

FROM MODEL TO UI USING ECP

Model using EMF and View using ECP

As part of evaluation of various EMF based UI development techniques, we bounced into ECP thru google search. Decided to evaluate ECP for EMF based models as it looked very promising thru the Videos and Tutorials that we had read on various eclipse websites.

In this article, we are going to explain the following

1. Installation of EMFStore & ECP,
2. Creation of Ecore Model, Generation of GenModel from Ecore
3. Creating Run Configuration ECP 3.x Application

The EMF Client Platform is a framework for building EMF-based client applications. The goal is to provide reusable, adaptable and extensible UI components to develop applications based on a given EMF model.

Our Domain model used to showcase this use case is as shown below in fig.1

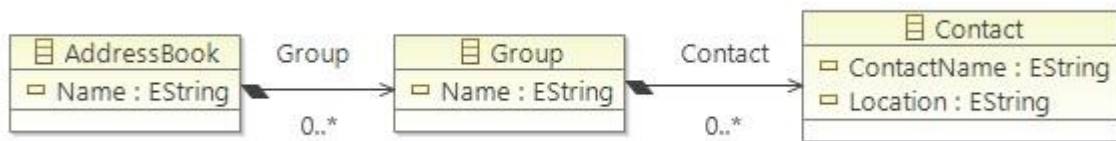
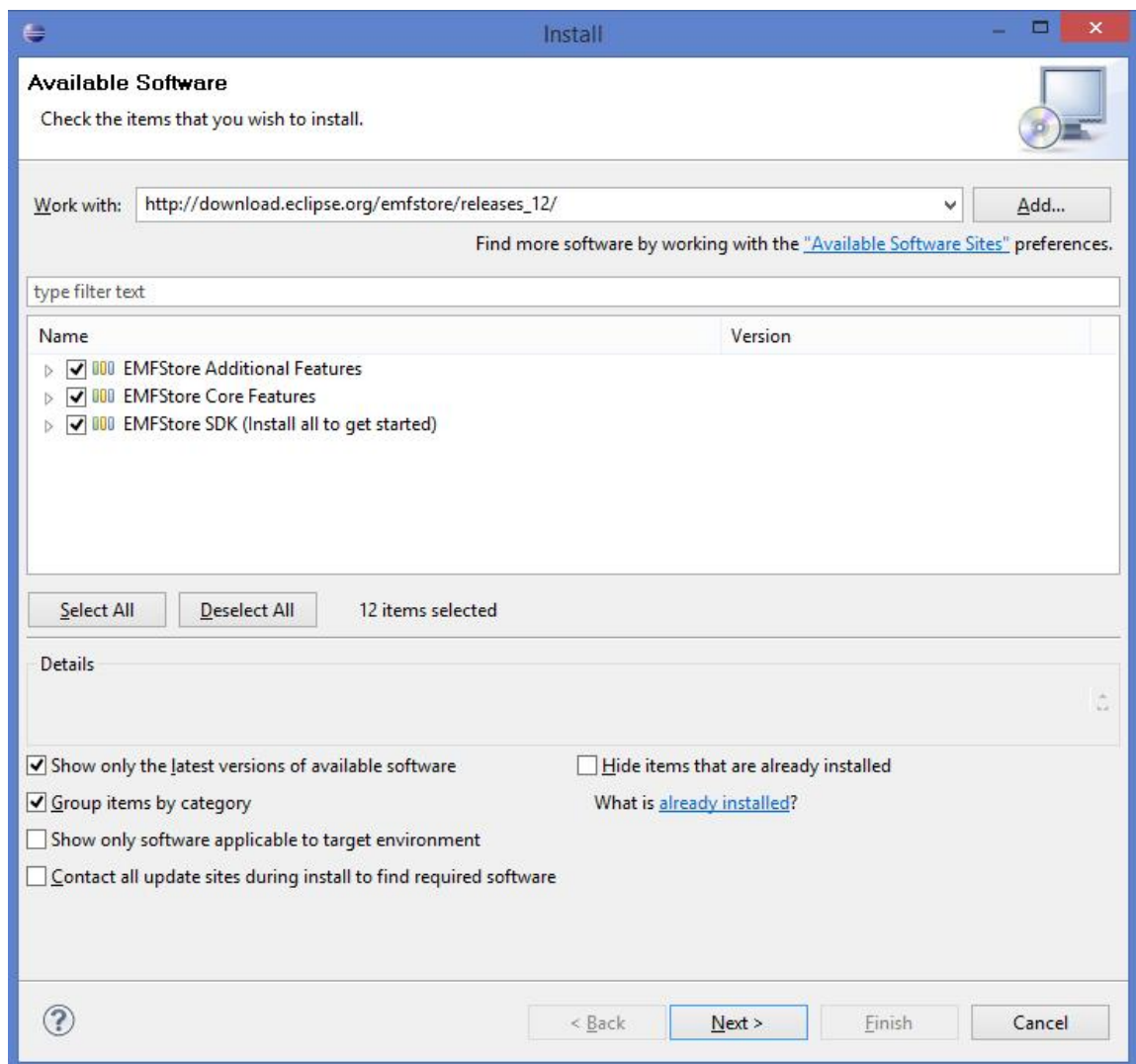


