California State University Fullerton
CPSC 462

Object Oriented Software Design
Use Case Model – Annex 1
for the

High Velocity Sales Technology System

Make a Purchase
Fully Dressed Use Case

Ryan McDonald
Senior Architect
rtmcdonald96@csu.fullerton.edu

Alexander Frederick
Senior Technical Director
afrederick2@csu.fullerton.edu

Benjamin Baesu
Senior Localization SW Designer
BBaesu@csu.fullerton.edu

Revision History:

Version	Date	Summary of Changes	Author
1.0	September 28, 2020	• Initial Release	Ryan McDonald
1.1	November 9, 2020	• Preconditions updated to match system process flow • Success Guarantee updated to match system process flow • Main Success Scenario updated to match system process flow • Extensions updated • Technology and Data variations updated to be in proper verbiage • Special Requirements updated to be in proper verbiage	Ryan McDonald
1.2	December 7, 2020	• Updated System Sequence Diagram to accurately represent system flow • Updated main success scenario to accurately represent system flow • Updated extensions to match success scenario number and added new extensions for potential scenarios	Ryan McDonald Alexander Frederick

Table of Contents

1   Use Case Description

1.1   Use Case Title
Make a Purchase

1.2   Scope
High Velocity Sales Technology system

1.3   Category
Greatest Risk

1.3.1   Risks addressed
1.   Payment Authorization Service Unavailable

1.4   Level
User Goal

1.5   Primary Actor(s)
- Customer

1.6   Stakeholders and Interests:

1.6.1   Customer
The customer wants a streamlined process to be able to make purchases quickly and easily without any errors along the way. The customer wants their total cost and items purchased to be shown before purchase is made. The customer wants proof of purchase after purchase has been completed.

1.6.2   Company CFO
The company wants accurate records of transactions and to satisfy customers so they will do return business. The company wants payment authorization to be recorded for company records. The company wants alternatives to receive payment in case of 3rd party payment authorization issues.

1.6.3   Manager
The manager wants product inventory to be accurately updated after each transaction so there are not inventory discrepancies that need to be updated manually.

1.6.4   Offices in Charge of State Tax Authorities
The state tax authorities want to collect sales taxes for each purchase made. There may be multiple agencies depending on location of customer.

1.7   Preconditions (Entrance Criteria)
Active session that is created by system has customer access level.

1.8   Success Guarantee (Exit State)
The payment has been successful, and the system returns to initial state after session creation.

1.9   Main Success Scenario:
1.   The customer requests to create a session with their username, password and access level.

2.   The system creates a session using their login credentials.

3.   The customer requests the commands available for their session.

4. The system responds with the command list that corresponds to their current session.

5. The customer requests to make a purchase.

6. The system responds with product inventory.

7. The customer requests the products they would like to purchase.

8. The system responds with the total costs of all products selected, with sales tax included.

9. The customer requests to make payment for their purchase.

10. The system launches the external 3rd party payment authorization system.

11. The customer completes payment through 3rd party system.

12. The system responds with a purchase receipt and purchase information.

13. The customer requests to end their session.

14. The system shuts down their active session.

1.10   Extensions (Alternate paths)

Step 2. User credentials do not correlate to any users within system.

2a. The customer requests to creates a new account.

2b. The customer requests to resets authentication information.

2. The system returns to the start of the success scenario.

Step 7. Product selected is out of stock.

1. The system responds with error message containing product information that was out of stock at time of product selection request.

2. The system returns to the state at main scenario step 5.

Step 11a. 3rd party payment system is non-functional.

1. The 3rd party payment system sends error message to system upon attempting to launch.

2. The system responds with error message to customer prompting customer to contact sales representative.

3. The system returns to initial state.

4. The sale is finished by sales representative using method in Use Case 6 Make a Sale.

Step 11b. 3rd party payment system is non-functional.

1. The 3rd party payment system sends error message to system upon attempting to launch.

2. The system responds with error message to customer and returns invoice to customer.

3. The customer receives invoice and fulfills payment using alternate payment method.

4. The system responds with a purchase receipt and purchase information.

Step 11c. 3rd party payment system does not return successfully authorized payment.

1. The system signals payment error to customer.

2. The customer responds by requesting to make payment again.

3. The system returns to step 7 in main scenario.

Step 11d. 3rd party payment system does not return successfully authorized payment.

1. The system signals payment error to customer.

2. The customer responds by requesting to complete sale with sales representative.

3. The system returns to initial state.

4. The sale is finished by sales representative using method in Use Case 6 Make a Sale.

1.11   Special Requirements:

- Active connection between UI layer and Domain layer must be maintained throughout entire process.

- System must check current stock of products selected for purchase before it returns total cost of purchase.

- Business(Domain) rules for sales must apply.

- The amount of sales tax is determined based on where the sale is made. In an e-commerce environment, the sale is completed at the location where the customer receives the products. For this reason sales tax is based on shipping address.

1.12   Technology and Data Variations List:

5. System shall take credit and debit card payments.

6. Sales tax shall be calculated according to local laws.

1.13   Frequency of Occurrence:

- 60 sales per hour.

1.14   Miscellaneous:

- What are the tax law variations for special groups?

2   Make A Purchase

2.1   Scenario Description

The customer requests to create a session with their username, password, and access level. The system responds by creating an active session for their credentials. The customer requests to get available commands. The system responds with the command list for their session. The customer requests to execute the make a purchase command with their credit card information and the item number and quantity for the item they are wishing to purchase. The system responds with their purchase result which includes their payment status and a summary of their item selection. The customer requests to end their session. The system shuts down the session.

2.2 System Sequence Diagram

Scenario 1: Make A Purchase

Customer   System

1: findRoles()

1.1: "Customer", "Manager", "Sales Rep", "System Admin"

2: createSession("Ryan", "123", "Customer")

2.1: Session<Customer>:sessionControl

3: sessionControl->getCommands()

3.1: "Make A Purchase", "Quit"

4: sessionControl->executeCommand("Make A Purchase")

4.1: Current Inventory List

5: ItemNumber("1234567893") and Quantity("1")

5.1: "You Selected: Luxurious Shirt Qty: 1", "Total Cost of Purchase: 629.99", Credit Card Payment Request

6: CreditCardInformation("4444123456789082", "1024", "123")

6.1: Purchase Result*

7: sessionControl->executeCommand("Quit")

7.1:

Purchase Result
"Payment Status: Visa Payment Approved
Thank you for your purchase: Item
Number: 1234567893
Item Quantity: 1
Total Cost: 629.99"