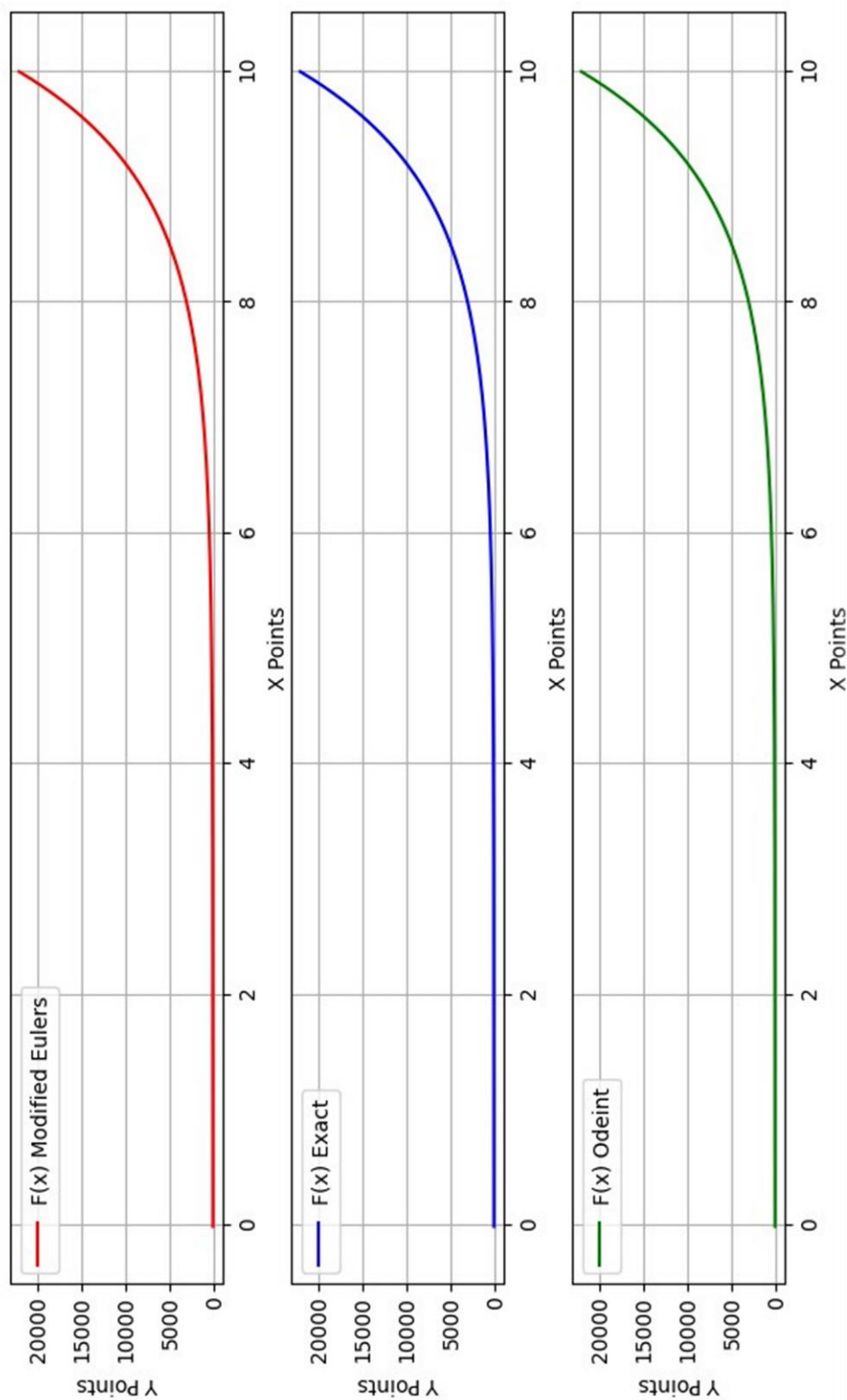


To Solve First Order Differential Equation by Modified Euler Method and compare it with Exact Solution and Inbuilt Function.