Fig 1: Model used in this Tutorial

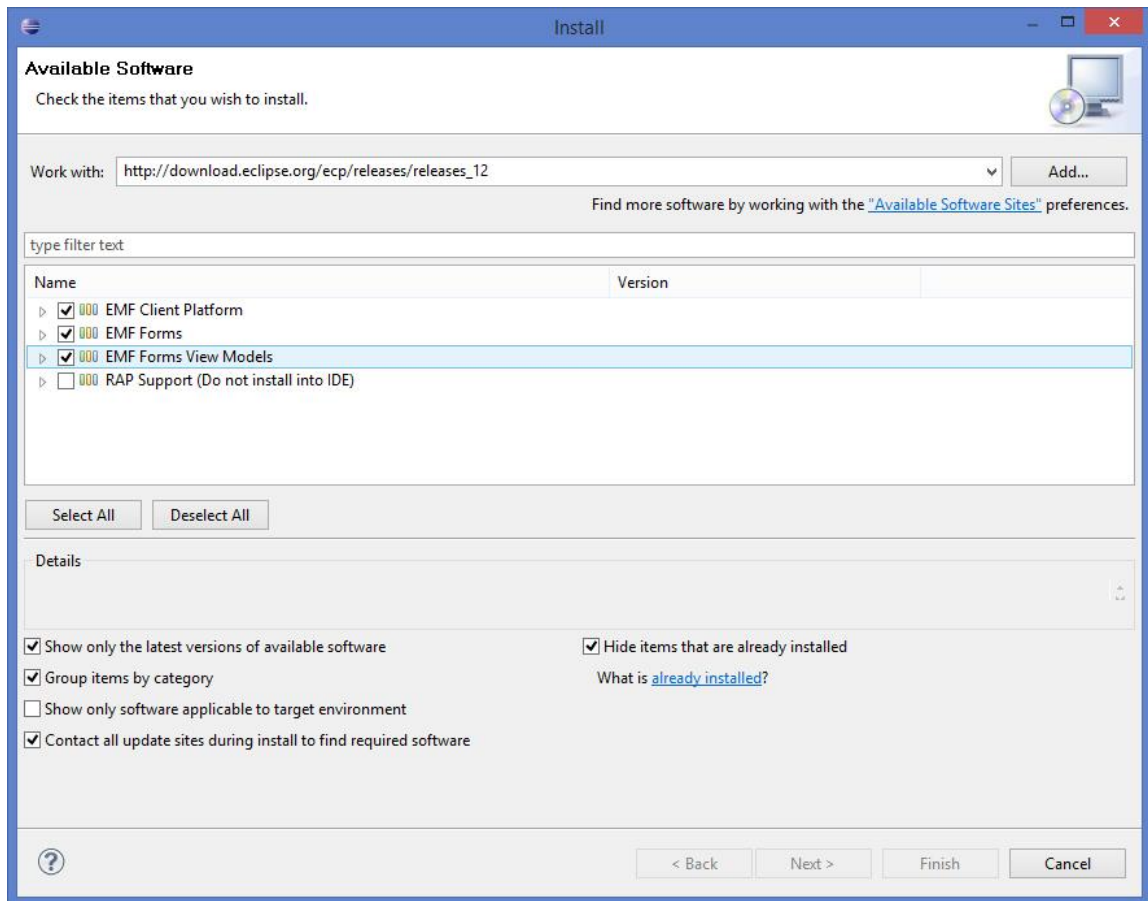
INSTALLATION OF EMFSTORE AND ECP:

1. Install Eclipse Modelling Framework (EMFStore) features for collaborative editing and versioning of models. You can update your existing Eclipse tool by selecting Help -> Install New Software and in the “Work With” text box just type this link [“http://download.eclipse.org/emfstore/releases_12/”](http://download.eclipse.org/emfstore/releases_12/). The plugins will be listed. Now select all the plugins



Then click Next for the next two occurrences, then select “I accept the terms of the license agreement” and click finish. The EMFStore will get installed and then restart the workspace.

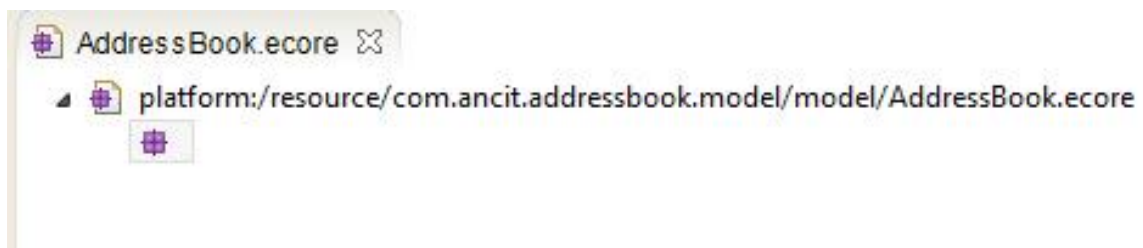
2. The EMF Client Platform is a framework for building EMF-based client applications. You can update your existing Eclipse tool by selecting Help -> Install New Software and a dialog appears, there in the “Work With” text box just type this link http://download.eclipse.org/ecp/releases/releases_12. The plugins will be listed. Now select all the plugins except RAP Support.



Then click Next for the next two occurrences, then select “I accept the terms of the license agreement” and click finish. The EMF Client Platform will get installed and then restart the workspace.

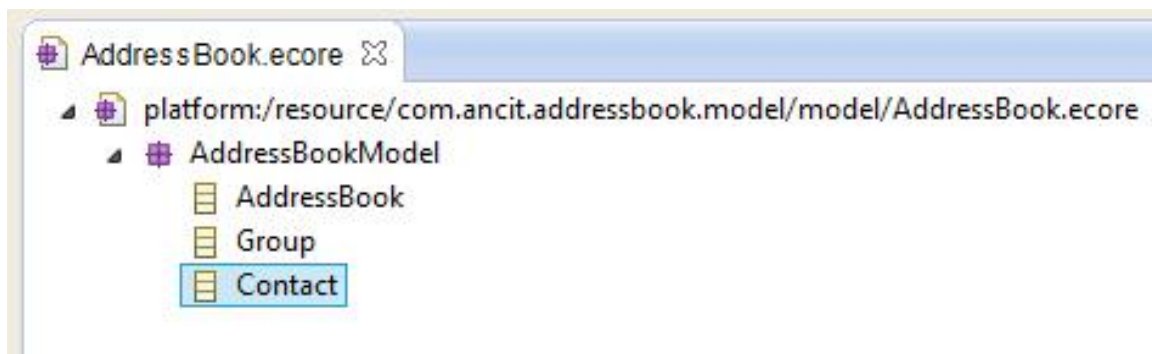
CREATION OF ECORE MODEL, GENERATION OF GENMODEL FROM ECORE:

1. So we have installed the EMFStore and ECF. Now create a new Empty EMF Project by File->New-> Project -> Empty EMF Project (Under Eclipse Modelling Framework). Then click Next button, on the next page give the project name as “com.ancit.addressbook.model” and click Finish button.
2. Now right click model folder under the created project in package explorer and select New-> Other -> Ecore Model (under Eclipse Modelling Framework). Click Next, give file name as “AddressBook.ecore” and click Finish Button. An Ecore model is created under model folder of our project.
3. Now open the “AddressBook.ecore” it will display a tree as given below



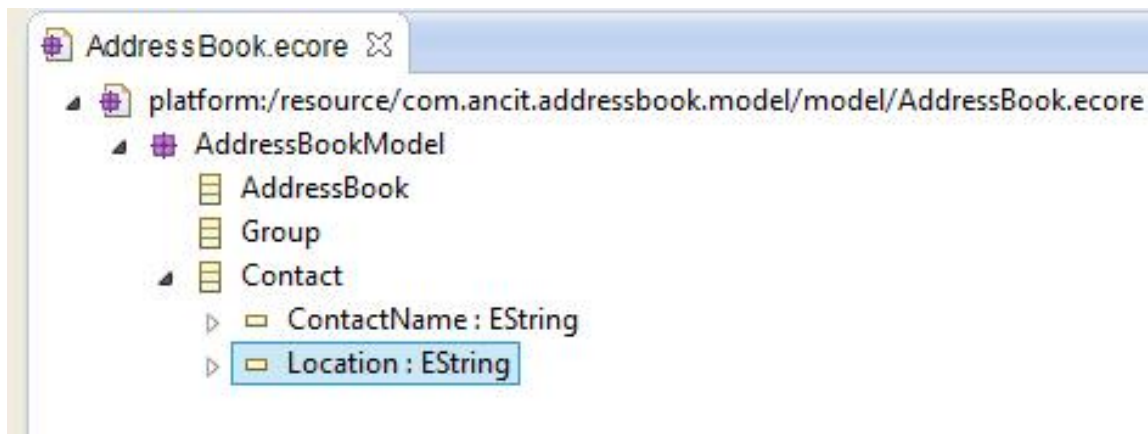
Double click the leaf node of the tree to open the properties view. Enter the name value as “AddressBookModel”, Ns Prefix value as “AddressBook” and NS URI value as [“http://www.ancit.org/addressbook”](http://www.ancit.org/addressbook).

4. Right Click the AddressBookModel node and select New Child -> Class. In the properties view give the class name as AddressBook.

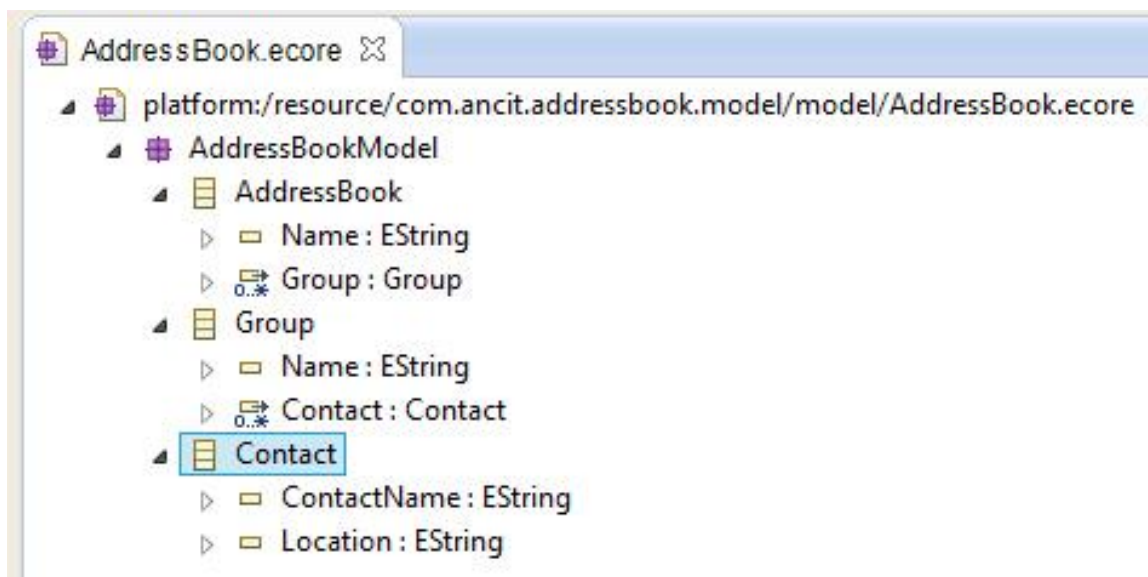


Similarly create two other classes namely Group and Contact. Now your AddressBook.ecore should look something like the above image.

