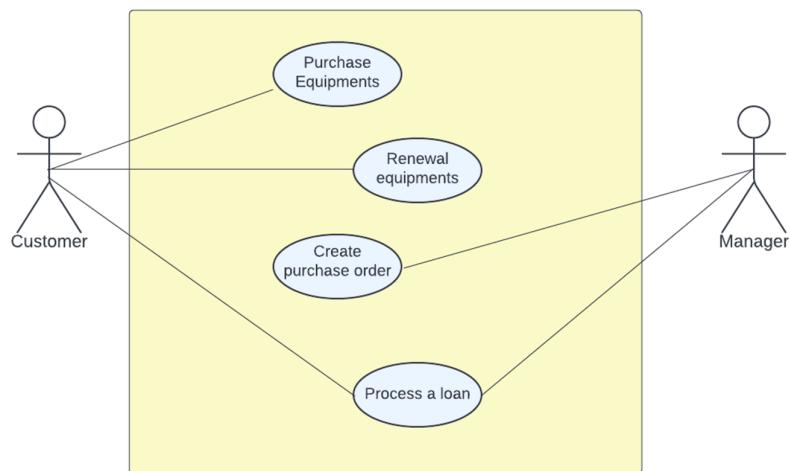
We all agree that preparation in the first years for the newborn child is very important. However, many new parents failed to fully prepare for the baby's arrival, especially in terms of appropriate equipment for child care. So, Baby Hut came to the rescue. Established by P. Hamill, J. George, and A. White, Baby Hut is a retail business that provides various growing baby types of equipment. Different from many other brands, besides a wide range of equipment options for infants, Baby Hut also provides many other special services such as worldwide delivery, pickup, hire equipment, or private consulting. With the recent need to expand the market and the potential of mobile devices and the online market, Baby Hut looked for a solution on their website to enhance their customer intimacy and experiment.

I. Business Requirements

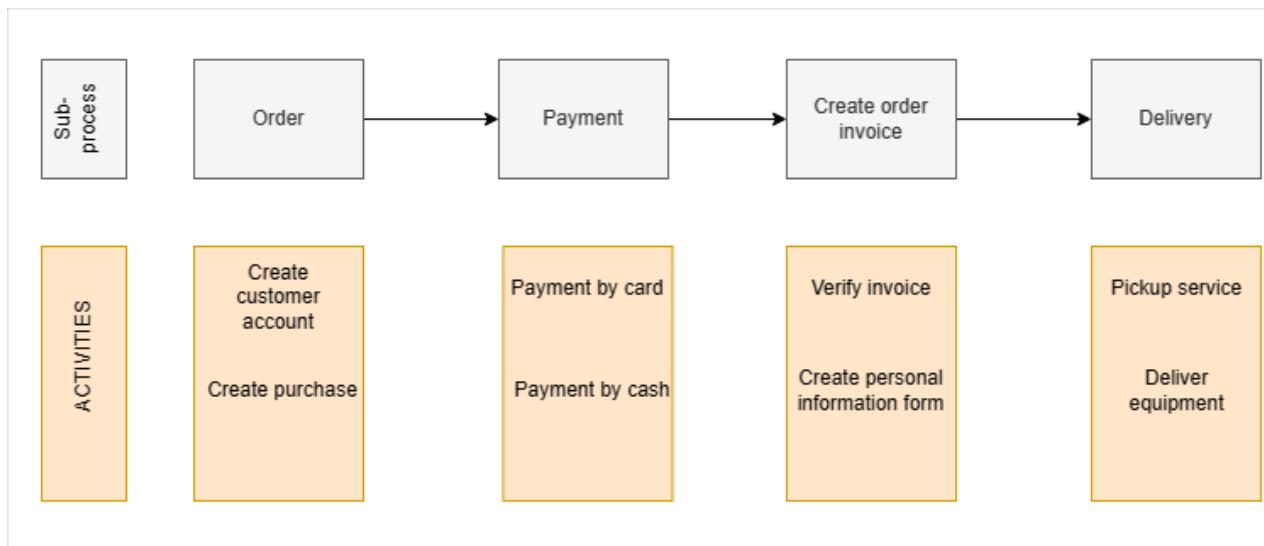
1.1 Organization Chart / Project Chart/Gantt Chart



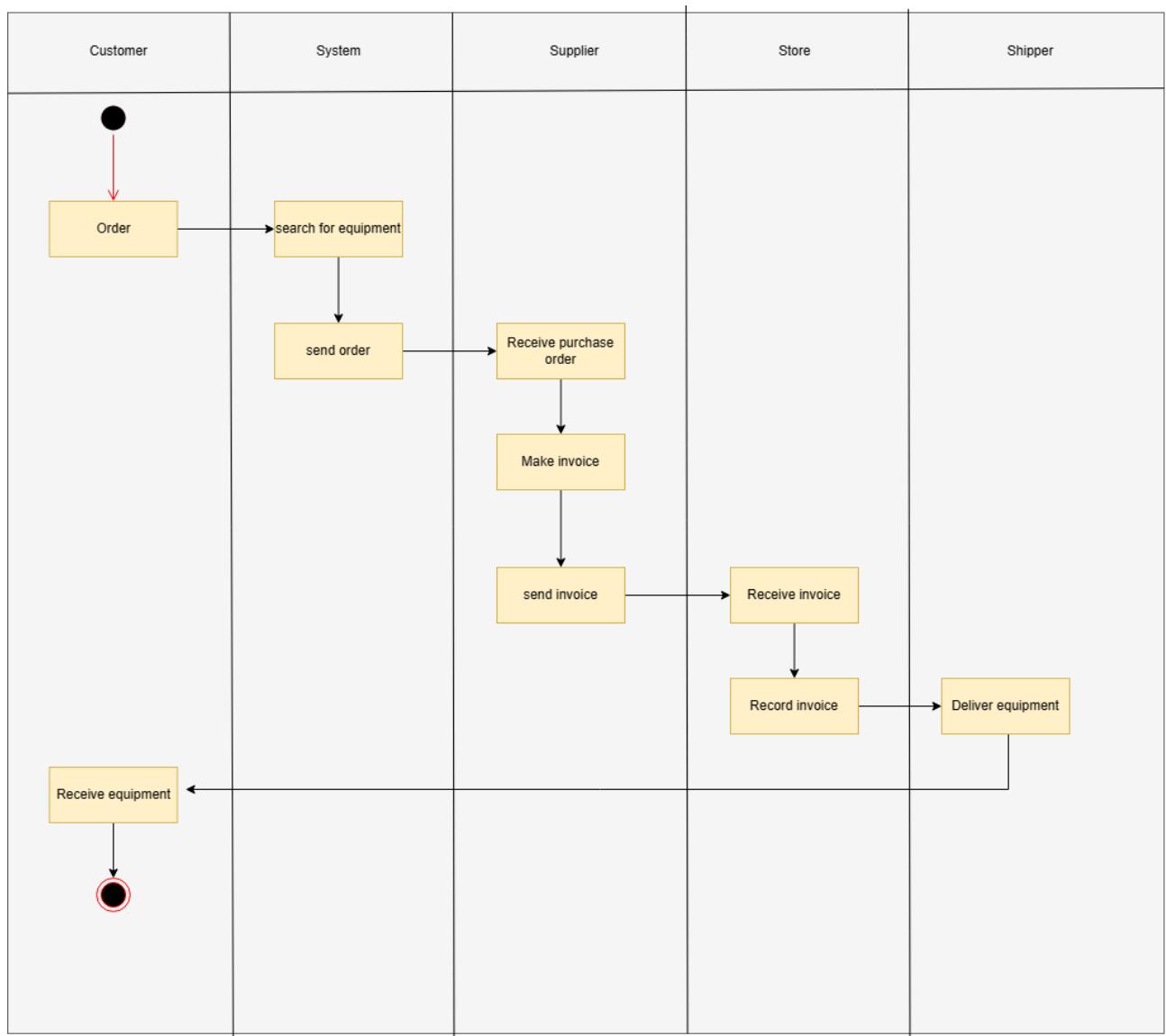
1.2 Business Modelling / Requirements



1.3 Business Processes / Flowchart of Requirements



1.4 Activity Diagram



1.5 List of Requirements

| Requirement | Functional | NonFunctional |
|--|------------|---------------|
| The system must maintain and update customer information | x | |
| The website is easy to maintain and upgraded. | | x |
| The website is easy to navigation | | x |
| The system must allow manager to have limited access (read only) between stores to data such as the availability of baby equipment at other stores | x | |
| The system must allow customer to access the website from multiple devices | x | |
| The system must use Google Analytics to track visitor traffic including where customers come from and how long they stay on the website. | x | |
| The system must have high security | x | |
| The system has search engine optimization so the search results in search engines show the | | x |

| | | |
|---|---|--|
| name of their company at the top of the list. | x | |
| The system allow customer to loan for Baby equipment | x | |
| The system must track the baby equipment status has been purchased or not | x | |
| The system must allow manager to change categories of equipment | x | |
| The system must automatically generate and send notification to customer's email when their baby equipment is overdue | x | |
| The system must flag the baby equipment if a piece of baby equipment is reserved | x | |
| The system provide a delivery and pick up service for approved customers in the local area | x | |

II. System Requirements Analysis

2.1 Translate from Business Use Case

2.1.1. System Narrative

We all agree that preparation in the first years for the newborn child is very important. However, many new parents failed to fully prepare for the baby's arrival, especially in terms of appropriate equipment for child care. So, Baby Hut came to the rescue. Established by P. Hamill, J. George, and A. White, Baby Hut is a retail business that provides various growing baby types of equipment. Different from many other brands, besides a wide range of equipment options for infants, Baby Hut also provides many other special services such as worldwide delivery, pickup, hire equipment, or private consulting. With the recent need to expand the market and the potential of mobile devices and the online market, Baby Hut looked for a solution on their website to enhance their customer intimacy and experiment.

2.1.2. Users and their goals

| USER/ACTOR | USER GOAL |
|----------------|---|
| Customer | Create order purchase Purchase equipment Update Order Loan equipment Renewals equipment |
| Manager | Recore order Statistic Activity report |
| Shipping clerk | Delivery equipments |

2.1.3. List of Events

List of events and its use case

| EVENT | TRIGGER | SOURCE | USE CASE | RESPONSE | DESTINATION |
|-------------------|-------------------|----------------|-------------------|---|---|
| Buy an equipment | Equipment inquiry | Customer | Purchase order | Order details | Customer Bank Shipping |
| Rent an equipment | System inquiry | Customer | Process a loan | Customer's status Rental information | Customer Bank Attendant Shipping |
| View equipment | Equipment inquiry | Customer | Display equipment | Equipment availability details | Customer |
| Register | Save to database | System | Register | Register successful | System |
| Update system | Update system | IT technicians | Update system | Update system successfully | System |
| Record the sale | Save to database | System | Record the sale | Data saved | System |

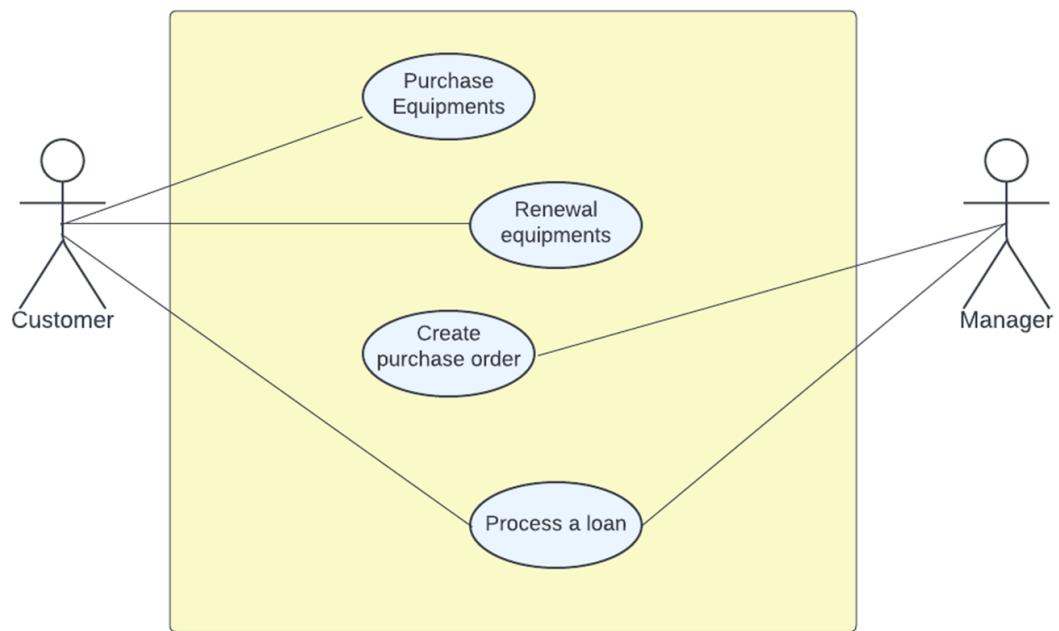
2.1.4. List of Actors

- **Customer:** who rent or buy baby equipment
- **Attendant:** is the representative from the store that facilitates new member application, rental and payment.
- **Manager:** management, operation and writing report of each store
- **Shipping clerk:** who delivery equipment

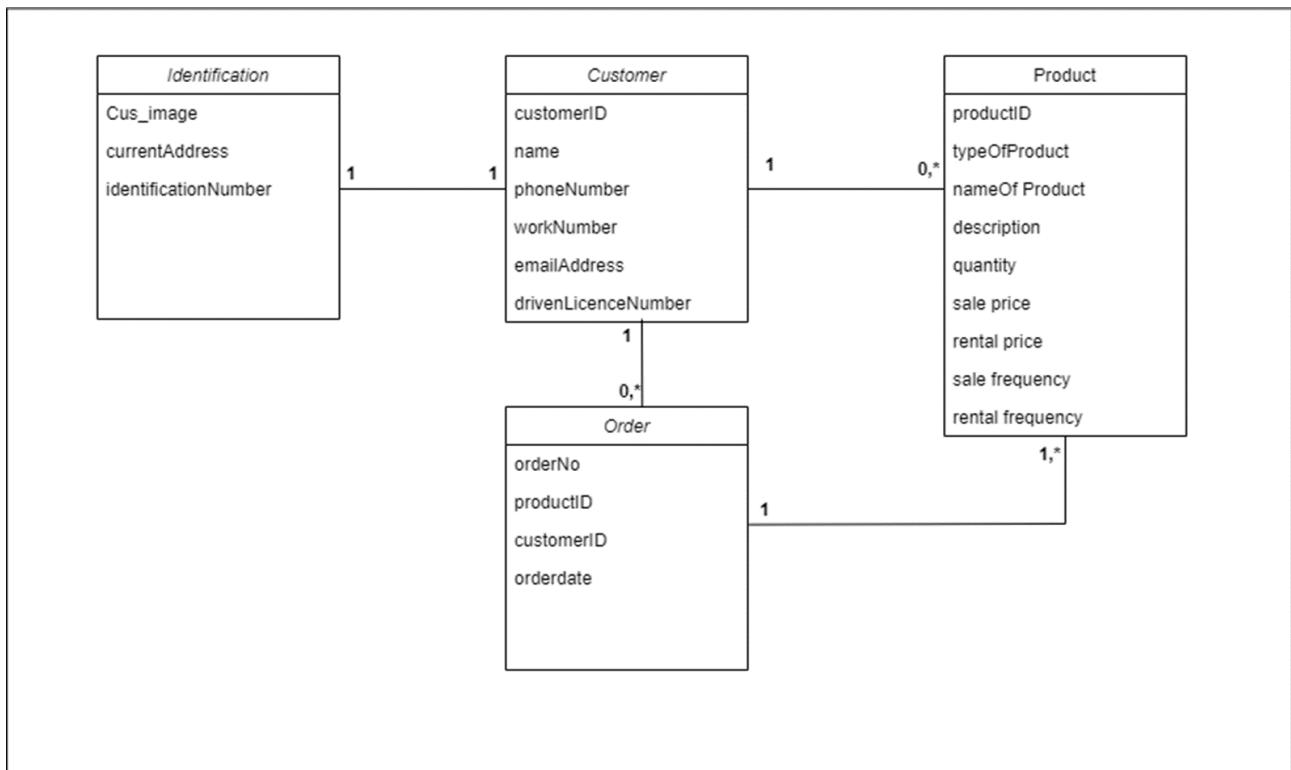
2.1.5. List of Use Cases

| Use case | Description |
|---------------------------------------|---|
| Purchase online | Allow customer to purchase online |
| Update customer's information | Allow customer to update their information in case they change phone number or address |
| Notify customers via email | System will send notification for customer via email |
| Display product image and information | Allow manager to upload product image and information |
| Reserve a piece of baby equipment | Allow customers to reserve a piece of baby equipment if none are available at the time. |
| Renew a piece of baby equipment | Allow customers to renew a piece of baby equipment provided that there are no unfilled reservations |
| Provide a delivery and pickup service | Allow customers to receive baby equipment without going to the store |
| Recommend equipment | System will recommend equipment based on customers's last choice |
| Register | Allow customers to register by giving their name, address, home telephone number, work telephone number, mobile number, email address and driver licence number/Medicare Number/passport. |
| Capture information online | System will capture customer's information online |
| Track sales of baby equipment | System will monitored the sales of equipment both at each store and at the central site |
| Process a loan | System will record the customer identification number and baby equipment identification number, date and time of loan and period of the loan. |
| Create order online | System will create the order when baby equipment is purchased |
| Record the sale | System will record the sale information as customer information, equipment identification number,... |
| Update equipment category | Allow manager to change categories of baby equipment from overnight to 3 day or weekly |
| Manage system | Allow owner to handle the system |
| Develop system | Allow owner to develop the system |
| Troubleshooting | Allow owner to fix the system if there is any error |

