SIT725 Software Engineering

Week 8: Use of UML Profile in your assignment

Use Enterprise Architect for this practical. Create your EA project file (.eap) and the (.xml) file of your profile.

There is no submission requirement. Practice for assignment-2 and show your tutor.

You continue your music portal web application analysis and design from earlier week. However, this time you will use UML profiling technique of Enterprise Architect to design content, navigation, function model. A description for creation of UML profile and example has been given here.

Music portal web application design:

Melbourne Entertainment Pty Ltd will develop a music portal web application that allows users to buy albums which then can be downloaded as archive files containing MP3s. Only registered user can buy or download the music/album. The user need to use registration process to register themselves. Each user is identified by a user name which can be selected from the names which have not been used. System should have the capability to find existing user names on behalf of users.

User will be able to search album by their name and also by the artist name. The search results by the search process will provide a list of matching albums. The album will have a link to a detail page for each album which shows the title of the album, the name of the artist, the list of songs and the album's price. Each registered user has a credit account that is used to buy albums. The credit account can be recharged by credit card payment. Both user and artists can maintain their address book to search other user or artists. Each named Contact should store an email address, two phone, two postal addresses and a picture. Name and email, Phone, Picture and Address should be maintained. Address may represent more information. The links for logging in or out, for registering and to the user's account page are always shown. This also holds for the album search box. The functionalities of address book will be as follows. You can extend this description based on your assumption for other functionalities of the music portal.

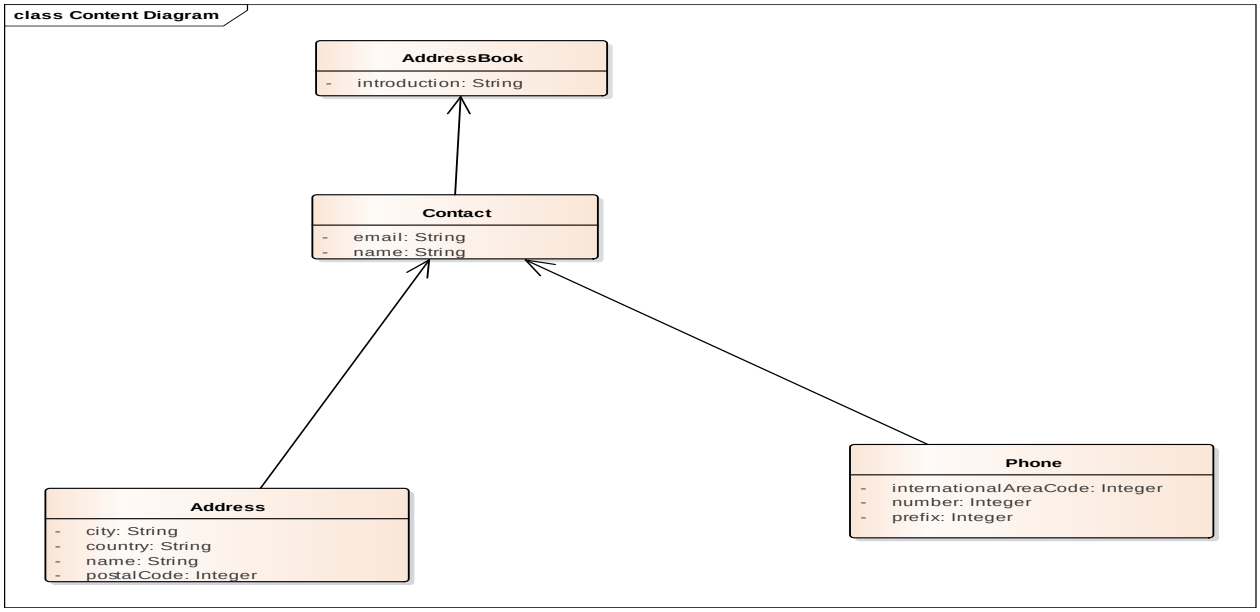
1) Create a contact in address book
2) Search whether a contact exists or not in the address book and display by name
3) Update a contact
4) Delete a contact
5) Show all contacts in a list
6) Search contacts by using artist

7) Search contacts by using album

Tasks:

