Ex.No: 10 **MINI PROJECT**

Date: **TRAINING INSTITUTE MANAGEMENT SYSTEM**

AIM:

To convert the uml diagrams to java code using Rational Rose software.

DESCRIPTION:

This project aims at performing forward engineering and reverse engineering.

Forward Engineering:

Forward engineering is the process of transforming a model into code through a mapping to an implementation language. Therefore this project converts the uml class diagram of the online website "Training Institute Management System" to the java code using the "Rational Rose" software in the forward engineering process. The steps to convert are as follows:

Forward Engineering Steps:

Step 1: Download and install the "Rational Rose" software which helps to draw uml diagrams and code conversion.

Step 2: Draw the Class diagram with the Courses, Student , Enrollment in the Logical View of the uml diagrams.

Step 3: Create a component for the main class, Course in the Component view.

Step 4: Make all the classes private other than the main class, by selecting private in Open Standard Specification menu on right clicking.

Step 5: Select the default language as Java in the Notation tab of Tools menu.

Step 6: Make a link between the classes and the Courses component in the component diagram.

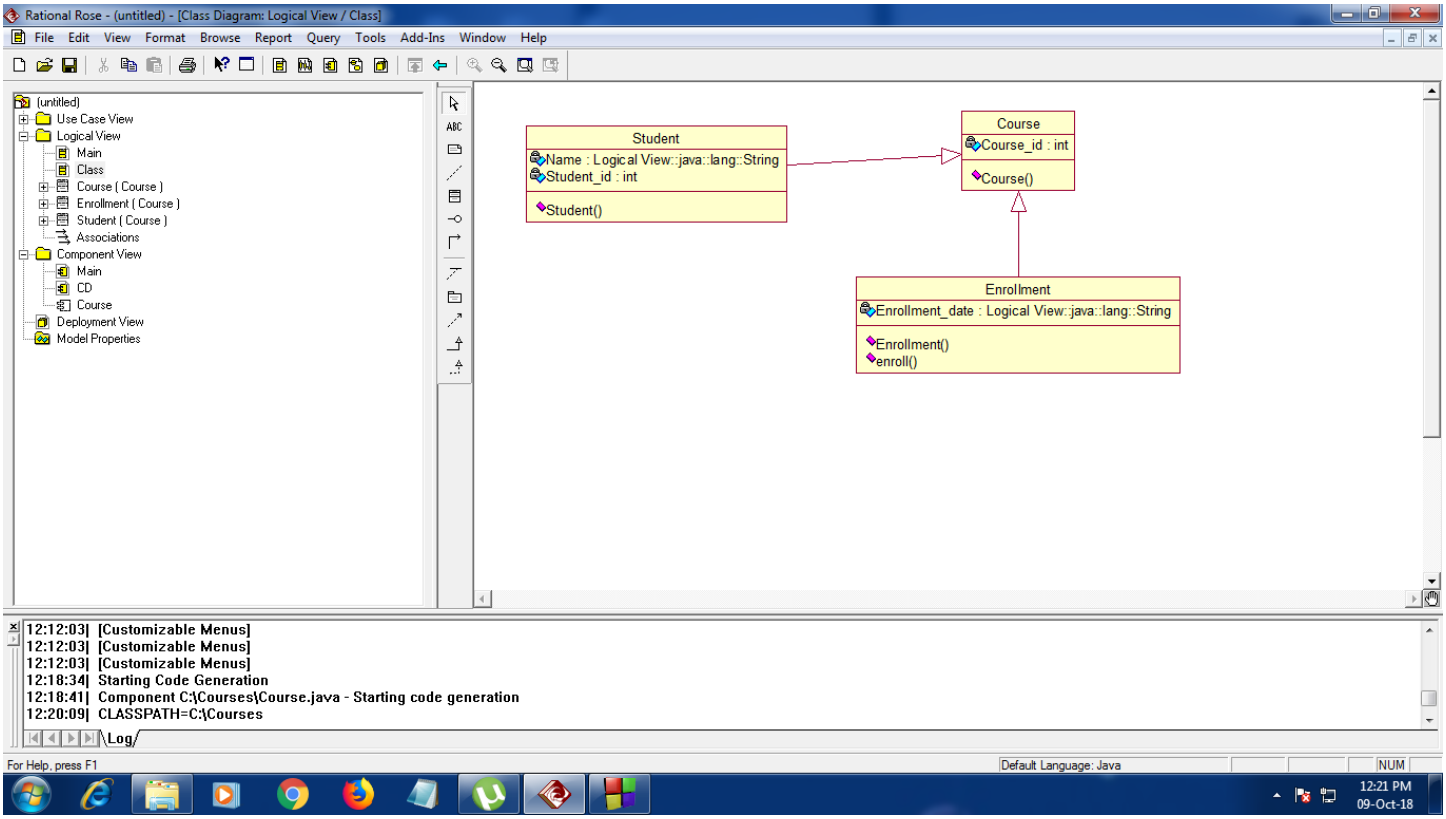
Step 7: Create the class path to store the java code. Follow the steps below to create