2.1.6. Use Case Diagram



2.1.7. Domain Class Model Diagram



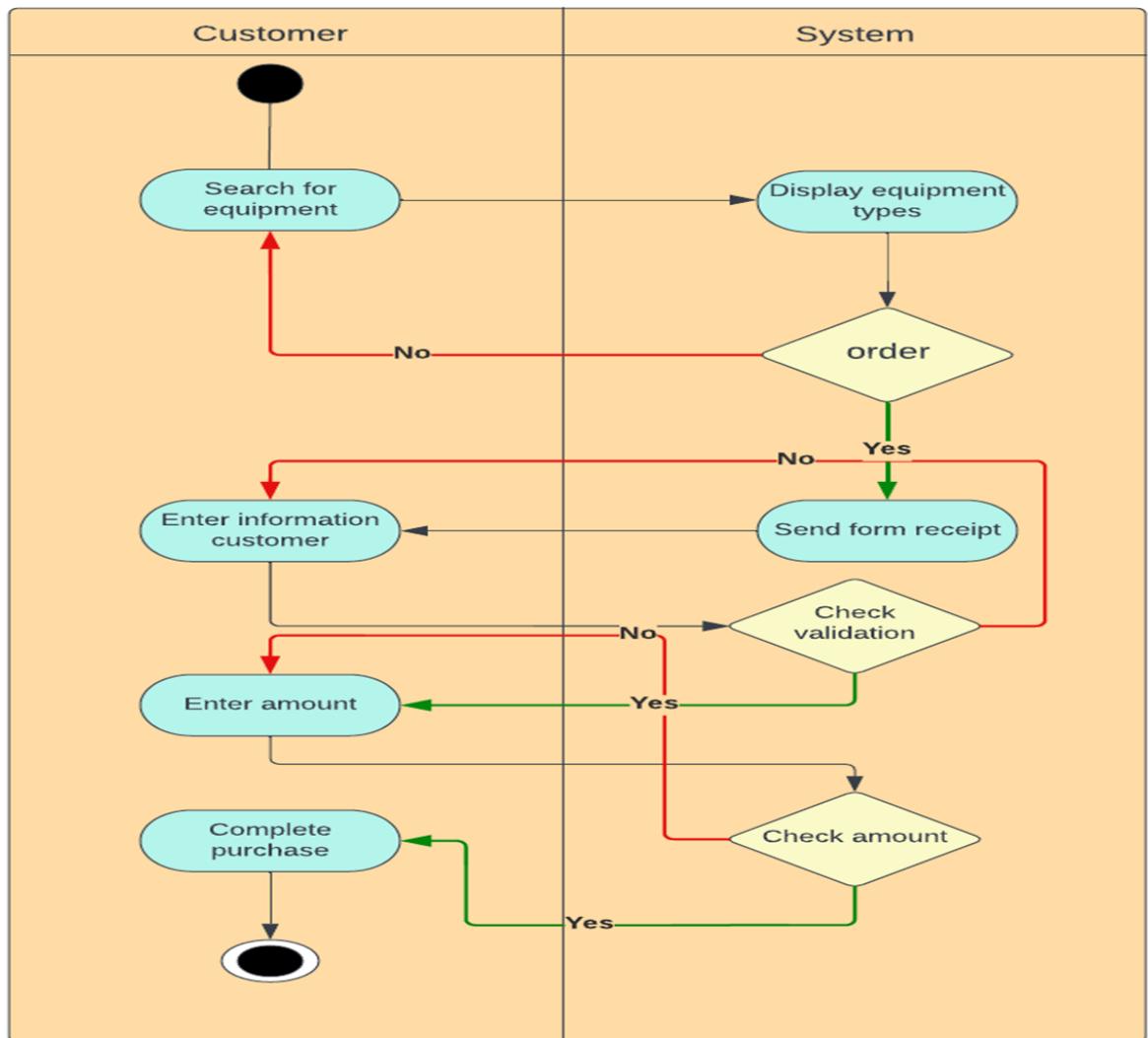
2.2 Use Case Descriptions

2.2.1. Use Case: Purchase equipments

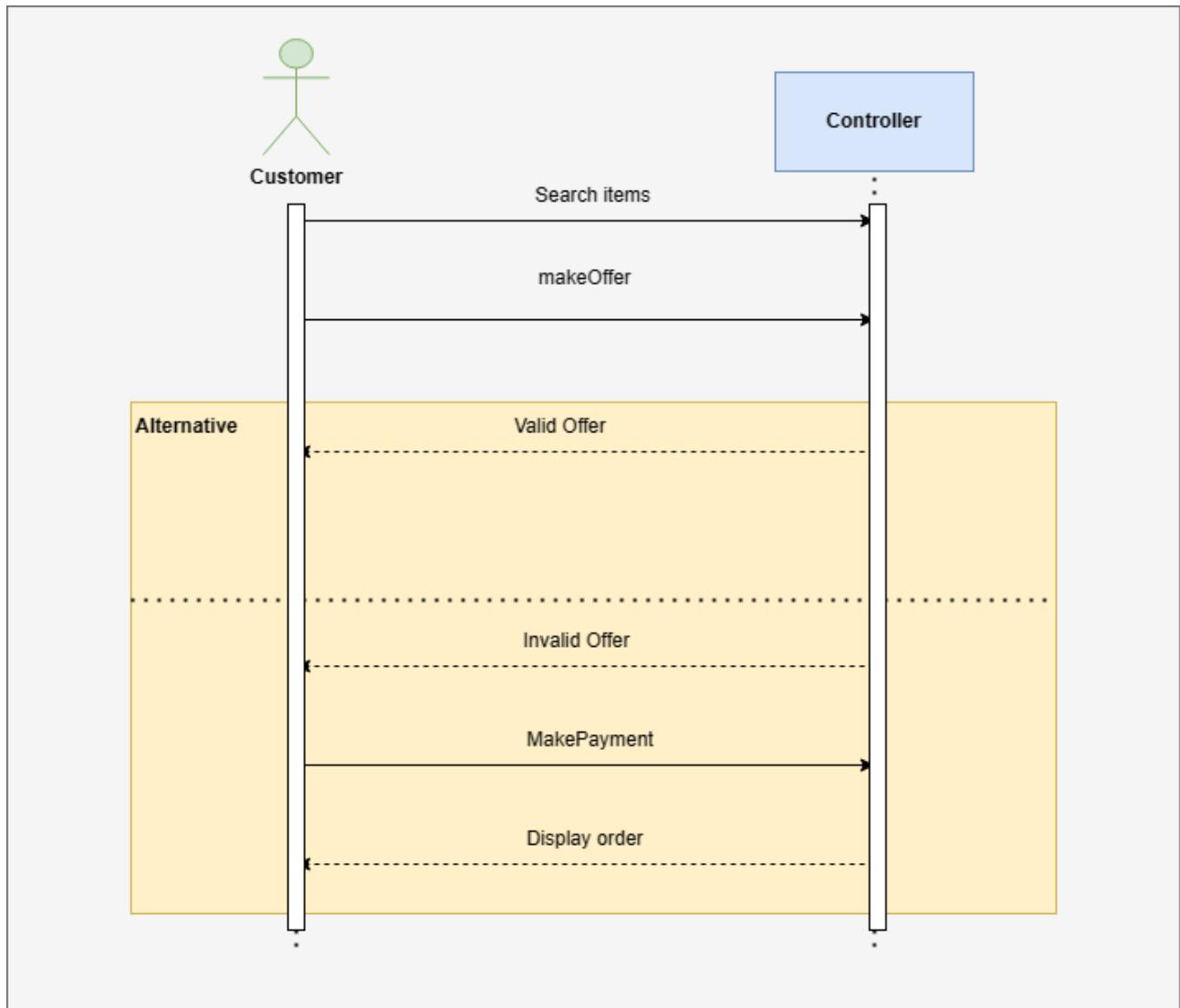
- i. Use case : Purchase equipments

| Use case name | Purchase equipment | | | | | | | | | | |
|--|---|-------|--------------------|--|---|------------------------------------|--|-----------------|---|--|--|
| Scenario | Purchase online equipments | | | | | | | | | | |
| Triggering event | Customer want to purchases equipments | | | | | | | | | | |
| Brief description | Firstly, customer will search for the equipment they want to buy, then the system will check the order valid or invalid, next customer enters the personal information in the form, the system will check validation, following that they enter the amount to purchase the baby equipment. | | | | | | | | | | |
| Actor | Customer | | | | | | | | | | |
| Related use cases | create purchase order, display equipment. | | | | | | | | | | |
| Stakeholders | Customer, Marketing, sales, Baby Hut | | | | | | | | | | |
| Preconditions | Baby equipment must be existed Customer account must be available Customer must have a membership card or must be properly identified with the photos on the saved system | | | | | | | | | | |
| Postconditions | The equipment must be purchased and recorded | | | | | | | | | | |
| Flow of activities | <table border="1"> <thead> <tr> <th>Actor</th> <th>Flow of activities</th> </tr> </thead> <tbody> <tr> <td>1. Customer search the baby equipment.</td> <td>1.1 System will find equipment and check if it exist or not, if it exists this will be displayed equipment exit</td> </tr> <tr> <td>1. Customer enter information form</td> <td>2.1 System will check validation data input of customer.</td> </tr> <tr> <td>1. Enter amount</td> <td>1. Check amount and complete purchase equipment</td> </tr> </tbody> </table> | Actor | Flow of activities | 1. Customer search the baby equipment. | 1.1 System will find equipment and check if it exist or not, if it exists this will be displayed equipment exit | 1. Customer enter information form | 2.1 System will check validation data input of customer. | 1. Enter amount | 1. Check amount and complete purchase equipment | | |
| Actor | Flow of activities | | | | | | | | | | |
| 1. Customer search the baby equipment. | 1.1 System will find equipment and check if it exist or not, if it exists this will be displayed equipment exit | | | | | | | | | | |
| 1. Customer enter information form | 2.1 System will check validation data input of customer. | | | | | | | | | | |
| 1. Enter amount | 1. Check amount and complete purchase equipment | | | | | | | | | | |
| Exception conditions | The equipment cannot be purchased if it is rented by another customer or is out of stock | | | | | | | | | | |