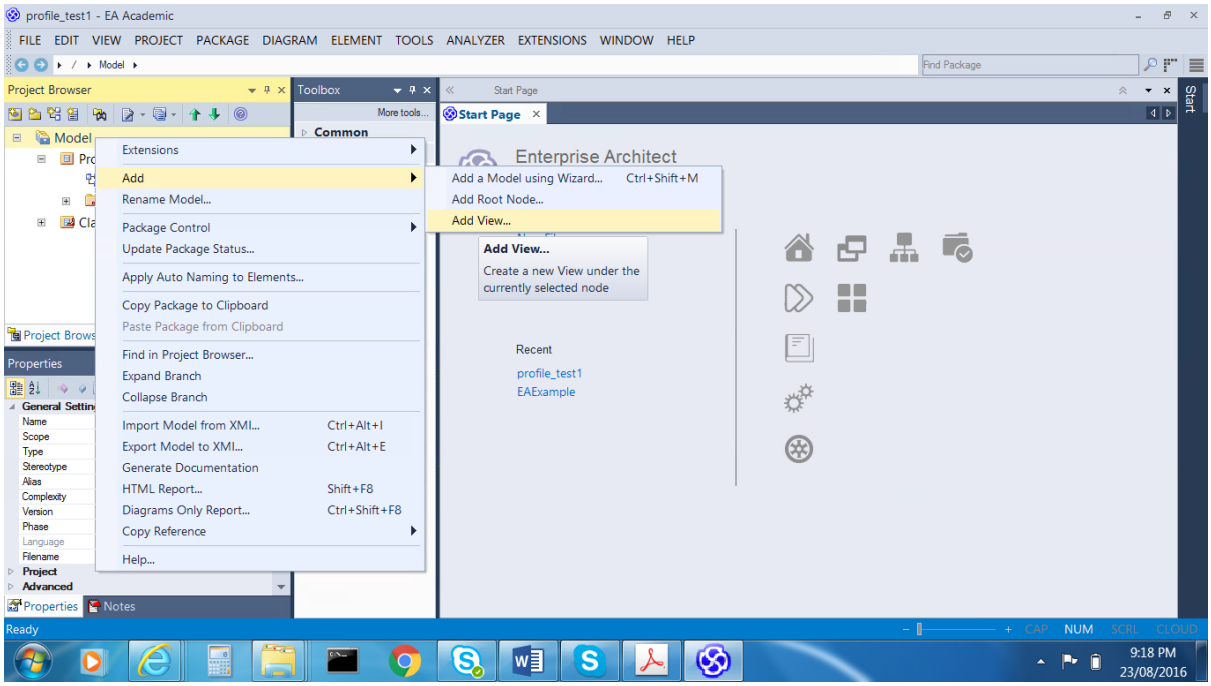
1) **Create an UML profile for content, function and navigation model**
2) **Use this profile to design the navigation model**
3) **Use this profile to design a Function model (this should include all user observable processes and the processes required for completion of user requirements and class attributes manipulation)**

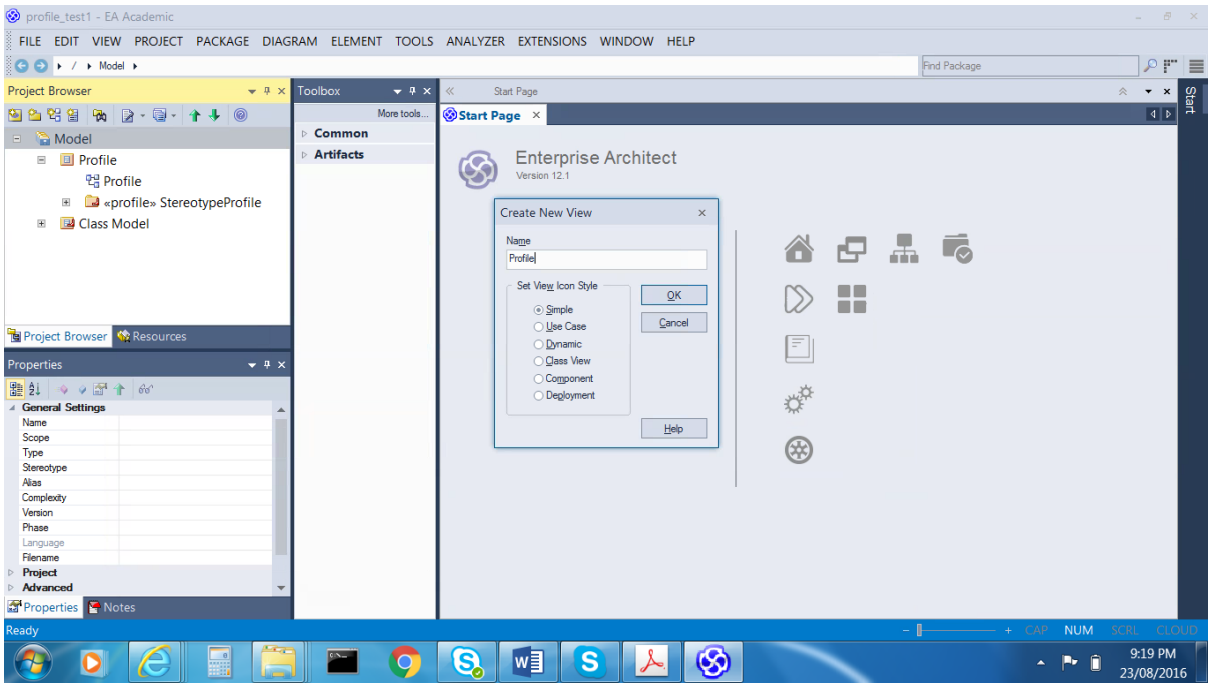
A content model has been presented using UML class diagram. However this can be created using UML profiling technique