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Enter Initial value of X: 0

Enter Value of Y at Initial value of X: 1

Enter Step Size: 0.01

Enter last value of interval: 10

To Plot Newton's cooling law ODE by Modified Eulers method, Exact solution & Inbuilt solver

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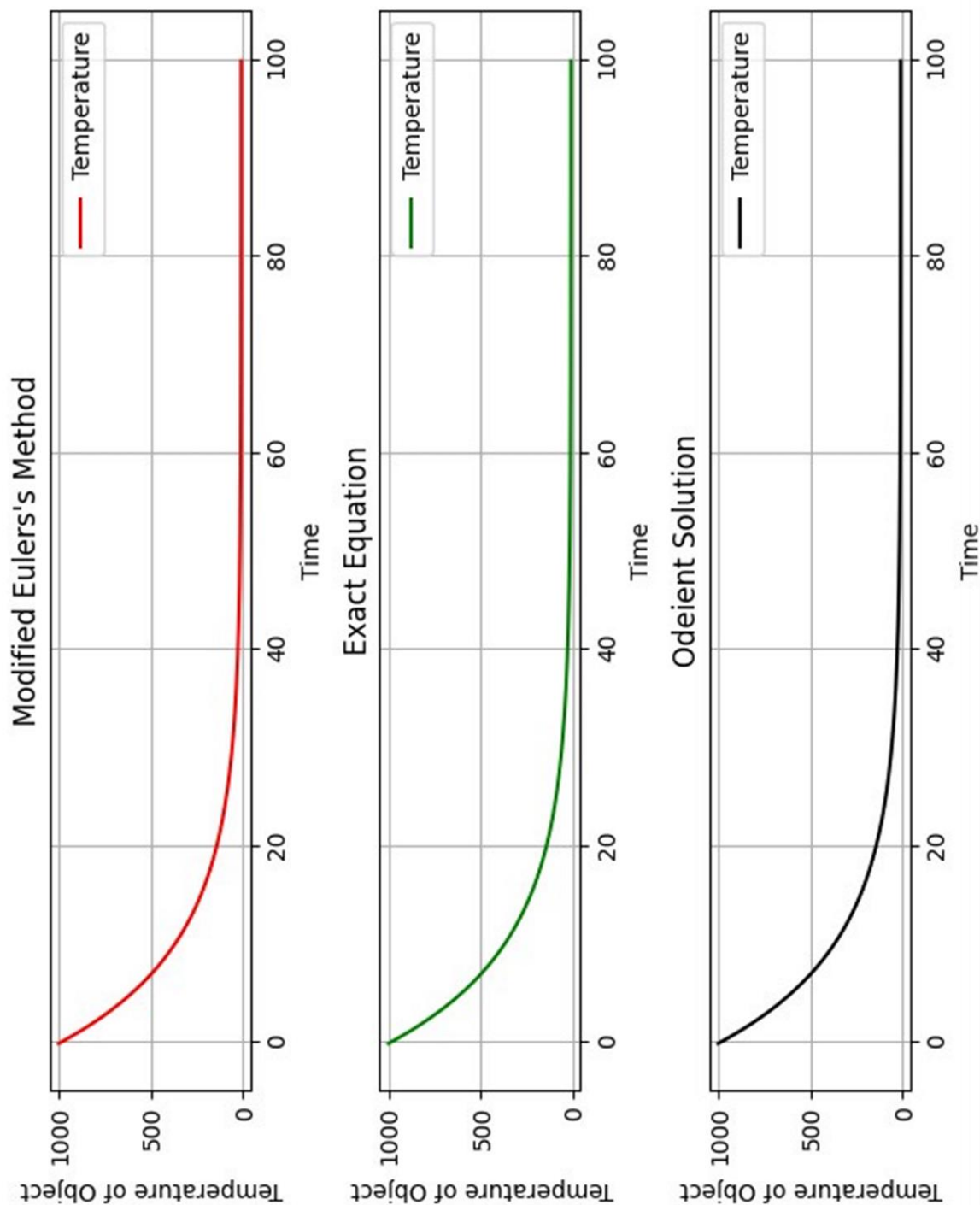
Newton's Law of Cooling

