***Scenario 1:*** **Student Logging In**  
**Scenario:** **Farah wants to log into the interactive learning system using TUIO.**  
1. Farah goes to the interactive screen in the classroom.  
2. The screen prompts her to show her code via TUIO.  
3. Farah raises her hands in front of the camera.  
4. Her TUIO code is detected by the system .  
5. A welcome message appears on the screen: "Welcome, ".  
6. Farah views her personal dashboard displaying all available lessons and games.  
7. She commences playing one of the games.  
***Scenario 2:*** **New Student Registration**  
**Scenario:** **Farah is registering to the interactive learning system through Bluetooth detection.**  
1. Farah enters a class with her tablet, whose Bluetooth is on.  
2. The teacher informs Farah of how to connect his tablet to the interactive screen through Bluetooth.  
3. Farah's tablet is detected by the system, which prompts: "New Device Found. Show your TUIO code to continue."  
4. Farah raises her hands in front of the camera to show his TUIO code  
5. The system saves TUIO with mac address detected  
6. The system flashes a confirmation message:" Welcome"  
7. Farah is routed to her personalized learning dashboard.

***Scenario3 :*** **Interactive Country Quiz Game**  
**Scene:** **Farah is playing an interactive game where she is answering questions about different countries by using TUIO.**  
1. On the interactive screen, it states, "Which country is this?", and there are circles around the question in different colors.  
2. Farah approaches the screen to make her response.  
3. She lifts her hands in front of the camera, and automatically, via the TUIO system,  
4. Images of various countries appear in the colored circles.  
5. Farah rotates her hand to move an arrow on the screen to point at the colored circle that shows the image of the correct country.  
6. As the arrow passes on the chosen circle, Farah freezes her hand to confirm the selection.  
7. The screen displays feedback: "Correct" .  
***Scenario 4***: **Teacher accessing his dashboard  
Scenario :** **Mr. Mohamed uses the dashboard to monitor her students' progress.**  
1. Mr. Mohamed stands before the interactive screen and triggers the teacher's dashboard by using her TUIO code and Bluetooth detection.  
2. The screen displays the teacher's dashboard.  
3. Mr. Mohamed points to "students grades" to see their grades .  
4. Mr. Mohamed makes a mental note to address the shape recognition in the next lesson based on the visual data presented.

***Scenario 6:* Navigating Video Segments with Hand Gestures**

**Scenario: Sarah is reviewing an educational video on the interactive learning** **screen, controlling it with MediaPipe gesture recognition.**

1.The video about world geography will automatically start when Sarah approaches the screen.  
2.Sarah show  her crossed hand at the camera to indicate an X to stop the video.  
3.She then waves two fingers to the right , and MediaPipe recognizes that it is the next segment.  
4. Interested in revisiting the last part, Sarah raises three fingers and waves to the left , and MediaPipe moves the video back to the previous segment.  
5. Once Sarah's hand is lowered, the video starts playing all over again.  
6. She applies those gestures throughout the whole video, stopping and reviewing some parts that she needed to secure in her mind.