Steps to create UML profile using Enterprise Architect

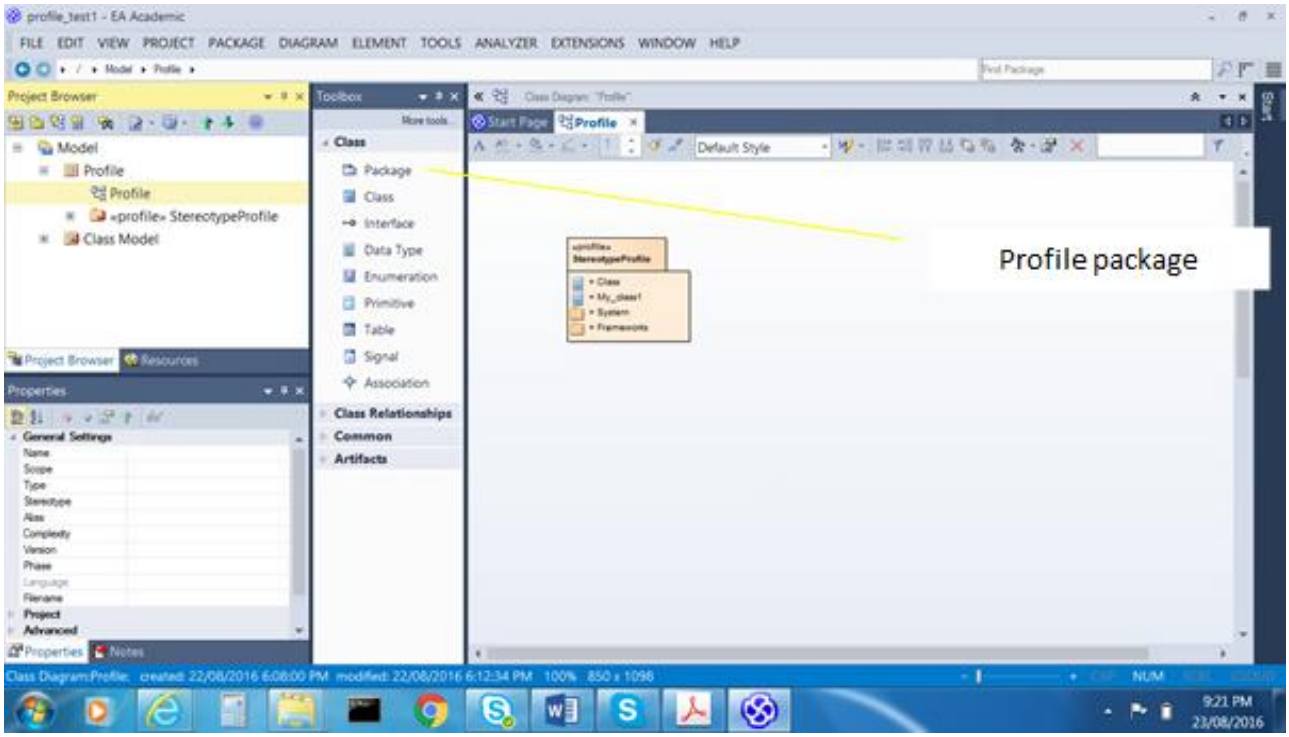
1. **Step-1:** Create a simple view to model root node
    a. Right Click on Model "root node" in the project browser, use context menu
    a. Click add, use context menu
    b. Click addview→ Create new view dialogue—Provide name "Profile"



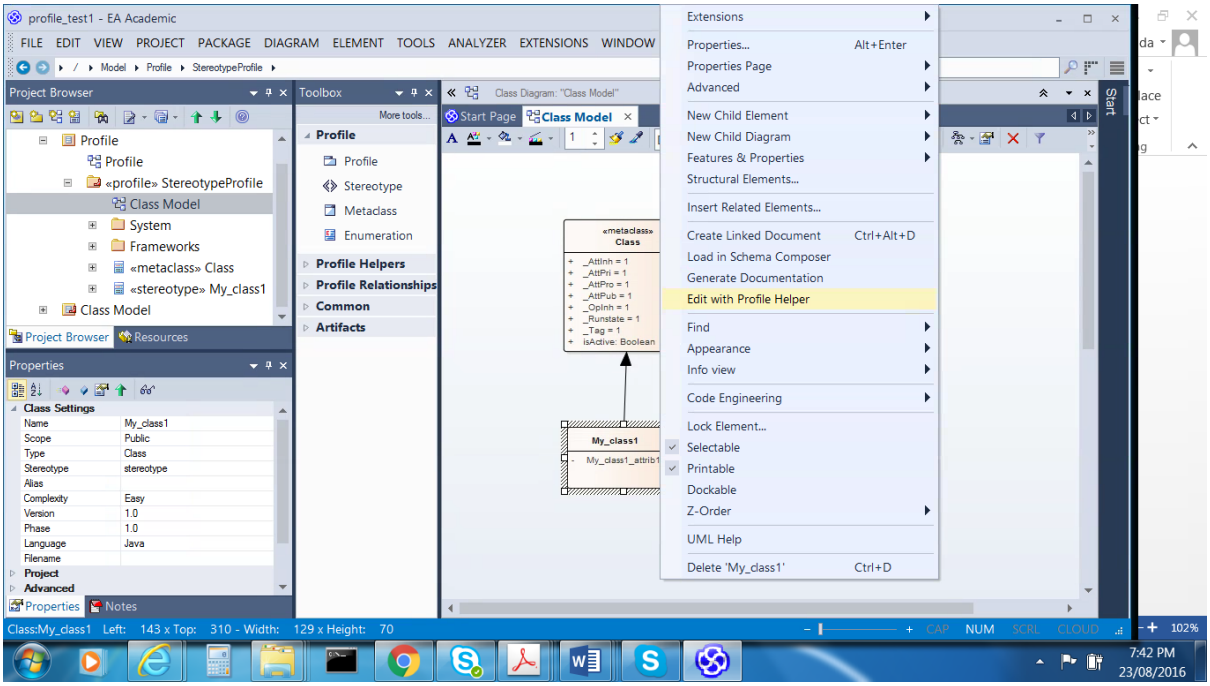


c. Select simple view from the above dialogue, then OK
d. This will create a profile

