*First of all, sorry for the inconvenience of having the accompanying text separately from the HTML-file and IPYNB-file. We planned to add the text to the original documents, however as running the code took longer than expected, we didn’t want to risk being to late by adding the new texts.*

# Data import

The main database (imported here as ‘flights.csv’) describes all flights within the United States in 2015. The database contains basic information like the date, airline and the airports connected by the flight. Furthermore, the scheduled and actual departure/arrival times are known through the database as well as the delays and the reasons behind these delays. Another database that is imported, gives for each American airport the IATA-code and the coordinates, which are used to create the visualisations with maps later on.

# Data processing and visualisation

## Average delays

In this paragraph the data of the original database are processed and modified to make it usable for the visualisations. First, the average arrival delays for all airlines and the average departure delays for all airports are calculated. The average arrival delays for all airlines are visualised in a bar graph. With the slider the average delays can be seen for each month of 2015.

## Flights and delays on a map

The first visualisation shows all flights from Hartsfield-Jackson Atlanta International Airport to other airports in the United States. The thicker the line, the more flights there are on that connection. You can see for example that there are less flights to Hawaii (Honolulu Int. Airport) than to Boston (Logan Int. Airport) or LaGuardia Airport in New York.

An interesting thing to consider when looking at the database is to analyse the delays. Therefore, the second visualisation shows the average delay of the flights from Atlanta in 2015, where the width of the line shows the average delay per flight for that connection. What can be noticed is that flights to the north have an higher average delay than flights to the south.

As it is difficult to see through all the lines in the first two map visualisations, the next one only shows all flights in the USA which had a delay of more than 24 hours. Remarkable is that a lot of those flights are connected to one airport in Texas: Dallas Fort Worth International Airport.

## Weather

For the next visualisations a new database is used: the weather data for the a number of airports in the United States for the first half year of 2015. In the first visualisation the precipitation (in inches) for William P. Hobby Airport (ICAO: KHOU) in Houston, Texas is shown. The red dots indicate a precipitation of more than 20 inches. The next visualisation includes the mean temperature (Fahrenheit) for the same location as well. The last of three visualisations shows if there is a correlation between the rainfall and the average delay at William P. Hobby Airport for three months of 2015.