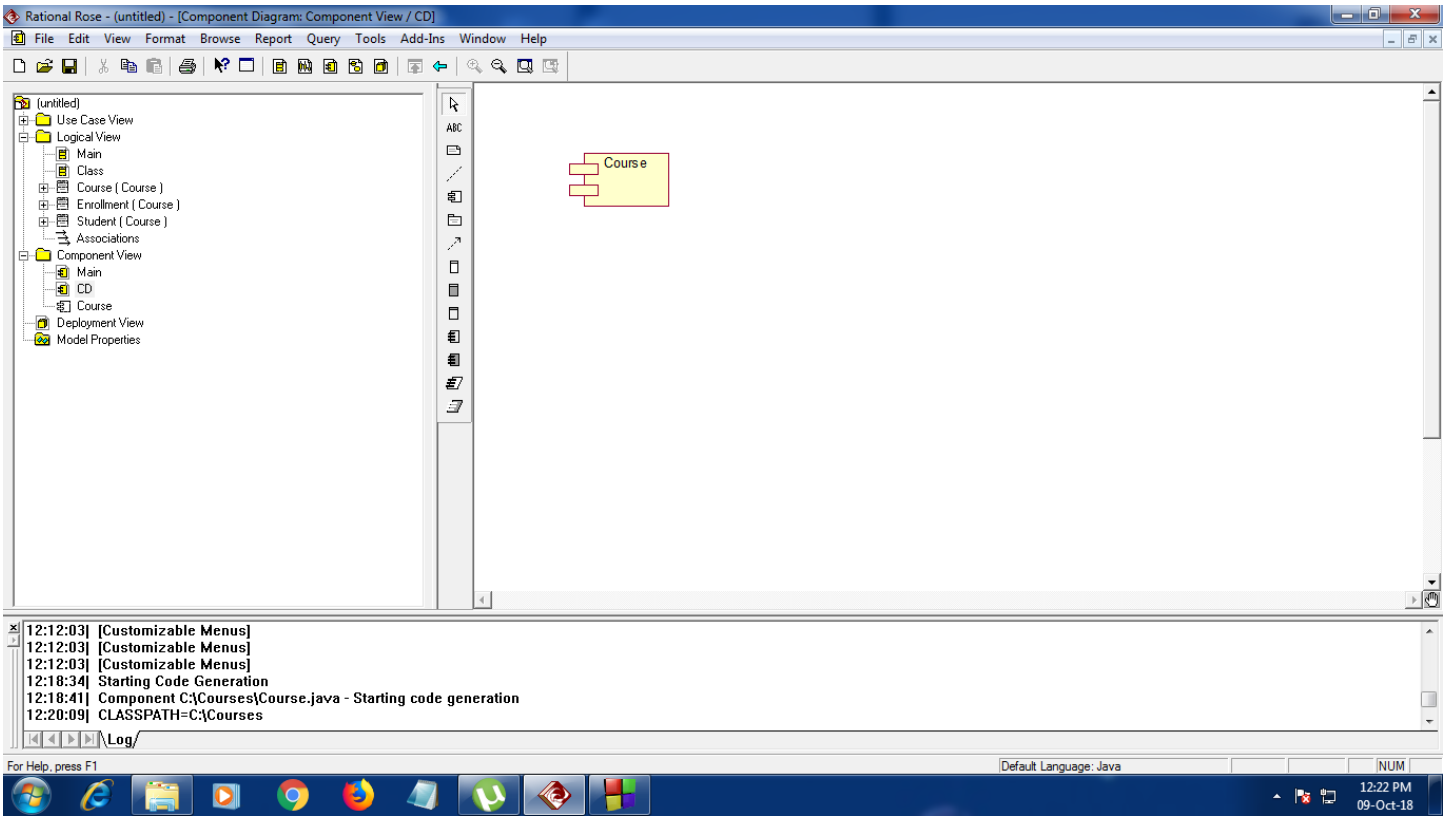
i) Right click on the Course Component
ii) Click on Java/J2EE
iii) Click on Project Specification
iv) Add Classpath and click on Reference Classpath button and click Ok