2. **Step-2:** Create a class diagram under profile view
   a. Select profile view in the project browser
   b. Right click—> in use context menu Add Diagram
   c. In the new diagram dialogue, select UML structural from left side, select class from right side
   d. Name the diagram “Profile”, OK



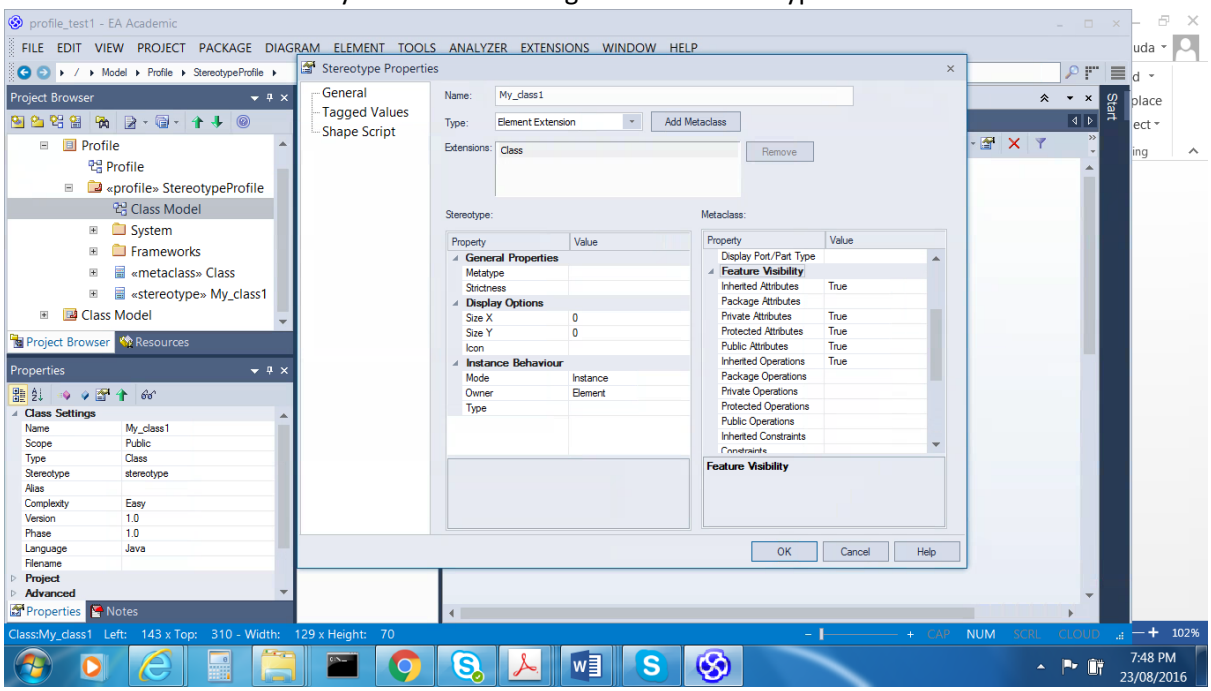
3. **Step-3**: Create a profile package
    a. On toolbox, select more tool, select **profile toolbox**
    b. Select “Profile” package in the toolbox and drag to class diagram
    c. Name the package “StereotypeProfile”, OK
    d. This will bring “new diagram” window
    e. Select “UML Structural” from left, “Class” from right side
    f. This will create a “StereotypeProfile” package
    g. Open the “StereotypeProfile” diagram by double clicking on it, this will form the base of UML profile
    h. Drag a “metaclass” from toolbox to diagram
    i. Drag a “Stereotype” in the diagram, provide names, then extend this stereotype from the “metaclass”
    j. Repeat this for new type of association
4. Tag values and other visibility:
    a. Select the stereotype class
    b. Right click, on context menu select edit with profile helper

