Lab Exercise 10- Create Model in OMEdit and Simulate Using OMShell

---

Objective

After this lab, you will be able to:

1. Create a Modelica model in OMEdit
2. Save the model properly
3. Load the file in OMShell
4. Simulate from command line
5. Plot results

PART 1 — Create Model in OMEdit

Step 1 — Open OMEdit

Start Menu → OpenModelica → **OMEdit**

Wait until fully loaded.

Step 2 — Create New Model

1. Click **File → New Modelica Class**
2. Name: **SpringMassShellLab**
3. Type: **Model**

4. Click OK

Step 3 — Paste This Code in Text View

Switch to **Text View** and paste:

```
model SpringMassShellLab
  parameter Real m = 1;
  parameter Real k = 100;
  parameter Real c = 2;

  Real x(start=0.1, fixed=true);
  Real v(start=0, fixed=true);

equation
  der(x) = v;
  m*der(v) + c*v + k*x = 0;

end SpringMassShellLab;
```

Click **Save**.

Remember the path.

PART 2 — Verify Model Works in OMEdit

Click **Simulate** once in OMEdit.

Plot:

```
x
```

If oscillation appears → model is correct.

Close plot.

PART 3 — Open OMShell

```
Start Menu → OMShell
```

You should see:

```
>>
```

PART 4 — Load Model File in OMShell

Type:

```
loadFile("C:/Users/Administrator/Documents/OpenModelica/SpringMassShellLab.mo
");
```

(Use forward slashes /)

Press Enter.

PART 5 — Simulate from OMShell

Type:

```
simulate(SpringMassShellLab, stopTime=10);
```

PART 6 — Plot from OMShell

Type:

```
plot(x);
```

You should see damped oscillation.

Also try:

```
plot(v);
```

PART 7 — Parameter Change from OMShell

Now override mass:

```
simulate(SpringMassShellLab, stopTime=10, simflags="-override m=2");
plot(x);
```

Observe:

- Slower oscillation

Now override damping:

```
simulate(SpringMassShellLab, stopTime=10, simflags="-override c=10");
plot(x);
```

Observe:

- Faster decay