Numerical Modelling Assignment 2
April 13, 2022

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19G4436

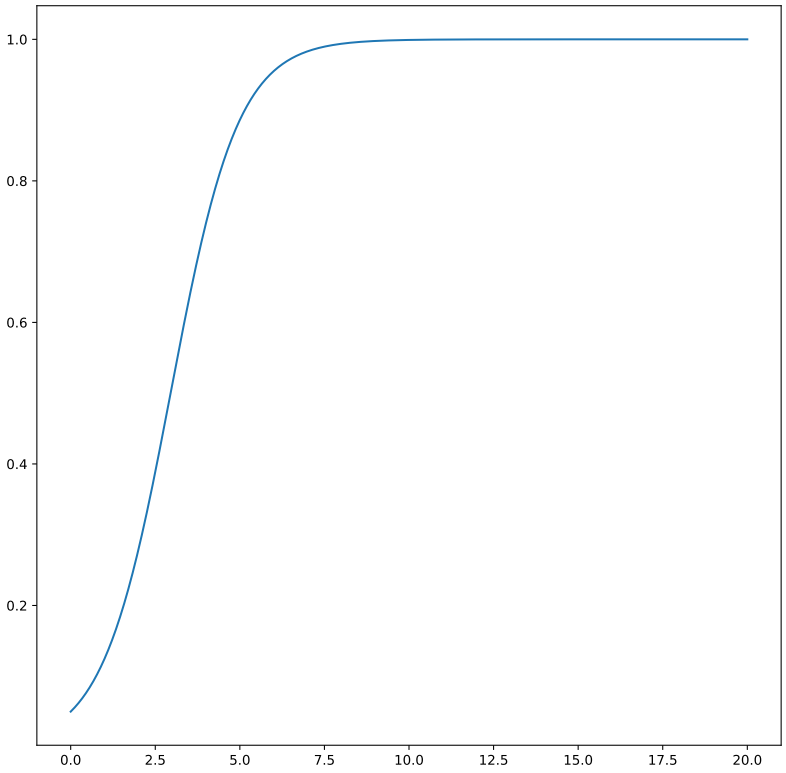


Figure 1: The Euler Method Solution of the Logistic Equation

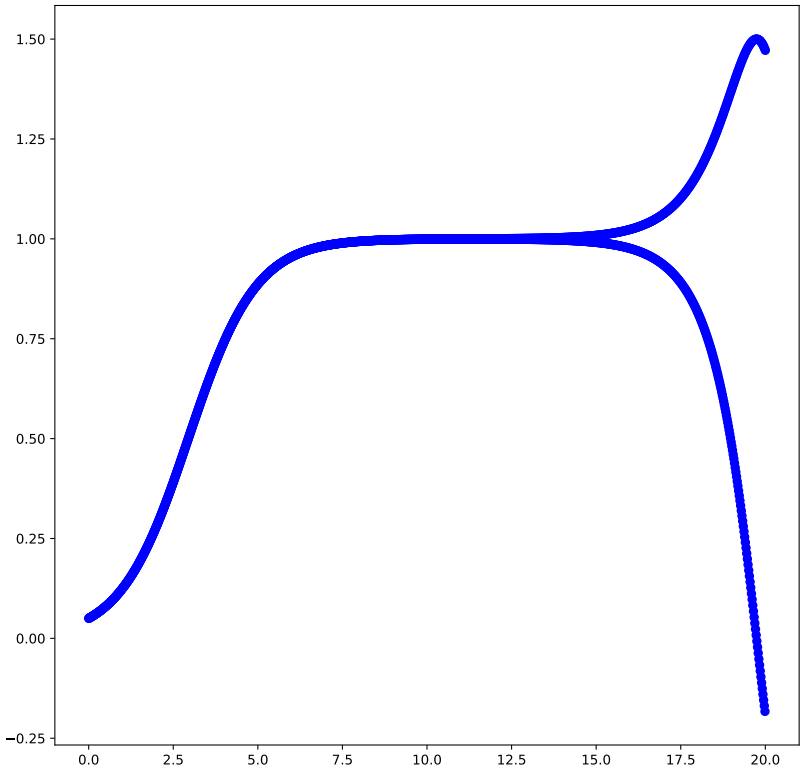


Figure 2: The Midpoint Method Solution of the Logistic Equation

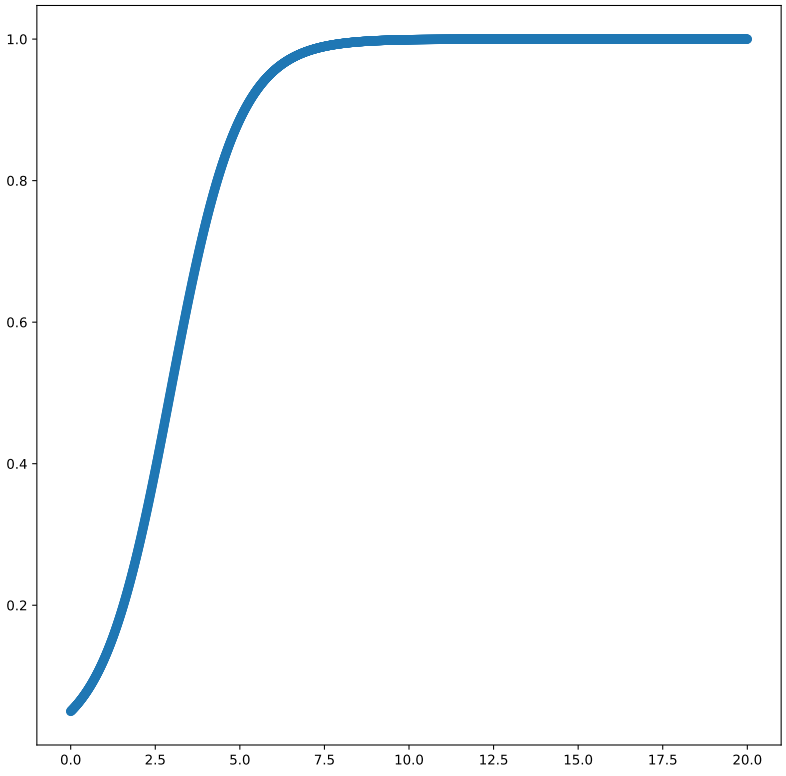
