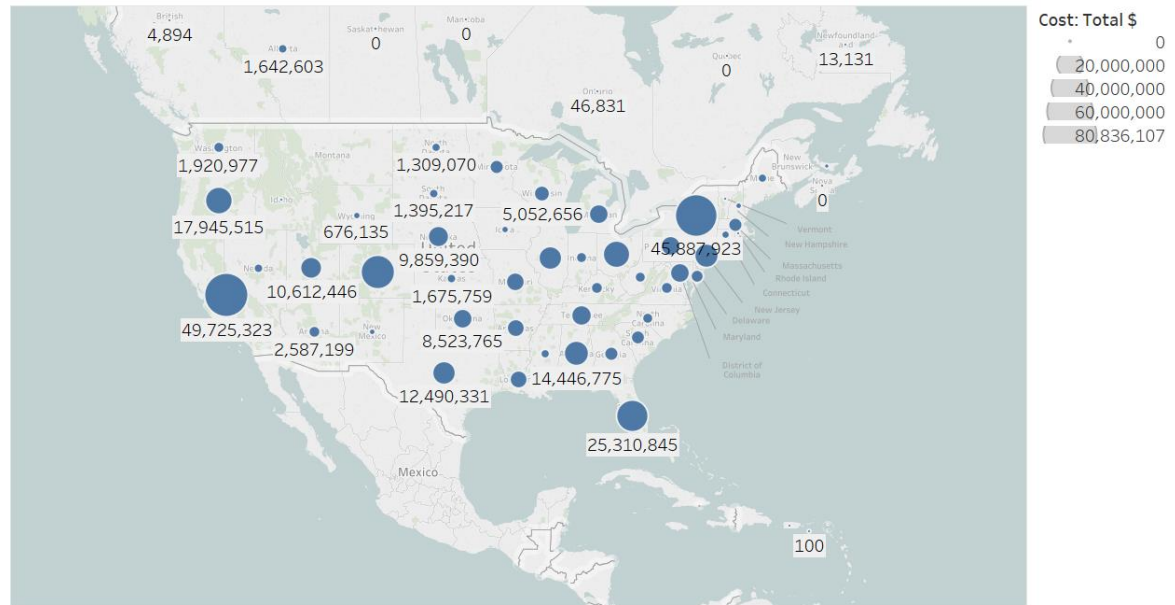


**Tableau:**

**1. Which departure state has the highest total monetary costs as a result of bird strikes?**

As observed in the below results, the total monetary cost is highest for California state. It is \$49725323. If we see the trend in the map, we observe that the top 3 states are the metropolitan states such as California, New York and Colorado.