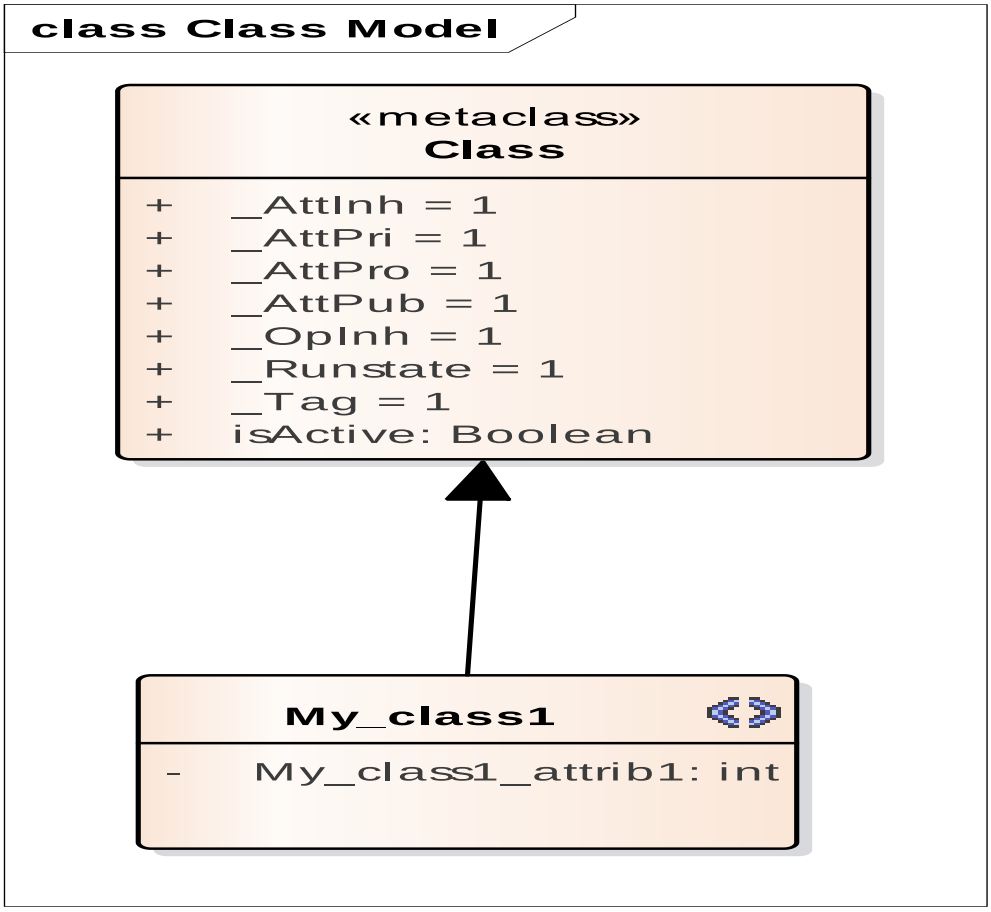


c. On stereotype properties dialogue , select extension, then select Feature visibility

d. Scroll down, select Tag values=true and also for your private, protected, public attributes.

