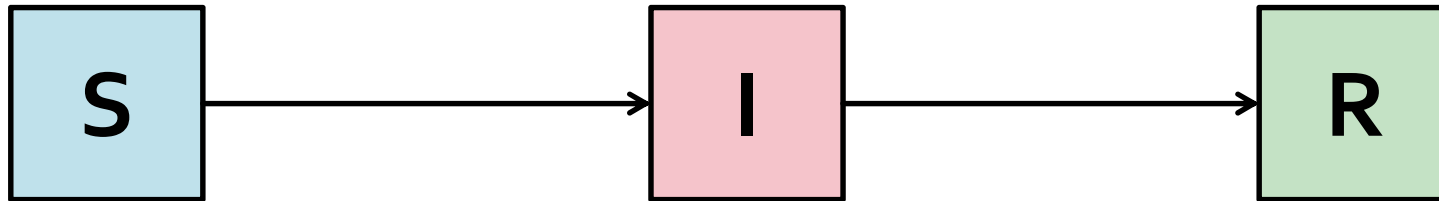


Simple SIR Model

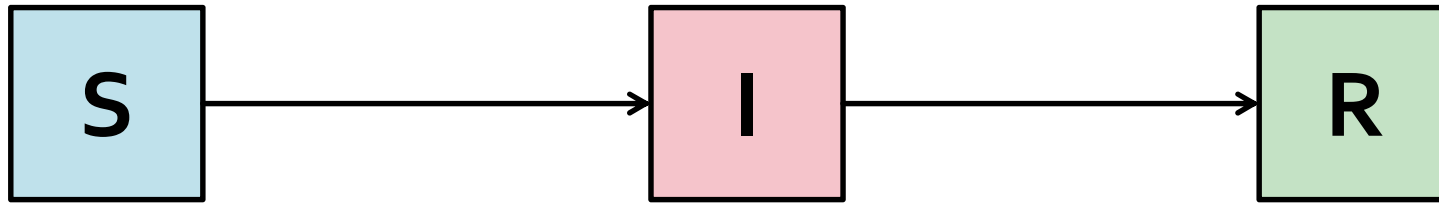


$$\frac{dS}{dt} = \frac{-\beta SI}{N}$$

$$\frac{dI}{dt} = \frac{\beta SI}{N} - \gamma I$$

$$\frac{dR}{dt} = \gamma I$$

Simple SIR Model

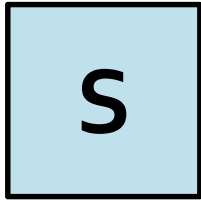


$$\frac{\Delta S}{\Delta t} = \frac{-\beta SI}{N}$$

$$\frac{\Delta I}{\Delta t} = \frac{\beta SI}{N} - \gamma I$$

$$\frac{\Delta R}{\Delta t} = \gamma I$$

Simple SIR Model



$$\frac{\Delta S}{\Delta t} = -\frac{\beta SI}{N}$$

$$\Delta S = S(t + \Delta t) - S(t)$$

$$\frac{S(t + \Delta t) - S(t)}{\Delta t} = \frac{-\beta SI}{N}$$

$$S(t + \Delta t) = S(t) - \frac{\beta S(t)I(t)}{N} \Delta t$$

Simple SIR Model

S

$$S(t + \Delta t) = S(t) - \frac{\beta S(t)I(t)}{N} \Delta t$$

I

$$I(t + \Delta t) = I(t) + \left[\frac{\beta S(t)I(t)}{N} - \gamma I(t) \right] \Delta t$$

R

$$R(t + \Delta t) = R(t) + \gamma I(t) \Delta t$$