

DETAILED PROJECT REPORT ON

DATA VISUALIZATION OF BIRD STRIKES BETWEEN 2000 – 2011



BY

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Project Details

Project Title:- Data Visualization of Bird Strikes Between 2000 – 2011

Domain: - Transportation and Communication

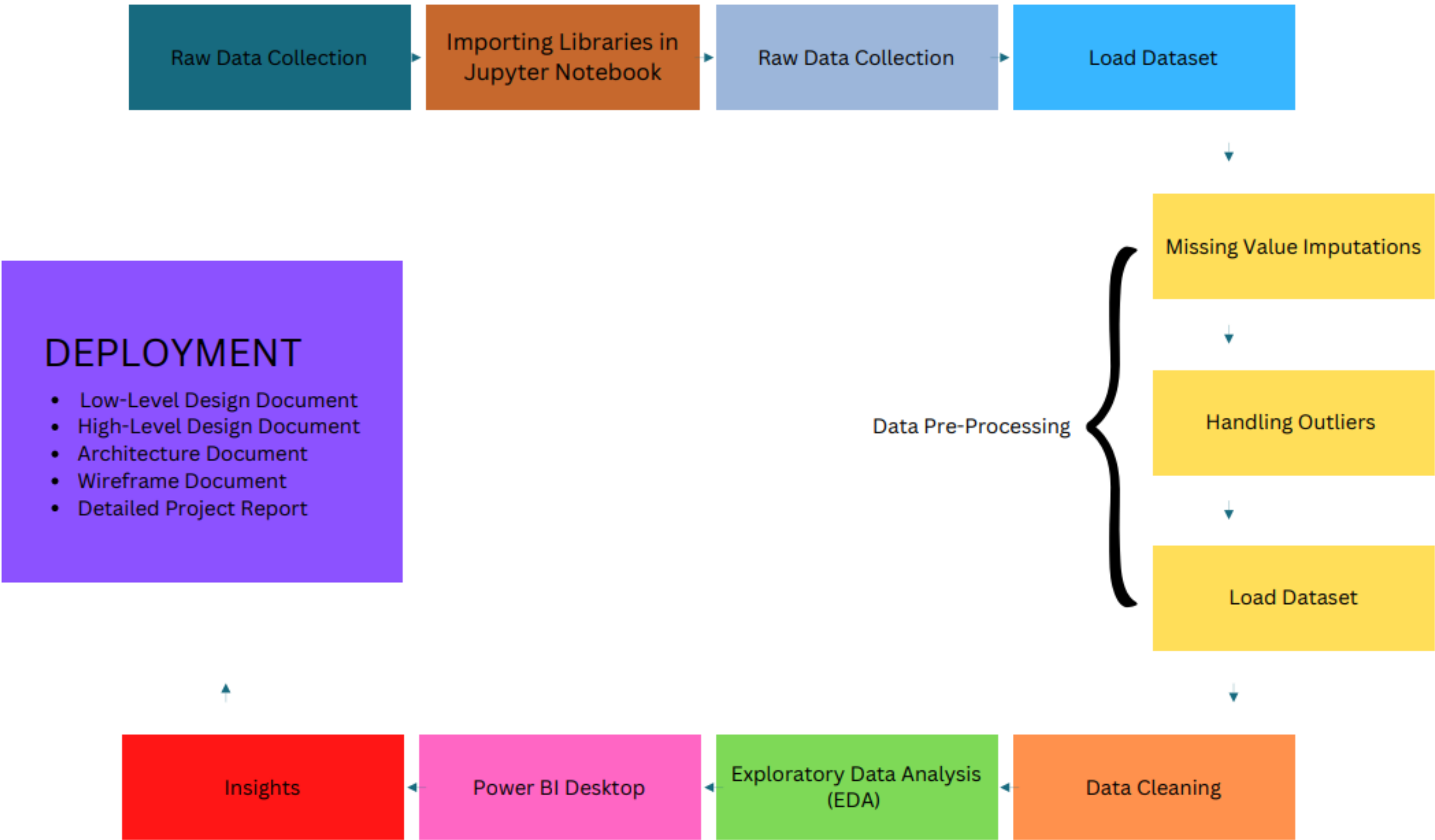
Problem Statement

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.