Temperature is in Degree Celsius and time is in seconds

Enter initial Temperature of Object: 1000

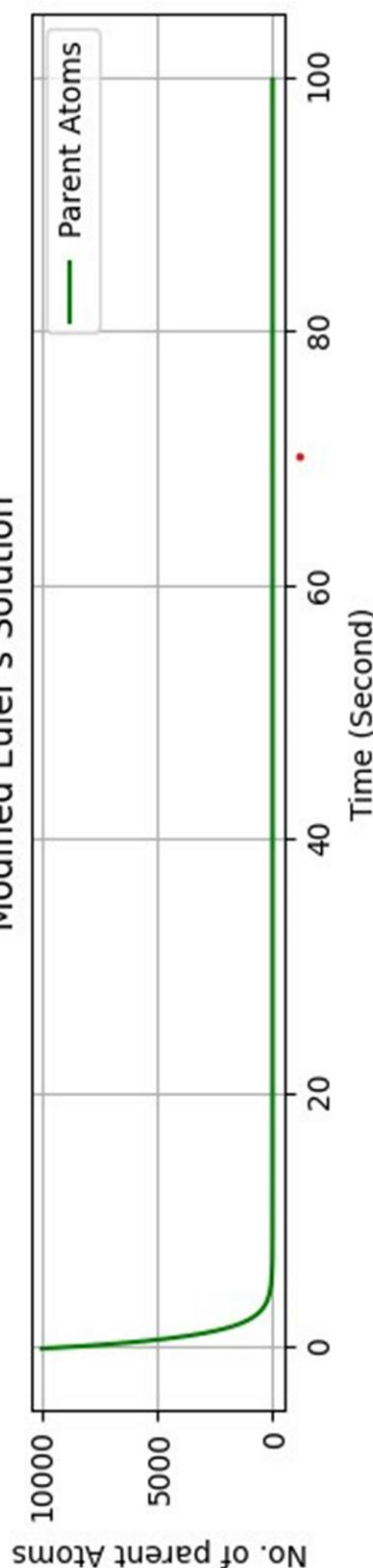
Enter Surrounding temperature: 10

Enter time from t=0, at which temperature of Object to be calculated: 100

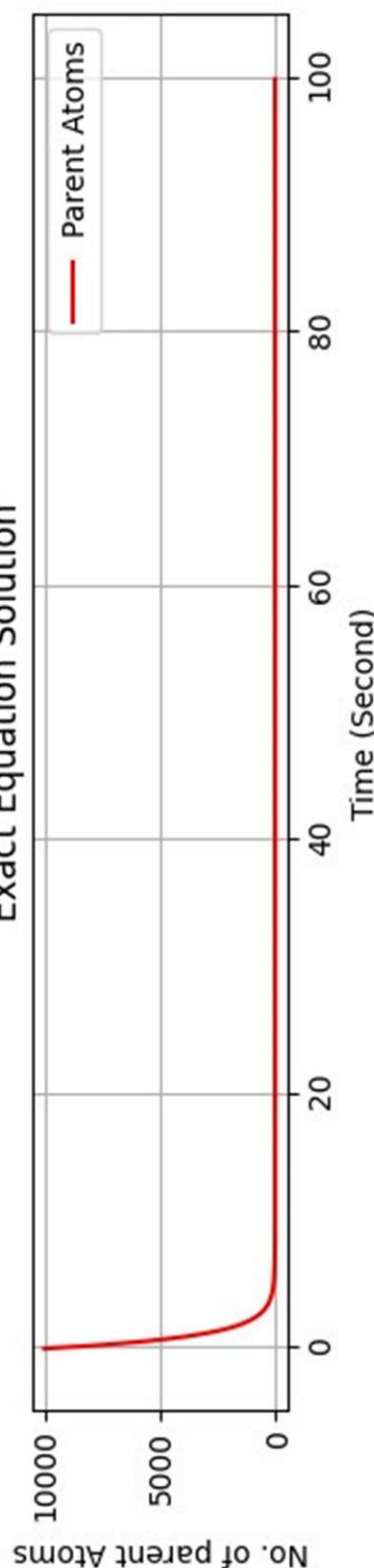


To Plot Radioactive Decay ODE by Modified Euler method, Exact solution & Inbuilt solver.

