WBS 1.1 VirusHostNetworkAnalysis

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Activity 1: Prediction matrix functions

Task 1.1: Read in the tsv file

Task 1.2: Find the unique viruses and unique hosts in the dataset

Task 1.3: Find a subset of the data where predictions is equal to 1

Task 1.4: Make a prediction matrix with unique hosts as the columns and unique viruses as the rows. Fill in the values with the predictions column of the data

Task 1.5: Sort matrix so that the top left corner is most dense

Task 1.6: Write a function to make a rectangle matrix into a square

Task 1.7: Write a function to make a square matrix into a rectangle

Activity 2: Heatmaps

Task 2.1: Make a heatmap for the prediction matrix

Task 2.2: Make a heatmap for the probability matrix

Activity 3: Model random networks

Task 3.1: ER model

Task 3.2: Configuration model

Activity 4: Network analysis

Task 4.1: Create a network graph for the actual data

Task 4.2: Compare this network to the random networks