Step 8: Generate the code by the following steps

i) Right click on the Course Component
ii) Click on Java/J2EE
iii) Click on Generate code

Step 9: Finally, the code will be generated in the specified path successfully.


Rational Rose - (untitled) - [Class Diagram: Logical View / Class]
File Edit View Format Browse Report Query Tools Add-Ins Window Help
(untitled)
Use Case View
Logical View
Main
Class
Course (Course)
Enrollment (Course)
Student (Course)
Associations
Component View
Main
CD
Course
Deployment View
Model Properties
Student
Name : Logical View::java::lang::String
Student_id : int
Student()
Course
Course_id : int
Course()
Enrollment
Enrollment_date : Logical View::java::lang::String
Enrollment()
enroll()
12:12:03| [Customizable Menus]
12:12:03| [Customizable Menus]
12:12:03| [Customizable Menus]
12:18:34| Starting Code Generation
12:18:41| Component C:\Courses\Course.java - Starting code generation
12:20:09| CLASSPATH=C:\Courses
Log
For Help, press F1
Default Language: Java
NUM
12:21 PM
09-Oct-18


Rational Rose - (untitled) - [Component Diagram: Component View / CD]
File Edit View Format Browse Report Query Tools Add-Ins Window Help
(untitled)
Use Case View
Logical View
Main
Class
Course (Course)
Enrollment (Course)
Student (Course)
Associations
Component View
Main
CD
Course
Deployment View
Model Properties
Course
12:12:03| [Customizable Menus]
12:12:03| [Customizable Menus]
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Log
For Help, press F1
Default Language: Java
NUM
12:22 PM
09-Oct-18

Java Code:

//Source file: C:\\Courses\\Course.java

```
public class Course
{
  private int Course_id;

  /**
   * @roseuid 5BBC4F490297
   */
  public Course()
  {

  }
}

private class Enrollment extends Course
{
  private String Enrollment_date;

  /**
   * @roseuid 5BBC4F4902A7
   */
  public Enrollment()
  {
```

```
  }
  public enroll()
  {

  }
}

private class Student extends Course
{
  private String Name;
  private int Student_id;

  /**
   * @roseuid 5BBC4F4902B7
   */
  public Student()
  {

  }
}
```

Reverse Engineering:

The process of recreating a design from the code.

Reverse Engineering Steps:

Step 1: Make some changes in the java code and save the changes.

Step 2: Go to the Rational Rose software and perform reverse engineering by the below steps

i) Right click on the Room component of the component view
ii) Click on Java/J2EE
iii) Click Reverse Engineer and a dialog box will appear
iv) Click on Reverse button in the dialog box.

Step 3: Finally, the changes will be reflected in the uml diagram.

Description		
Implementation		
Viva		
Record		

Result:

Thus the forward and reverse engineering has been done for "Training Institute Management System" successfully.