Departure state with total monetary costs as a result of bird strikes



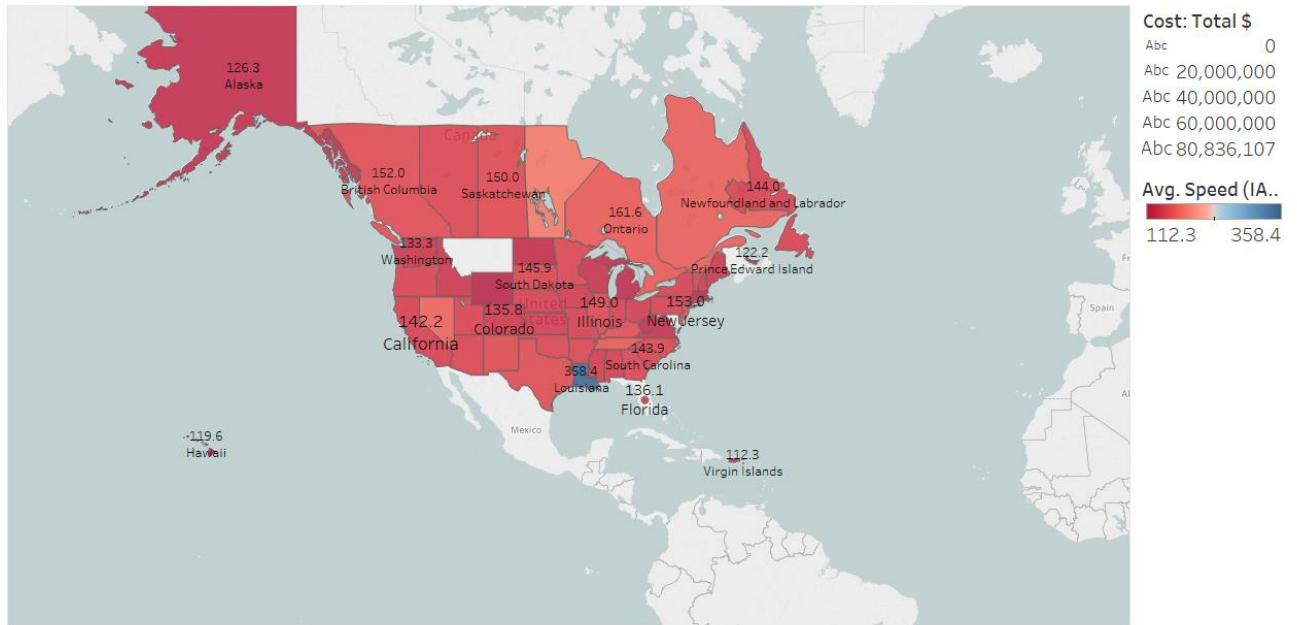
Map based on Longitude (generated) and Latitude (generated). Size shows sum of Cost: Total \$. The marks are labeled by sum of Cost: Total \$. Details are shown for Origin State.

If we find the average of total cost, the result changes. It is observed that Alberta state in Canada has the highest average cost, whereas Albana, Alberta and Arkansas are the top 3 states that has high average monetary cost as a result of bird strike.

Origin State: **Alberta**  
Avg. Cost: Total \$: **51,331**

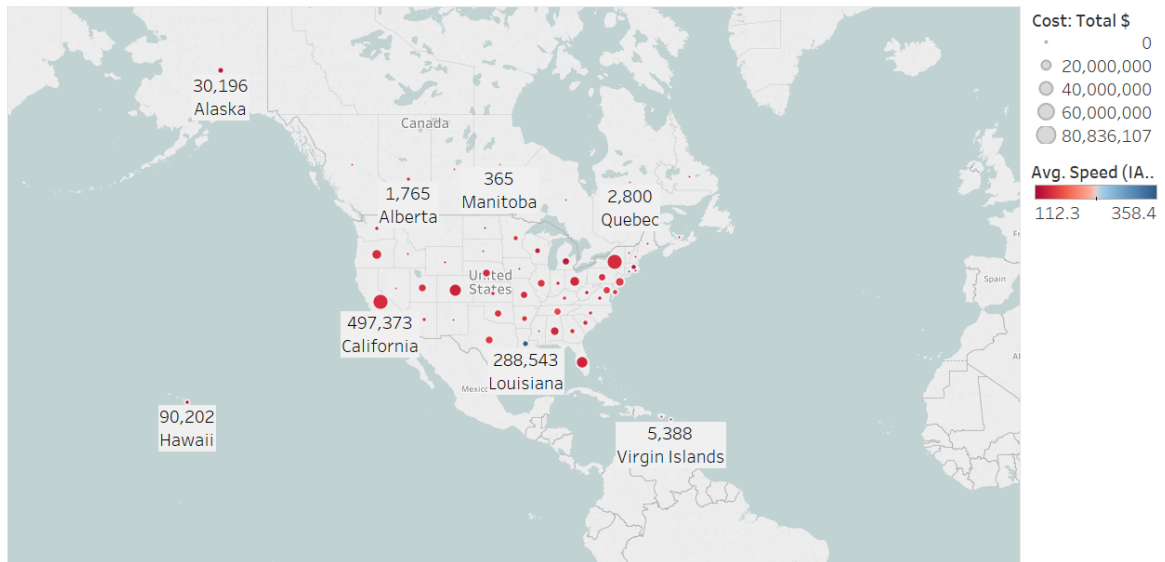
After selected the maps option in the maps and adding Average speed (IAS) to shapes and origin state (latitude and longitude) to row and columns we get the below results. Red blue divergence color helps to understand the variation in the average speed in United states. As observed in the below image, the blue color represents the airplane that has highest average speed. We can say that Louisiana state has the highest average speed, whereas the average speed is lowest for the Nevada state. The highest average speed is 368.4.