- ii. Activity diagram for Use Case: Use Case purchase equipment



- iii. System sequence diagram for Use Case: Use Case Purchase equipment

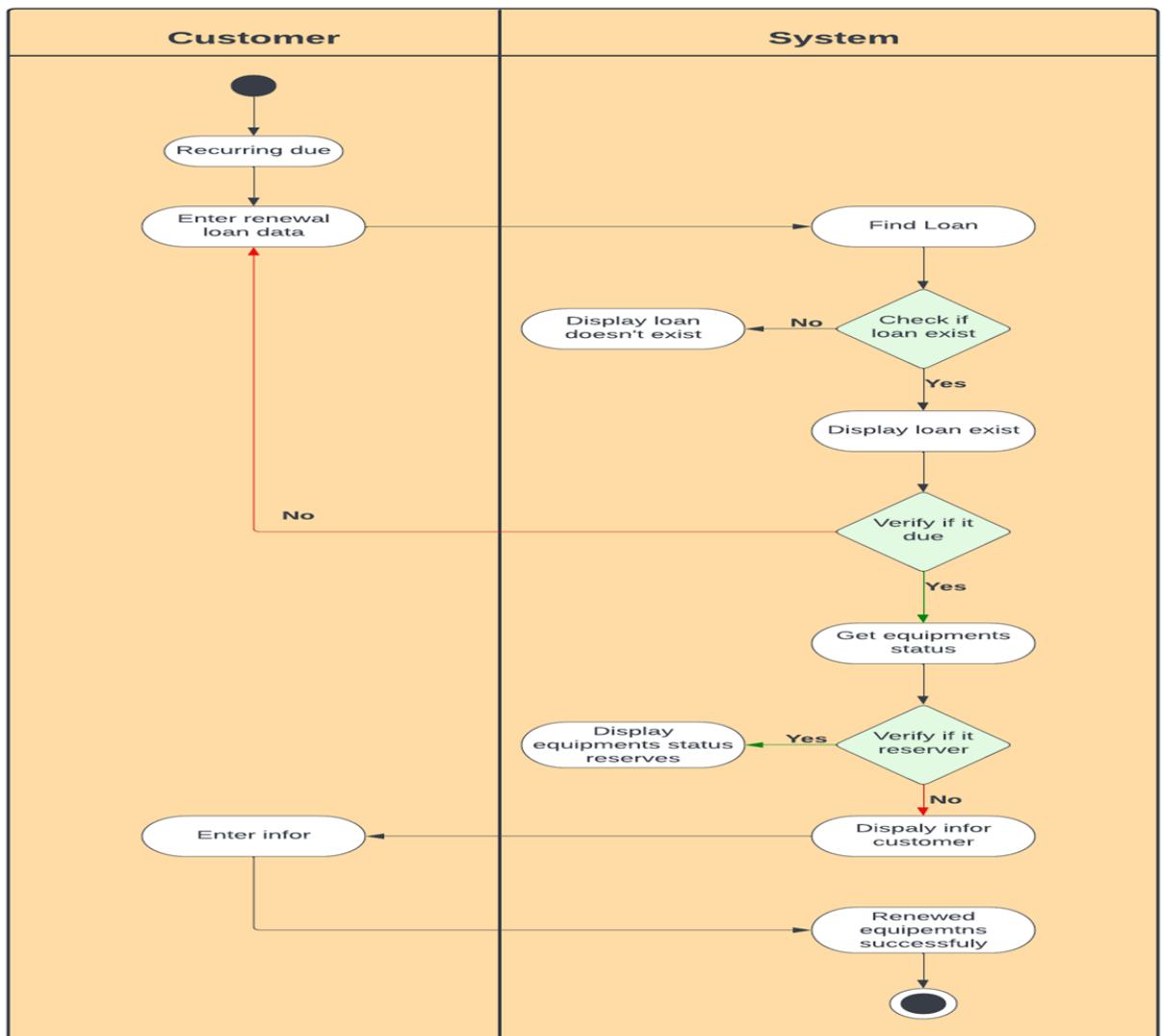


2.2.2. Use Case: Renewals equipment

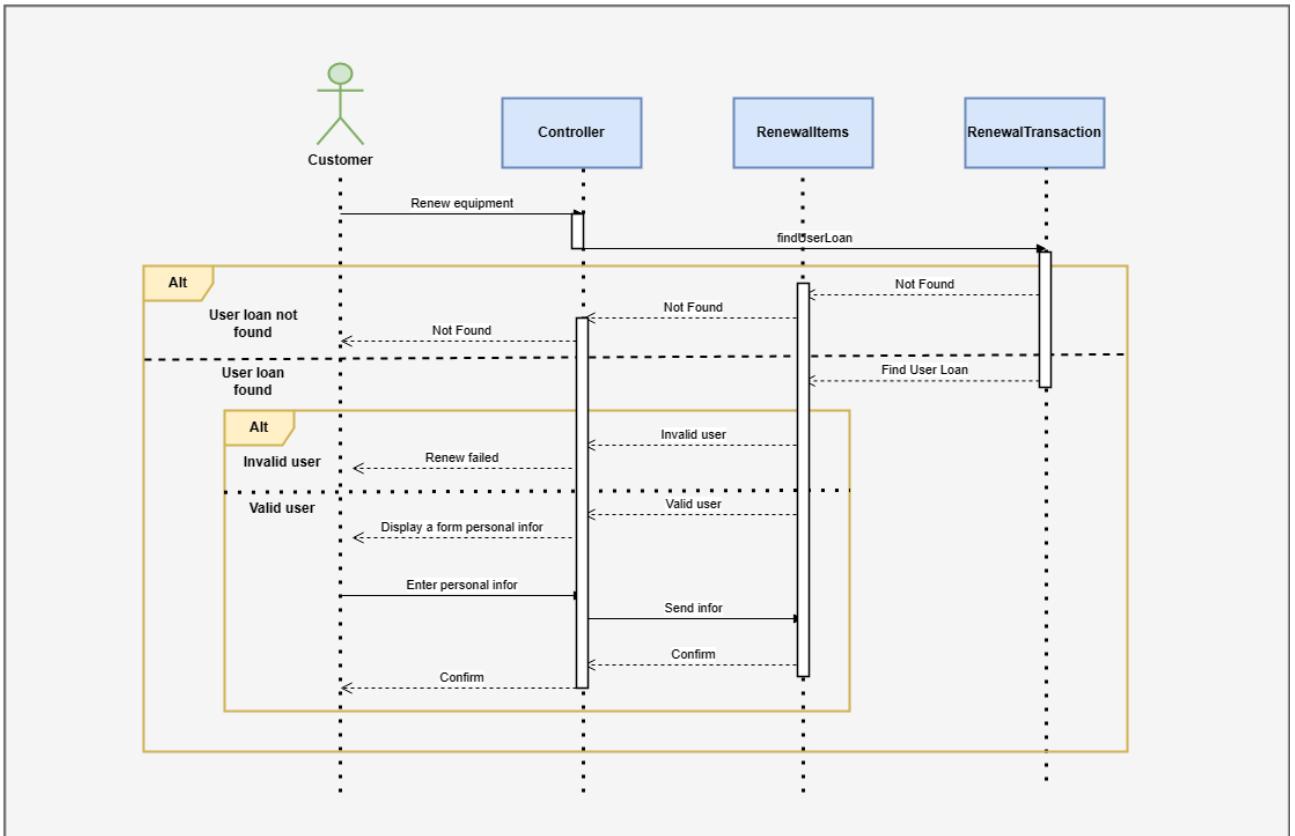
i. Use case : Renewals equipment

| Use case name | Renewals equipments | | | | | | | |
|--|---|--------------|---------------------------|-------------------------------------|--|--|----------------------------------|--|
| Scenario | Renewals online equipments | | | | | | | |
| Triggering event | Customer want to renew rent equipments | | | | | | | |
| Brief description | when the equipment expires, the customer will enter the renewal type of the equipment, the system will find the loan yes or not and check the loan is due, then check the equipment status, check the device is reserved or not, if not, the system will display a form to fill out information for the customer to renew the rented equipment. | | | | | | | |
| Actor | Customer | | | | | | | |
| Related use cases | Process loan, reserved equipment. | | | | | | | |
| Stakeholders | Customer, Marketing, sales, Baby Hut | | | | | | | |
| Preconditions | Baby equipment must be rented A piece of baby equipment can be renewed provided that there are no unfilled reservations. | | | | | | | |
| Postconditions | The equipment must be renewed and recorded | | | | | | | |
| Flow of activities | <table border="1"> <thead> <tr> <th>Actor</th> <th>Flow of activities</th> </tr> </thead> <tbody> <tr> <td>1. Customer enter renewal loan data</td> <td>1. System will find loan and check if loan exist or not, if it exist this will be displayed loan exists 2. System will check loan if it due, then it will check the equipment status. If it reserves system displays if it not it will display a personal form.</td> </tr> <tr> <td>2. Customer will enter the personal information.</td> <td>2.1 System will renew equipment.</td> </tr> </tbody> </table> | Actor | Flow of activities | 1. Customer enter renewal loan data | 1. System will find loan and check if loan exist or not, if it exist this will be displayed loan exists 2. System will check loan if it due, then it will check the equipment status. If it reserves system displays if it not it will display a personal form. | 2. Customer will enter the personal information. | 2.1 System will renew equipment. | |
| Actor | Flow of activities | | | | | | | |
| 1. Customer enter renewal loan data | 1. System will find loan and check if loan exist or not, if it exist this will be displayed loan exists 2. System will check loan if it due, then it will check the equipment status. If it reserves system displays if it not it will display a personal form. | | | | | | | |
| 2. Customer will enter the personal information. | 2.1 System will renew equipment. | | | | | | | |
| Exception conditions | The equipment cannot be renewed if it is reserved before | | | | | | | |

ii. Activity diagram for Use Case: Renewals equipment



iii. System sequence diagram for Use Case: Renewals equipment

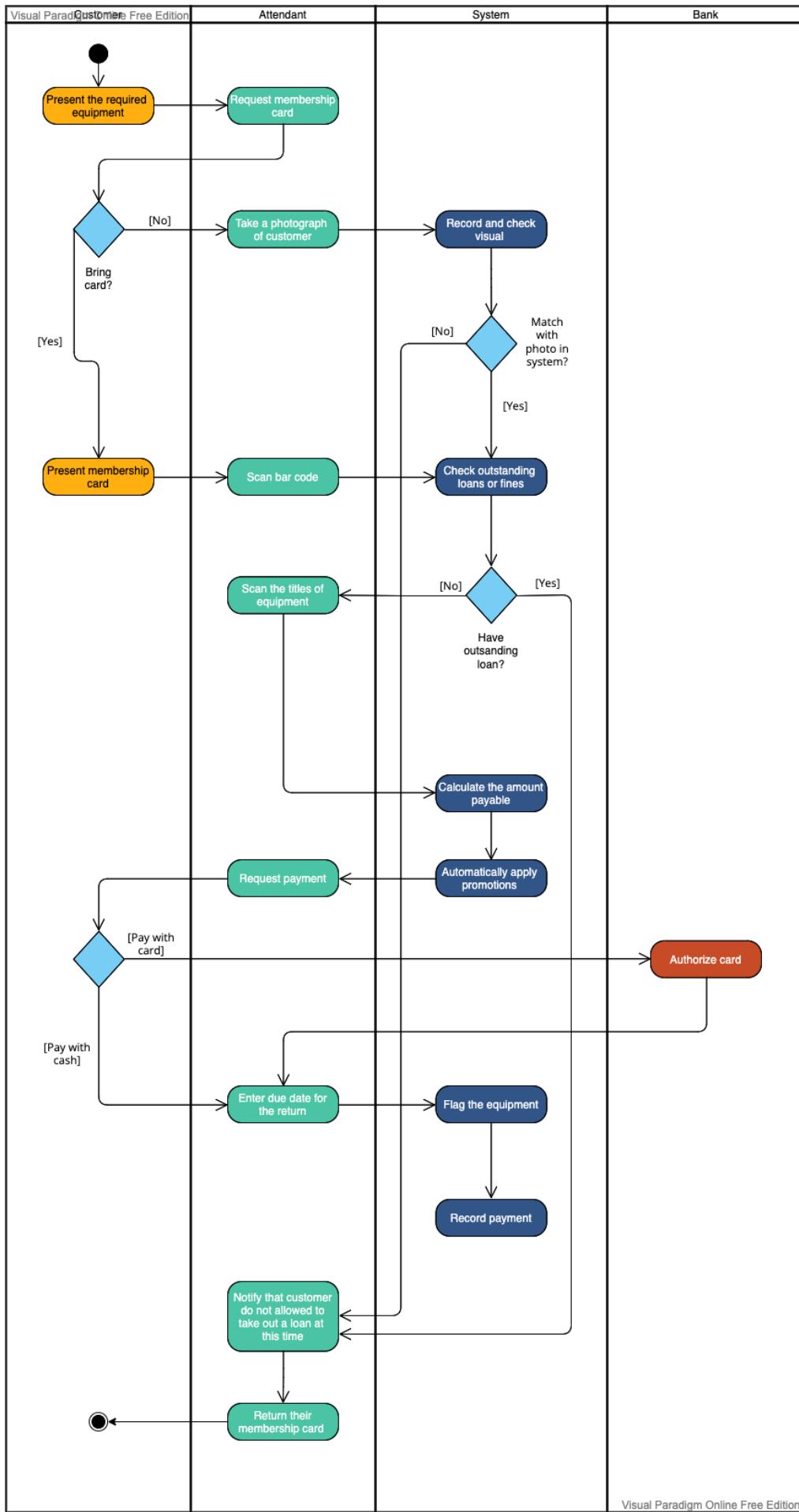


2.2.3. Use Case: Process a loan

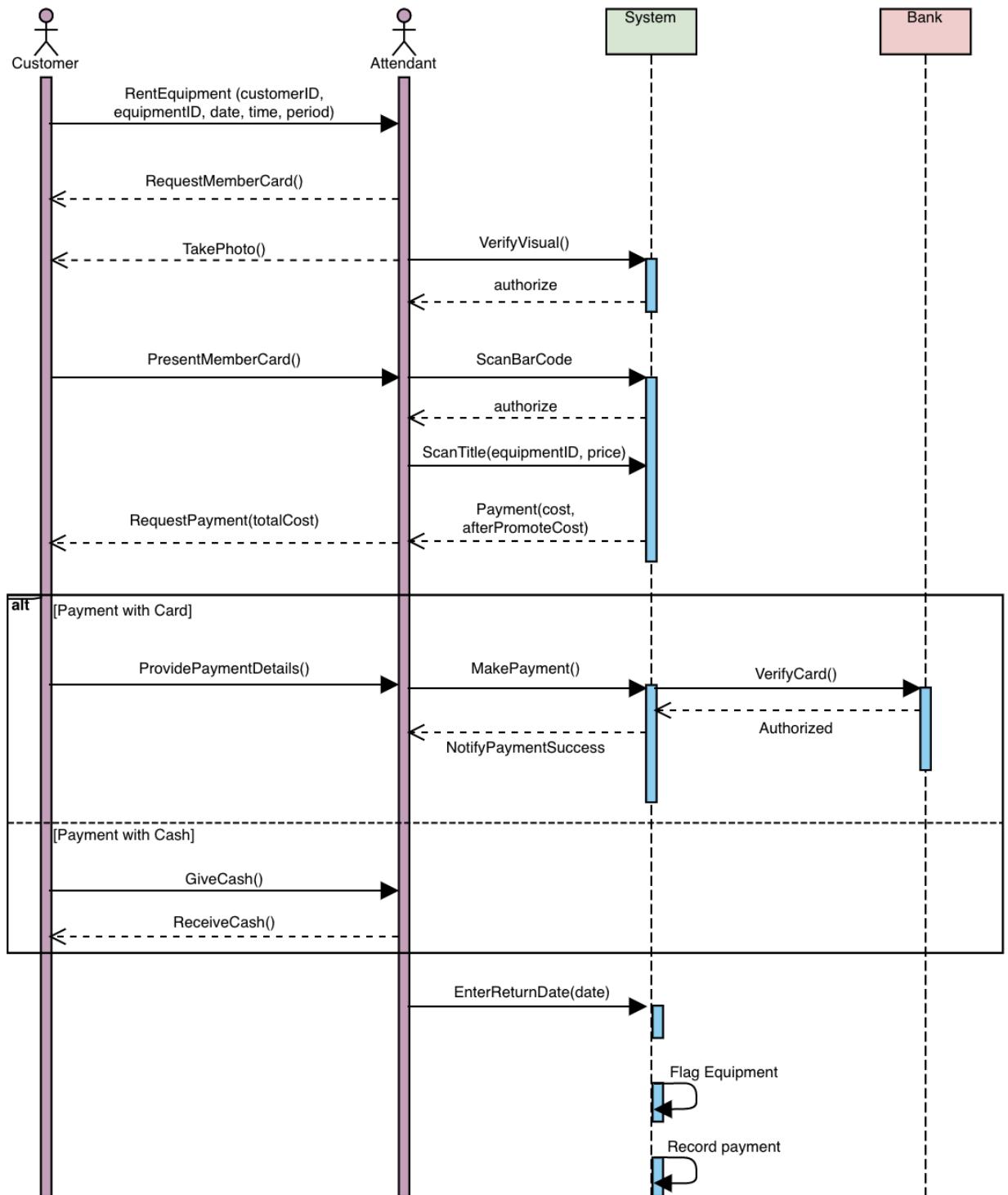
- Use case : Process a loan

| | | |
|-----------------------------|---|---|
| Use case name | Process a loan | |
| Scenario | The customer wants to rent the equipment for a period of time | |
| Triggering event | Customer comes to the store to choose equipment and tell the staff they want to rent it | |
| Brief description | Customer wants to rent the equipment | |
| Actor | Customer, Attendant | |
| Related use cases | Record the sale | |
| Stakeholders | Customer, Baby Hut | |
| Preconditions | Customer must come to store Customer must have no overdue loans or fines Customer must have a membership card or must be properly identified with the photos on the saved system | |
| Postconditions | Customer can rent an equipment | |
| Flow of activities | Attendant | System |
| | 1. Request a membership card or verify customer by matching with the photograph recorded in the system. 2. Scan barcode of membership card 3. Scan titles of equipments 4. Enter due date for the return | 1. Check visual: 1.1. If identical, continue 1.2. If not, deny request 2. Check outstanding loans or fines 2.1. If they don't have, continue 2.2. If they have, deny request 3. Calculate the amount payable and automatically apply promotions 4. Flag the equipment and record payment |
| Exception conditions | <u>Customer</u> who come to the store for renting do not match with the photograph recorded in the system. | |

