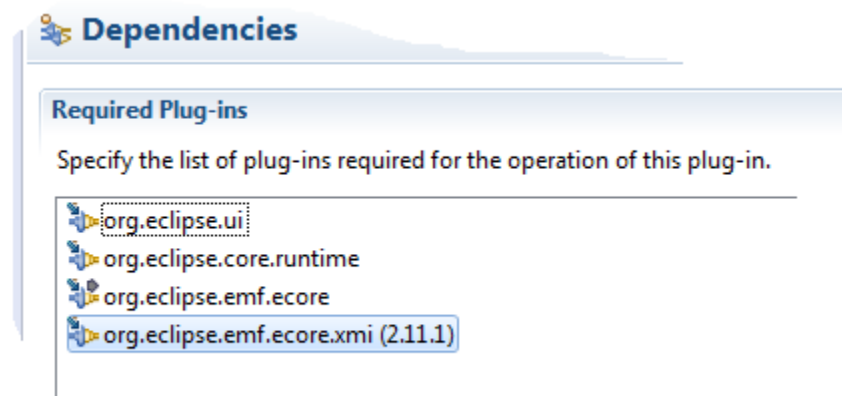


Loading and Serializing EMF Models

Having learnt how to create a EMF model in the previous article, we now need to learn how to Save and Load an EMF Model. This is a facility offered by org.eclipse.emf.ecore.xmi plugin.

Saving and Loading of EMF models is achieved thru its ResourceSet. ResourceSet is a collection of EMF resources. We need to configure the ResourceSet before we can use it to Save or Load out model. Configuring the ResourceSet involves registering the EPackage or the Ecore Model and Registering the XMI file extension to its relevant ResourceFactory.

Step 1 : Add org.eclipse.emf.ecore.xmi in your plugin dependancies



Step 2 : Initializing and Configuring the ResourceSet

```
//Initializing the ResourceSet
ResourceSet rSet = new ResourceSetImpl();
//Registering the EPackage to this ResourceSet
rSet.getPackageRegistry().put(AddressbookPackage.eNS_URI, AddressbookPackage.eINSTANCE);
//Registering the FileExtension to its ResourceFactory
rSet.getResourceFactoryRegistry().getExtensionToFactoryMap().put("ab",new XMIResourceFactoryImpl());
```

In Line No.2 We register the EPackage of our EMF Model. This is used to link our XMI NameSpace to our EMF Model. So whenever a Resource is loaded with the XMI NameSpace, it is attached to the relevant Model. Similarly whenever a Model is saved, it is saved with the relevant NameSpace.

In Line no.3 We are registering the required ResourceFactory for a given File Extension. The ResourceFactory is responsible for Loading and Saving of the EMF Model. You may extend this class to change your Load or Save algorithm along with EMF resource. By default if the Model is created using Ecore, then we use XMIResourceFactory and if it is created thru a Schema then we use XMLResourceFactory.

Step 3 : Creating your EMF Resource

```
//Creating your EMF resource  
Resource resource = rSet.createResource(URI.createFileURI("c:/temp/sample.ab"));|
```

We use the `createresource` method to create the EMF Resource. EMF resource requires an URI to specify its location. URI could be created for a File location or a Relative Plugin location using the relevant methods. In our example we have used a file location to point to a HardCoded path.

Step 4 : Writing the Model into EMF Resource

```
//Writing the Model into the EMF Resource|  
AddressBook book = AddressbookFactory.eINSTANCE.createAddressBook();  
resource.getContents().add(book);
```

So with the handle to the EMF resource, we need to use the above line and write our initialized model into the Resource. You just need to write the Root Element it in turn it would save the complete Tree. This is similar to writing a Serializable Model using `ObjectOutputStream` in JAVA.

Step 5 : Saving the EMF Resource

```
//Saving the Resource  
try {  
    resource.save(null);  
} catch (IOException e) {  
    // TODO Auto-generated catch block  
    e.printStackTrace();  
}
```

Finally we need to trigger the SAVE operation and this being an IO Operation would raise an Java `IOException`.

Step 6 : Loading an EMF resources

For loading a resource, we need to Configure the `ResourceSet` as mentioned in Step 2 above and then make the following code changes.

```
//Loading an EMF resource  
Resource loadedResource = rSet.getResource(URI.createFileURI("c:/temp/sample.ab"), true);  
AddressBook loadedBook = (AddressBook) loadedResource.getContents().get(0);
```

The Above code mentioned in Step 5 holds good for creating a new resource and saving your model. But if the model is already loaded thru an EMF Loader using a ResourceSet as mentioned above in Step 6, then you just need to invoke code as mentioned below and dnt hav to follow Step 1 to Step 5.

```
try {  
    book.eResource().save(null);  
} catch (IOException e) {  
    // TODO Auto-generated catch block  
    e.printStackTrace();  
}
```

This is because while loading the Resource we would have loaded it thru our ResourceSet. Therefore the model already has a pointer back to the Resource.

ABOUT ANCIT:

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