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**Topic Name: Implementation Runge-Kutta (or at least Eulers) method for a DE of 1st degree of y'(x)=-sin(x), when y(0)=2, x=0..4\*pi by using Matlab.**

The Euler method is a first-order [numerical](https://en.wikipedia.org/wiki/Numerical_analysis) procedure for solving [ordinary differential equations](https://en.wikipedia.org/wiki/Ordinary_differential_equation) with a given [initial value](https://en.wikipedia.org/wiki/Initial_value_problem). It is the most basic [explicit method](https://en.wikipedia.org/wiki/Explicit_and_implicit_methods) for [numerical integration of ordinary differential equations](https://en.wikipedia.org/wiki/Numerical_ordinary_differential_equations) and is the simplest [Runge–Kutta method](https://en.wikipedia.org/wiki/Runge%E2%80%93Kutta_method). The Euler method is named after [Leonhard Euler](https://en.wikipedia.org/wiki/Leonhard_Euler).

The Euler method is a first-order method, which means that the local error (error per step) is proportional to the square of the step size, and the global error (error at a given time) is proportional to the step size. The Euler method often serves as the basis to construct more complex methods, e.g., [predictor–corrector method](https://en.wikipedia.org/wiki/Predictor%E2%80%93corrector_method).

By using the Euler method calculate the relative error and absolute error for an approximate value.