ABOUT DATASET :-

The dataset contains Information like Phase of flight, Precipitation, Cost: Total ,Pilot warned of birds or wildlife?, Number of people injured, Feet above ground, Flight Date , Impact to flight etc

ARCHITECTURE

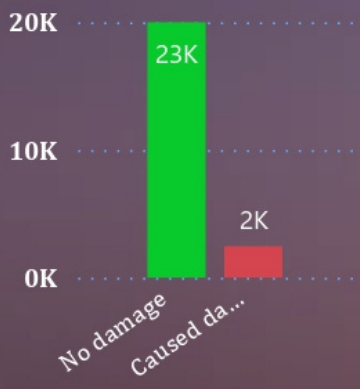


Data Visualization of Bird Strikes Between 2000-2011

All



Aircraft Damage



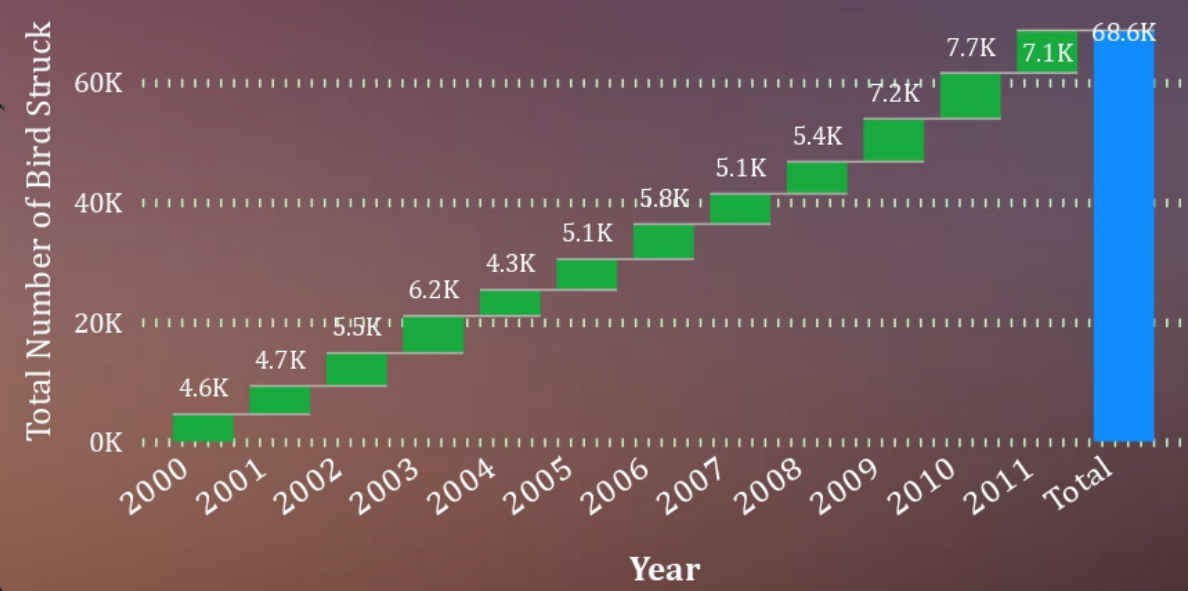
Number of Bird Strikes

25.43K

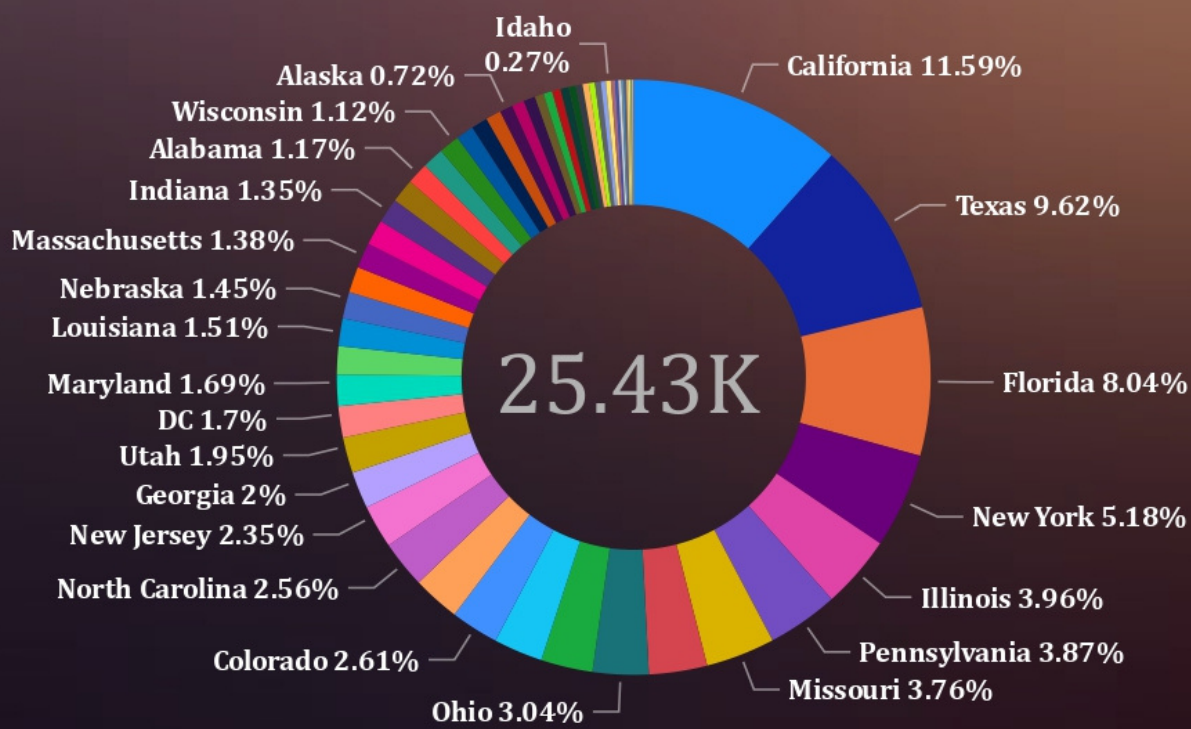
Aircraft Repairing Cost

\$142M

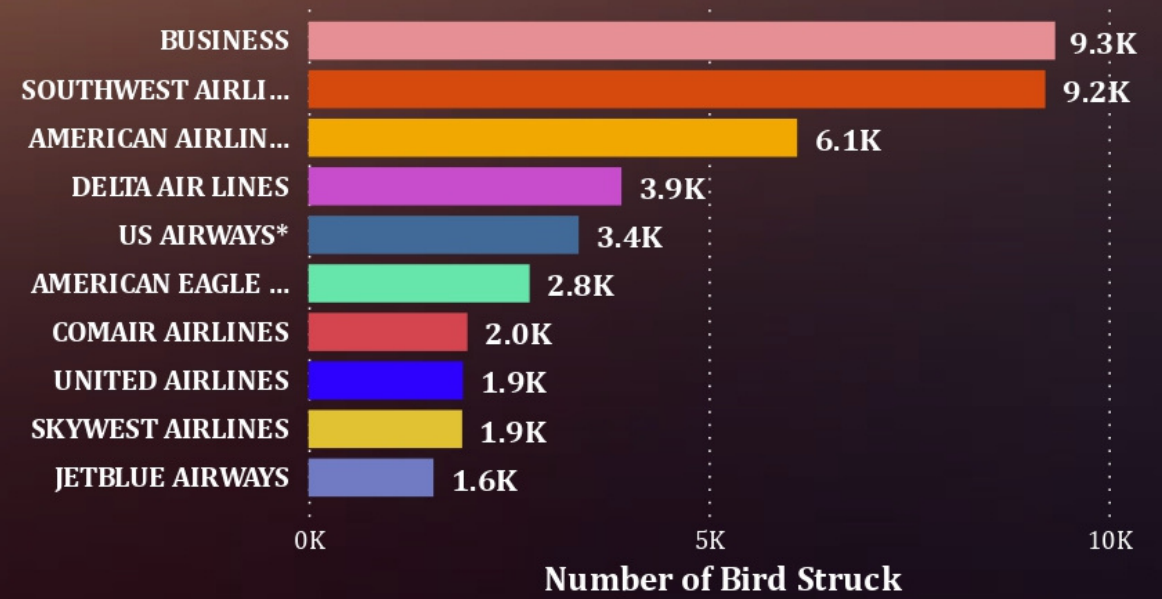
Total Number of Bird Strikes Yearly



Number of Bird Strikes In United State

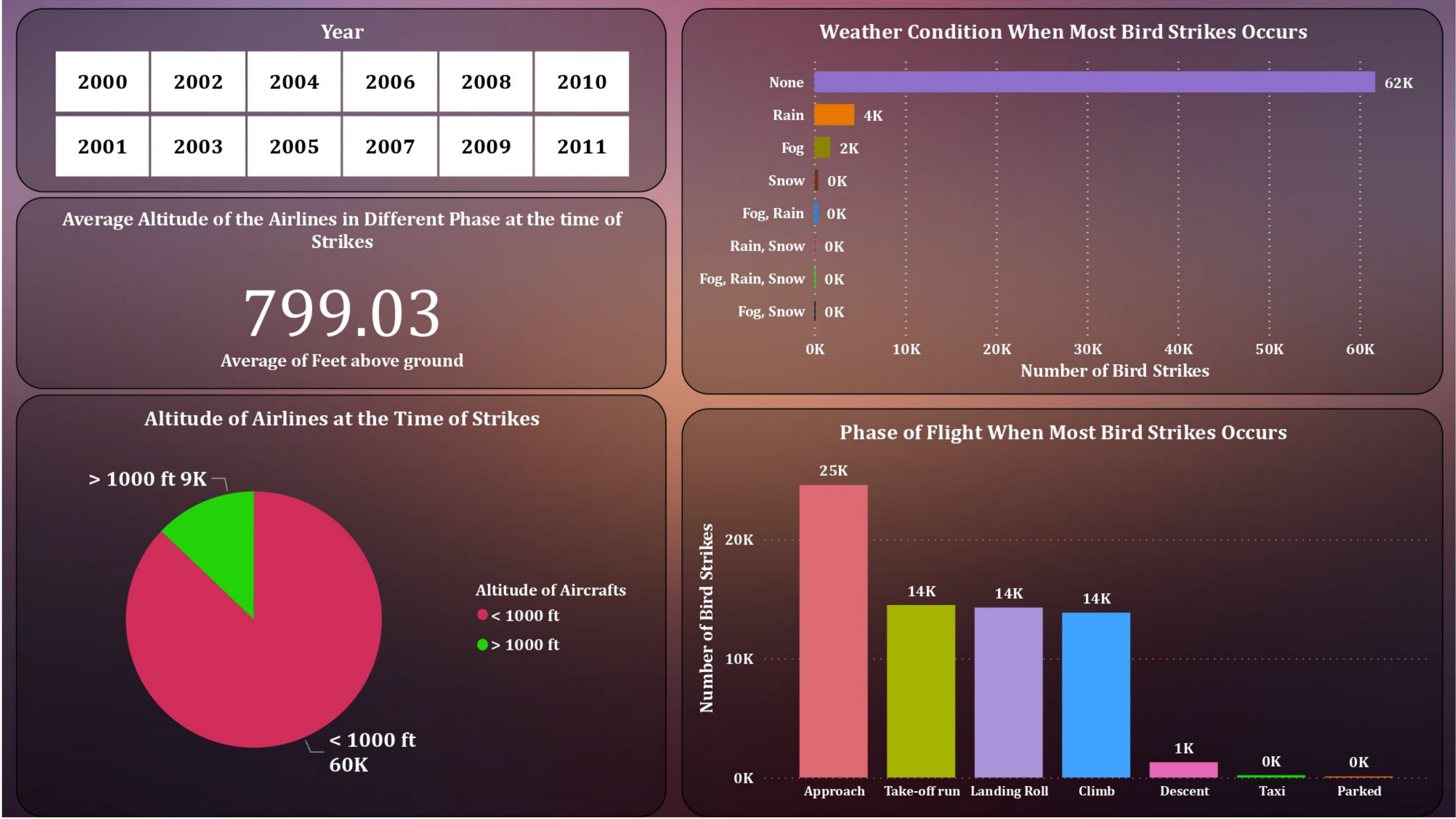


