

# Abstract

The main aim of this project is to solve the linear ordinary differential equation

We are applying the iterative methods that called variational methods(VIM).

Some examples will be solved to show that the proposed methods are efficient and have high accuracy and does not require any restrictive assumption. Also, the comparison with the numerical methods, with the analytical solution.

The First Chapter of this Project will focus on some basic concepts of the ordinary differential equations. The Second Chapter deals with implementation of the new iterative methods(VIM) to solve the linear ordinary differential equation. In Chapter three, we will solve some examples, in the first, will find the exact solution then use the (VIM) to find the numerical solution