Project Problem Description

Project Objective:

The objective of this project is to build a fully automated system. It can recognize passenger passing the kios and assist them to onboard the plane without any human. It can help save a lot of time and human resource.

- Airline passengers should be able to scan their ID card and Boarding pass at the kiosk
- The kiosk should be able to extract passenger information from the boarding pass and then verify it from the ID card.
- If all scanning and validation goes well, the kiosk greets the passenger with a final message that “He/she can board the plane” or if there are issues, the kiosk can suggest the passenger to “Please see an airline representative to complete the boarding along with issues during the validation process”.

Input Data Sources:

- Boarding Pass
- ID Card
- Lighter images of passenger’s carry-on
- Short video showing passenger face
- Flight detail of all passenger

The Solution Strategy:

- Using the Azure From Recognizer Service for extracting information from passenger’s ID card. Information extracted from passenger’s ID card will be compared to information in flight manifest of all passenger.
- Using the Azure Face API for extracting the photo (face) from ID card and video. then use this information to verify if they are matching.

- Using the Azure From Recognizer Service for extracting the information from passenger's boarding, then compare to flight information from flight manifest table.
- Using the Azure Custom Vision to train a model for detecting the lighter object in passenger's carry-on images.

Model performance metrics and threshold:

- Use precision and recall to validate object detection model and use accuracy to validate face recognition model
- Each model will return a confidence score between 0-1. I will set a threshold about 0.5. Only the field with confidence score above 0.5 is used for validation