Top 10 US Airlines in Terms of Having Encountered Bird Strikes



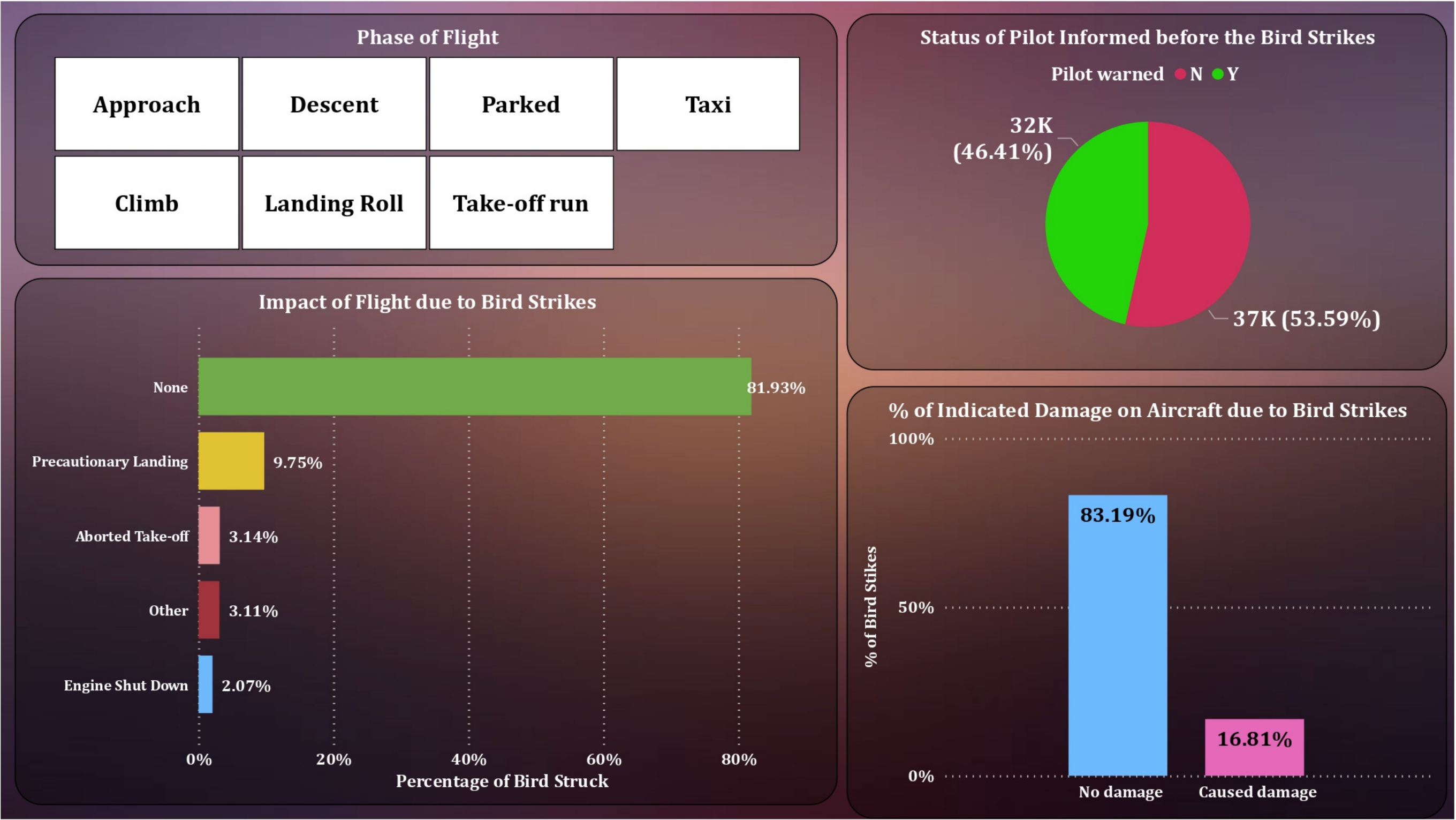
Insights:-

- Total number of bird strikes happens is around 25.43 thousand in the span of 11 years.
- In this span of 11 years more than 2000 Aircrafts got Damaged due to Bird Strikes and this resulted in the repair cost of 136 million dollar of aircrafts.
- Out of 25,429 flights that have been involved in a bird strike incident, 22,975 received no damage while 2454 received small to large scale damages.
- Number of bird strikes continue to increase yearly from 2000 to 2011. where in 2010 the number of strikes is highest where as in year 2004 the lowest number of Bird strikes happens.
- Airlines namely, Business , Southwest Airlines , American Airlines, Delta Air Airlines, US Airlines are more involved in bird strikes than other airlines.
- the state of California is involved with most number of bird strikes in all of the USA , followed by Taxes.
- States like Montana received a comparatively low number of strikes



Insights:-

- 81 percent of the planes were flying at an altitude <1000 while 19 percent of the planes were at altitude >1000 when the strikes occurred.
- Rain, Fog or Snow has little to no relation with respect to bird strikes and its seen in most of the cases when strike occurred, the weather was fine.
- A highest number of strikes occurred when the plane was approaching the runway.
- Where as Strikes also occurred when the planes were taking off, landing, climbing to altitude or descent.
- No strikes were reported when planes were either parked or being taxied
- Average altitude at which most of the strikes occurred is 799 ft. from ground



Insights:-

- In 53 % cases pilots were not informed or they are unaware of the possible bird strikes where as in 46 percent cases they were informed prior to the strikes.
- 81.93 % bird strikes results in no damage to the plane or the flight schedule.
- 9.7% bird strikes resulted in precautionary landing of the flight.
- 3.1 % bird strikes resulted in Take-off being aborted.
- 2.07% bird strikes caused engine shut down.

Thank You