Slide 5:

-Now we’re going to take a closer look at what we obtained from our data set and the main questions we want to answer!  
  
Slide 6:

-Our first point of interest was flight status. We wanted to compare how many flights were canceled, diverted, early, or delayed for each of the five airports we looked at.

-The reason being that the data is a good indicator of how well each of the airports operates in coordinating the arrivals and departures of thousands of planes a month!

-A quick look at the code we wrote shows that we set our origin city and destination city to our designated city name. In addition, we wanted flights that had a delay value greater than zero. This weeds out any of the flights that were early and had a negative delay value.

-After obtaining each of the counts for diverted, canceled, arrival delay, and departure delays, we were able to obtain our early or on time flight value by subtracting those counts from our total flights (for our particular airport/city).

-One unexpected problem we ran into was our canceled and diverted counts being so low that they were barely visible on our pie chart visualizations. In order to fix this problem, we combined those two counts into one category for our visualizations.

Slide 7:

-Here you can see the pie charts for each airport: each pie chart displays a count for early or on time flights, arrival delays, departure delays, and a combined slice for canceled and diverted flights.

-An example of a comparable finding here is that LAX has the lowest amount of early or on time flights (27.8%), whereas Atlanta has 64.4% of early or on time flights

Slide 8:

-Our second point of interest was delay types. We wanted to compare the reasons that a given flight could be delayed between each airport.

-The reason being that the data can be analyzed on a per-airport basis to identify problem areas for an airport’s operations, like security or flight coordination.

-A deeper dive into our code shows you that we set our parameters up in a similar way to the flight status data. Each airport’s flights were filtered down to those with positive delay values, then each of the delay type reasons was counted for positive values (as this indicated contribution). Finally we obtained the count for delays that did not have a specific reason listed.

Slide 9:

-Here you can see the bar charts for each airport: each bar chart displays the count for a specific delay reason. The following delay types were counted for: carrier delays, weather delays, NAS delays, security delays, late aircraft delays, and other/unknown reasons.

-A carrier delay is a delay that is within the control of the aircraft, like aircraft cleaning, damage, or awaiting the arrival of a connecting flight.

-Weather delays are caused by extreme or hazardous weather conditions (these could be to, from, or enroute to the next destination).

-NAS delays are delays that are within the control of the National Airspace system, like air traffic control or heavy traffic volume.

-Security delays are delays caused by the evacuation of a terminal or concourse, or re-boarding a flight due to a security breach.

-Late aircraft delays are due to the late arrival of the same aircraft at a previous airport. This is also known as delay propagation.

-Aside from our unknown/other category, carrier delays had the highest count for delay types for four out of five of the airports. Chicago was the exception with more NAS delays.

Slide 10:

-Our final point of interest was the length of time a flight was delayed. We wanted to see how many flights fit into a specific time bin.   
-This data can be taken to indicate how many of the flights were delayed for a given length of time and can give both patrons and airlines a good idea of how often a flight may be delayed for.

-A deeper dive into the code shows you that we binned the data into time frames in order to create a stacked bar chart for arrival and departure delays.

-A slight problem we ran into is that the counts for each bin/delay could not be displayed due to spacing of the stacked bars. To solve this problem, we simply printed the number of delayed flights for each time bin and delay type (either arrival or departure).

Slide 11:

-Here you can see each stacked bar chart for our five airports. The time bins we selected were 0-15 minutes, 15-30 minutes, 30-60 minutes, 60-120 minutes, and 120+ minutes.

-It is clear to see that most arrival and departure delays fall between 0 and 15 minutes for all five airports.

