Structure of the program

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1. Functions for computing $f(x, y)$ and $y(x)$ functions for all the numerical methods.

2. Function $find\_x(x_0, x_{max}, step)$ to compute all the x values (where x returns an array of x_i values for given x_0, x_{max} and $step$).

3. Function $exact(x_0, y_0, x_{max}, step)$ to compute all the y values for exact analytic solution, where y returns an array of y_i values respectively to x_i from previous step for given x_0, y_0, x_{max} and $step$.

4. Function $euler(x_0, y_0, x_{max}, step)$ to compute all the y values for Euler Method method, where y returns an array of y_i values respectively to x_i from the second step for given x_0, y_0, x_{max} and $step$.

5. Function $euler\_imp(x_0, y_0, x_{max}, step)$ to compute all the y values for Improved Euler method, where y returns an array of y_i values respectively to x_i from the second step for given x_0, y_0, x_{max} and $step$.

6. Function $runge\_kutta(x_0, y_0, x_{max}, step)$ to compute all the y values for Runge-Kutta method, where y returns an array of y_i values respectively to x_i from the second step for given x_0, y_0, x_{max} and $step$.

7. Function $global\_error(x_0, y_0, x_{max}, step_0, step_{max}, step\_of\_steps)$ to compute global errors for each method with respect to exact solution, where $global\_error$ returns three arrays (for each method) of $global\_error_i$ value respectively to $step_i$ value between $step_0$, $step_{max}$ with step $step\_of\_steps$.

8. Computation of all the results using mentioned functions and plotting.