

Lab – Functional modelling

Monday 20th Feb and Wednesday 22nd Feb

In this lab, the first part shows more tutorials on use case diagram with an example which is the solution of the previous lab. This example uses different association types such as <<include>>, <<extend>> and <<generalisation>>, it also includes the use case narrative description such as pre/post condition and flow of events.

The second part of the lab relates to functional modelling of your MusicSpace project.

Part 1 – More tutorials on use case diagram

The lab last week is about to explore the requirement at the system level for the function Place an order online, this can be described as follows:

R1 - The system shall allow clients to place an order online

R1.1 New user needs to register first, after registration, the user receives a code and member card

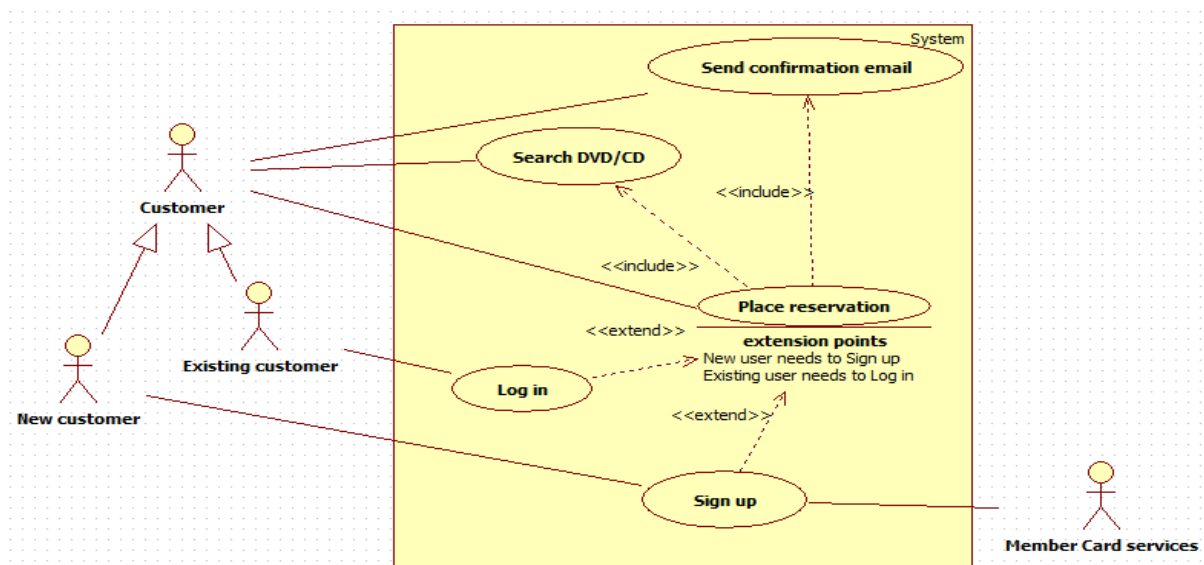
R1.2 Existing user can login to the system

R1.3 User shall search the DVD by name, by type, or by actors

R1.4 User shall select the DVD they want to rent to make a reservation/order

R1.5 The system shall send a confirmation email to user after placing a renting order.

The corresponding use case diagram:



Precondition: User must be logged in to the system.

Post-condition: An order is placed and a confirmation email was sent out

Flow of events of Place an order online:

Normal flows:

1. User initiates placing an order
2. User search interested DVD/CD
3. User add found DVD/CD to the basket
4. User ends the placing order
5. The system confirms the order and sending email
6. The use case is finished

R2. When the customer returns the DVDs, the correct payment shall be calculated based on renting time, and the status of DVDs must be updated

Details, for example:

2.1 A staff scans the user card

2.2 The system retrieves the renting details

2.3 The staff scans each DVD

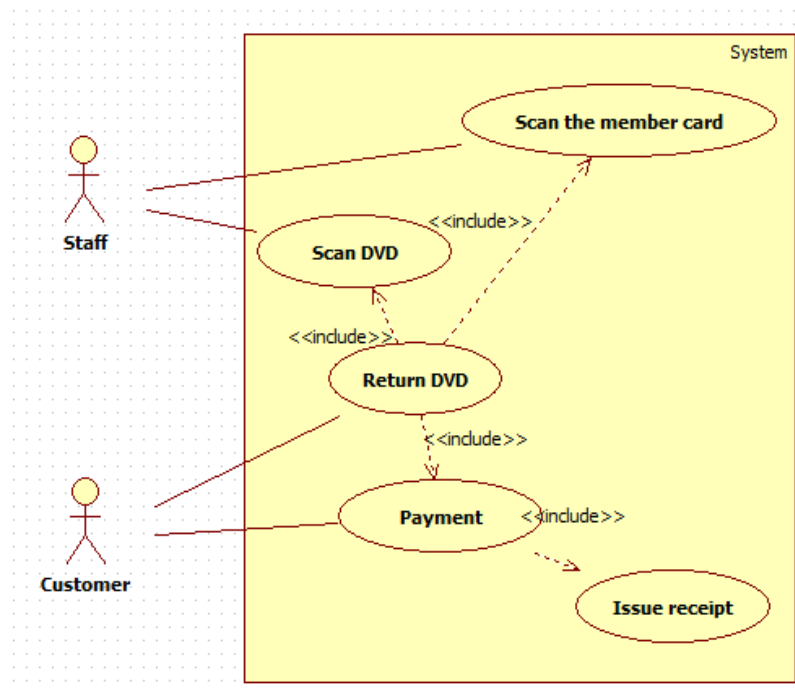
2.4 The system retrieves the DVD and updates its status from “rented” to “available”

