**Project Objective: Developing an AI-Powered Airport Boarding Kiosk**

The objective is to create a computer vision and AI-driven kiosk for seamless passenger boarding in airports, eliminating the need for human assistance.

1. **The kiosk, in its operational state, aims to fulfill the following functions:**

* Allowing passengers to scan their ID card and Boarding pass.
* Extracting passenger information from the boarding pass and cross-verifying it with the ID card.
* Capturing a 30s video of the passenger, conducting facial recognition to match the live person with the scanned ID.
* Scanning passengers' carry-on baggage to identify any prohibited items and prevent boarding if necessary.
* Displaying a message welcoming passengers to board or suggesting they see an airline representative for boarding issues during validation.

1. **Simulated Kiosk Experience Creation:**

* Creation of a passenger manifest containing 7 passengers with detailed information.
* Generation of fabricated Digital IDs and boarding passes for passengers in the manifest.
* Inclusion of the project owner's fabricated ID card in the passenger list to test face recognition using the owner's video.
* Utilization 30 second video of the project owner for the Kiosk's facial recognition system.
* Scanning of passenger carry-on items, flagging any prohibited items, specifically lighters.

1. **Input Data Sources:**

* Flight Manifest List for all 7 passengers
* 7 Passenger ID cards with foto
* 7 Passenger Boarding Passes
* 2 Passenger 30 second videos displaying their faces
* Photos of Passenger carry-on items

1. **Solution Strategy:**

* Train a model using Azure Form Recognizer service to extract passenger information from Boarding passes.
* Utilize Azure Form Recognition digital ID service for extracting face and personal information from passengers' digital IDs.
* Validate the extracted passenger information from boarding passes against the manifest list.
* Verify a person's identity from the manifest list using their personal ID if their name exists in the manifest.
* Employ Azure Video Indexer service to verify the face photo from the digital ID against the passenger video provided.
* Create a machine learning model using Azure custom vision services for lighter identification from the provided images.
* Test the Azure custom vision model, trained for lighter identification, using the sample carry-on images.
* Display a final validation message (successful or unsuccessful) after completing boarding pass validation as the last step of the project.