**CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENTS**



**Assignment 4**

Course Title: System Integration with Dymola

Course Code: CUTM1022 (0-0-2)

**Submitted to:**

***Dr. Sudhansu Kumar Samal***

*Faculty of*

*School of Engineering & Technology, Bhubaneswar*

**Submitted by:**

Name: Kiran Kumar Malik

Registration no: 200301120128

Branch: B-Tech in Computer Science and Engineering’s

Semester: 4th Sem

Section: C

**Experiment No.: 4**

Half-wave Rectifier

**Requirements:**

OpenModelica software

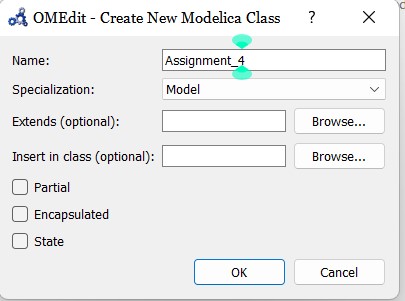
**Procedure:**

Step 1: Open Openmodelica connection editor

Graphical user interface, application

Description automatically generated

Step 2: Click on New Modelica class, give a new Modelica class name, then click on ok



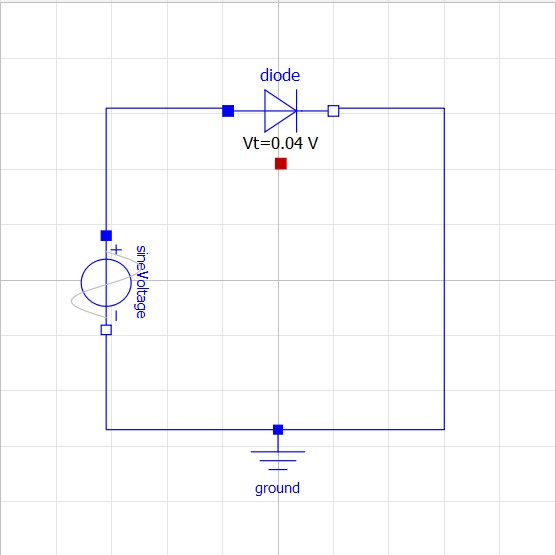
Step 3: Then this type of page will appear

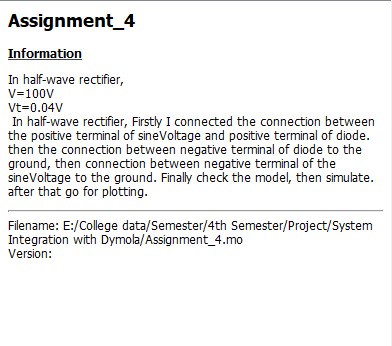
A picture containing white, tub, bath

Description automatically generated

Step 4: Go to Modelica packages, then go to electrical, then analog, then basic, then drag resistor and ground to the modeling field , then choose the constant voltage from source packages.

I connected the connection between the positive terminal of sineVoltage and positive terminal of diode. then the connection between negative terminal of diode to the ground, then connection between negative terminal of the sineVoltage to the ground.

Add some information of the modeling



Step 5: After the completion of modeling then save the Modelica file into your pc as .mo extensions, after that go for simulation, when clicking on simulation then compilation occurs, graphical language changes into modelica language.

model Assignment\_4

Modelica.Electrical.Analog.Basic.Ground ground annotation(

Placement(visible = true, transformation(origin = {0, -70}, extent = {{-16, -16}, {16, 16}}, rotation = 0)));

Modelica.Electrical.Analog.Semiconductors.Diode diode annotation(

Placement(visible = true, transformation(origin = {1, 61}, extent = {{-19, -19}, {19, 19}}, rotation = 0)));

Modelica.Electrical.Analog.Sources.SineVoltage sineVoltage(V = 100) annotation(

Placement(visible = true, transformation(origin = {-62, -1}, extent = {{-17, -18}, {17, 18}}, rotation = -90)));

equation

connect(sineVoltage.p, diode.p) annotation(

Line(points = {{-62, 16}, {-62, 62}, {-18, 62}}, color = {0, 0, 255}));

connect(diode.n, ground.p) annotation(

Line(points = {{20, 62}, {60, 62}, {60, -54}, {0, -54}}, color = {0, 0, 255}));

connect(sineVoltage.n, ground.p) annotation(

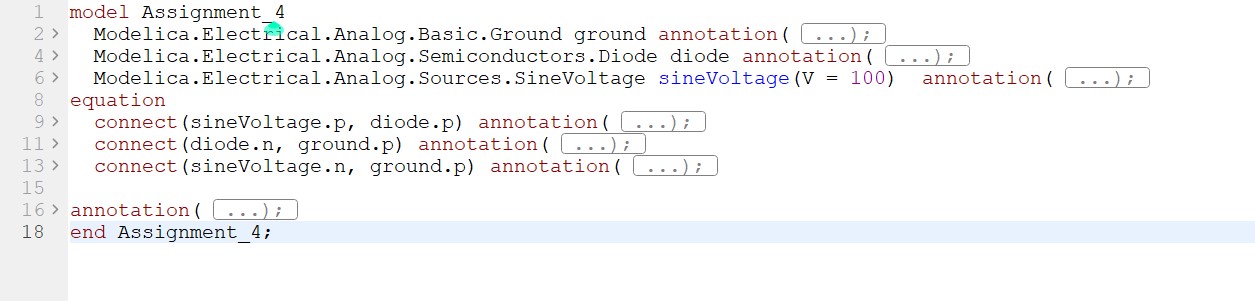
Line(points = {{-62, -18}, {-62, -54}, {0, -54}}, color = {0, 0, 255}));

annotation(

uses(Modelica(version = "4.0.0")),

Documentation(info = "<html><head></head><body><!--StartFragment--><span style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">In half-wave rectifier,</span><div style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">V=100V</div><div style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">Vt=0.04V</div><div style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">&nbsp;In half-wave rectifier, Firstly I connected the connection between the positive terminal of sineVoltage and positive terminal of diode. then the connection between negative terminal of diode to the ground, then connection between negative terminal of the sineVoltage to the ground. Finally check the model, then simulate. after that go for plotting.</div><!--EndFragment--></body></html>"));

end Assignment\_4;



Step 6:after the compilation it will show you a plotting area where you have to plot, as per your given data you have to simulate.