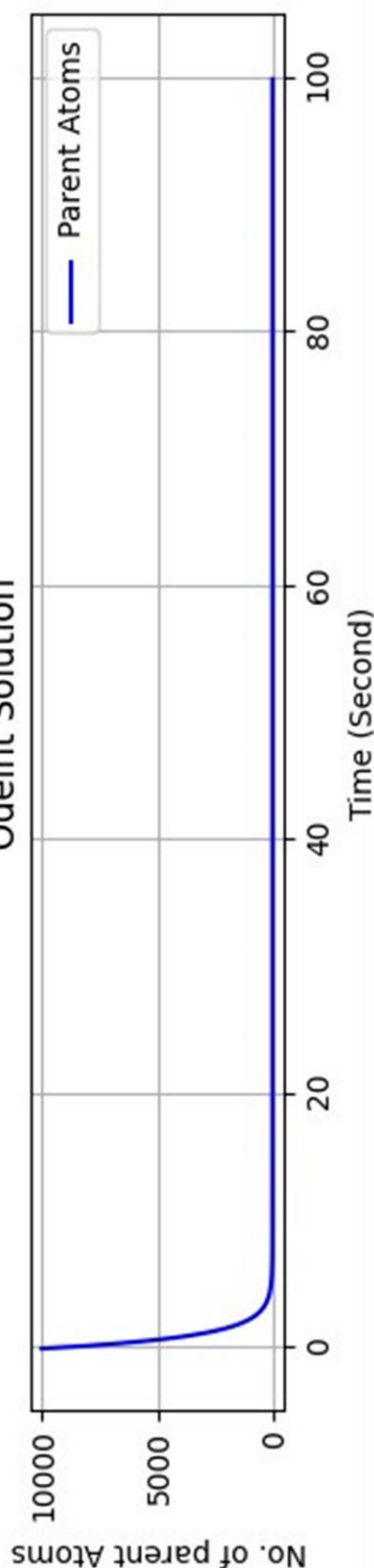
Modified Euler's Solution



Exact Equation Solution



Odeint Solution



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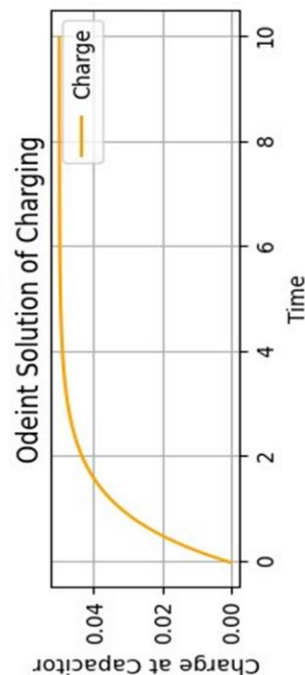
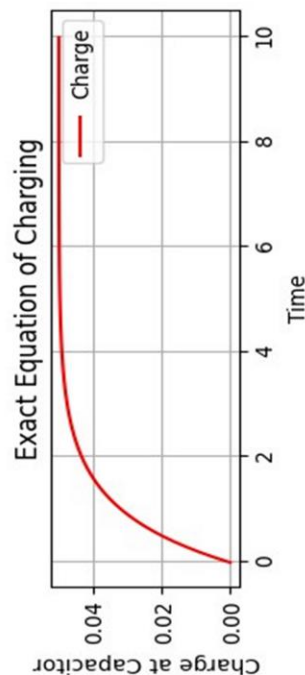
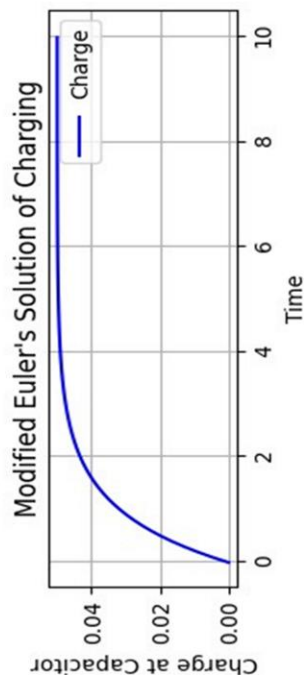
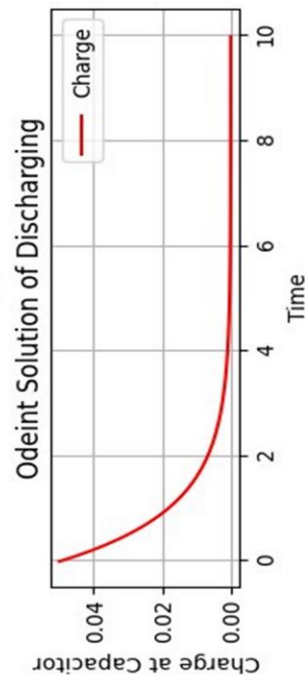
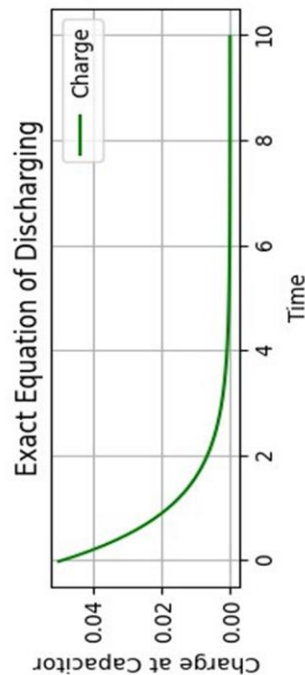
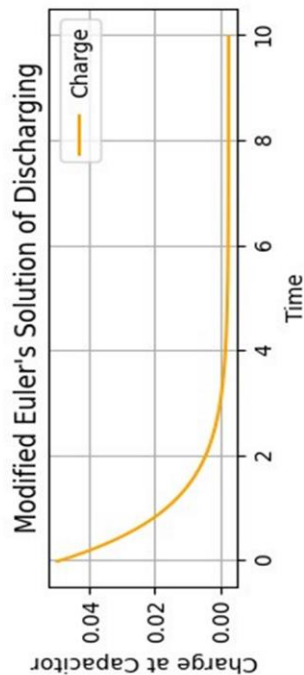
Radioactive Decay

Time is in Seconds

Enter Number of Parent Atoms at $t=0$: 10000

Enter time instant at which Remaining of Parent Atoms to be calculated: 100

Enter Radioactive Decay constant value: 1



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RC Circuit Charging and Discharging of Capacitor

Capacitance is in Farad, resistance is in ohm,time is in second,charge in coulomb,voltage in volts.

Enter Capacitance of Capacitor: 0.01

Enter EMF of Battery: 5

Enter Resistance of Resistor: 100

Enter time instant at which charge on capacitor to be calculated: 10

To Plot Current in RC circuit and potential ODE with DC source by Modified Euler Method, Exact solution, Inbuilt solver.

