```
> restart;
# Define parameters
lambda1 := lambda[1]:
lambda2 := lambda[2]:
N0 := N[0]:
# Define the system of differential equations with explicit functions
eq1 := diff(N1(t), t) = -lambda1 * N1(t) :
eq2 := diff(N2(t), t) = lambda1 * N1(t) - lambda2 * N2(t) :
# Solve the first differential equation for N1(t)
sol1 := dsolve(\{eq1, N1(0) = N0\}, N1(t)):
# Extract the solution for N1(t)
N1 \ sol := rhs(sol1):
\# Substitute the solution for N1(t) into the second equation
eq2 \ sub := subs(N1(t) = N1 \ sol, eq2):
    \# Solve the second differential equation for N2(t) with initial condition
    N2(0) = 0
sol2 := dsolve(\{eq2 \ sub, N2(0) = 0\}, N2(t)):
# Display the solutions
 sol1, (sol2);
           N1(t) = N_0 e^{-\lambda_1 t}, N2(t) = -\frac{N_0 \lambda_1 (e^{-t(\lambda_1 - \lambda_2)} - 1) e^{-\lambda_2 t}}{\lambda_1 - \lambda_2}
                                                                                       (1)
```