5. Now right click the contact node and select new child- > EAttribute. On the properties view give the name value as ContactName and select the EType as EString [java.lang.String]. On selecting this EType value the EAttribute Type value also gets updated with the same value. Similarity create another EAttribute named Location. Now your AddressBook.ecore should look something like this.

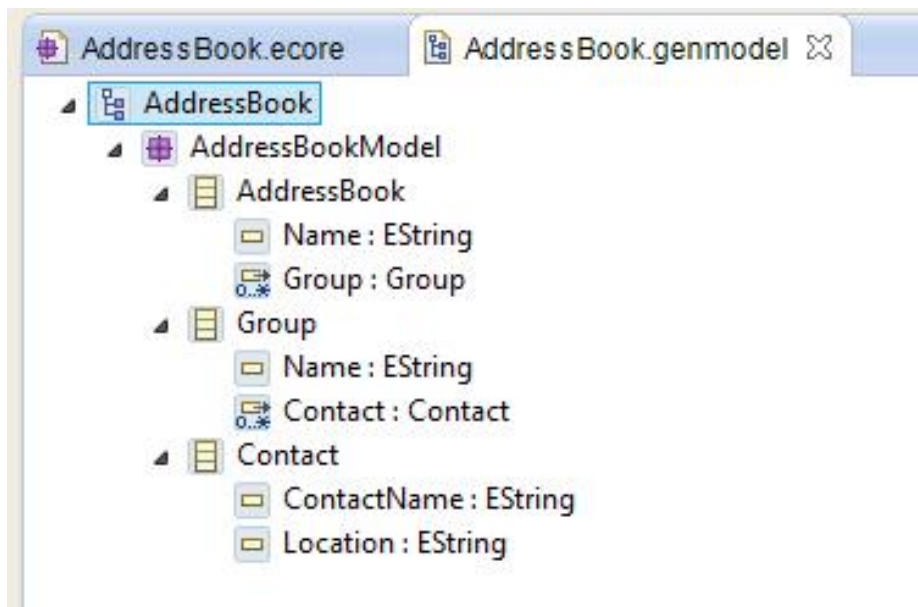


6. Now right click "Group" node and select New Child -> EReference. On the properties view enter the name value as "Contact", choose the Etype value as "Contact" and Containment value as "true".



Now set the Lower Bound value to 0 and Upper Bound value to -1. The value -1 indicates * in this case. Similarly create an EReference for AddressBook node named Group. Additionally create EAttribute for both AddressBook and Group node named Name. Now your AddressBook.ecore should look something like the above image.