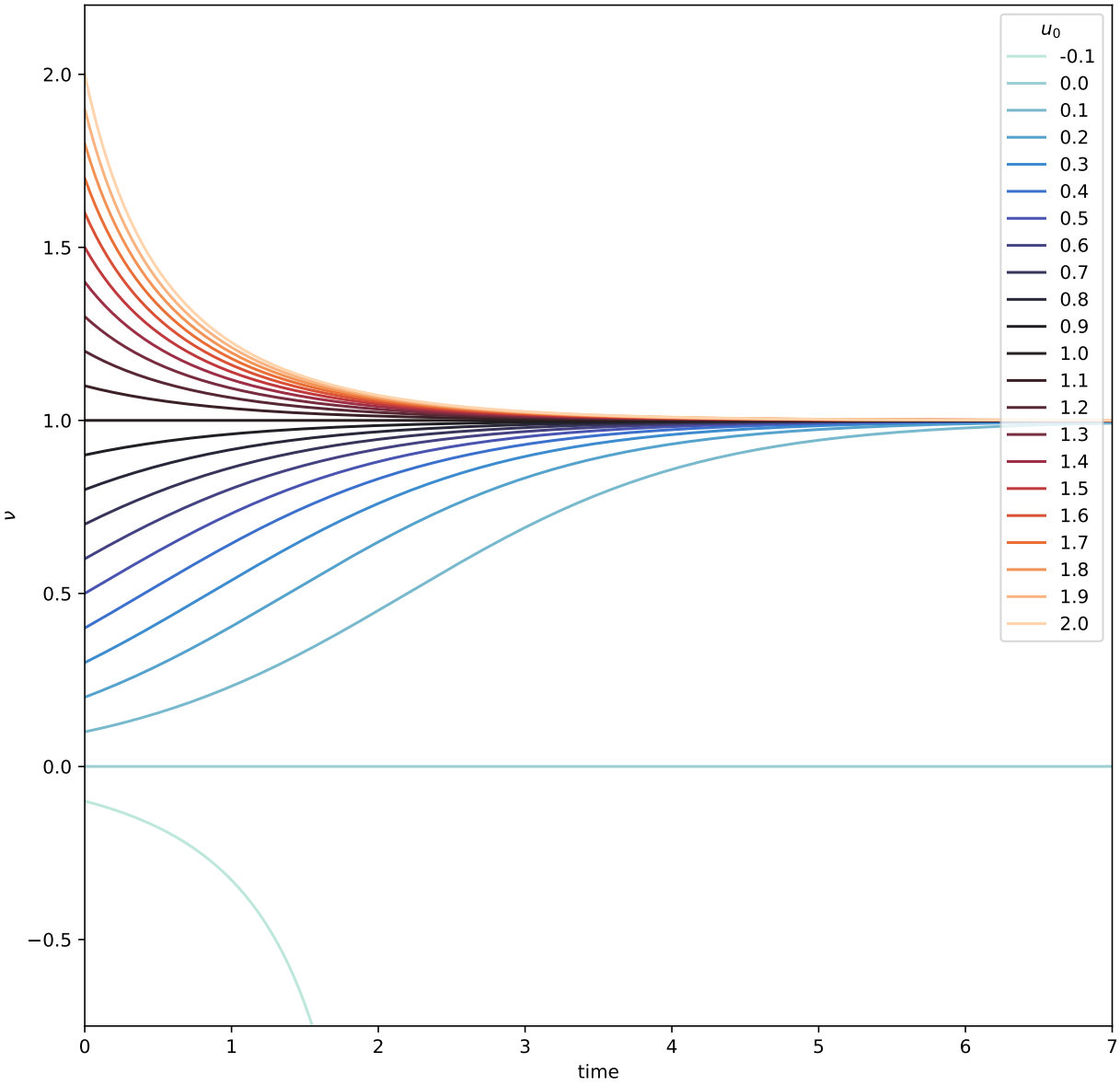
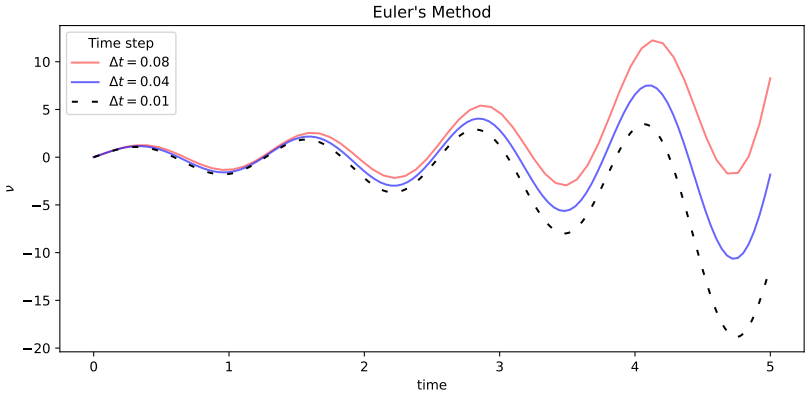
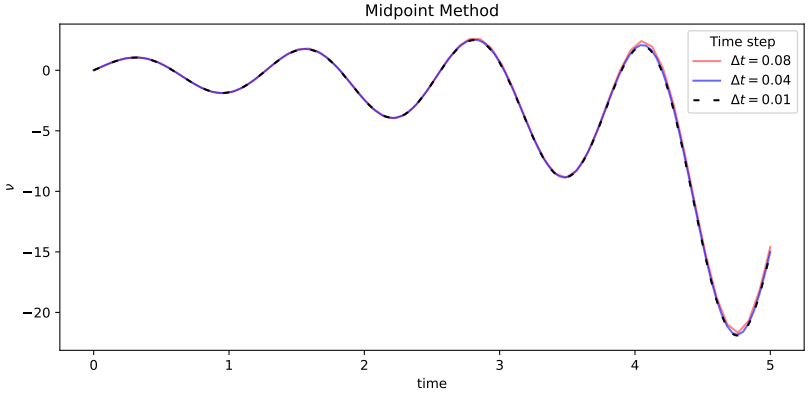
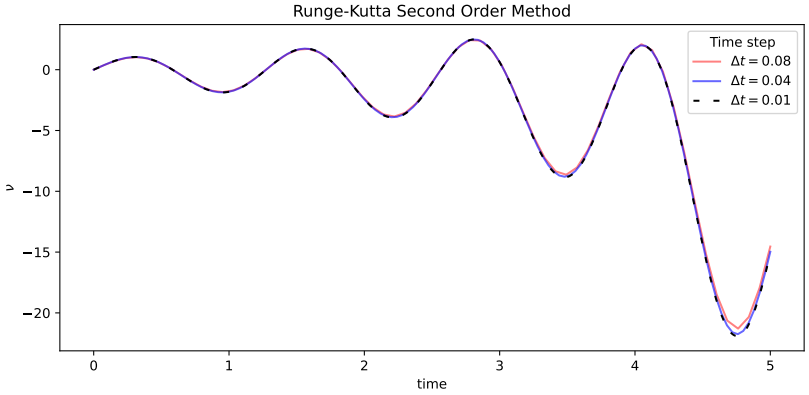


Figure 3: A Second Order Runge Kutta Method Solution of the Logistic Equation


u_0
-0.1
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
1.1
1.2
1.3
1.4
1.5
1.6
1.7
1.8
1.9
2.0
2.0
1.5
1.0
0.5
0.0
−0.5
ν
0
1
2
3
4
5
6
7
time


Euler's Method
Time step
$\Delta t = 0.08$
$\Delta t = 0.04$
$\Delta t = 0.01$
v
time


Midpoint Method
Time step
$\Delta t = 0.08$
$\Delta t = 0.04$
$\Delta t = 0.01$
v
time


Runge-Kutta Second Order Method
Time step
$\Delta t = 0.08$
$\Delta t = 0.04$
$\Delta t = 0.01$
v
time