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RC Circuit

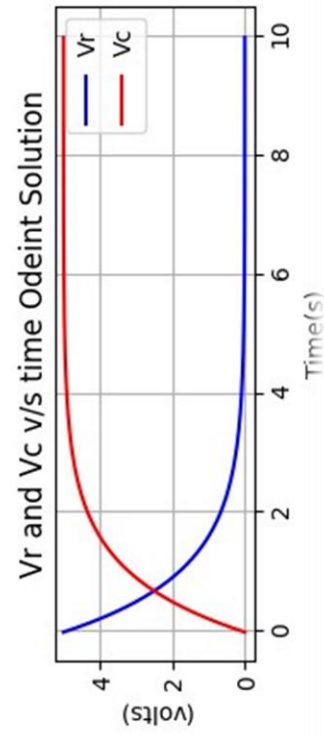
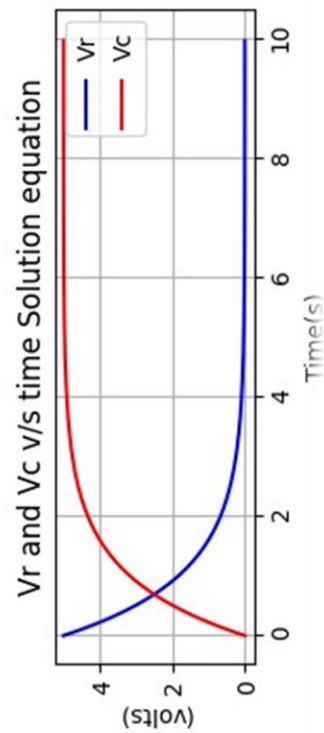
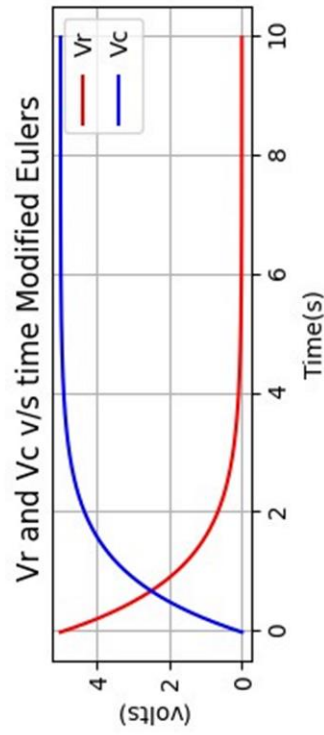
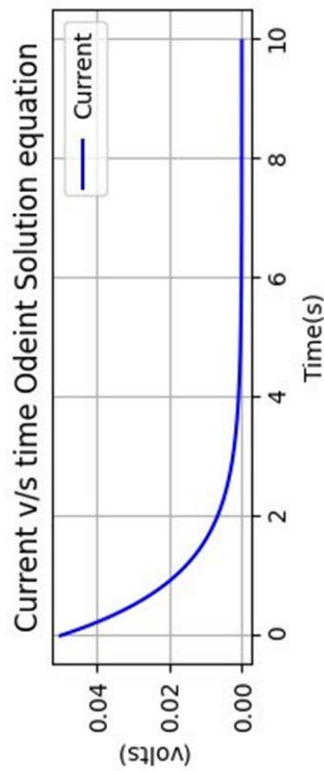
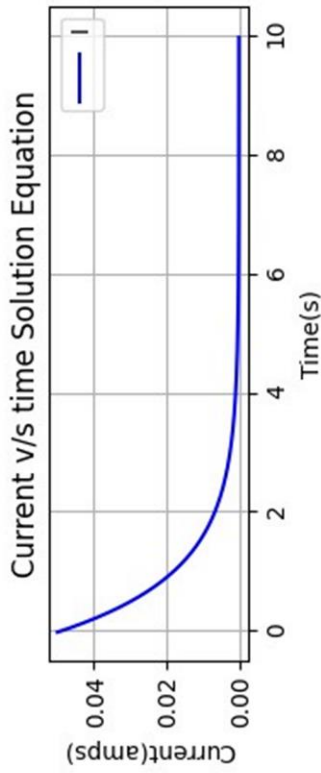
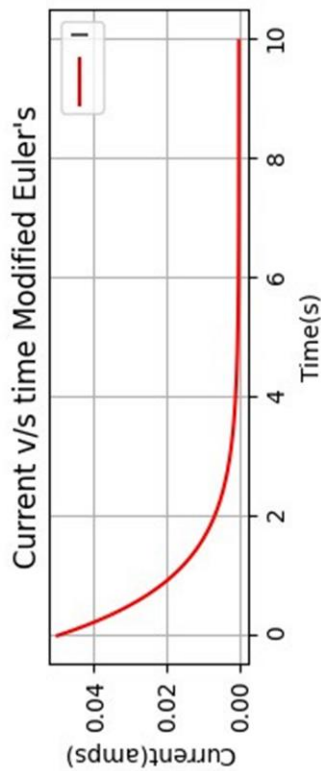
Capacitance is in Farad, resistance is in ohm,time is in second,charge in coulomb,voltage in volts.