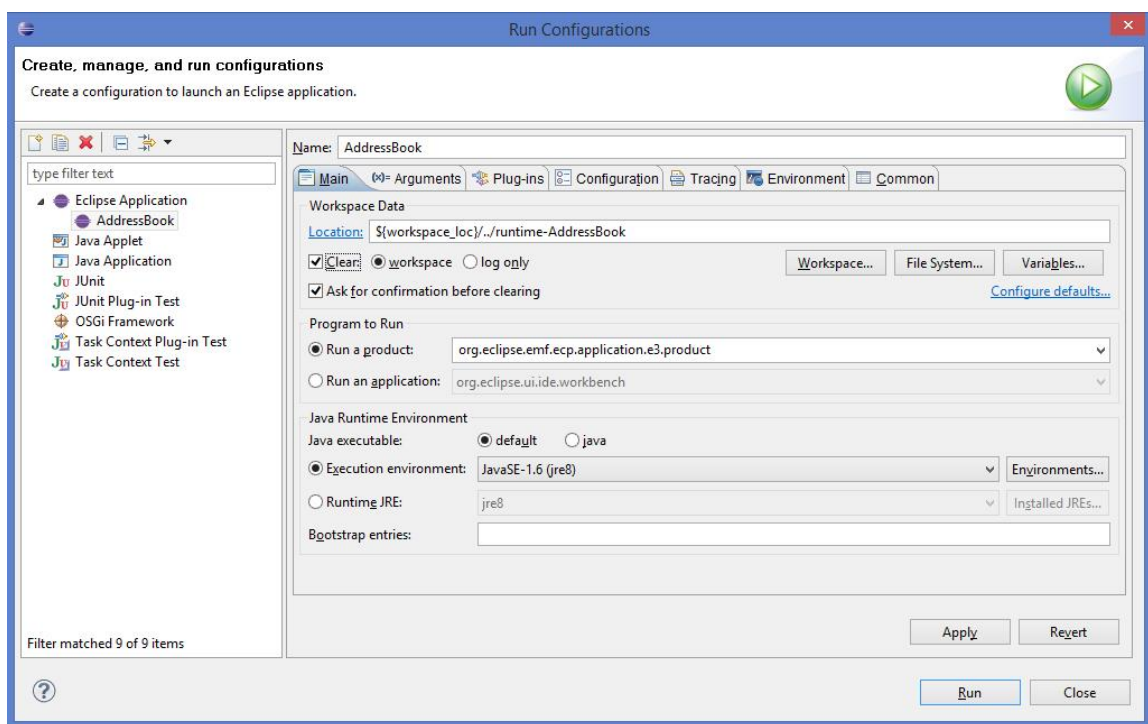
7. Let us now create EMF Generator Model for our Ecore. To do this right click the AddressBook.ecore select New->other -> EMF Generator Model (under Eclipse Modelling Framework). Click next and give the File name value as "AddressBook.genmodel" then click next and select "Ecore Model" now click next and browse for the AddressBook.ecore then click load button. With successful loading click next -> select our AddressBookModel and click finish button. An EMF genmodel gets created under model folder of our project. You can see the classes and its attributes same as in the AddressBook.ecore. The AddressBook.genmodel should look something like this



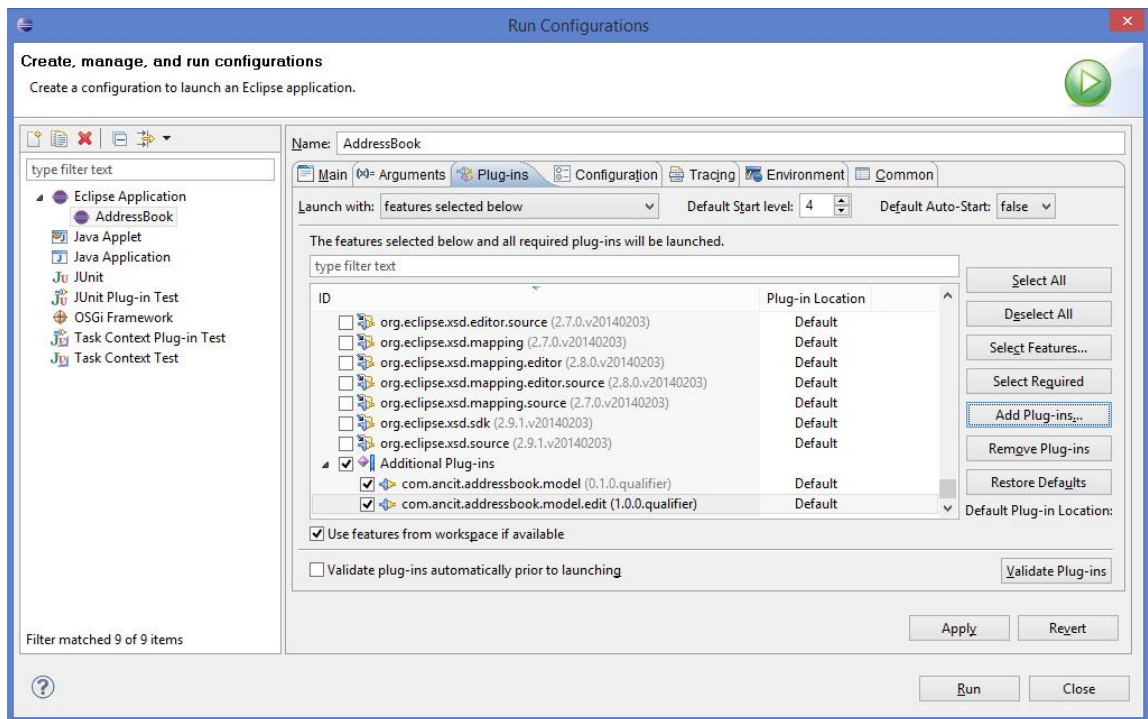
8. Now let us generate model code and edit code using the AddressBook.genmodel. To do right click the root node of AddressBook.genmodel and select "Generate Model code", code will be generated under src folder of our project. Once again right click the root node and select "Generate Edit code", this will create a new project named "com.ancit.addressbook.model.edit" in the workspace. These two projects are sufficient for ECP application.