e. You can set your own Icon using left side “stereotype table”→ icon

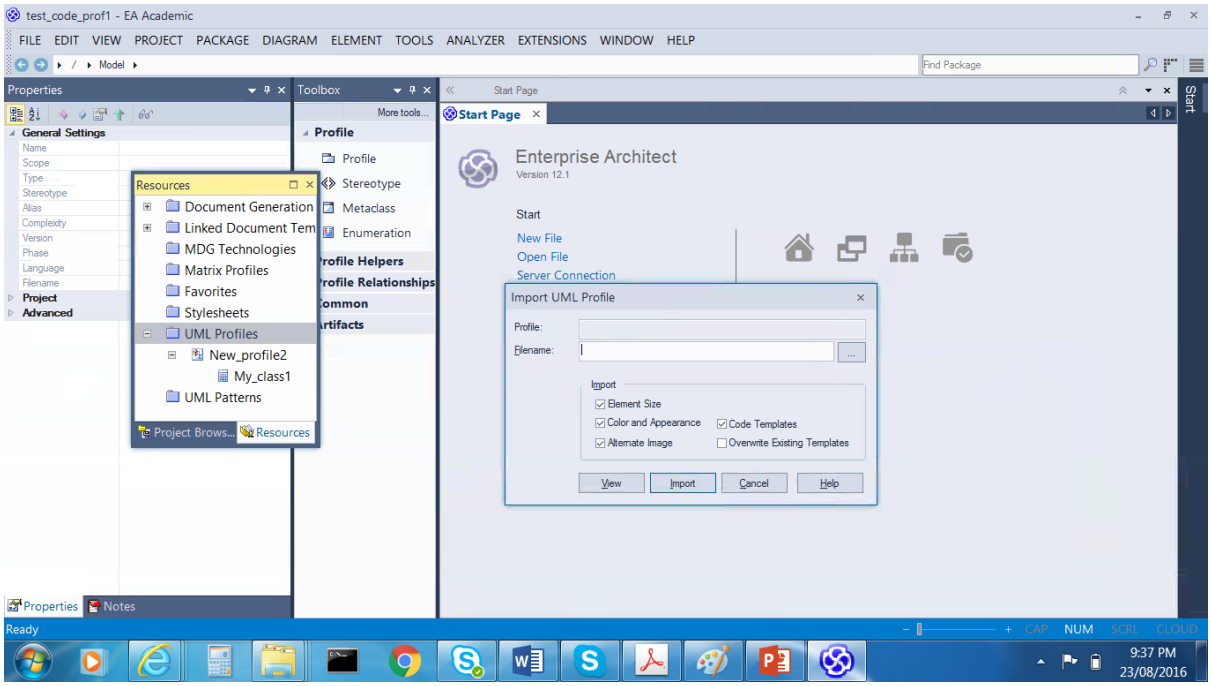




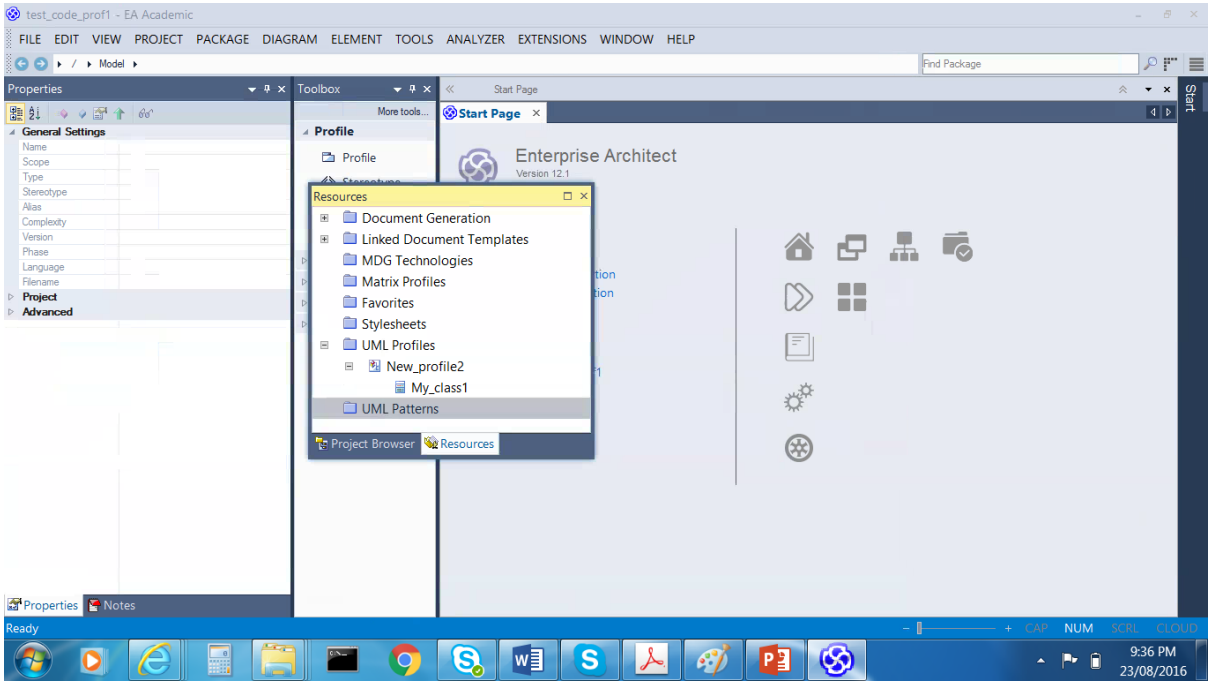
5. **Step-5**: **Right click on the diagram, →save current changes**
6. **Step-6**: Save your profile
    a. **Right click on the diagram →Advanced→Save as profile, this will save the profile as xml file (.xml), save in a proper location**

Using your profile in the design activities:

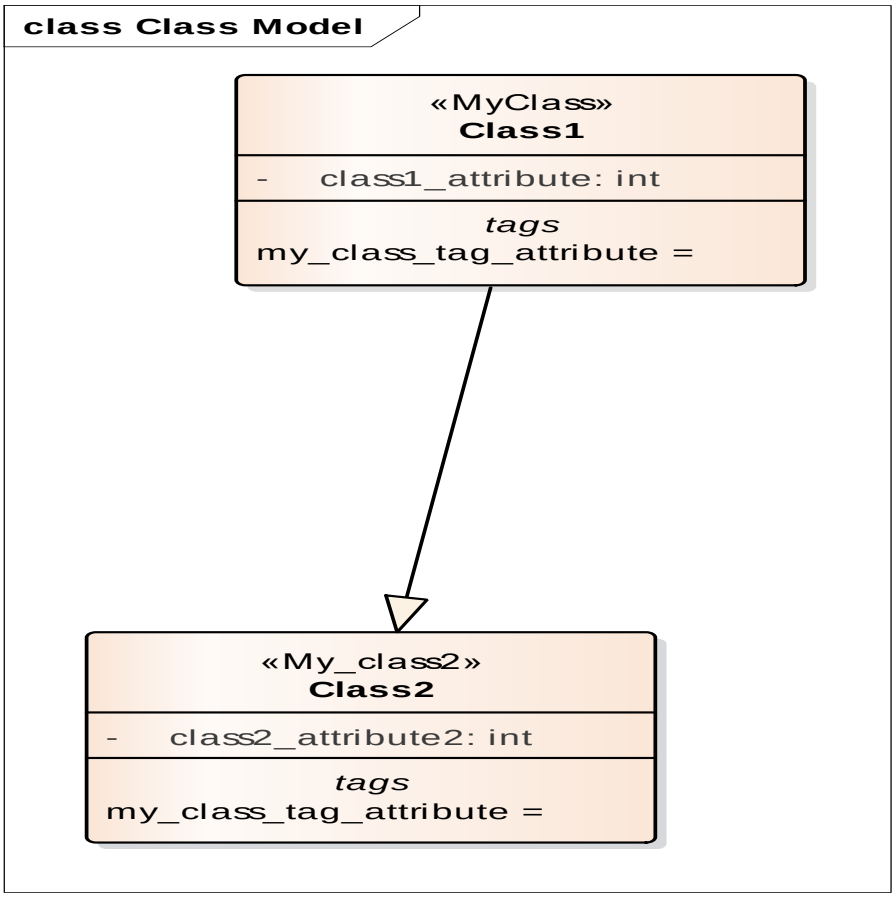
7. Step-7: Add profile to your project
    b. Create a new project
    c. Select view in main menu
    d. Project Resources browser
    e. This will bring “Resource Browser” window



