# **Finding cumulative infected people from SIS model**

**Part-I:** The Susceptible-Infected-Susceptible has two components, susceptible (S) and infected (I). The N = S + I represents the total population. In an SIS model, our interest is to find out the number of infected people (I) at a given time point. However, it is also important to know the cumulative number of infected people at a given time point. However, the SIS model's present structure does not allow us to get the cumulative number of infected people. In this work, we propose an algorithm to determine the cumulative number of infected people at a given time point. We also propose the methods that can be used to get the future prediction of the cumulative number of infected people from the SIS model.

# **Estimating multiple values of β instead of one from SIS model**

**Part-II:**Another problem with the SIS (or SIR) model is that it assumes a fixed β. We also propose a smart way to get estimated β that will give a better prediction. It could be multiple values of β instead of one. The prediction will be based on that β, which is based on the recent history data.