BISC 204, Lab 5B & Lab 5 Report

Lab 5B Group Objectives:

1. Develop code to reflect your group's model and create at least one simulation with your code.
2. Create good comments throughout your code, and share all the code between groups.
3. Create simulations with the other model(s) to compare the dynamics of plague.

Lab 5 Report Questions:

Please turn in a pdf document with your answers to the following questions, and your R code used to produce your analysis. Although you may work with your group in code development and simulation, you must turn in your own unique answers.

1. Diagram the processes that create the dynamics within your group's model, defining all the variables and parameters within your model. Describe at least five assumptions within your model.
2. Produce R code to investigate the dynamics of your model. Create a simulation with all the parameter values from your model and code that reflects your model's system of equations. In your document describe the initial conditions and parameter values used to produce your simulation, along with a graph showing your model output for those conditions.
3. Choose one parameter from your model and produce simulations that alter its value by one order of magnitude in either direction (smaller and larger). Describe which parameter you changed, and how. Make a plot showing changes in the resulting dynamics, and describe whether, and if so, how the dynamics change in response to that particular parameter value.
4. Describe a hypothesis related to plague dynamics that you can test by comparing a simulation(s) from your group's model to simulation(s) from another model in the paper. Make a prediction about what you will see when you run the simulations to test this hypothesis.
5. Produce the simulations to test whether the model simulations do, or do not, support the predictions that you proposed in question 4. In your report, include both a visualization that supports your conclusion(s), and written description of the output and comparison.