## Average speed for the airplanes with bird strikes from the states of origin



If we combine question 1 and 2, we get the below results. We can see in the below image blue color is reflected for the Louisiana state. It shows highest average speed whereas, size of circle is big for California state.

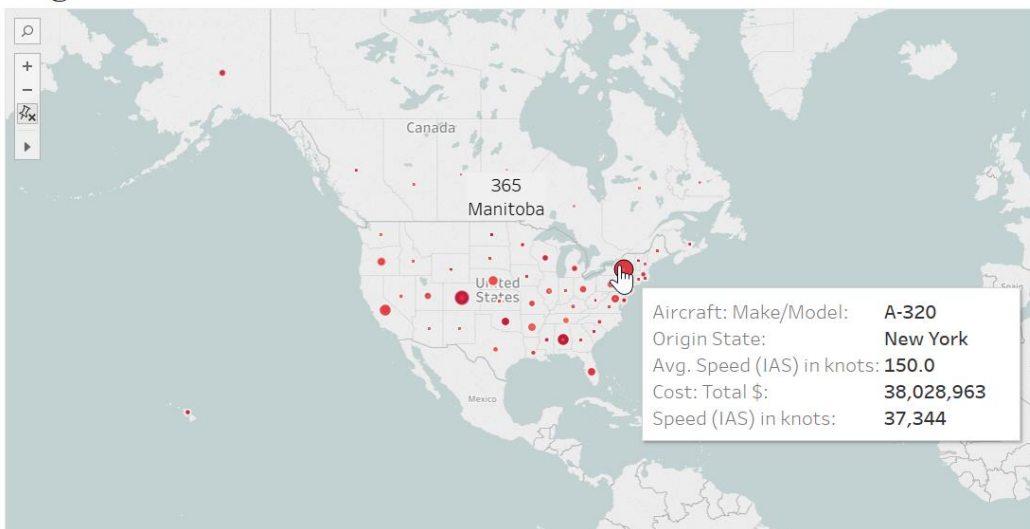
## Average speed for the airplanes with bird strikes from the states of origin



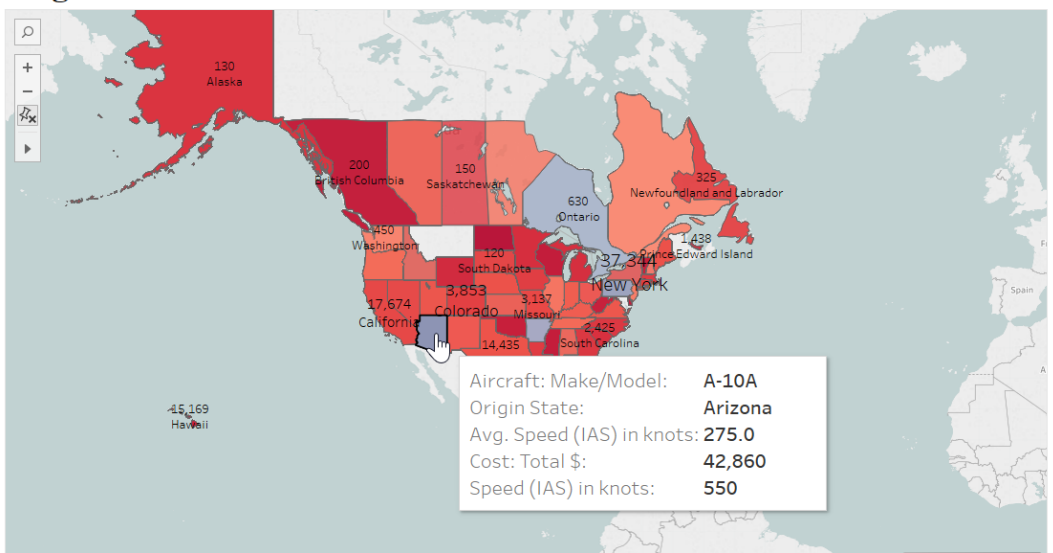
### 3. How does the results change if the dimension “Aircraft Make/Model” is added?

