Task 1:

Compare the results that you obtained in each case: How / why did you select the layout used for the first part of this task? What are the pros and cons of the layout you obtained with and without using the provided coordinates? Which one do you deem superior and why?

To show network connectivity, a network graph layout is the most straight forward way to visualize such a task. I chose the forced graph in d3, because it allows you to drag the points around, so you get to see the connection between points. The pro of having x, and y, is that it allows you to visualize the spatial location between each point. Although, simply given the spatial location is not enough, because it does not have a unit/reference. You cannot explain why those locations are together. Therefore, when given x and y has no units, being able to drag the points around allows you to see the connections better. Therefore, the first one is slightly better. The dragging cannot not be used in second graph, otherwise we will lose the coordinate.

Task 2:

Compare the results you obtained in this task with the ones from the previous task. What are the respective pros and cons of each solution?

The pro, now our location has meaning. It is mapped to one of the physical locations in the U.S. Therefore, we can tell that from the coast, it naturally has more airports than Montana. The down side for this graph is you cannot move the nodes around when they are overlapped. Again, the advantage of the first graph is being able to drag the points around to see the point of your choice. Also having the gravity effect gives you a more vivid perception of certain node is more important than others.

Task 5:

Comment on the benefits and limitations of the filtering options introduced in this task. What additional control mechanisms would you wish to have to improve the visualization of this dataset?

Having filters declutter the space. Although, we already have lots flights, using only one end filter cannot help you limit to the certain range. So, for scale, we need a two-end bounded slider, so you can adjust not only the minimum, but also the maximum. For the legend, we should be able to click on the state, and have the graph only show flights and airports related to the state.