Project Problem Description

Project Objective:

The problem objective is to build a passenger kiosk platform powered with AI developed using computer vision to automate the boarding for the passengers for their flight. The boarding kiosk will be fully automated with no assistance from human.

The platform should be able to do the following functions:
- Take a picture from passenger ID card and boarding pass, analyze the information in them and validate the passenger by matching their name, date of birth with the details in boarding pass.
- Take a 10 second video from the passenger and compare it with the photo in the id card, then validate the passenger by comparing them.
- Analyze the passenger baggage and identify objects inside the bag, and confirm all the items are allowed on the plan and disallow them to board if there is prohibited item in the baggage.
- Finally, if validated is alright and confirmed by the system, it greets the passenger to proceed to the boarding gates.

Data Sources:
- List of all passengers including flight details and full information about the passengers
- 5 different passenger digital id cards (all the passengers in the flight)
- 5 boarding passes in pdf format (boarding passes for all passengers of the flight)
- Video containing short record of the passenger
- Photos containing the baggage items

The Solution Strategy:

- Azure cognitive form recognizer will be used to extract information from boarding pass and digital id cards and validate the passenger info from flight overall data.
- Azure video Analyzer will be used to analyze the video containing the passenger face to identify the features of their face and compare with the id photo to confirm the right passenger.
- Azure object detection will be used to identify items in their baggage and validate the allowed items on flight. In this project the lighter will be identified as prohibited item. The images containing lighter will be trained on Azure custom vison services and then will be tested on the passenger baggage items.

- Once identified the passenger and validated with their id and pass, they will be allowed by message output confirming their boarding.