The highest total monetary costs was for California but when we add the Aircraft Make/Model to the details, we can say that New York has the highest total monetary costs. A-320 is the aircraft make/model and total monetary cost is \$38028963. Similarly, the state that has highest average speed IAS changes from Louisiana to Arizona. The average speed is 275 and the aircraft make/model is A-10A.

## Average speed for the airplanes with bird strikes from the states of origin



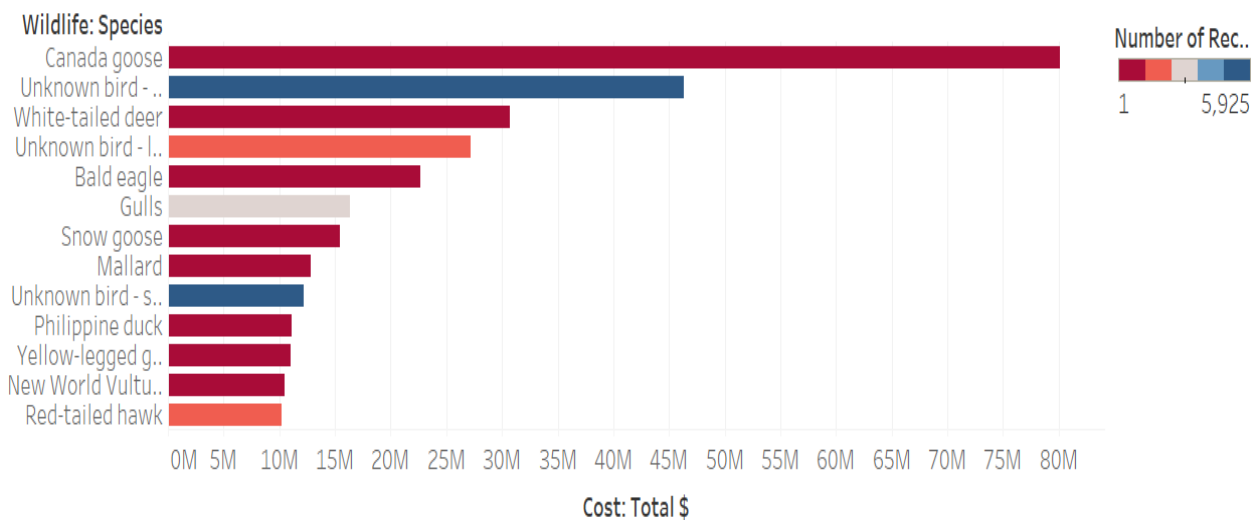
**Average speed for the airplanes with bird strikes from the states of origin**



**4. Determine the impact of these strikes on the bird population in terms of total cost.**

As observed in the below image, Canada Goose has the highest cost (i.e approximately 80millions). The top 3 species in terms of cost is Canada goose, Unknown bid and White-tailed deer. It is very important to take measure to conserve them. The number of records is highest for unknown births and lowest for Canada goose and white-tailed deer We can say that highest total strikes has the lowest population.

