INFORMATION SYSTEM ANALYSIS & DESIGN - 2024

https://www.facebook.com/groups/1151556862812376

tdque@yahoo.com   quetd@ptit.edu.vn

ASSIGNMENT 2

Due date: 17-19-20/09

The requirement of an OLD library management system in the University is described as follows:

The functional requirements for an automated university library circulation system include the need to support searching, borrowing, and book-maintenance activities. The system should support searching by title, author, keywords, and ISBN. Searching the library's collection database should be available on terminals in the library and available to potential borrowers via the World Wide Web. If the book of interest is currently checked out, a valid borrower should be allowed to request the book to be returned. Once the book has been checked back in, the borrower requesting the book should be notified of the book's availability. The borrowing activities are built around checking books out and returning books by borrowers. There are three types of borrowers: students, faculty and staff, and guests. Regardless of the type of borrower, the borrower must have a valid ID card. If the borrower is a student, having the system check with the registrar's student database validates the ID card. If the borrower is a faculty or staff member, having the system check with the personnel office's employee database validates the ID card. If the borrower is a guest, the ID card is checked against the library's own borrower database. If the ID card is valid, the system must also check to determine whether the borrower has any overdue books or unpaid fines. If the ID card is invalid, the borrower has overdue books, or the borrower has unpaid fines, the system must reject the borrower's request to check out a book; otherwise the borrower's request should be honored. If a book is checked out, the system must update the library's collection database to reflect the book's new status.

The book-maintenance activities deal with adding and removing books from the library's book collection. This requires a library manager to both logically and physically add and remove the book. Books being purchased by the library or books being returned in a damaged state typically cause these activities. If a book is determined to be damaged when it is returned and it needs to be removed from the collection, the last borrower will be assessed a fine. However, if the book can be repaired, depending on the cost of the repair, the borrower might not be assessed a fi ne. Finally, every Monday, the library sends reminder e-mails to borrowers who have overdue books. If a book is overdue more than two weeks, the borrower is assessed a fine. Depending on how long the book remains overdue, the borrower can be assessed additional fines every Monday.

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The University wants to upgrade the system **LibSys** so that:

- Borrower can search, order the needed items via web internet or smart phone
- Borrower also may extend, check availability and reserve books via web or smartphone
- Borrower may pay fine online with smartphone
- Borrower may request to ship books by drone (flying device)

Your task:

1. Using context diagram to describe **LibSys**
2. Using feature tree to describe **LibSys**
3. Using table to describe actors, use cases of **LibSys**
4. Draw a use case diagram with two levels:
   - Overall level
   - Detail/level 1
5. Write 10 scenarios and 10 use stories with corresponding acceptance criteria
6. Draw 3 activity diagrams/swim lane:
   - Two diagrams for borrowing and pay fines by borrower
   - One for staff processing borrows via web/phone + drone
7. Defining class names from 10 scenarios and draw 10 CRC card for your selected classes
8. Draw a class diagram (analysis phase): class name + attributes + (methods-option) + relationships + multiplicity

