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praktikum modul 5.py - C:/Users/user/praktikum modul 5.py (3.11.9)
File Edit Format Run Options Window Help
import numpy as np
import matplotlib.pyplot as plt

t0 = 0          #waktu awal
tn = 450        #dalam waktu 450 hari
ndata = 2500    #jumlah data

t = np.linspace(t0,tn,ndata)
h = t[2]-t[1]

N = 2500        #jumlah populasi
I0 = 25         #jumlah awal individu terinfeksi
R0 = 3          #jumlah awal individu sembuh
S0 = N - I0 - R0 #jumlah awal individu rentan

I = np.zeros(ndata)
S = np.zeros(ndata)
R = np.zeros(ndata)

I[0] = I0
S[0] = S0
R[0] = R0

beta = 0.5      #laju penularan
gamma = 0.2     #laju pemulihan

for n in range(0, ndata-1):
    S[n+1] = S[n] - h*beta/N*S[n]*I[n]
    I[n+1] = I[n] + h*beta/N*S[n]*I[n] - h*gamma*I[n]
    R[n+1] = R[n] + h*gamma*I[n]

plt.plot(t,S,label='S')
plt.plot(t,I,label='I')
plt.plot(t,R,label='R')
plt.legend()
plt.show()

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S0 = N - I0 - R0 #jumlah awal individu rentan

I = np.zeros(ndata)
S = np.zeros(ndata)
R = np.zeros(ndata)

I[0] = I0
S[0] = S0
R[0] = R0

beta = 0.7      #laju penularan
gamma = 0.15    #laju pemulihan

for n in range(0, ndata-1):
    S[n+1] = S[n] - h*beta/N*S[n]*I[n]
    I[n+1] = I[n] + h*beta/N*S[n]*I[n] - h*gamma*I[n]
    R[n+1] = R[n] + h*gamma*I[n]

plt.plot(t,S,label='S')
plt.plot(t,I,label='I')
plt.plot(t,R,label='R')
plt.legend()
plt.show()

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