**Impact of these strikes on the bird population in terms of total cost.**

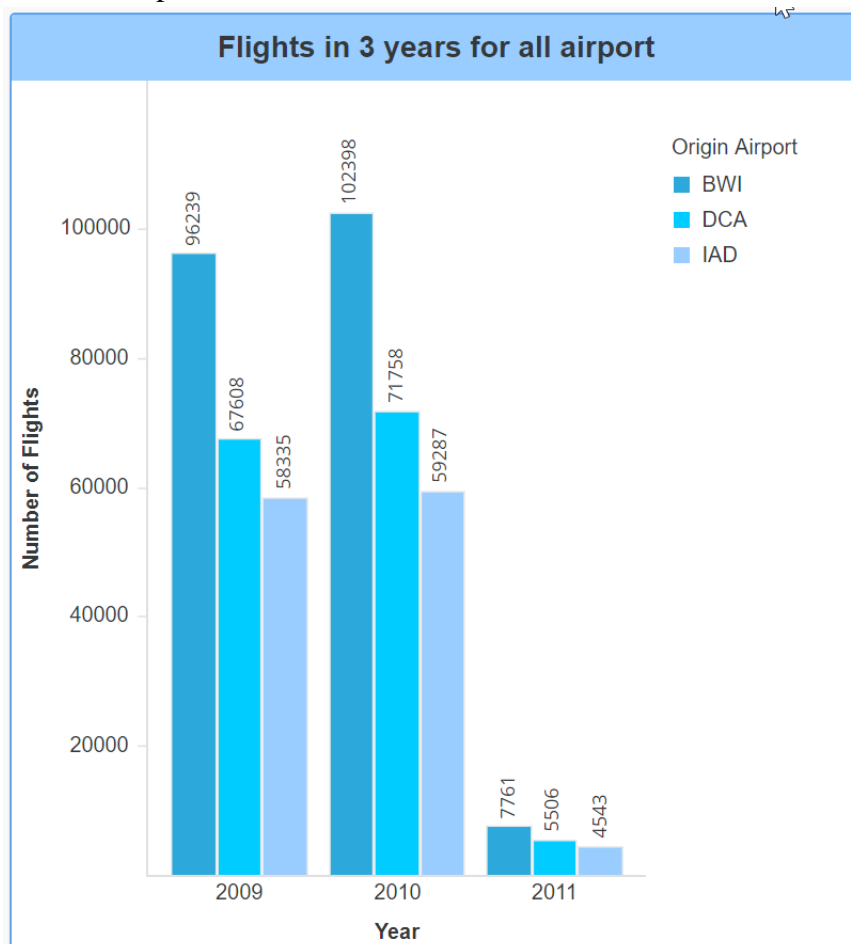


Sum of Cost: Total \$ for each Wildlife: Species. Color shows