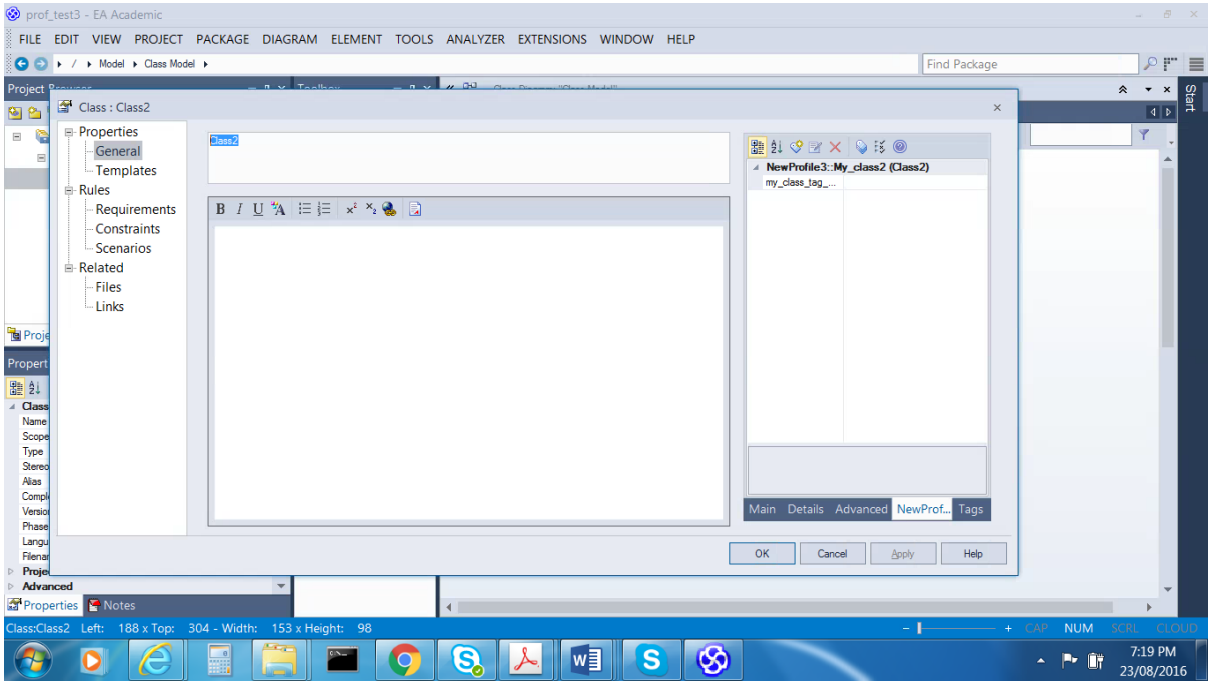
8. Step-8: Import the profile
    f. Select UML profile icon in the resource browser
    g. Right click , use context menu, select “Import Profile”
    h. This will bring import profile dialogue box, select the saved UML profile (.xml) file.
    i. Then import
    j. Click on more tools, you can see your profile tool is in the list



9. Step-9: use this for your own Assignment in content, navigation, function model



Double click on the class, you will see the tag values

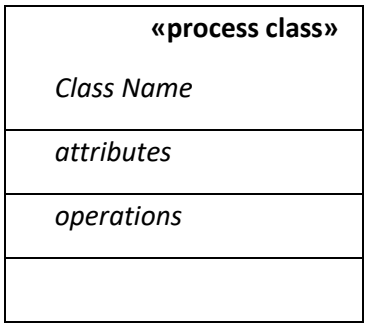


##Making visible your profile always in the toolbox

1. Select more tools
2. Select Toolbox visibility
3. This will bring Visible toolbox page
4. Scroll down at the bottom
5. Select your profile, check at the right side.
6. This will be visible in the toolbox always.

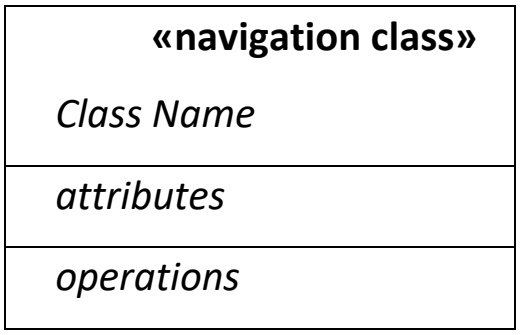
Following Stereotype classes are required in your UML profile for your assignment-2:

1) Process Class



2) Process Link «process link» →

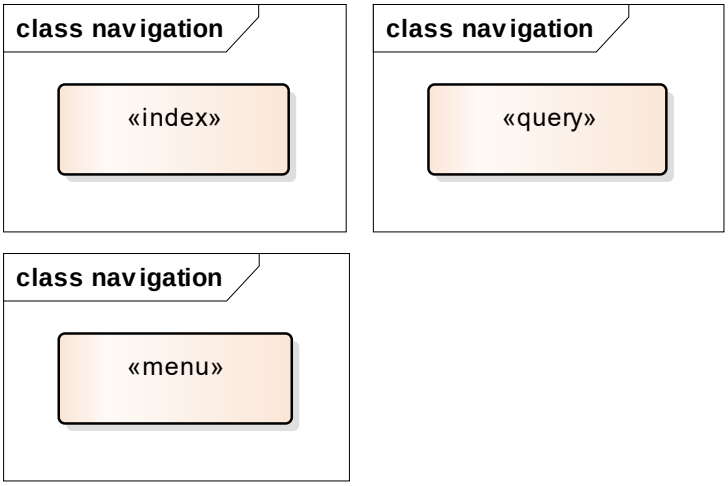
3) Navigation Class



4) Navigation Link «navigation link» →

5) Content Classes (as different types you require)