CREATION OF RUN CONFIGURATION FOR ECP 3.X APPLICATION:

1. To run the project we have to create a run configuration. Select Run-> Run Configuration from the toolbar, a dialog appears. In the left panel double click Eclipse Application to create a new Configuration. Now on the right panel give the Name value as “AddressBook” and under the Main tab Check the Clear checkbox (under the Workspace data group) and select Run a product (under Program to Run) and give its value as “org.eclipse.emf.ecp.application.e3.product”. Your configuration must look something like this

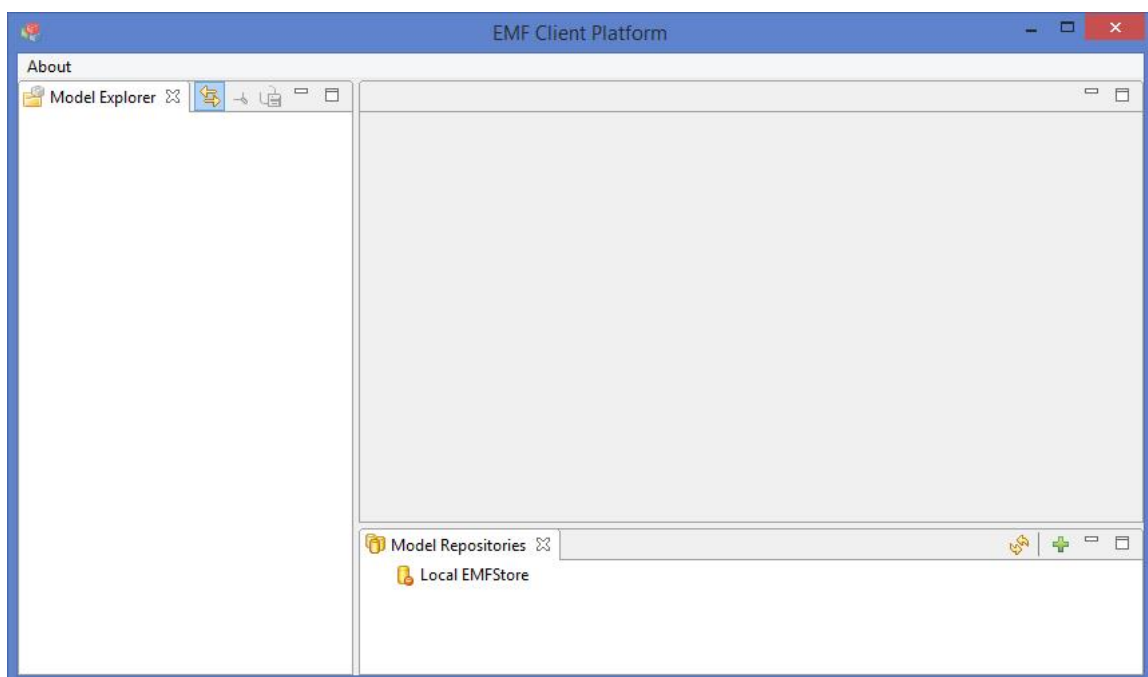


2. Now on the plugins tab pick the value of Launch with as “features selected below”, then click the “deselect all” button to deselect all the selected plugins. In the plugins list select “org.eclipse.emf.ecp.demo.e3.feature” plugin, then click select required button. Now click Add Plug-ins button and select our projects (com.ancit.addressbook.model and com.ancit.addressbook.model.edit), then click validate plugins button. Now the plugins tab of the configuration must look something like this

