# Project Objective

Develop a computer vision and AI-based passenger boarding kiosk for airports to facilitate the boarding process without human assistance. The kiosk should perform the following functions:

**Requirements**

1. **Scan and verify passenger information**:
    - Scan passenger ID card and boarding pass
    - Extract information from boarding pass
    - Verify information matches between ID card, boarding pass, and flight manifest on server
2. **Facial recognition**:
    - Take a 15-30 second video of the passenger
    - Perform facial recognition to match the live person with the ID card
3. **Prohibited item detection**:
    - Scan passenger's carry-on baggage
    - Identify any prohibited items
    - Stop passenger from boarding if prohibited items found
4. **Validation and messaging**:
    - If all validation succeeds, display message that passenger can board plane
    - If issues arise, suggest passenger sees an airline representative to complete boarding

**Simulated Kiosk Experience**

- Create passenger manifest with 5+ passengers
- Fabricate digital IDs and boarding passes for all passengers in manifest
- Include project owner's fabricated ID and 15-30 second video for face recognition validation
- Scan passenger carry-on items and flag if lighter is present as prohibited item
- Process all data using Azure computer vision services to simulate automated boarding

**Input Data Sources**

- Flight manifest list for 6 passengers
- 6 passenger ID cards
- 6 passenger boarding passes
- 15-30 second video of each passenger's face
- Photo of each passenger's carry-on items

**Solution Strategy**

1. Train Azure Form Recognizer model to extract passenger info from boarding passes
2. Use Face API and Form Recognizer to extract face and personal info from digital IDs
3. Validate passenger info from boarding pass against manifest list
4. If name exists in manifest, validate identity from personal ID
5. Verify face from digital ID matches face from passenger video using Video Indexer

6. Train Azure Custom Vision model to identify lighters in carry-on images
7. Test Custom Vision model on sample carry-on images
8. Display final validation success/failure message to complete boarding process