**CENTURION UNIVERSITY OF TECHNOLOGY AND MANAGEMENTS**



**Assignment 3.3**

Course Title: System Integration with Dymola

Course Code: CUTM1022 (0-0-2)

**Submitted to:**

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Semester: 4th Sem

Section: C

**Experiment No.: 3.**

Current load to the resistor with Inductor and capacitor

**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

Graphical user interface

Description automatically generated

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 constantVoltage and resistor. then the connection between negative terminal of resistor and positive terminal of inductor, then connection between negative terminal of the inductior and positive terminal of capacitor, connection between negative terminal of capacitor to ground, connection between negative terminal of constantVoltage to ground.

Add some information of the modeling

Graphical user interface, text, application

Description automatically generatedDiagram, schematic

Description automatically generated

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\_3of3

Modelica.Electrical.Analog.Basic.Resistor resistor(R = 10) annotation(

Placement(visible = true, transformation(origin = {-49, 63}, extent = {{-11, -11}, {11, 11}}, rotation = 0)));

Modelica.Electrical.Analog.Basic.Capacitor capacitor(C = 10) annotation(

Placement(visible = true, transformation(origin = {54, 64}, extent = {{-10, -10}, {10, 10}}, rotation = 0)));

Modelica.Electrical.Analog.Basic.Inductor inductor(L = 2) annotation(

Placement(visible = true, transformation(origin = {-2, 64}, extent = {{-10, -10}, {10, 10}}, rotation = 0)));

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

Placement(visible = true, transformation(origin = {0, -46}, extent = {{-10, -10}, {10, 10}}, rotation = 0)));

Modelica.Electrical.Analog.Sources.ConstantVoltage constantVoltage(V = 100) annotation(

Placement(visible = true, transformation(origin = {-71, -1}, extent = {{-11, -11}, {11, 11}}, rotation = -90)));

equation

connect(constantVoltage.p, resistor.p) annotation(

Line(points = {{-70, 10}, {-68, 10}, {-68, 64}, {-60, 64}}, color = {0, 0, 255}));

connect(resistor.n, inductor.p) annotation(

Line(points = {{-38, 64}, {-12, 64}}, color = {0, 0, 255}));

connect(inductor.n, capacitor.n) annotation(

Line(points = {{8, 64}, {64, 64}}, color = {0, 0, 255}));

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

Line(points = {{64, 64}, {80, 64}, {80, -36}, {0, -36}}, color = {0, 0, 255}));

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

Line(points = {{-70, -12}, {-70, -36}, {0, -36}}, color = {0, 0, 255}));

annotation(

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

Documentation(info = "<html><head></head><body><span style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">In this RL circuit</span><div style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">R=10ohm</div><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;\">L=2H</div><div style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">C=10F</div><div style=\"font-family: 'MS Shell Dlg 2'; font-size: 12px;\">&nbsp;In this RLC circuit load to the resistor with inductor, Firstly I connected the connection between the positive terminal of constantVoltage and resistor. then the connection between negative terminal of resistor and positive terminal of inductor, then connection between negative terminal of the inductior and positive terminal of capacitor, connection between negative terminal of capacitor to ground, connection between negative terminal of constantVoltage to ground. Finally check the model, then simulate. after that go for plotting.</div></body></html>"));

end Assignment\_3of3;

Graphical user interface, text

Description automatically generated

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.

Chart, line chart

Description automatically generated