- ii. Activity diagram for Use Case: Process a loan



- iii. System sequence diagram for Use Case: Process a loan

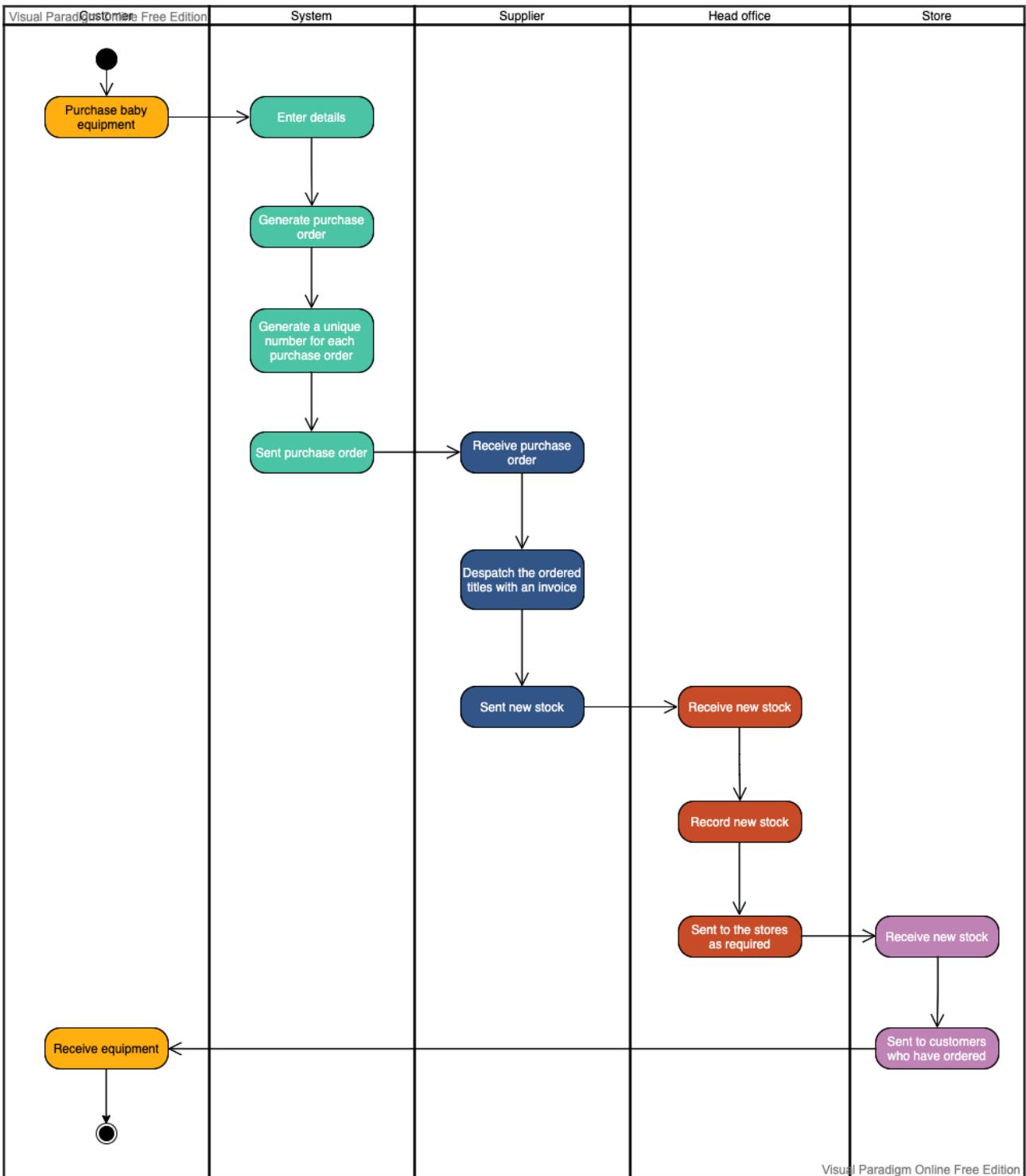


2.2.4. Use Case: Create purchase order

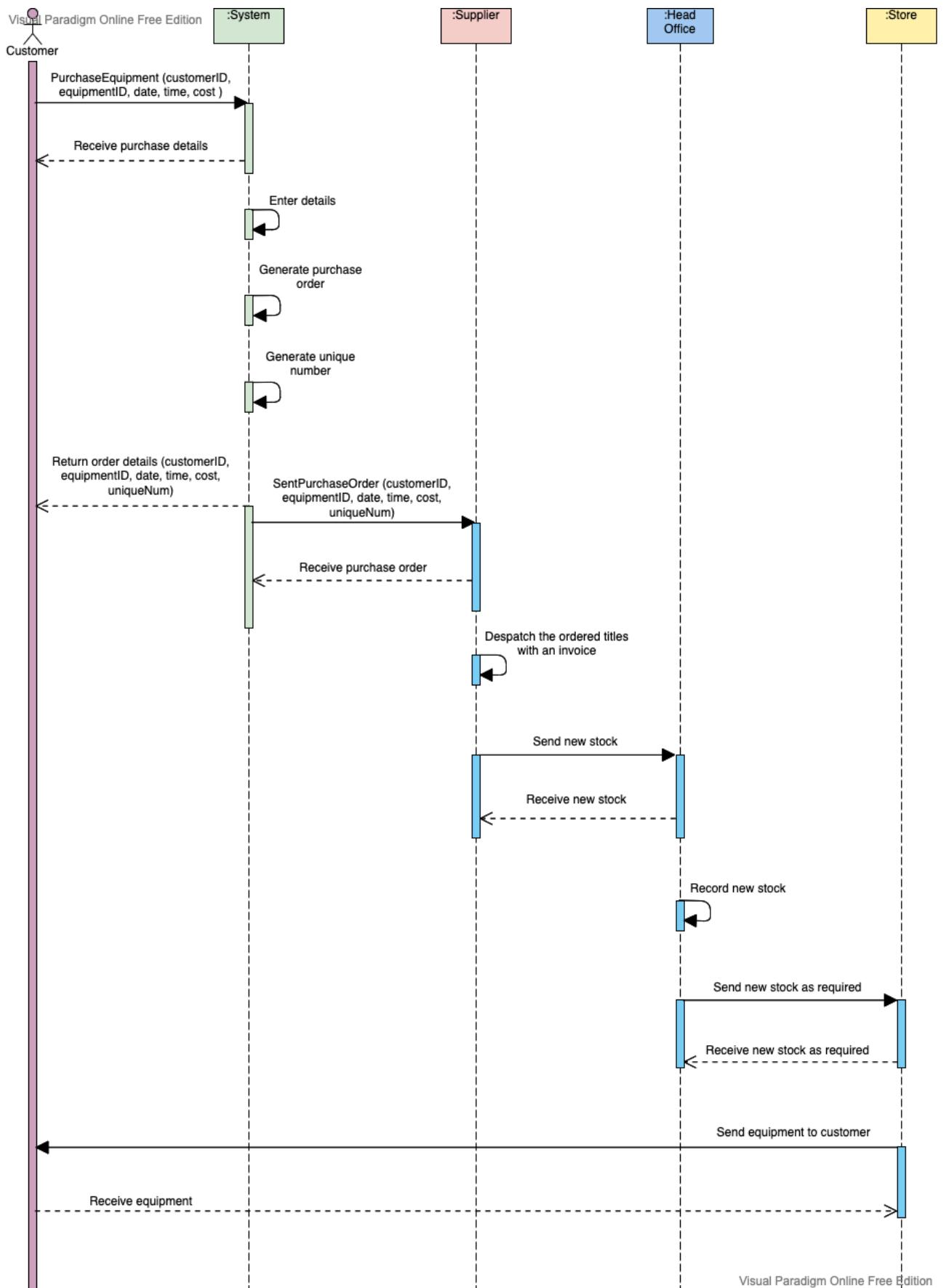
- i. Use case : Create purchase order

| | | |
|-----------------------------|--|--|
| Use case name | Create purchase order | |
| Scenario | The system will generate a purchase order whenever baby equipment are purchased | |
| Triggering event | Customer purchase baby equipment | |
| Brief description | When baby equipment are to be purchased, the details will be entered into the system which will then generate a purchase order each of which is identified by a unique number generated by the system | |
| Actor | Supplier, Head office | |
| Related use cases | Purchase online, Record the sale | |
| Stakeholders | Supplier, Baby Hut | |
| Preconditions | Baby equipment must to be purchased | |
| Postconditions | The purchase order will be create and record | |
| Flow of activities | Actor | Flow of activities |
| | <ul style="list-style-type: none"> 1. Customer purchase an equipment 2. The purchase order will then be sent to the supplier 3. New stock is sent to head office, recorded and sent to the stores as required | <ul style="list-style-type: none"> 1. Generate purchase order then create a unique number for each purchase order 2. The supplier will then despatch the ordered titles together with an invoice |
| Exception conditions | The equipment cannot be purchased if it is rented by another customer or is out of stock | |

- ii. Activity diagram for Use Case: Create purchase order



iii. System sequence diagram for Use Case: Create purchase order



2.3 Verifying use cases for Actor

2.3.1. Verifying uses cases: Customer

| Data entity/domain class | C R U D | Verified use case |
|--------------------------|----------|-------------------------|
| Customer | Purchase | Purchase baby equipment |
| | Create | Create purchase order |
| | Loan | Process a loan |
| | Renew | Renewals equipment |

2.3.2. Verifying uses cases for Manager

| Data entity/domain class | C R U D | Verified use case |
|--------------------------|---------|-------------------|
| Manager | Delete | Delete equipment |
| | Add | Add equipment |
| | Update | Update equipment |

| | | |
|--|-----------|-----------------|
| | Statistic | Statistic order |
|--|-----------|-----------------|

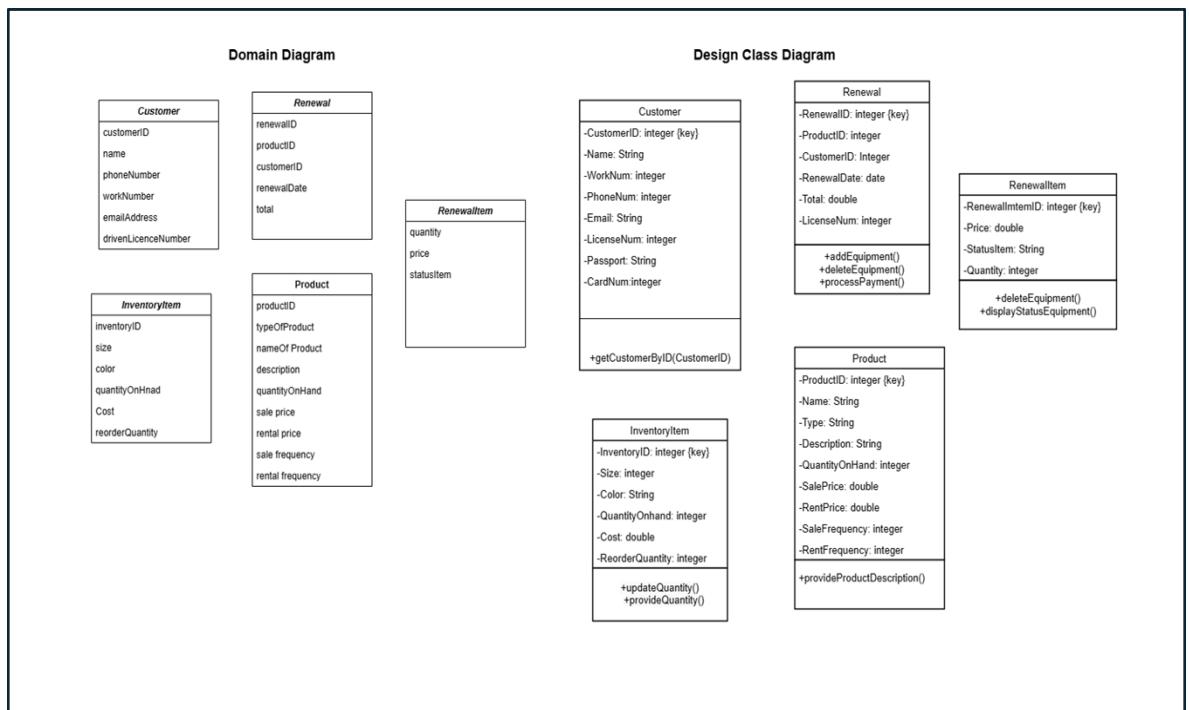
2.3.3. Verifying uses cases for Actor 3

| Data entity/domain class | C R U D | Verified use case |
|---------------------------------|----------------|--------------------------|
| Shipping clerk | Delivery | Deliver equipment |
| | Pickup | Pickup service |

III. System Requirements Design

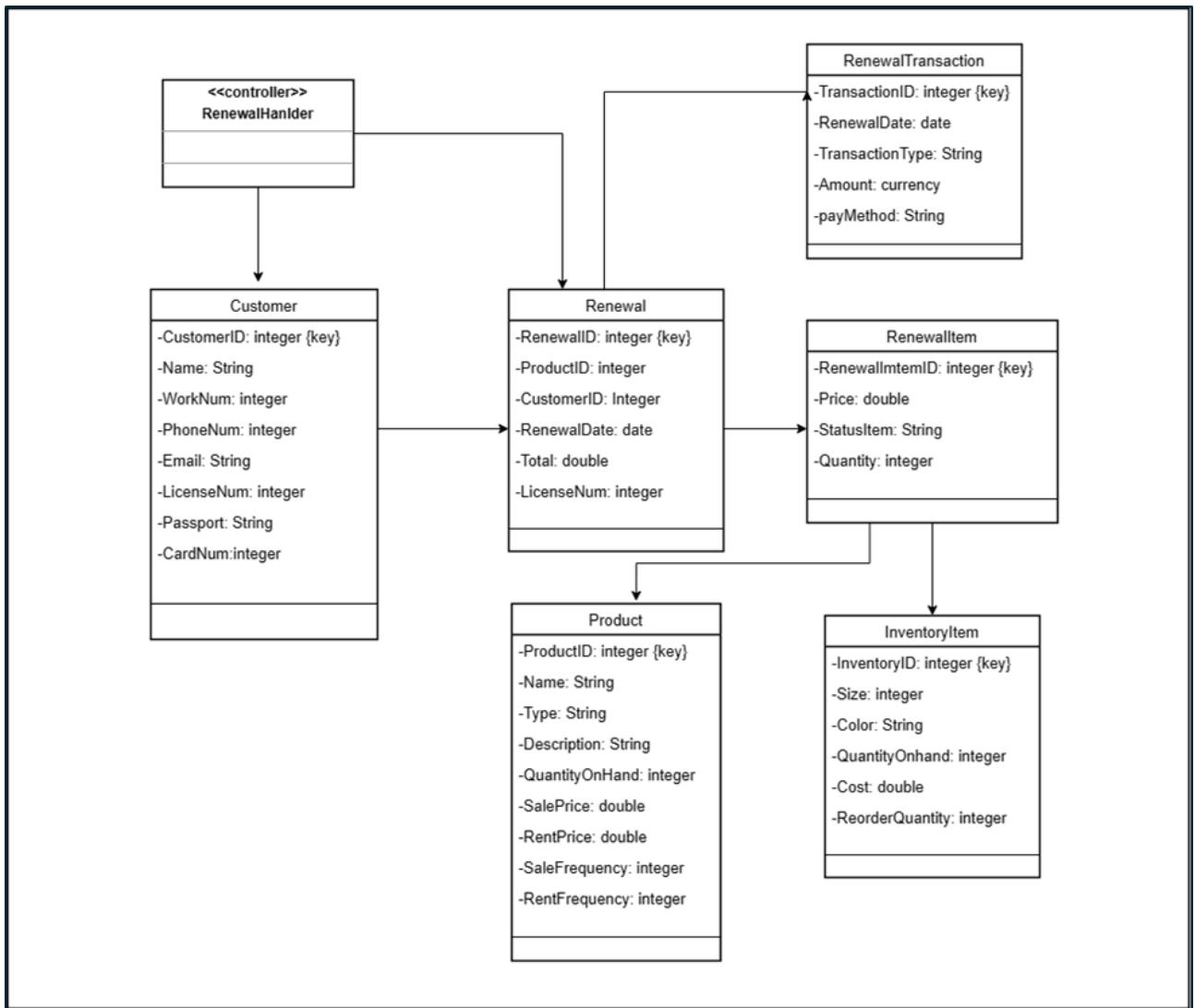
3.1 Design Class for Use Case Renewals equipment

