Module 11: Assignment: Modelling Differential Equation

Problem Statement:

As part of the EV modeling team, you're tasked with creating a Simulink model to simulate the charging behavior of an EV battery. The model will depict voltage dynamics using a first-order differential equation, dv/dt = 6e^(-4t) where, v is the voltage of the battery and t is time. Your goal is to visualize how the battery voltage changes over time during charging, starting from an initial voltage of 0 volts.

Task to be Performed:

- Design a Simulink model to simulate EV battery charging dynamics.
- Set the initial voltage of the battery to 0 volts.
- Implement the first-order differential equation representing voltage dynamics.
- Visualize the output voltage over time using a scope block.