
```
function [ y ] = Heun( f,y0,dt,t_end )
%HEUN The Heun function model is based on a similar concept as
% the Euler model, but averages the slop for the function points n
% and n+1. This leads to a more percice result than with Heun
%
len = t_end/dt; %the number of steps is calculated

y = [y0,zeros(1,len)]; % the result memory is allocated
for n = 1:len
    % a temporary value is calculated for the current Euler value
    % this value is based on previous Heun y result values
    % range for the calculation is limited to two steps for
    % perfomance purposes
    temp = Euler(f,y(n),dt,dt);

    %Average of both test point y values based on slopes
    y(n+1) = y(n) + dt * 0.5 * (f(y(n)) + f(temp(2)));
end

end
```

```
Error using Heun (line 6)
Not enough input arguments.
```

Published with MATLAB® R2013a