Group No: 03 Project title: AIR-TRACKER	21B-007-SE 21B-027-SE 21B-066-SE 21B-140-SE

Feature List

Features are defined in four areas (input, output, process, and nonfunctional requirements), each statement can be written as

As a < type of user >, I want < some goal > so that < some reason >.

With acceptance criteria

For help: https://www.mountaingoatsoftware.com/agile/user-stories
https://www.altexsoft.com/blog/business/acceptance-criteria-purposes-formats-and-best-practices/

Inputs (Users, External, Internal):

User Gestures

"As a User, I want the system to recognize hand gestures (e.g., swipe left, swipe right) so that I can control presentation slides without using a physical clicker."

Acceptance Criteria:

- The system accurately recognizes basic hand gestures like swipe left, swipe right, point, and draw.

Camera Feed

"As a developer, I want to capture real-time video feed from the camera so that I can process and detect hand gestures."

Acceptance Criteria:

- The camera feed is stable and continuous with minimal latency

Presentation Slides

"As a User, I want to load my presentation slides into the system so that I can navigate and annotate them using gestures."

Acceptance Criteria:

- The system supports popular presentation formats like PowerPoint, PDF, and Google Slides.

Hand Gesture Dataset

"As a System Developer, I want to utilize a labeled dataset of hand gestures so that I can train my machine-learning models accurately."

Acceptance Criteria:

- The dataset includes diverse samples covering various gestures, hand orientations, and lighting conditions.

Process (different steps of the project):

Gesture Recognition

"As a System Developer, I want to process the captured video feed and identify hand gestures in real-time so that I can map them to specific slide control actions."

Acceptance Criteria:

- The system uses machine learning models (e.g., CNN) to detect gestures within a frame.

Real-Time Annotation

"As a User, I want to draw and annotate directly on my presentation slides using hand gestures so that I can highlight important points during my presentation."

Acceptance Criteria:

- The system should respond to gestures such as "point" and "draw" by rendering corresponding annotations on the slide.

Data Preprocessing

"As a System Administrator, I want to clean and preprocess the gesture data so that the machine learning models can learn effectively."

Acceptance Criteria:

- The preprocessing step should include normalization of input sizes, data augmentation, and noise reduction.
- The preprocessed data should lead to improved model accuracy and robustness.

Model Training

"As a System Developer, I want to train a Convolutional Neural Network (CNN) model with the preprocessed gesture dataset so that it can accurately recognize gestures in various conditions."

Acceptance Criteria:

- The training process should result in a model with a high accuracy rate

Output (Reports, Outcomes, Responses, notifications etc.)

Slide Navigation

"As a User, I want the system to change slides based on my hand gestures so that I can navigate through my presentation seamlessly."

Acceptance Criteria:

- The system should reliably switch slides in response to gestures like "swipe left" and "swipe right".
- The slide change should be smooth and occur immediately after the gesture is detected.

Annotations

"As a User, I want to see my annotations displayed on the slides in real-time so that I can enhance my presentation visually."

Acceptance Criteria:

- Annotations should appear exactly where the gesture indicates and in the correct format (e.g., color, thickness).

Gesture Feedback

"As a User, I want to receive immediate feedback from the system when a gesture is recognized so that I know the system is working"

Acceptance Criteria:

- The feedback should be unobtrusive but clear enough to be noticed by the presenter

Non-Functional Requirements (Reliability, Authorization, File Integrity, Audit Trail, Continuity of Processing, Service Level, Access Control, Methodology, Correctness, Ease of Use, Maintainable, Portable, Coupling, Performance, Ease of Operation)

Reliability

"As a System Developer, I want to consistently recognize gestures and perform actions without crashes or failures so that the presentation experience remains smooth."

Acceptance Criteria:

- The system should handle long sessions (e.g., >2 hours) without degradation in performance.

Performance

"As a System Developer, I want to process gestures and update the presentation within milliseconds so that the interaction feels natural and responsive."

Acceptance Criteria:

- The system should maintain a response time of less than 100ms for gesture recognition and processing.

Ease of Use:

"As a User, I want the system to be intuitive and straightforward to set up and use so that I can focus on my presentation content rather than the technology."

Acceptance Criteria:

- The system should have a simple setup process, requiring only basic calibration before use.

Compatibility

"As a System Administrator, I want to be compatible with multiple operating systems and presentation formats so that I can be used in various environments."

Acceptance Criteria:

- It should support multiple presentation software platforms like PowerPoint, Google Slides, and PDF viewers.

Maintainability

"As a System Developer, I want the system to be easy to update and maintain so that it can evolve with new technologies and user needs."

Acceptance Criteria:

- The codebase should be modular and well-documented to facilitate updates.

Supervisor Name and signature