Enter the value of resistance in ohms:100

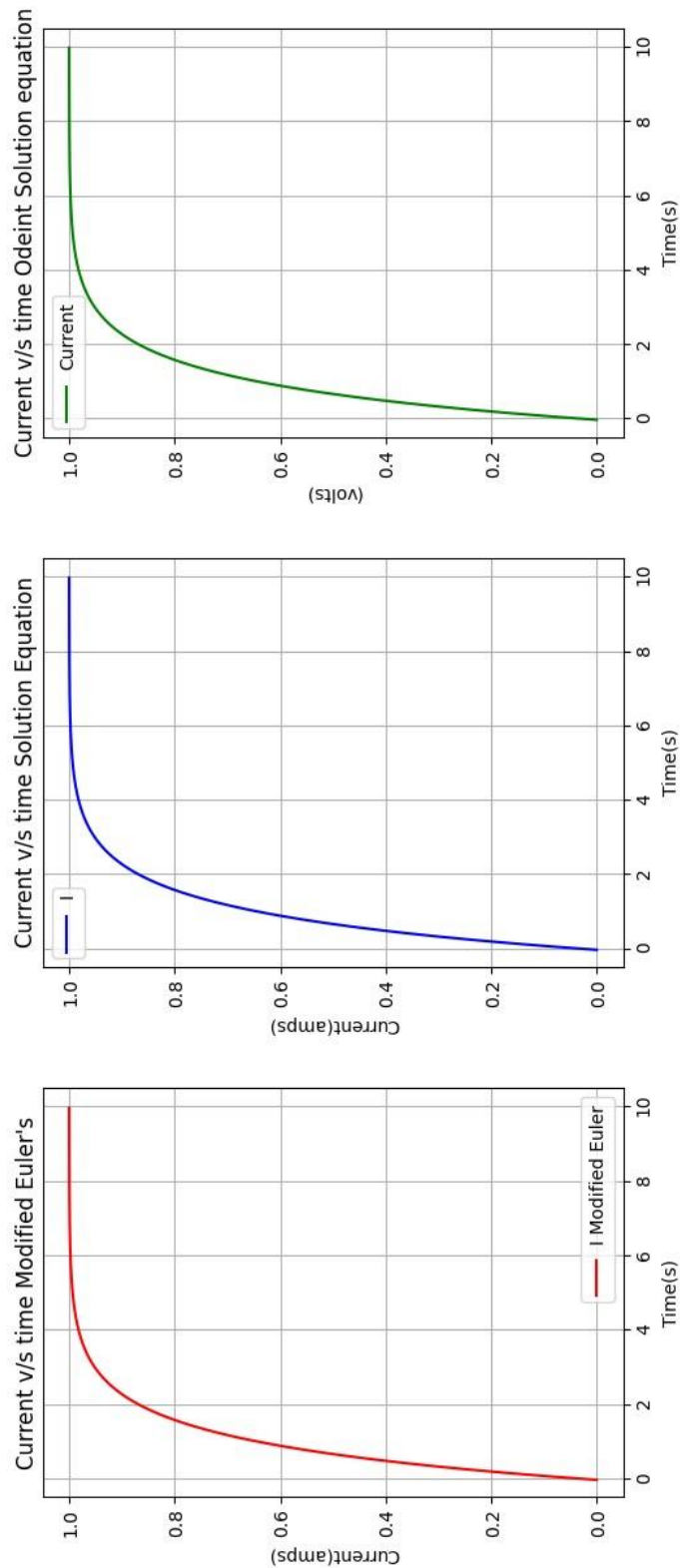
Enter the value of capacitance in farads:0.01

Enter the value of EMF in volts:5

Enter time instant at which current to be measured:10



To Plot Current in RL circuit ODE with DC source by Modified Euler Method, Exact solution, Inbuilt solver.



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Variation of curent with time in RL Circuit

Resistance is in ohm,time is in second,Inductance in henry,voltage in volts.

Enter Inductance of Inductor: 100

Enter EMF of Battery: 100

Enter Resistance of Resistor: 100

Enter time instant at which Current through inductor to be calculated: 10