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.

Input data sources:

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

Solution strategy:

- To extract information from passenger's ID card, I will use Azure From Recognizer Service. Information extracted from passenger's ID card will be compared to information in flight manifest of all passenger.
- To extract passenger's face, I will use Azure Face API to extract face from ID card and video. And I will use this information to verify they are the same person
- To extract information from passenger's boarding pass, I will Azure From Recognizer Service, and compare to information in flight manifest
- I will use Azure Custom Vision to train a model to detect lighter object in passenger's carry-on image

Model performance metrics and threshold:

- I will 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