sum of Number of Records. The view is filtered on sum of Cost: Total \$, which ranges from 10,000,000 to 80,080,800.

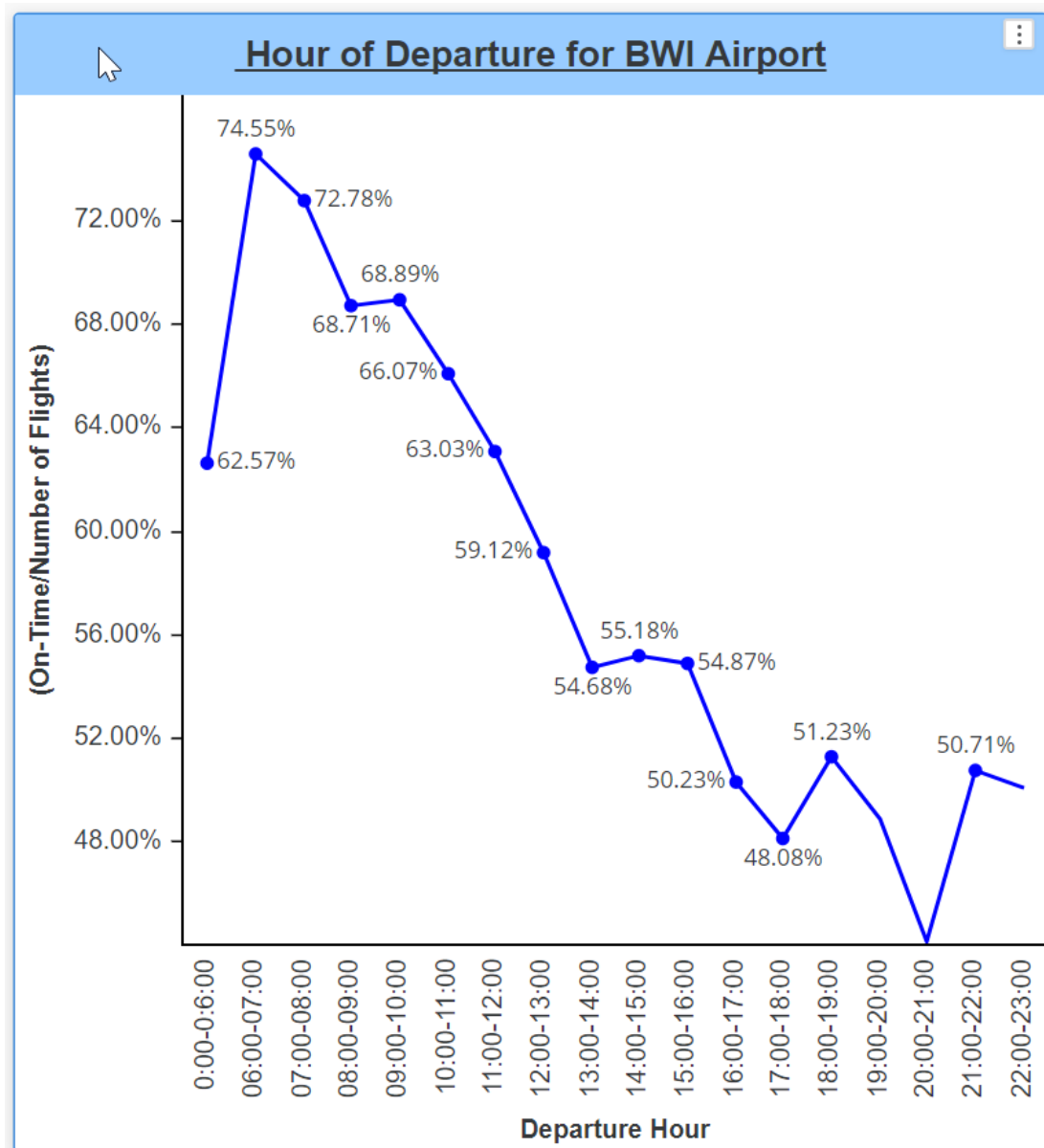
### MicroStrategy:

1. Calculate and graph the total number of flights from each of the three main Washington, DC area airports between years 2009 - 2011, and identify the busiest airport among the three.

The below graph represents the total number of flights from each of three main airports between 2009 to 2011. X axis represents the years and Y axis represents the number of flights. For each year, bar graph is divided into three airport. Each airport is represented with different shades of blue. The values for the total number of flights for individual airport is represent in graph. As observed in the below image, **BWI is the busiest airport with 102398 number of flights**. The below trends show that number of flights increased in 2010 but drastically decreased in 2011. But number of flights in BWI were highest in comparison to other airports.



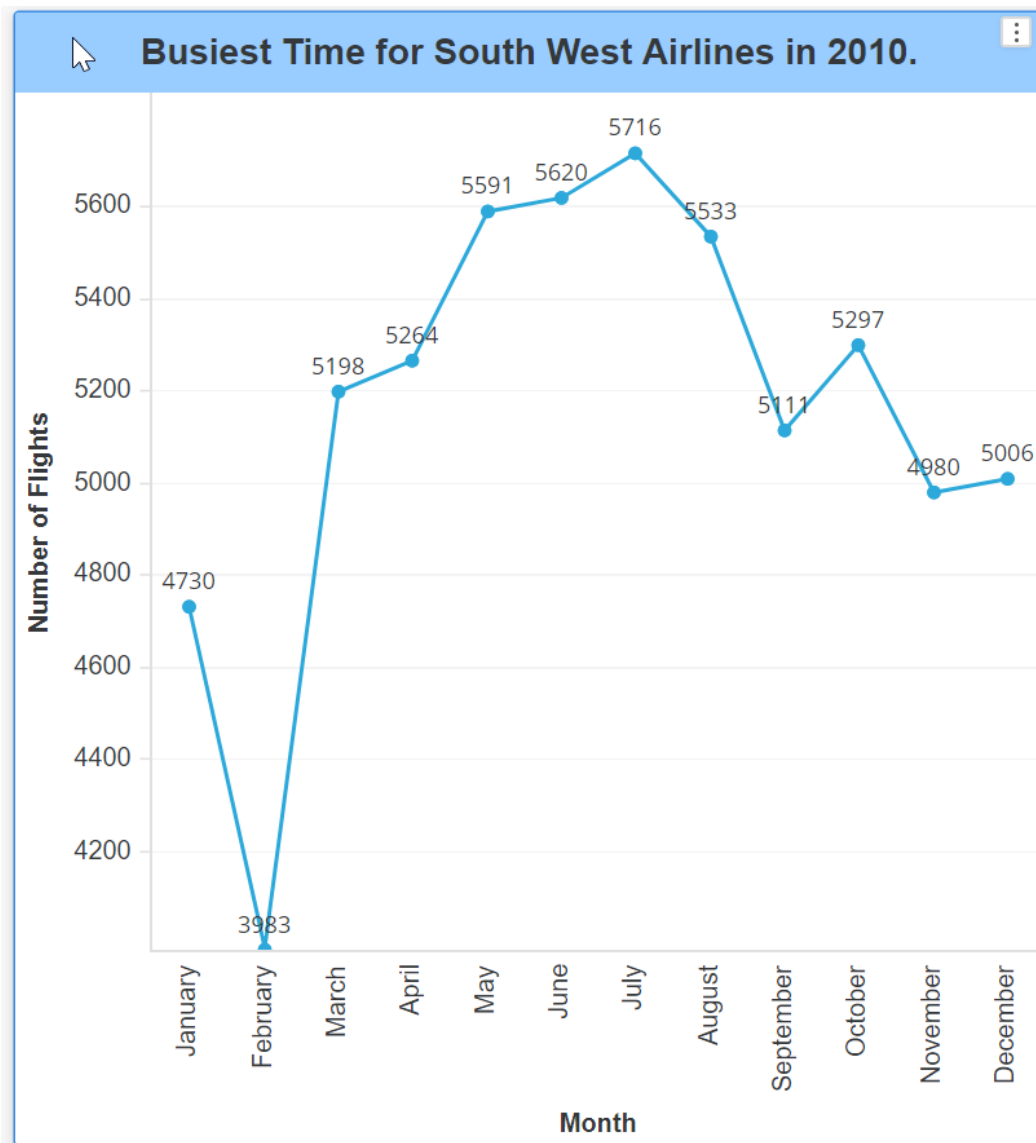
2. Calculate and graph the best hour for departure from the Baltimore Washington International (BWI) airport. Think about the on-time flights as a proportion of total number of flights.
3. As observed in the below graph, we can say best hour for departure is between **6:00 am to 7:00 am** from the **Baltimore Washington International (BWI) airport**. The ontime/number of flights shows the percentage of the on-time flights as a proportion of total number of flights. X axis represents the departure hours whereas the Y axis represents ontime/number of flights. The blue line trend shows that the on-time/ number of flights increase between 5am to 6am and decreases after 7 am. The evening and the night are not good time for departure, whereas 8pm to 9 pm is worst.





**4. Calculate and graph the busiest month for Southwest Airlines in 2010 for all the three airports combined.**

As observed in the below graph, blue color line graph shows trend of South west airlines flights across months in 2010. We can say that **July is the busiest month with 5716 flights of Southwest Airlines in 2010 for all the three airports** whereas, February has the least number of Southwest Airlines flights. The trend also suggest that number of flights drastically reduces after January and increases after February. There is increase from March to July and reduces July.



**5. For each airline, calculate and graph delays at each of the three airports and identify the one with the least average delay. (Hint: The graph will look like airlines on the Y-axis and the delay on the X-axis).**



**The airlines with least average delay is US Airways Inc because it has an average delay of 23.70.** As observed in the below visualization, Airlines are present in the Y axis and Average (Average\_delay(mins)) is present in the X axis. The bar graph represents the comparison for the different airlines. The airports are represented in different shades of blue. You can view legend for reference. The reference line provides average for each airline across different airports. As you can see the Average for U.S. airlines is low whereas, the average for united airlines is very high. The trend also suggest that American eagle airlines does not land on IAD airport and Mesa Airlines does not land on DCA airport.

