

<b>Project Title</b>	Data Visualization of Bird Strikes between 2000 – 2011
<b>Technologies</b>	Business Intelligence
<b>Domain</b>	Transportation and Communication
<b>Project Difficulties level</b>	Advanced

### Problem Statement:

Transport and communication is one of the crucial domain in field of analytics. Environmental impacts and safety are, nowadays, two major concerns of the scientific community with respect to transport scenarios and to the ever-growing urban areas. These issues gain more importance due to the increasing amount of vehicles and people. Seeking for new solutions is reaching a point where available technologies and artificial intelligence, especially MAS, are being recognized as ways to cope and tackle these kinds of problems in a distributed and more appropriate way.

A bird strike is strictly defined as a collision between a bird and an aircraft which is in flight or on a take-off or landing roll. The term is often expanded to cover other wildlife strikes - with bats or ground animals. Bird Strike is common and can be a significant threat to aircraft safety. For smaller aircraft, significant damage may be caused to the aircraft structure and all aircraft, especially jet-engine ones, are vulnerable to the loss of thrust which can follow the ingestion of birds into engine air intakes. This has resulted in several fatal accidents. Bird strikes may occur during any phase of flight, but are most likely during the take-off, initial climb, approach and landing phases due to the greater numbers of birds in flight at lower levels. To have a closer look the following document visually depicts the data collected on Bird Strikes by FAA between 2000-2011.

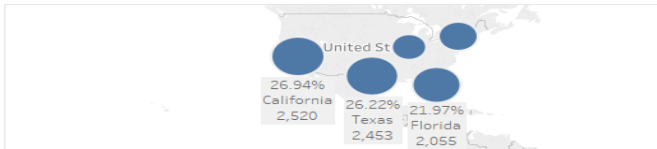
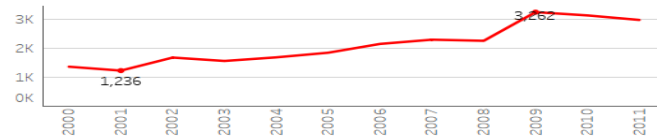
## Bird Strikes In US 2000-2011

-Hozefa Haveliwala

Data Source  
<https://wildlife.faa.gov/>

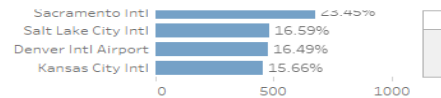
This study aims at exploring the data from Federal Aviation Administration National Wildlife Strike Database (NWSD) for the 11-year period 2000 through 2011. A bird strike is strictly defined as a collision between a bird and an aircraft which is in flight or on a take off or landing roll. Bird Strike is common and can be a significant threat to aircraft safety. At times aircraft damage from these bird strikes is significant enough to create a high risk to continued safe flight.

Timeline

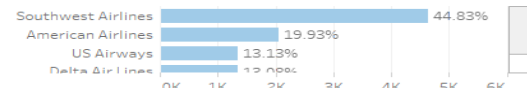


Top N  
5

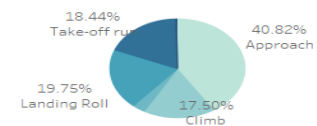
Airport



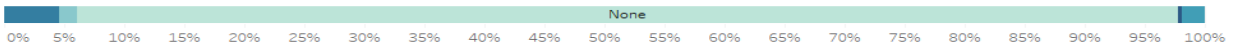
Airline Operator



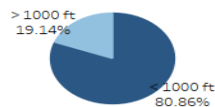
Phase of Flight



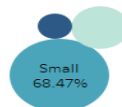
Effect on Flight



Altitude



Bird Size



Pilots Informed?



Build a dashboard as shown in the above screenshot.

You can play around these objectives as well

### Charts

#### 1.1 Visuals Depicting the Number of Bird Strikes:

##### 1.1.2 Yearly Analysis

##### 1.1.2 Bird Strikes in US

##### 1.1.3 Top 10 US Airlines in terms of having encountered bird strikes

##### 1.1.4 Airports with most incidents of bird strikes – Top 50

#### 1.2 Yearly Cost Incurred due to Bird Strikes:

#### 1.3 When do most bird strikes occur?

##### 1.3.1 Altitude of airplanes at the time of strike

##### 1.3.2 Phase of flight at the time of strike

1.3.3 Average Altitude of the airplanes in different phases at the time of strike

1.4 Effect of Bird Strikes

1.4.1 Impact on Flight

1.4.2 Effect of Strike at Different Altitude

1.4.3 Were Pilots Informed?

1.4.4 Prior Warning and Effect of Strike Relation

### Dataset:

Dataset is available in the given link. You can download as per your convenient.

<https://drive.google.com/drive/folders/1hLkL5HO4xG9rjL8XeS6q-uAjwbTDSX6?usp=sharing>

### Approaches:

Python, R, Tableau, Power BI or you can use any tools and techniques as per your convenience. We would appreciate your valid imagination in finding solutions

### Project Evaluation metrics:

#### Code: As per the requirements

- You are supposed to write a code in a modular fashion
- Safe: It can be used without causing harm.
- Testable: It can be tested at the code level.
- Maintainable: It can be maintained, even as your codebase grows.
- Portable: It works the same in every environment (operating system)
- You have to maintain your code on GitHub.
- You have to keep your GitHub repo public so that anyone can check your code.
- Proper readme file you have to maintain for any project development.
- You should include basic workflow and execution of the entire project in the readme file on GitHub
- Follow the coding standards: <https://www.python.org/dev/peps/pep-0008/>

### Database:

- You are supposed to use a given dataset for this project.

<https://drive.google.com/drive/folders/1hLkL5HO4xG9rJL8XeS6q-uAjwbTDSX6?usp=sharing>

## **Submission requirements:**

### **High-level Document:**

You have to create a high-level document design for your project. You can reference the HLD form below the link.

#### **Demo link:**

[HLD Document Link](#)

### **Low-level document:**

You have to create a Low-level document design for your project; you can refer to the LLD from the below link.

#### **Demo link:**

[Low Level Design Sample document link](#)

### **Architecture:**

You have to create an Architecture document design for your project; you can refer to the Architecture from the below link.

#### **Demo Link:**

[Architecture Document Link](#)

### **Wireframe:**

You have to create a Wireframe document design for your project; refer to the Wireframe from the below link.

#### **Demo link**

[Wire-frame link](#)

### **Project work:**

You will have to share the Tableau Public Link of your work

You have to submit your code GitHub repo in your dashboard when the final submission of your project.

### **Demo link**

[Project code sample link :](#)

### **Detail project report:**

You have to create a detailed project report and submit that document as per the given sample.

### **Demo link**

[DPR sample link](#)

### **Project demo video:**

You have to record a project demo video for at least 5 Minutes and submit that link as per the given demo.

### **Demo link**

[Project sample link :](#)

### **The project LinkedIn a post:**

You have to post your project detail on LinkedIn and submit that post link in your dashboard in your respective field.

### **Demo link**

[Linkedin post sample link :](#)



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