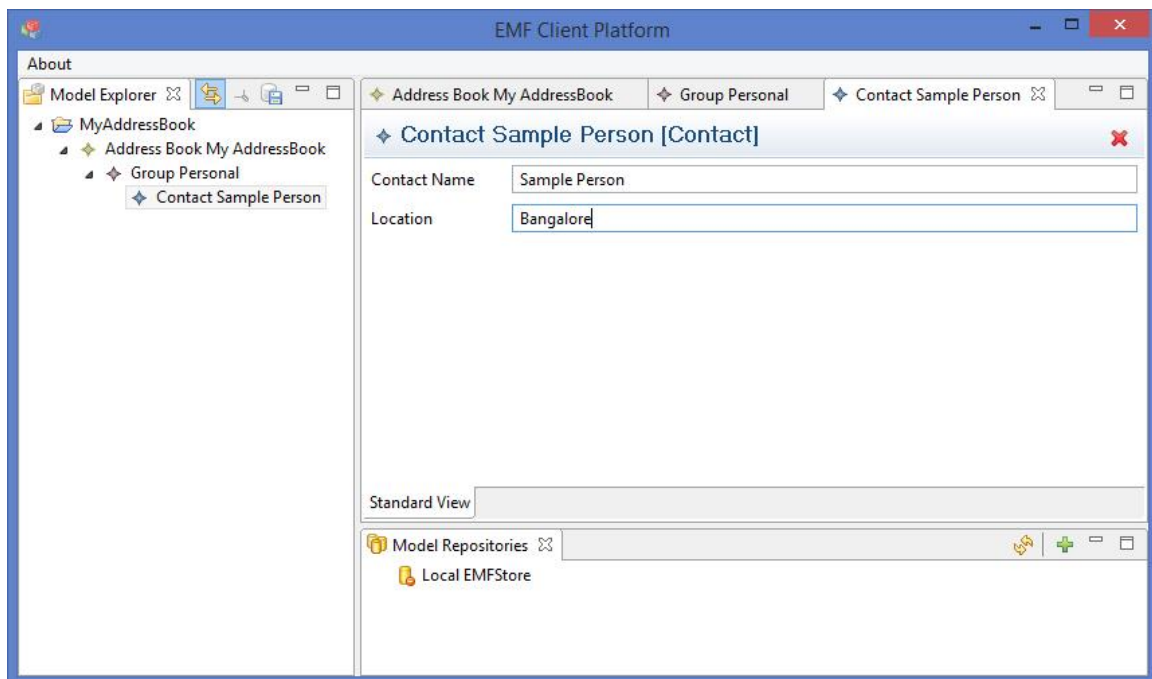


ECP 3.X APPLICATION IN ACTION:

1. Now click run button. You will get an output like this



2. Here right click on the model explorer view and select create new project, give the project name as "MyAddressBook". Now right click the MyAddressBook project and select New Model element, pick addressbook and click finish. An AddressBook element gets created under the project. Then right click Address element and select Group. A group element gets created under Address element. Similarly create a contact element under Group element. For each element created separate views are opened. Give suitable name for the address book, group and contact element. Your output should look something like this.



REFERENCES:

<http://eclipse.org/ecp/>

<http://eclipsesource.com/blogs/tutorials/getting-started-with-the-emf-client-platform/>

ABOUT ANCIT:

ANCIT Consulting is an Eclipse Consulting Firm located in the "Silicon Valley of Outsourcing", Bangalore. Offers professional Eclipse Support and Training for various Eclipse based Frameworks including RCP, EMF, GEF, GMF. Contact us on annamalai@ancitconsulting.com to learn more about our services.