2.5 The system calculates the fee

2.6 Customer pays fee

2.7 The system prints out the receipt

Use case diagram



Flow of events of Return DVDs use case

Basic flows:

1. Use case starts by Staff scanning the member card
2. The system retrieves the renting order
3. Staff scans each DVDs
4. The system retrieves the DVD
5. The system updates DVD status to available
6. The system calculates the corresponding fee
7. User pays
8. System prints out the receipt
9. The use case finishes

How to add Flow of events ?

-Right click on the use case, select Tagged Values (Fig.1)

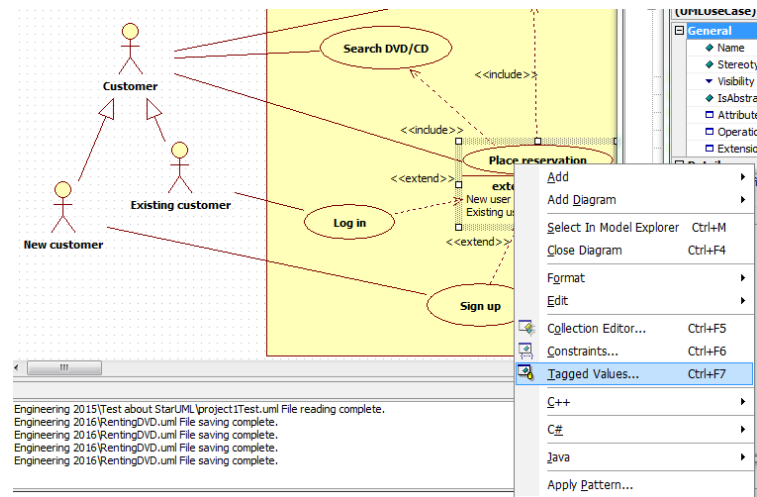


Fig.1

Select UseCaseSpecification in Tag Definition set

Enter the texts for Basic flow/ Alternative flow /Precondition/Postcondition (Fig.2)

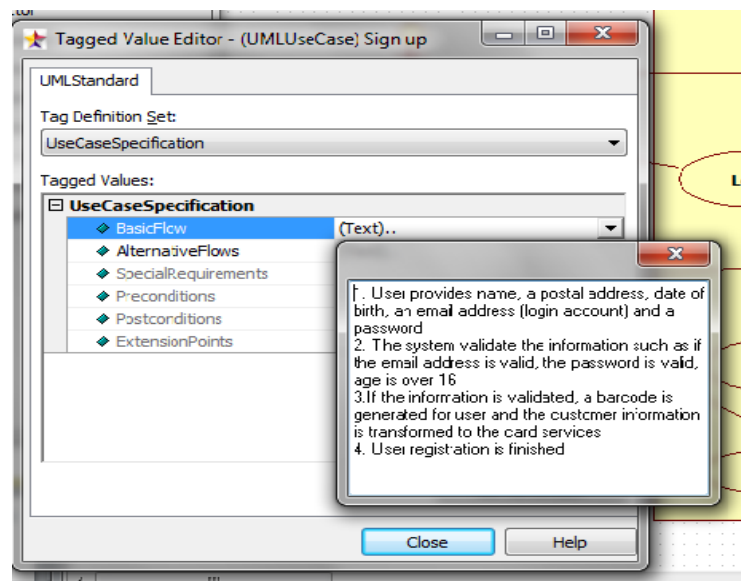


Fig.2

How to add an Extension point to a use case ?

Extension point indicates the conditions where the use case needs to include the extended use cases.

