

```
% Part 1-4 for Problem 1
function [t, y] = forward_euler_refactor(f, tspan, ic, nsteps)
    % Extract t0 and tf from tspan
    t0 = tspan(1);
    tf = tspan(end); % Using 'end' to reference the last element of tspan

    % Time step
    h = (tf - t0) / nsteps;

    % Preallocate arrays for efficiency
    t = (t0:h:tf)';
    y = zeros(length(t), length(ic));

    % Initial condition
    y(1, :) = ic;

    % Forward Euler method loop, adjusted for f depending on t and y
    for i = 1:nsteps
        y(i+1, :) = y(i, :) + h * f(t(i), y(i, :));
    end
end
```