3.2.1. Design Classes in Detailed Design

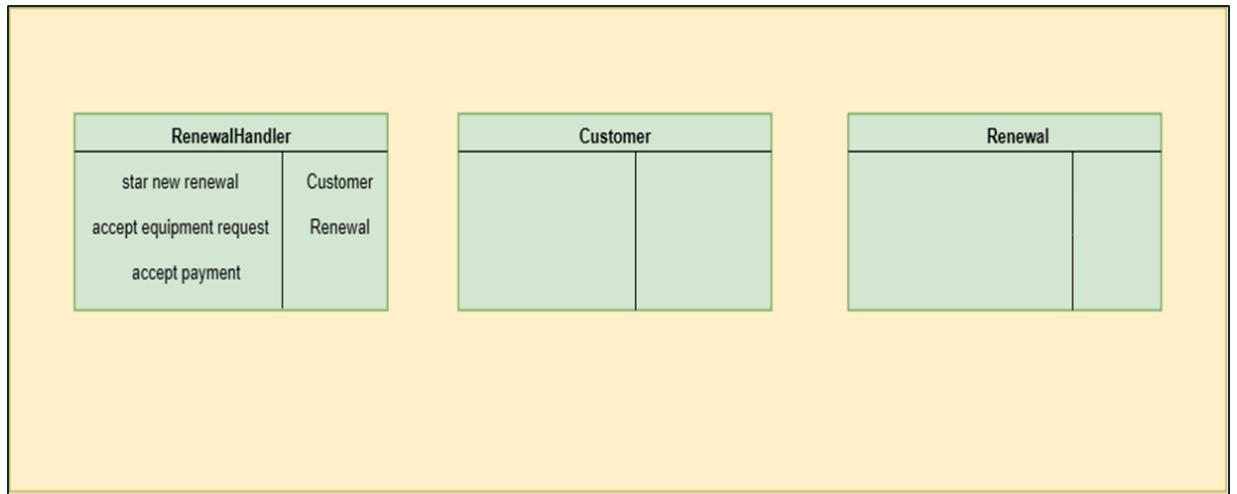


3.2.2. Design Class Diagram

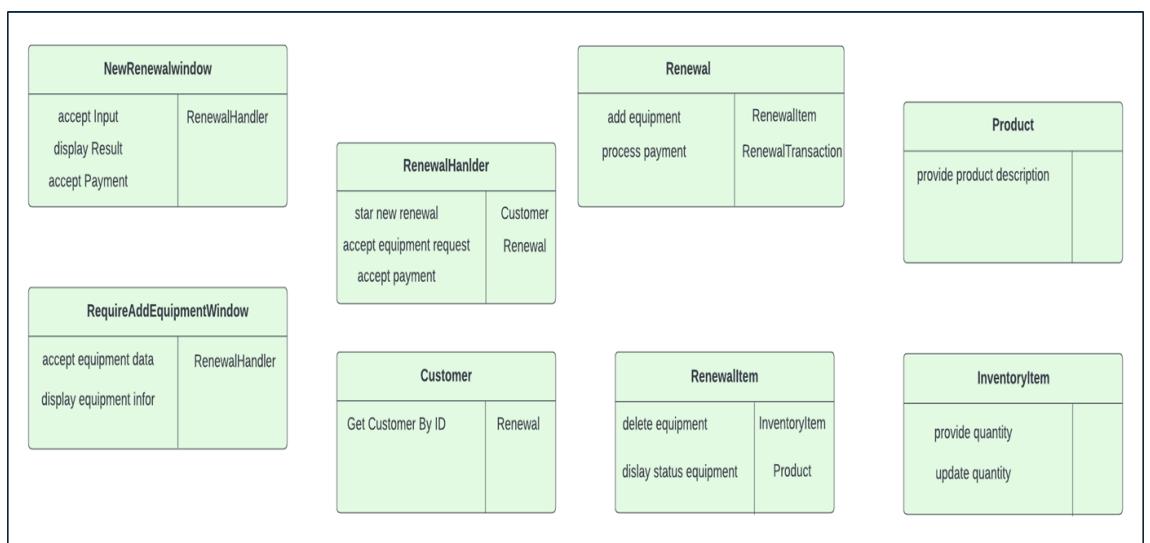
i. Domain Design Class



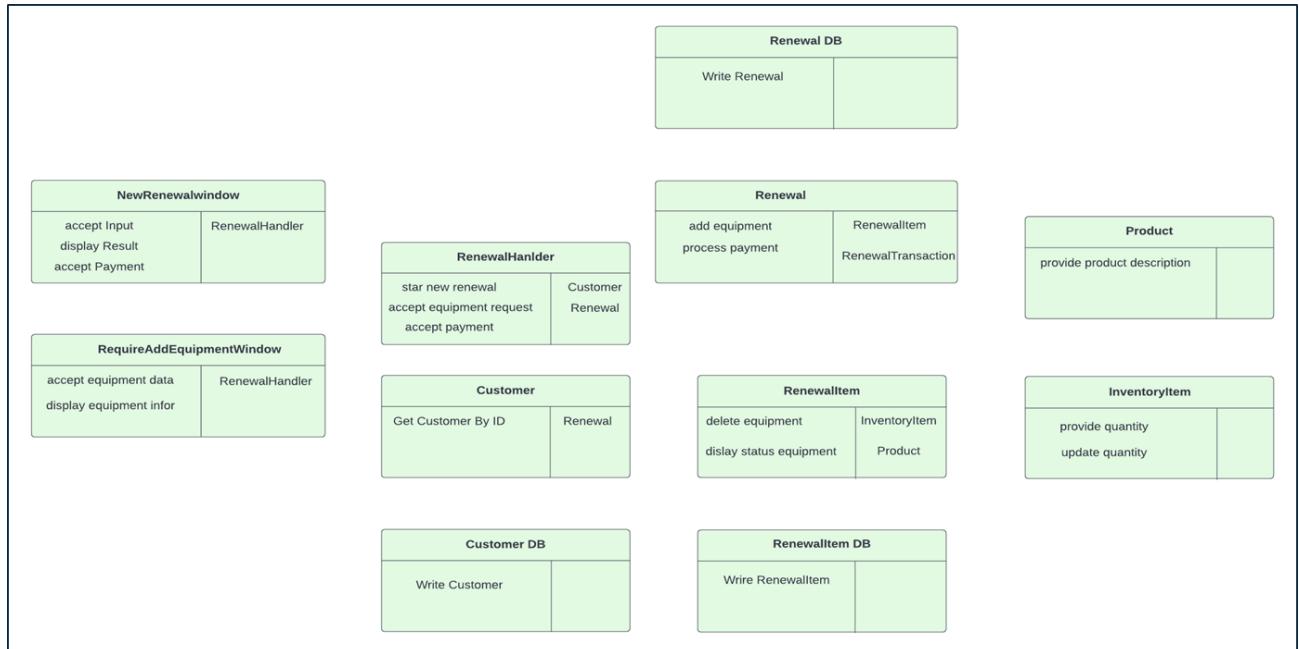
ii. Controller



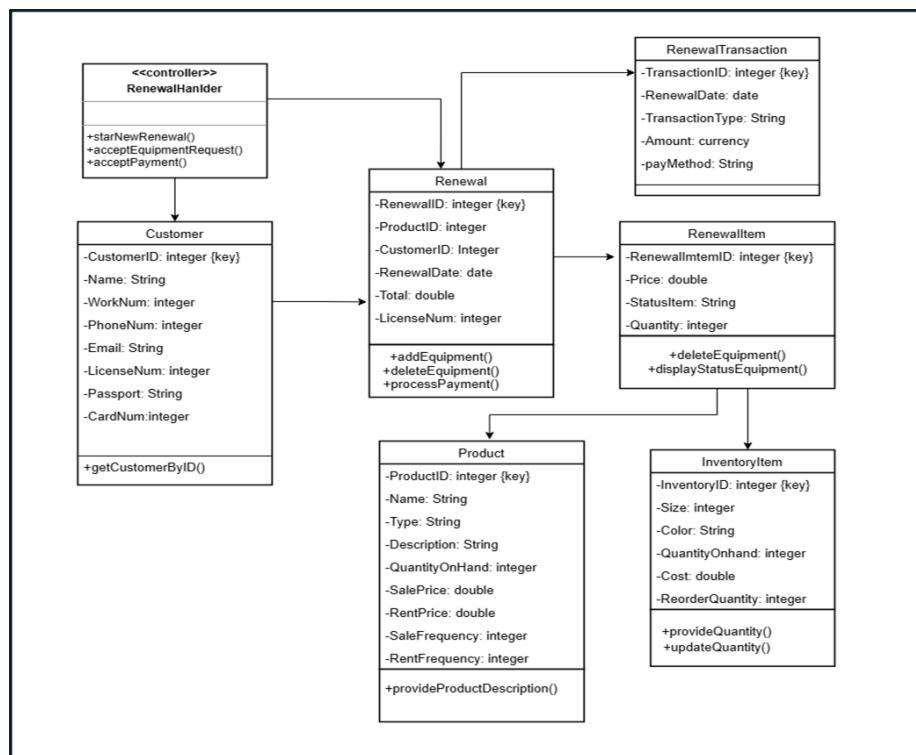
iii. UI



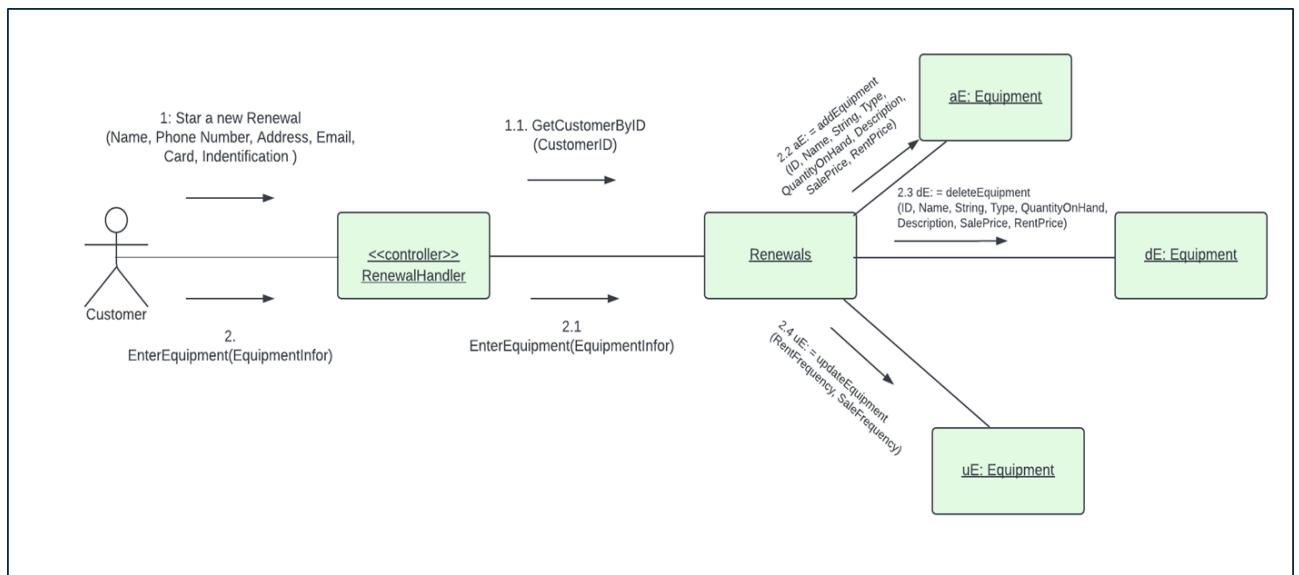
iv. Data Access



v. *Design Class*

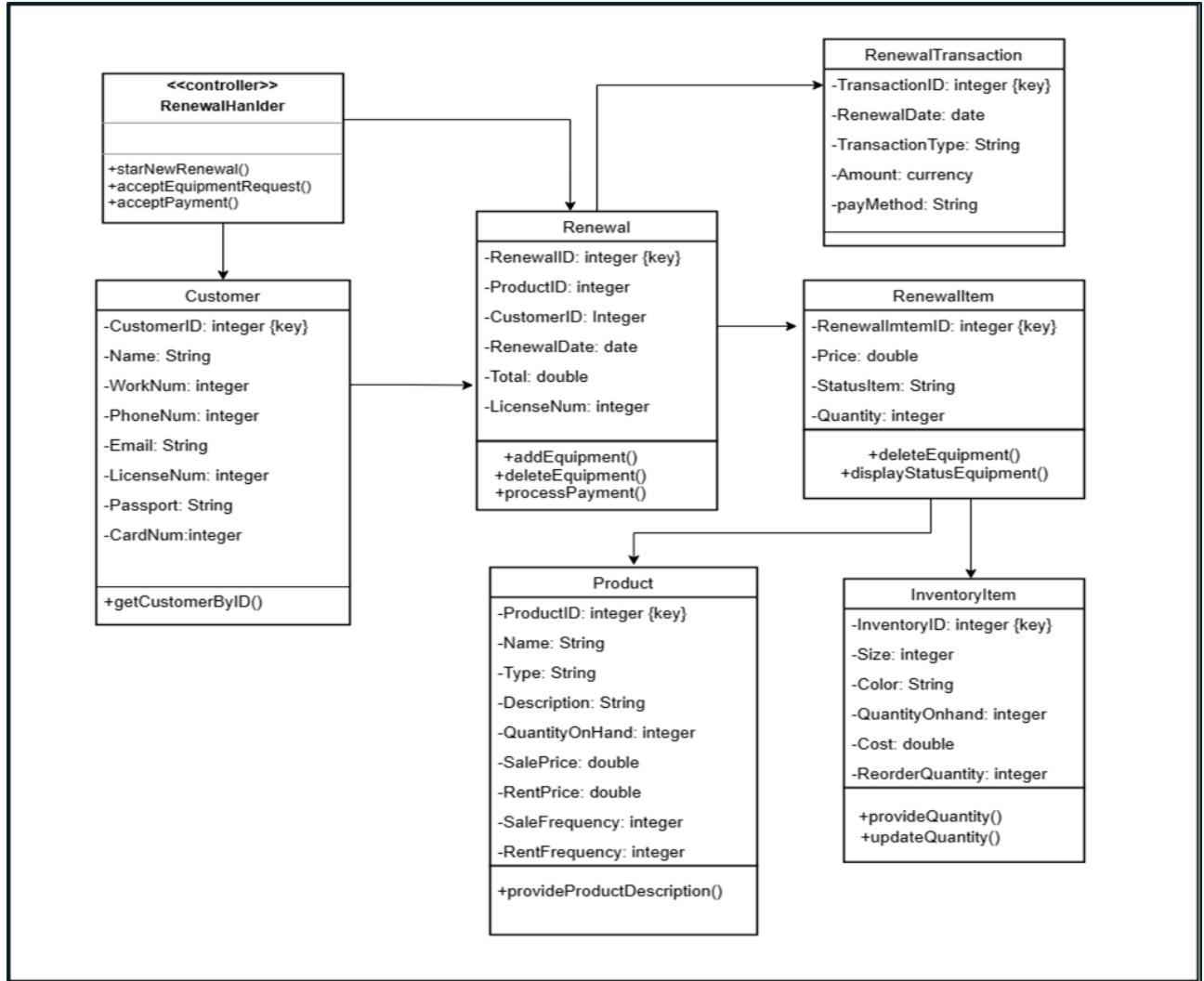


3.2.3. OOD with Communication



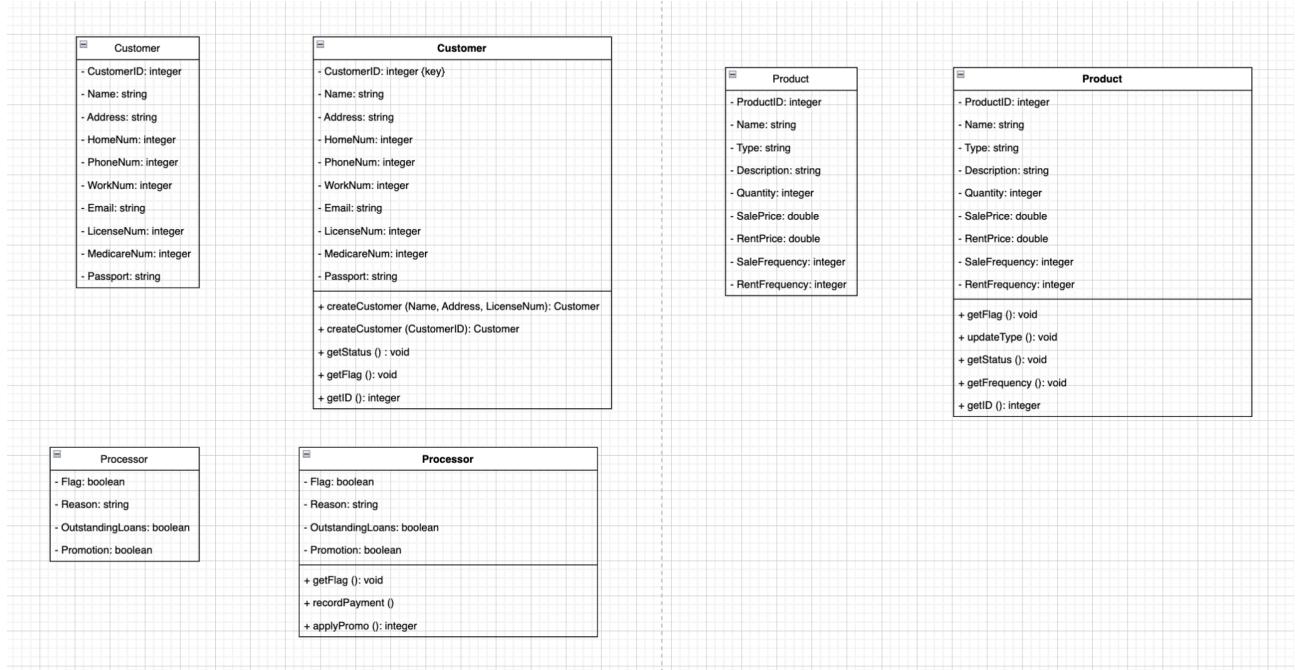
3.2.4. OOD with Sequence Diagram

3.2.5. Final Design Class Diagram



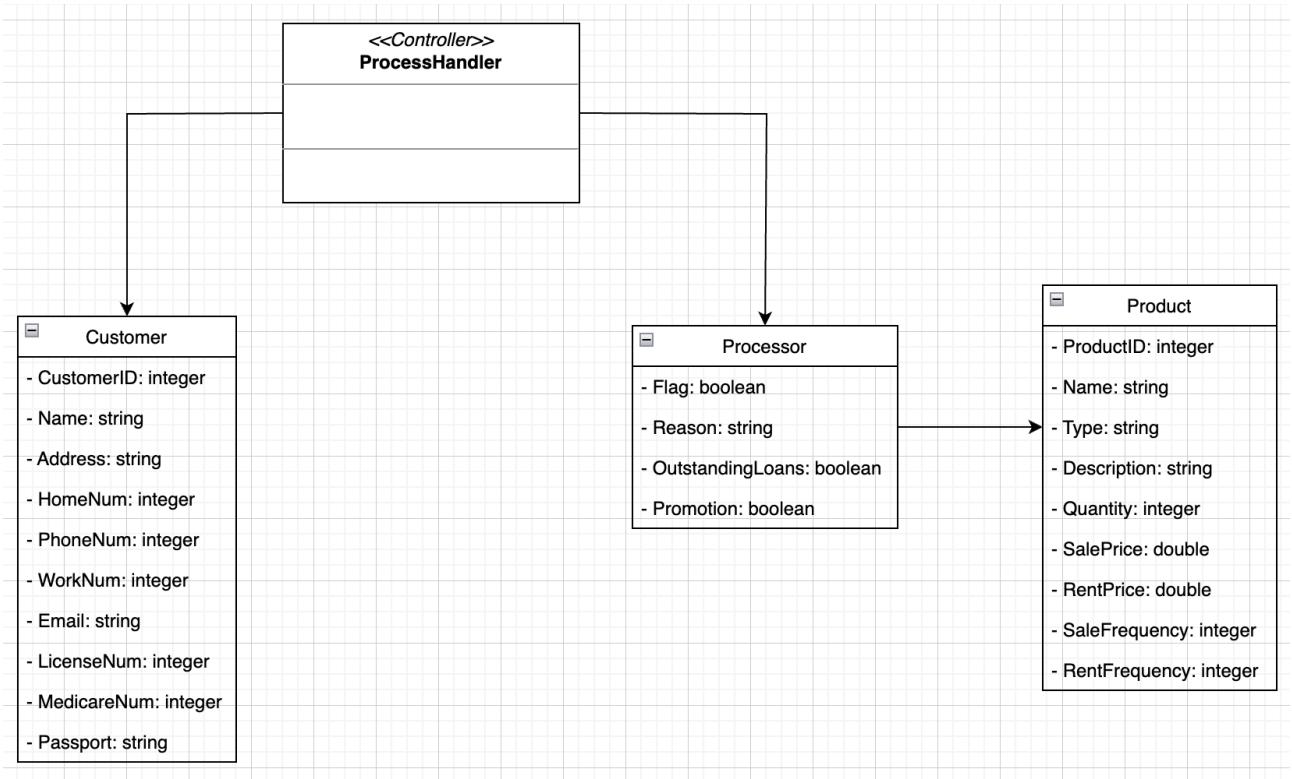
3.2 Design Class for Use Case Process a loan