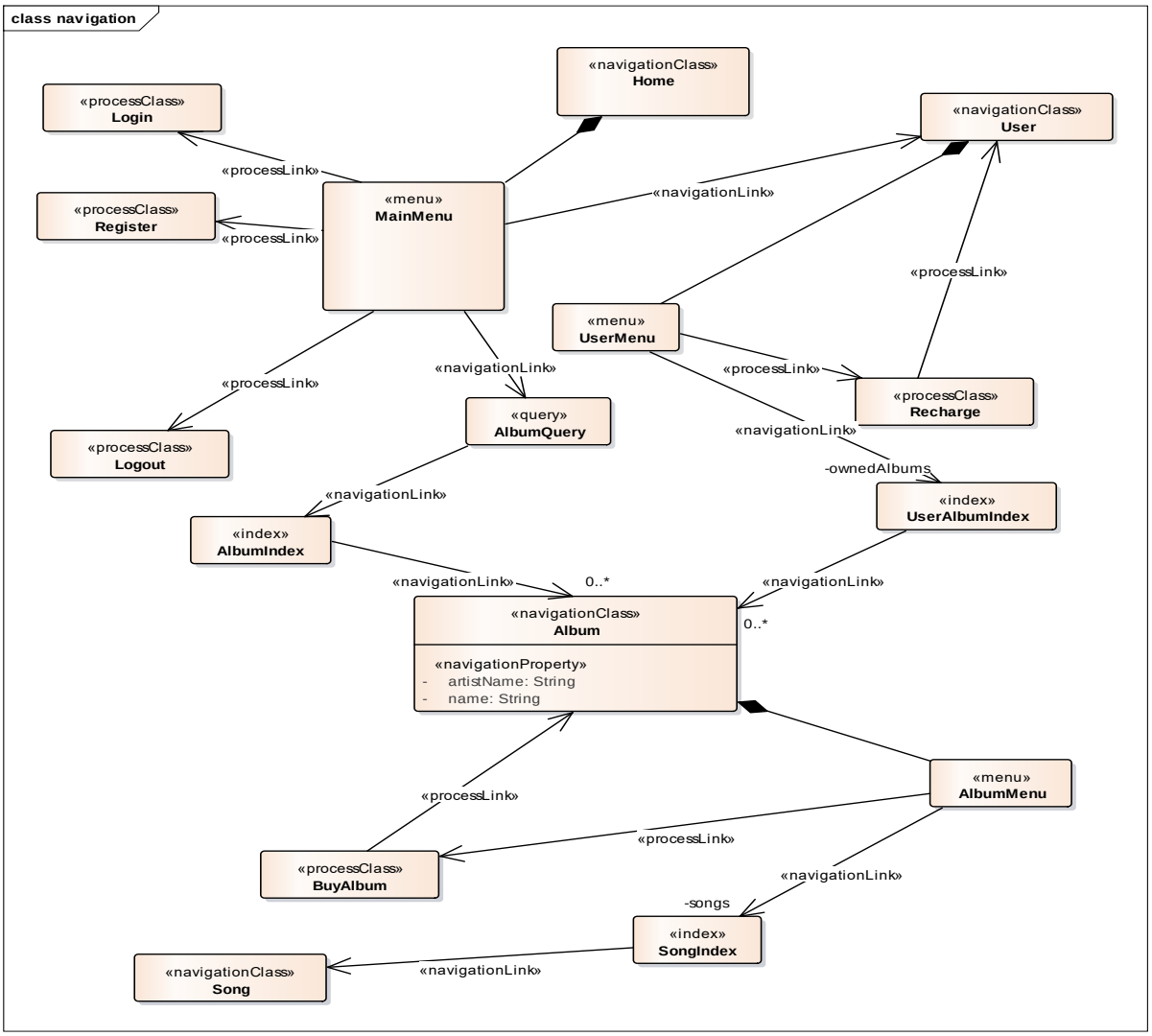
6) Menu, Query, Index



##An example of partial navigation has been presented below for you.

You are required to develop a navigation semantic unit (NSU) for your use case and which may need to be re-done for different users.

You need to create your own classes in the profile for process class (stereotype), navigation class (stereotype) and additional navigational element (menu, query, index stereotypes). Build your complete information structure, use those content classes in the navigation classes, then add navigation link, add index, menu and query as required, then add user observable function to your navigation design (use process link as required).


class navigation
«navigationClass»
Home
«processClass»
Login
«navigationClass»
User
«processLink»
«menu»
MainMenu
«navigationLink»
«processClass»
Register
«processLink»
«processLink»
«menu»
UserMenu
«navigationLink»
«processLink»
«processClass»
Recharge
«processLink»
«navigationLink»
«query»
AlbumQuery
«processClass»
Logout
«navigationLink»
-ownedAlbums
«index»
UserAlbumIndex
«navigationLink»
«index»
AlbumIndex
«navigationLink»
0..*
«navigationLink»
«navigationClass»
Album
0..*
«navigationProperty»
- artistName: String
- name: String
«menu»
AlbumMenu
«processLink»
«processLink»
«processClass»
BuyAlbum
«navigationLink»
-songs
«index»
SongIndex
«navigationClass»
Song
«navigationLink»