Click ExtensionPoints in the Properties window of the use case, then Click insert (small green rectangle) to add extension point (Fig.3)

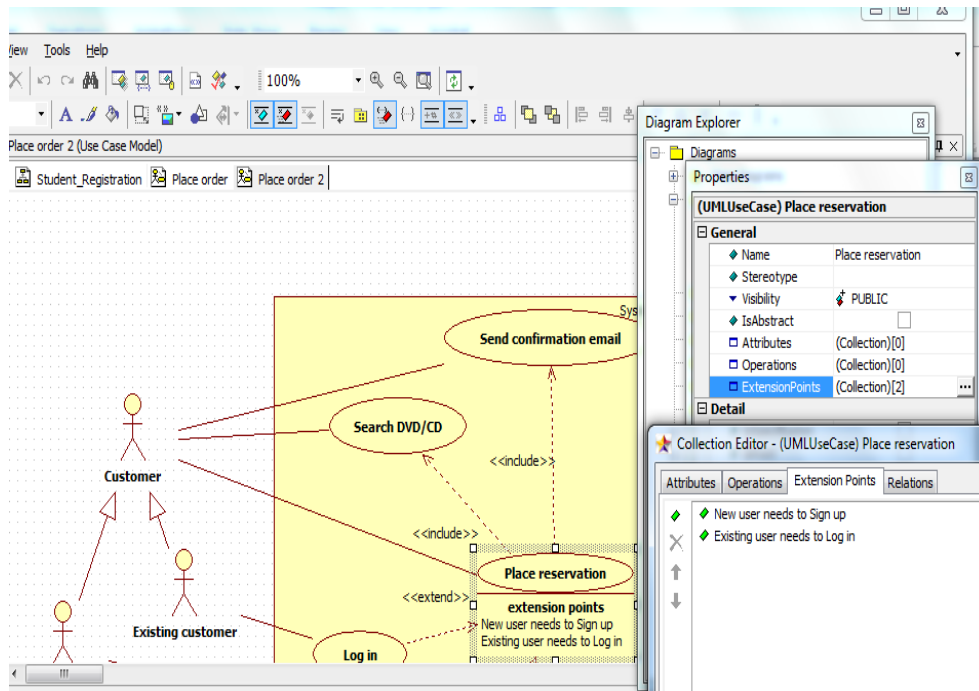


Fig. 3

How to generate a Use case specification document ?

Select Tools from the Menu and StarUML Generator, check Requirement category, and .doc format (Fig.4).

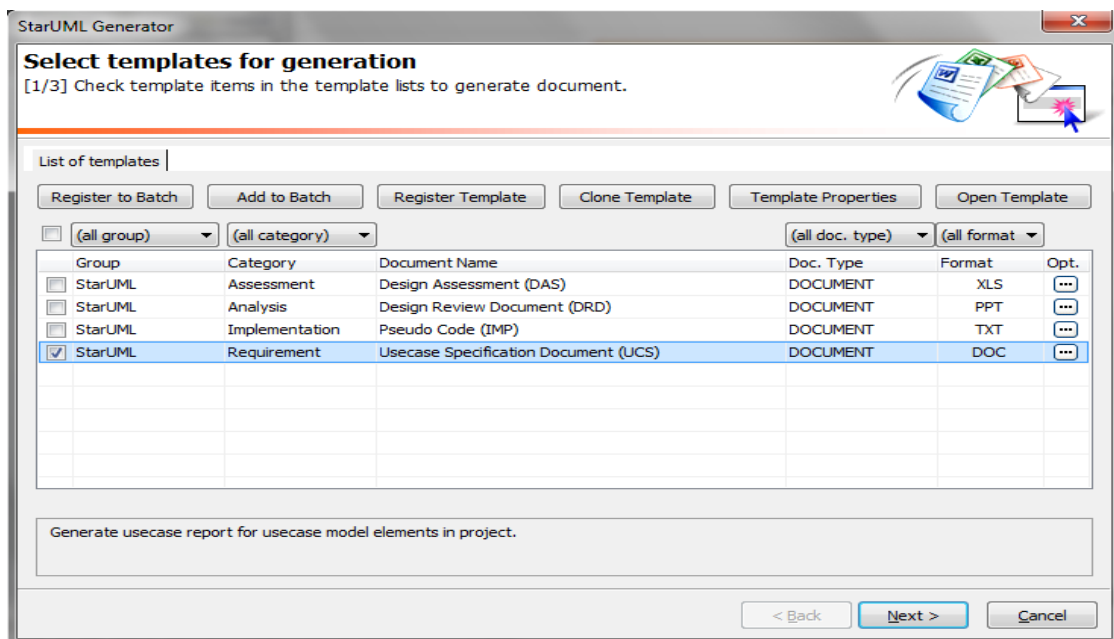


Fig.4

Part 2 – Functional analysis of MusicSpace project

Perform functional aspect analysis of your Musicspace project by providing necessary use case diagrams.

You should use different association types as well as include use case narrative/description where applicable.

Once finished, you generate the diagrams to a Use case Specification Documentation, this content will be part of your assignment submission together with other analysis tasks at a later phase.