3.2.1. Design Classes in Detailed Design

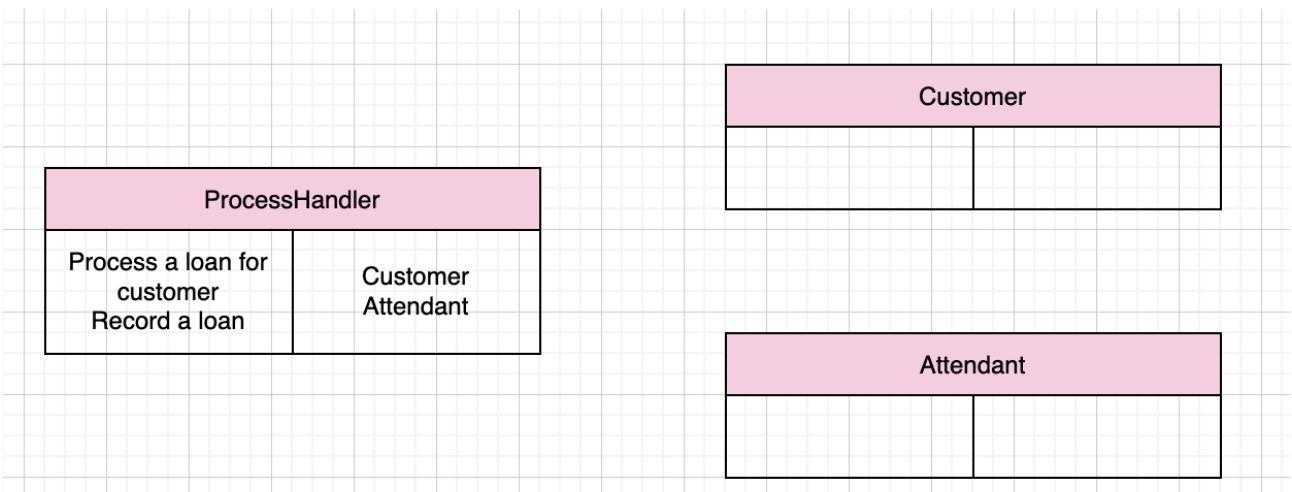


3.2.2. Design Class Diagram

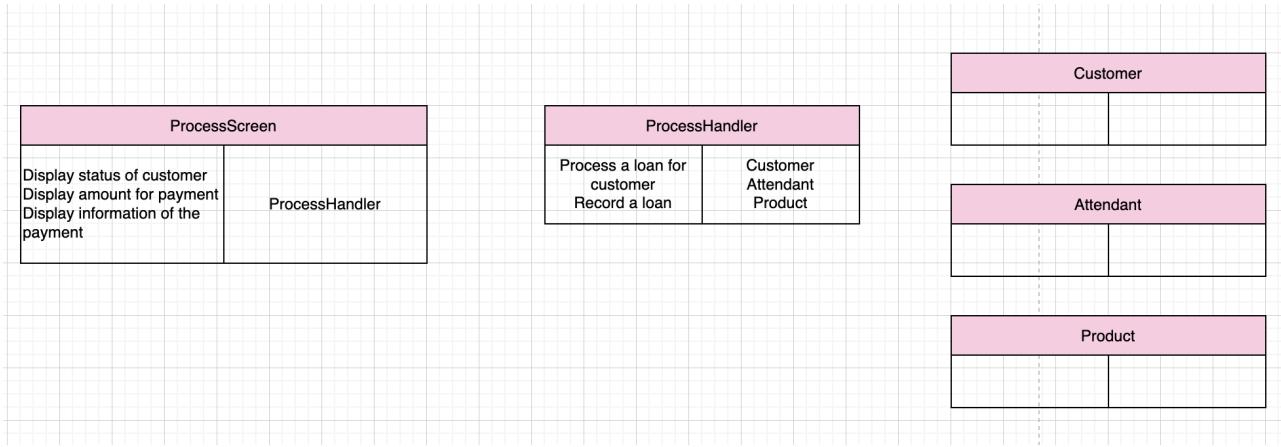
i. Domain Design Class



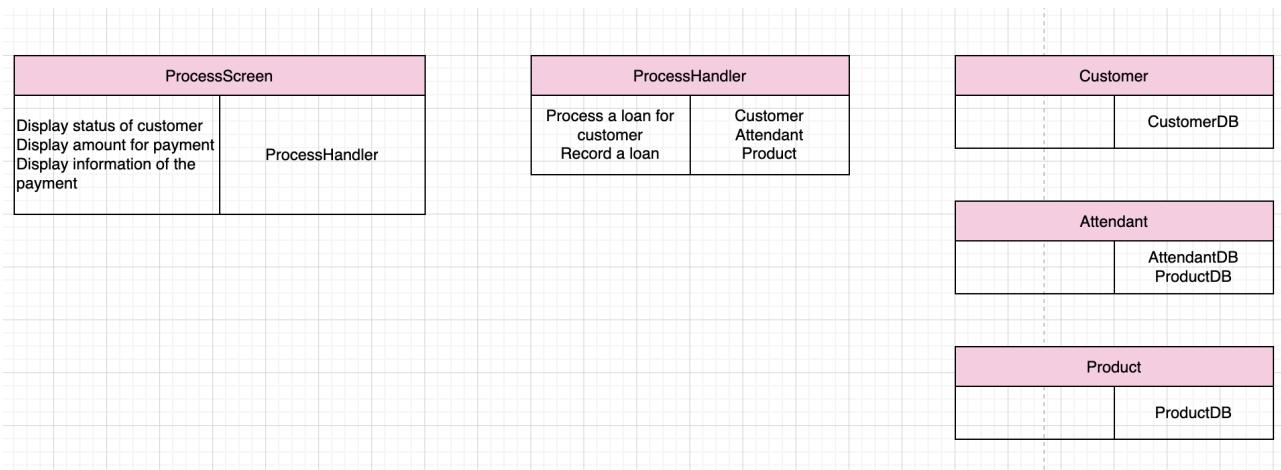
ii. Controller



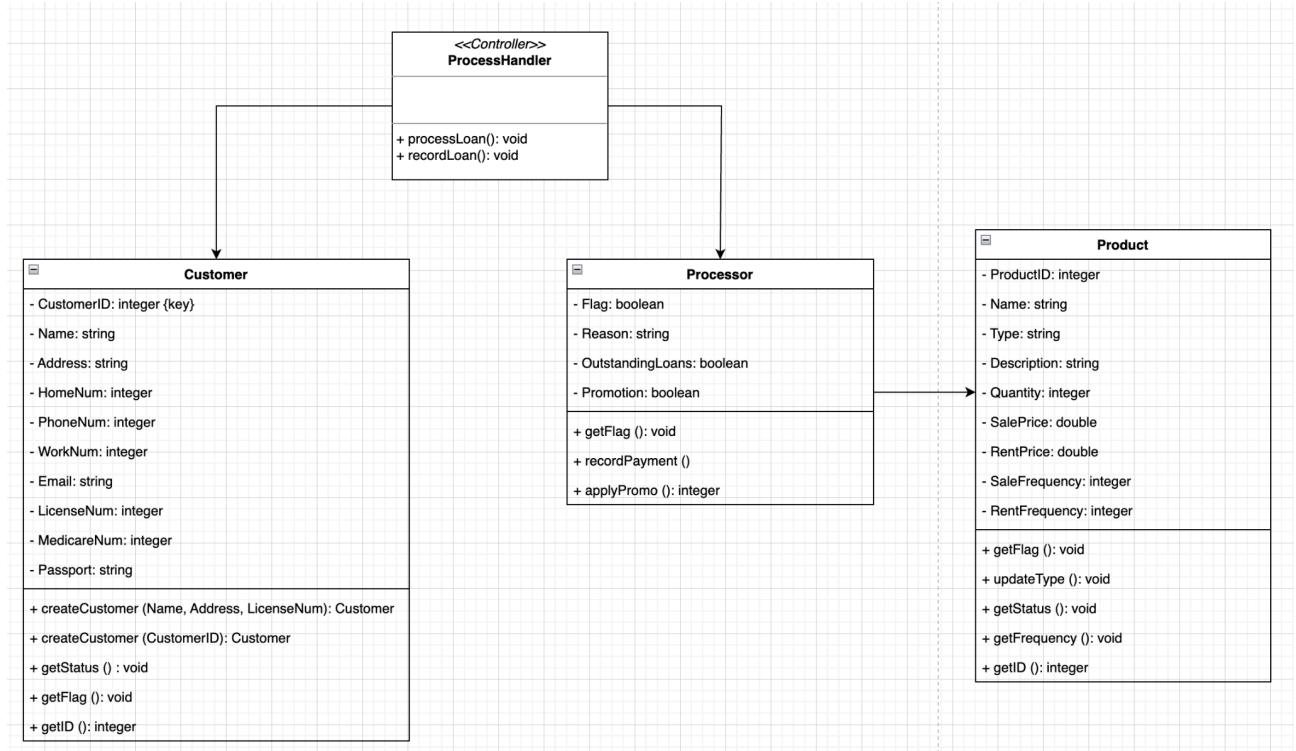
iii. UI



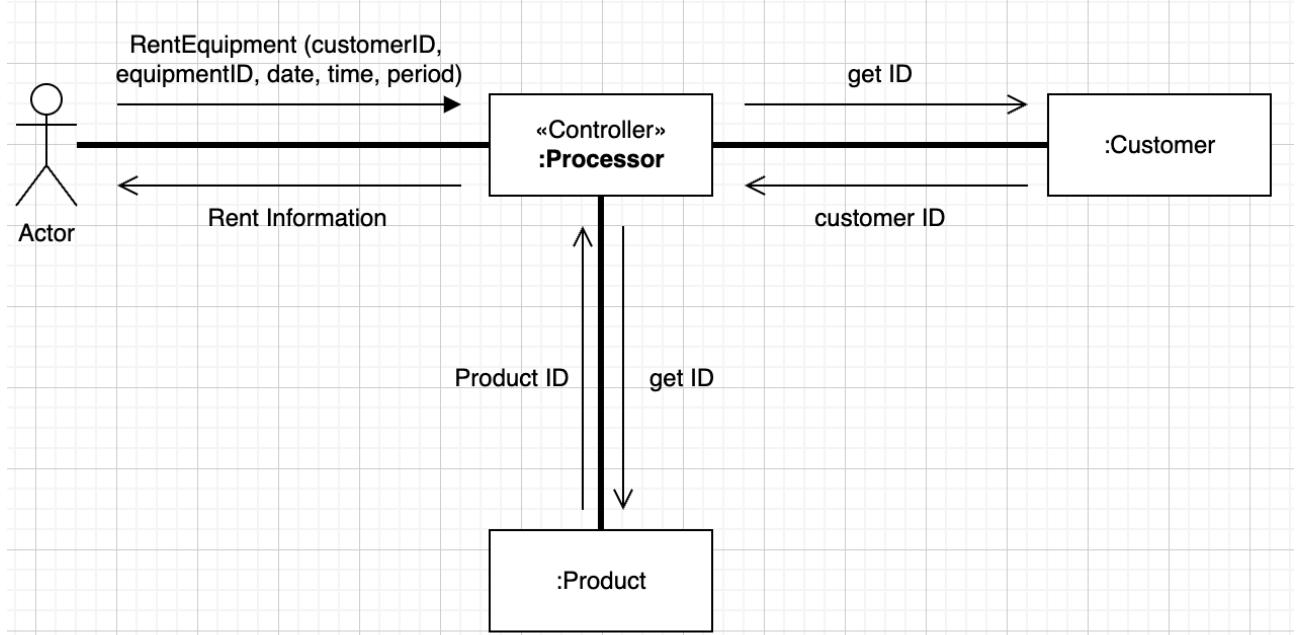
iv. Data Access



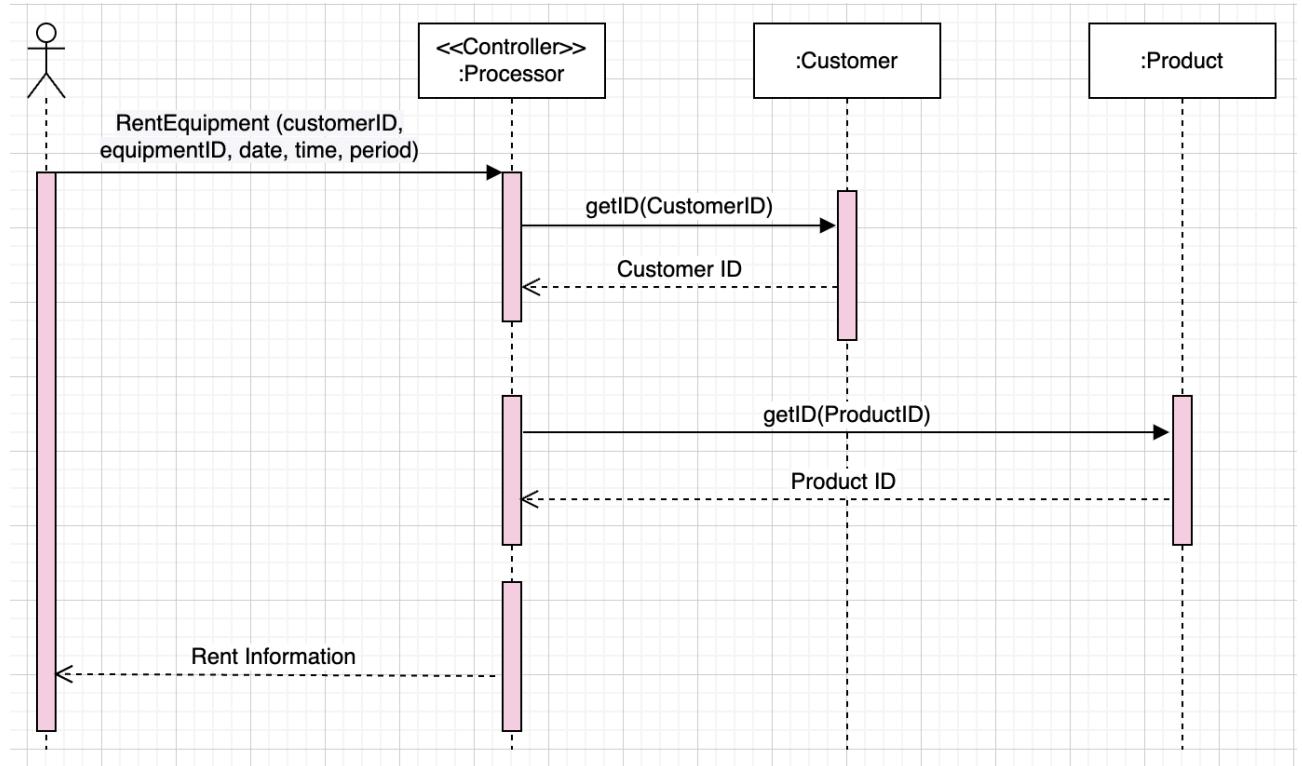
v. Design Class



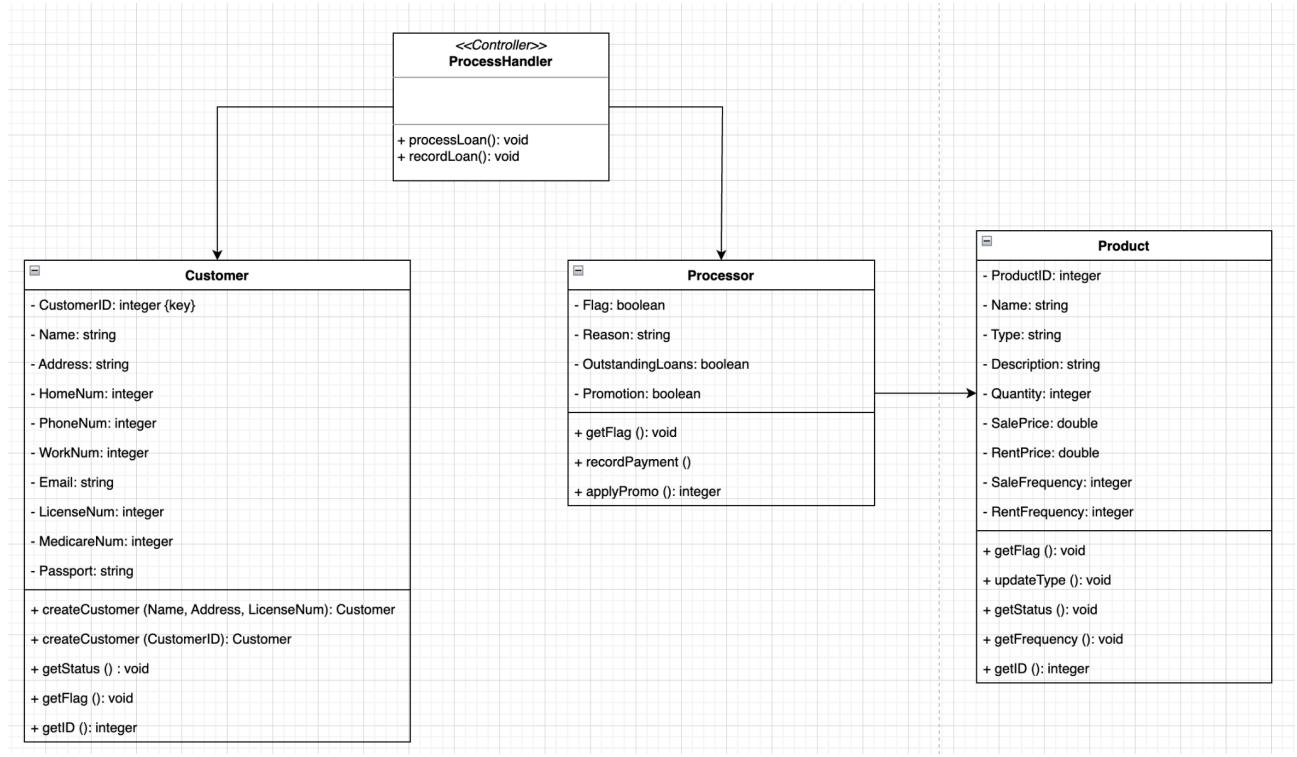
3.2.3. OOD with Communication



3.2.4. OOD with Sequence Diagram

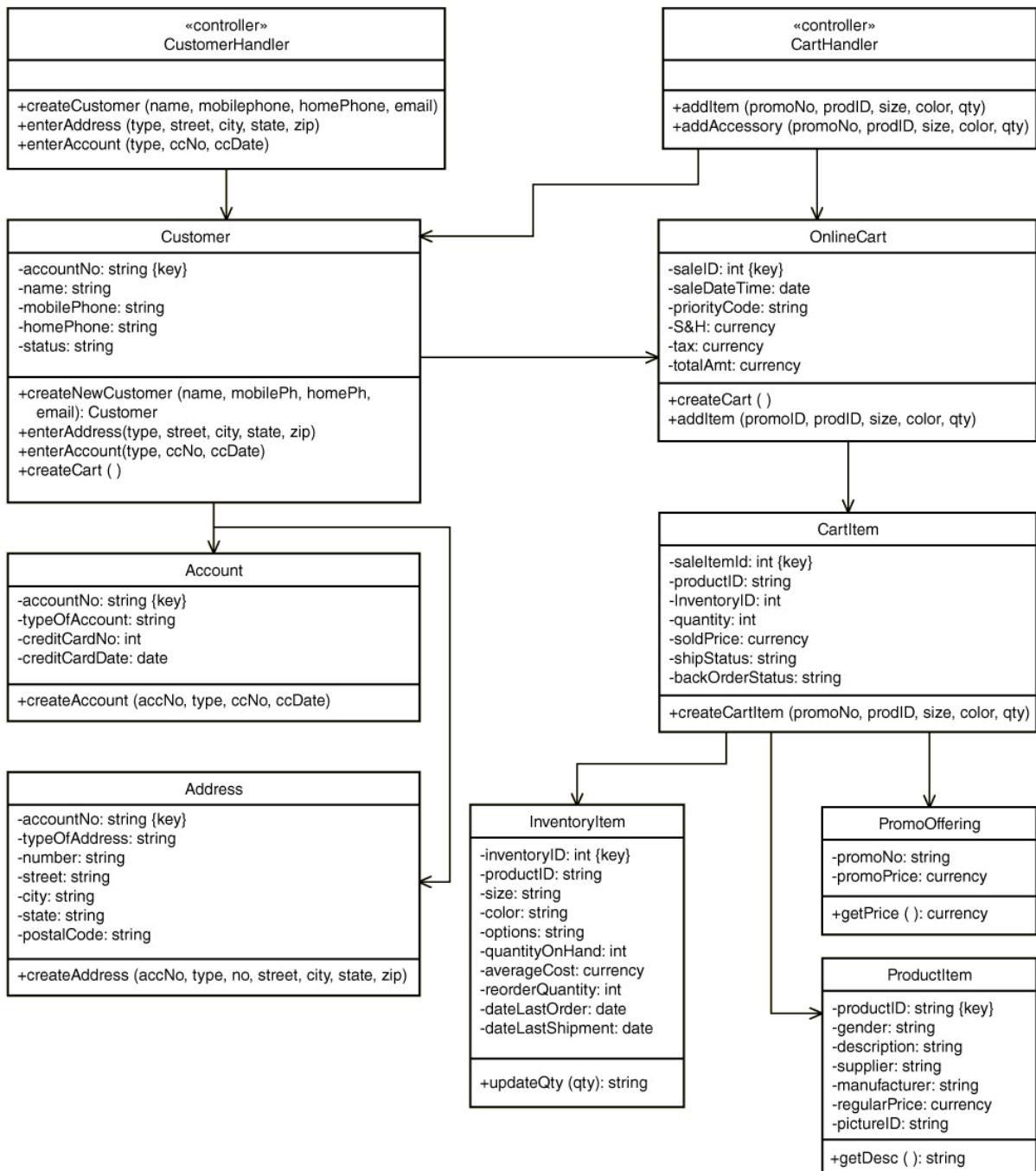


3.2.5. Final Design Class Diagram



IV. System Requirements Implementation

4.1 Design Class for Sub System

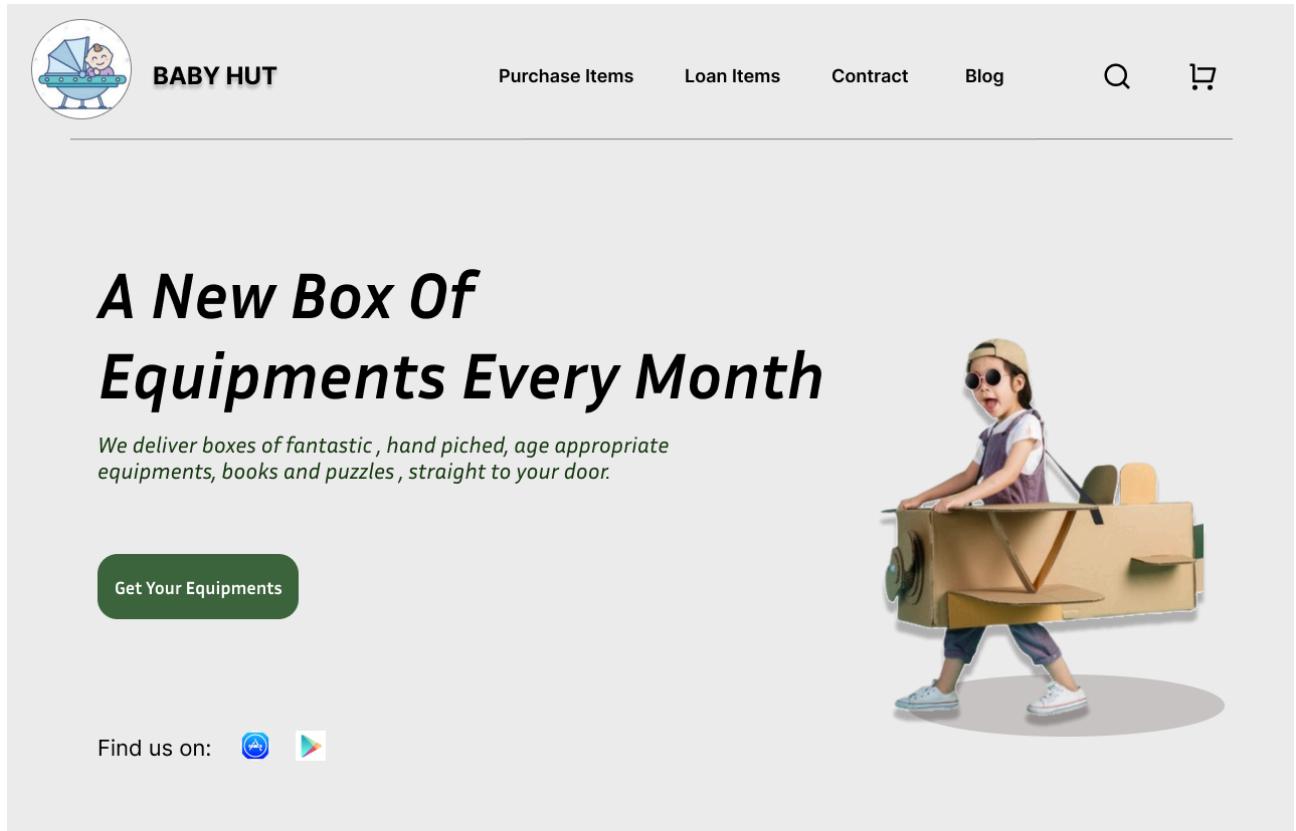


Implementation

4.3.1. *Map persistent objects to the tables in a database*

4.3.2. *Modifying sequence diagrams*

4.3.3. *UI design*



The image shows the Baby Hut website's user interface. At the top, there is a navigation bar with a logo featuring a baby in a stroller, followed by the text "BABY HUT". To the right of the logo are links for "Purchase Items", "Loan Items", "Contract", and "Blog". There are also search and filter icons. Below the navigation bar, the main headline reads "A New Box Of Equipments Every Month". A subtext below the headline states, "We deliver boxes of fantastic, hand picked, age appropriate equipments, books and puzzles, straight to your door." A green button labeled "Get Your Equipments" is positioned on the left. On the right, there is an illustration of a child wearing a cardboard airplane costume, standing on a grey oval. Below the headline, there is a section for social media links with the text "Find us on:" followed by icons for Facebook and Google Play.