Template for writing actors – use case

Actor	Use case	Detail
Borrower	**Login**	- Login: user….. - Change password: user…. - Forget password: user….bla…bla -
	Search	
Librarian		
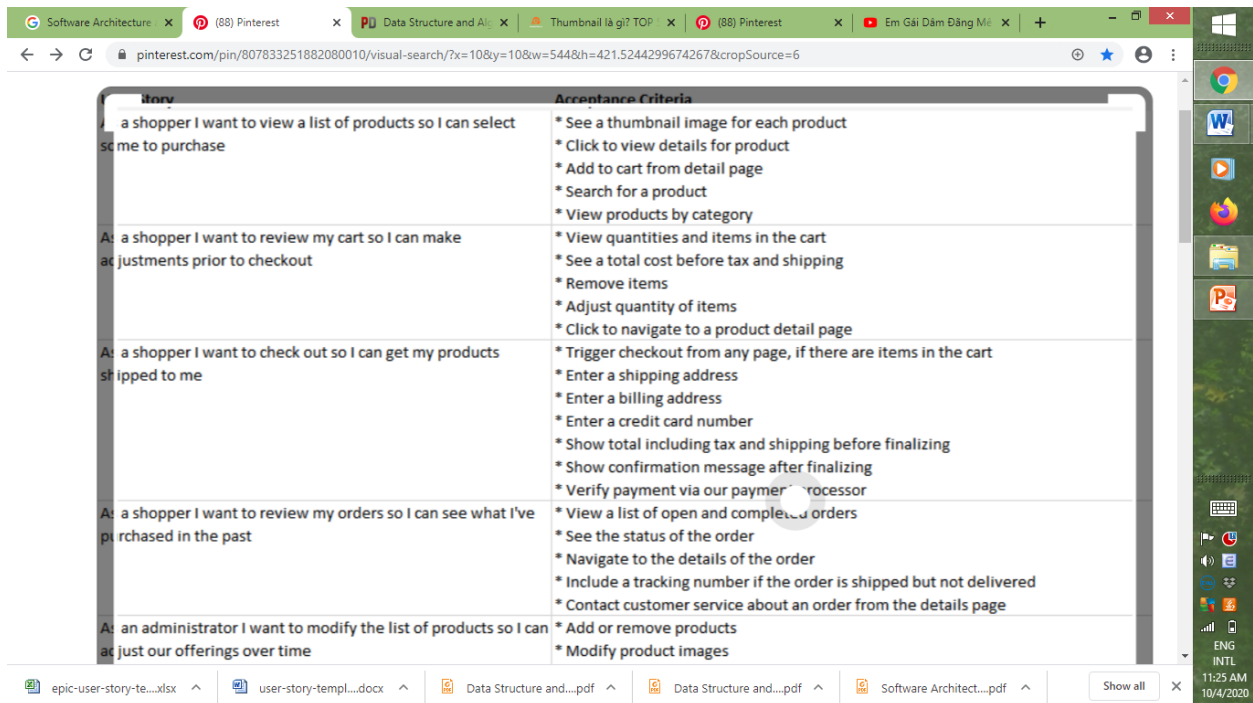
User story & Acceptance Criteria

Note: This supplementary material is for students
studying the subject Software A&D & software requirement

https://www.pinterest.com/pin/807833251882080010/visual-search/?x=10&y=10&w=544&h=421&cropSource=6

User Story	Acceptance Criteria
As a shopper I want to **view a list of products** so I can select some to purchase	- See a thumbnail image of each product - Click to view detail for a product - Add to cart from detail page - Search for a product - View product by category

As a shopper I want to **review my cart** so I can make adjustments prior to check out	- View quantities and items in the cart - See a total cost before tax and shipping - Remove items - Adjust quantity of items - Click to navigate to a product detail page
As a shopper I want to **check out** so I can get my products shipped to me	- Trigger checkout from any page , if there are items n the cart - Enter a shipping address - Enter a billing address - Enter a credit card number

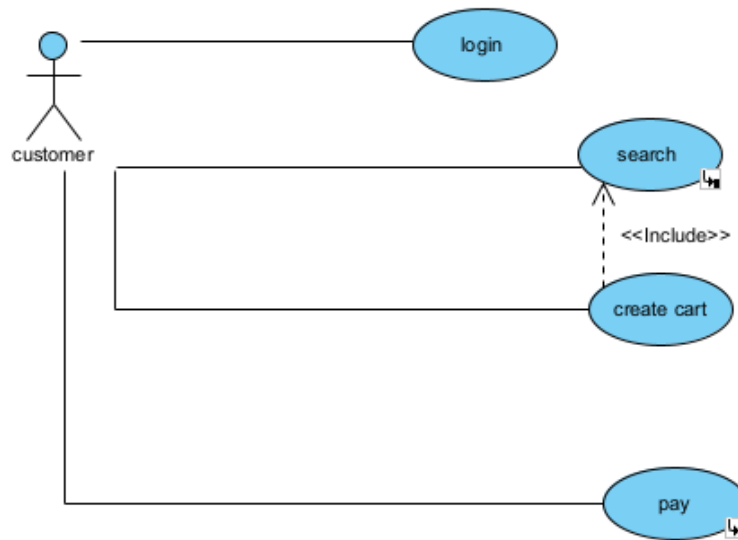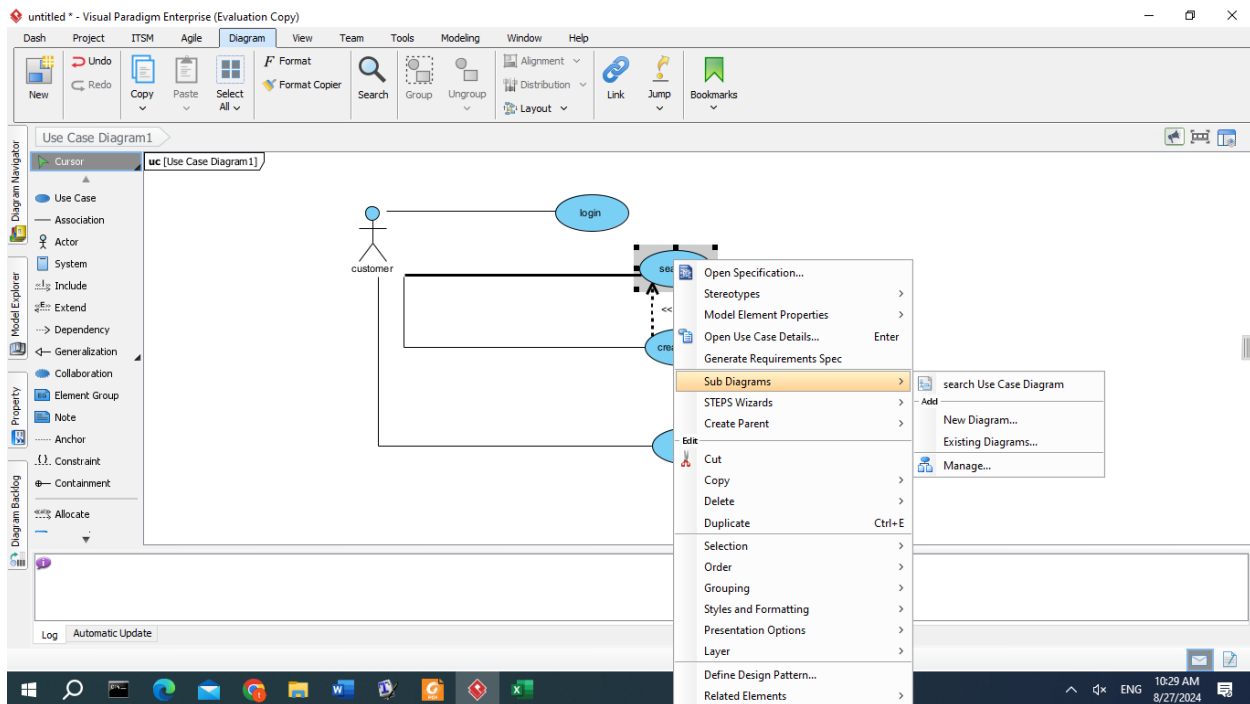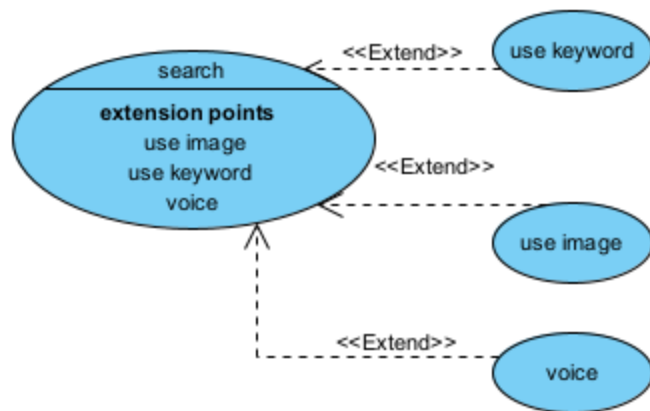## USE CASE DIAGRAM

Overall use case diagram

Figure 1: Overall Usecase Diagram

CLASS DIAGRAM (ANALYSIS PHASE)

A part of class diagram in analysis phase