4.3.4. SQL Code

i. Create Database

```
-- Customer table
CREATE TABLE customer (
    cutomerID int primary key,
    name nvarchar(82),
    phoneNumber nvarchar(255) unique,
    workNumber nvarchar(255),
    emailAddress nvarchar(255),
    drivenLicenceNumber nvarchar(255) unique
)
```

```
-- Identification table
create table identification (
    Cus_image nvarchar(255) primary key,
    currentAddress nvarchar(255),
    identificationNumber nvarchar(255) unique
)
```

```
-- Product table
create table product (
    productID int primary key,
    typeOfProduct nvarchar(255),
    nameOfProduct nvarchar(82),
    descriptions nvarchar(255),
    quantity int,
    sale_price int,
    rental_price int,
    sale_frequency int,
    rental_frequency int
)
```

```
-- Order table
create table orders (
    orderNo int primary key,
    productID int unique not null,
    customerID int unique not null,
    orderDate date,
    constraint fk_orders_product foreign key (productID) references product(productID),
    constraint fk_orders_customer foreign key (customerID) references customer(cutomerID),
)
```

*ii. Create Table***4.3.5. Software Classes Method Code****I. JAVA**

```
1 import java.util.ArrayList;
2 import java.util.Scanner;
3
4 public class Main {
5     public static void main(String[] args) {
6         ArrayList <Product> productList = new ArrayList<>();
7         ArrayList <Customer> customerList = new ArrayList<>();
8         ArrayList <Order> orderList = new ArrayList<>();
9
10        // Input of product details
11        Scanner sc = new Scanner(System.in);
12        System.out.print("How many products do you want to add? ");
13        int numProduct = sc.nextInt();
14        InputOfProduct(numProduct, productList, sc);
15        System.out.println("Print list of product");
16        printList(productList);
17        System.out.print("Enter the id of product that you are looking for: ");
18        int idOfProduct = sc.nextInt();
19        int resultProduct = getProductInfoById(idOfProduct, productList);
20        System.out.println(resultProduct);
21        if (resultProduct != -1) {
22            System.out.println(productList.get(resultProduct));
23        } else {
24            System.out.println("None of product in storage");
25        }
26        System.out.println("=====");
27
28        // Input of customer details
29        System.out.print("How many customer do you want to add? ");
30        int numCustomer = sc.nextInt();
31        InputOfCustomer(numCustomer, customerList, sc);
```

```

31     InputOfCustomer(numCustomer, customerList, sc);
32     System.out.println("Print list of customer");
33     printList(customerList);
34     System.out.print("Enter the id of customer that you are looking for: ");
35     int idOfCustomer = sc.nextInt();
36     int resultCustomer = getCustomerInforById(idOfCustomer, customerList);
37     System.out.println(resultCustomer);
38     if (resultCustomer != -1) {
39         System.out.println(customerList.get(resultCustomer));
40     } else {
41         System.out.println("None of customer in list");
42     }
43     System.out.println("=====");
44
45     // Input of order details
46     System.out.print("How many order do you want to add? ");
47     int numOrder = sc.nextInt();
48     InputOfOrder(numOrder, orderList, sc);
49     System.out.println("Print list of order");
50     printList(orderList);
51     System.out.print("Enter the number of order that you are looking for: ");
52     int idOfOrder = sc.nextInt();
53     int resultOrder = getOrderInforById(idOfOrder, orderList);
54     System.out.println(resultOrder);
55     if (resultOrder != -1) {
56         System.out.println(orderList.get(resultOrder));
57     } else {
58         System.out.println("None of order in list");
59     }
60     sc.close();
61 }
```

```

65     // insert input type String
66     public static String insertString () {
67         Scanner sc = new Scanner(System.in);
68         String s = sc.nextLine();
69         return s;
70     }
71
72     // print all type of list (generic)
73     @
74     public static <E> void printList (ArrayList<E> list) {
75         for (E l : list) {
76             System.out.println(l);
77         }
78     }
79
80     // enter all products to list
81     public static ArrayList<Product> InputOfProduct (int numProduct, ArrayList<Product> productList, Scanner sc) {
82         while (numProduct > 0) {
83             Product product = new Product();
84             System.out.print("Input the product Id: ");
85             int id = sc.nextInt();
86             System.out.print("Input your type of product: ");
87             String type = insertString();
88             product.setProductID(id);
89             product.setTypeOfProduct(type);
90
91             productList.add(product);
92             numProduct--;
93         }
94         return productList;
95     }
96 }
```

```

96   | // enter all customer to list
97   |   public static ArrayList<Customer> InputOfCustomer (int numCustomer, ArrayList<Customer> customerList, Scanner sc) {
98   |       while (numCustomer > 0) {
99   |           Customer customer = new Customer();
100          System.out.print("Input the customer Id: ");
101          int id = sc.nextInt();
102          System.out.print("Input the name of customer: ");
103          String name = insertString();
104          System.out.print("Input the phone number of customer: ");
105          String phone = insertString();
106          System.out.print("Input the number of work: ");
107          String work = insertString();
108          System.out.print("Input the email address: ");
109          String email = insertString();
110          System.out.print("Input the driven licence: ");
111          String licence = insertString();
112          customer.setCustomerId(id);
113          Customer customer = new Customer() ...;
114          customer.setPhoneNumber(phone);
115          customer.setName(name);
116          customer.setWorkNumber(work);
117          customerList.add(customer);
118          numCustomer--;
119      }
120  }
121  return customerList;
122 }
123

```

```

125   | // enter all order to list
126   |   public static ArrayList<Order> InputOfOrder (int numOrder, ArrayList<Order> orderList, Scanner sc) {
127   |       while (numOrder > 0) {
128   |           Order order = new Order();
129   |           System.out.print("Input the number of order: ");
130   |           int orderNo = sc.nextInt();
131   |           System.out.print("Input the product id: ");
132   |           int idPro = sc.nextInt();
133   |           System.out.print("Input the customer id: ");
134   |           int idCus = sc.nextInt();
135   |           System.out.print("Input the date of order: ");
136   |           String date = insertString();
137   |           order.setOrderDate(date);
138   |           order.setOrderNo(orderNo);
139   |           order.setProductId(idPro);
140   |           order.setCustomerId(idCus);
141   |           orderList.add(order);
142   |           numOrder--;
143   }
144   return orderList;
145 }
146
147
148
149 // get product infor in list by ID
150 @
151 public static int getProductInforById(int id, ArrayList<Product> list) {
152
153     int start = 0;
154     int end = list.size() - 1;

```

```
155     while (_start <= _end) {
156         int mid = _start + (_end - _start) / 2;
157
158         if (list.get(mid).getProductID() > id)
159             _end = mid - 1;
160         else if (list.get(mid).getProductID() < id)
161             _start = mid + 1;
162         else
163             return mid;
164     }
165     return -1;
166 }
167
168 // get customer infor in list by ID
169 @
170 public static int getCustomerInforById(int id, ArrayList<Customer> list) {
171
172     int _start = 0;
173     int _end = list.size() - 1;
174
175     while (_start <= _end) {
176         int mid = _start + (_end - _start) / 2;
177
178         if (list.get(mid).getCustomerId() > id)
179             _end = mid - 1;
180         else if (list.get(mid).getCustomerId() < id)
181             _start = mid + 1;
182         else
183             return mid;
184     }
185     return -1;
186 }
```

```
185     }
186
187     // get order infor in list by ID
188     @
189     public static int getOrderInforById(int id, ArrayList<Order> list) {
190
191         int start = 0;
192         int end = list.size() - 1;
193
194         while (start <= end) {
195             int mid = start + (end - start) / 2;
196
197             if (list.get(mid).getOrderNo() > id)
198                 end = mid - 1;
199             else if (list.get(mid).getOrderNo() < id)
200                 start = mid + 1;
201             else
202                 return mid;
203         }
204     }
205
206 }
```

V. SYSTEM TESTING, DEPLOYMENT AND DEMONSTRATION

5.1 Testing: Test plan & Test case

| | Functions | Testcase procedure | Input | Expected Result | Test Result |
|---|---------------------|--|--|--|--|
| 1 | Test rentOrder() | Inputs including an amount, a price, a warehouse, an imported date and a payment method | An amount: 100 A warehouse: warehouse 2 Date: 20-3-2021 Payment method: Choose “pay by cash” | Successfully added | Pass |
| 2 | Test addequipment() | Input of a name of a product. It will check whether a name is available or not | A name: Sky doll | Successfully added | Fail (the product is available in stock) |
| 3 | Test Order() | Input of a name of a customer, an address, an amount and a payment method | A name: Huy An address: Quan 4 An amount: 100 A payment method: Cash | Successfully order | Pass |
| 4 | Test Statistic() | Firstly, adding a name of product again then generate an invoice of that product with its amount, ... After that, an number of | Complete test case “1” and “2” again | Sum of products that are in warehouses will be shown accurately after adding more products | Pass |

5.2 Deployment

5.3 Demonstration

The screenshot shows a product page on the Baby Hut website. At the top, there is a navigation bar with the Baby Hut logo, a home icon, and links for Baby Clothes, Baby Care, Baby Gear, Hamleys, Footwear & accessories, a search icon, and a shopping cart icon.

The main content area displays a yellow floral bibshorts and white bodysuit set. There are three smaller images of the product shown from different angles: front view, back view, and a close-up of the bodysuit's neckline.

Product details:

- Yellow Floral Bibshorts And White Bodysuit Set**
- \$ 20.65 For Buy \$ 5.45 For Rent**
- Price inclusive all taxes

Age Groups:

- 0-3M (highlighted in blue)
- 0-6M
- 6-9M
- 9-12M
- 12-18M
- New Born

Qty: - 1 +

Buttons:

- Purcchase (orange)
- Rent (orange)

Check Pincode:

- Enter your Pincode (text input field)
- Check (button)

The screenshot shows a web browser displaying the Baby Hut website. At the top, there is a navigation bar with a logo of a baby in a stroller, followed by the text "BABY HUT". To the right of the logo are links for "Baby Clothes", "Baby Care", "Baby Gear", "Hamleys", "Footwear & accessories", a search icon, and a shopping cart icon.

Below the navigation bar, the text "Purchase items" is centered. Underneath this, there is a product listing for "yellow floral bibshorts and white bodysuit set" in size "0-3M". To the right of the product image, there is a quantity selector showing "1" and a price of "\$20.65".

Below the product listing, there is a section titled "Enter your infomation" containing four input fields: "Name", "Phone Number", "Address", and "Card Number". To the right of these fields is a large orange button labeled "Purchase".

The screenshot shows the Baby Hut website's 'MY ORDERS' page. At the top, there is a navigation bar with categories: Baby Clothes, Baby Care, Baby Gear, Hamleys, and Footwear & accessories. To the right of these are a search icon and a shopping cart icon. Below the navigation bar, the title 'MY ORDERS' is centered. A table follows, displaying five purchase records:

| Product | Quantity | Date | Price |
|-------------------------------|----------|-----------|----------|
| Pij mask mini vehicle asst | 1 | 1-12-2022 | \$400.00 |
| Pink giraffe snowglobe | 2 | 3-12-2022 | \$160.55 |
| Paw patro toy on bag rubble | 3 | 4-12-2022 | \$50.55 |
| Nerf-n strike | 2 | 5-12-2022 | \$28.99 |
| Bently 6 in 1 baby controller | 1 | 6-12-2022 | \$875.00 |

**BABY HUT** Baby Clothes Baby Care Baby Gear Hamleys Footwear & accessories  

Loan Equipment

Have a coupon? Click here to enter your code.

Information Customer

| | |
|-----------------------|-----------|
| First Name | Last Name |
| Phone Number | |
| Email | |
| Street Address | |
| Identification Number | |

Additional Information

Other note (optional)

Note

Account Status

Flagged Not Flagged

Your Equipment Loan

| Product | Subtotal |
|----------------------|----------|
| Mini vehicle asst *1 | \$100.00 |
| Subtotal | \$100.00 |
| Total | \$100.00 |



pj mask mini vehicle asst. - green

Code: MK78JT4

PLACE LOAN

Final Project

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| | | | | | |
|----------|----------------------|----------|---------------|----------|-----------------|
| 1 | Information Personal | 2 | Renewals Loan | 3 | Verify Renewals |
|----------|----------------------|----------|---------------|----------|-----------------|

| | | |
|--------------------|------------------|-----------------|
| DATA PERSONAL | | |
| Name | Phone Number | Address |
| Email | Card/Credit Card | Indentification |
| CONTINUAR → | | |

The screenshot shows the Baby Hut website interface. At the top, there is a navigation bar with categories: Baby Clothes, Baby Care, Baby Gear, Hamleys, Footwear & accessories, a search icon, and a shopping cart icon. Below the navigation bar, there is a progress bar with three steps: 1. Information Personal, 2. Renewals Loan (which is highlighted in green), and 3. Verify Renewals.

Renewed Equipment: Mothercare Sport Isofix Car Seat Charcoal Grey

Options:

- 3 months \$60.75
- 6 months \$119.99
- 1 year \$210.75

Apply For Renewals



This is a screenshot of an email verification page. At the top is a decorative graphic of a red envelope with a white document and a green checkmark. Below it is the text "Verify your email address". A message in the center states: "You've been entered *****@gmail.com as the email address for your account. Please verify email address by clicking the button below." At the bottom is a large blue button with the word "Verify" in white.

Conclusions/ Recommendations

In conclusion, the primary goal of this project is to design and analyze a website that not only increases the customer experience but also meets the main needs of the business. To enhance the website solution experience, we strongly recommend the Baby Hut Company follow six iterations in SDLC

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- B.1. [1].John Satzinger, Robert Jackson, and Stephen Burd, Systems Analysis and Design In a Changing World, 7th Edition, Cengage Learning, 2016

- B.2. Dennis, Alan, Barbara Haley Wixom, and Roberta M. Roth. Systems analysis and design 5th Edition. John Wiley & Sons, 2012.

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- I.1. <https://youtu.be/pCK6prSq8aw>
- I.2. <https://youtu.be/RiGCVzw7pl8>