1. TESTING

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

	Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
1	Tap “History” button	User is on Home Screen	App navigates to History Page with saved user history	App stays on current page / reloads previous screen	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025

Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)

2 Tap Brush tool icon	User in Drawing Mode	Brush tool activated, allows drawing with selected color/size	Tap has no effect, brush not activated	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
3 Tap Eraser tool icon	User in Drawing Mode with existing strokes	Eraser activated, allows removing strokes	Tap has no effect, eraser not activated	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3),

	TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
4 Change gesture sensitivity (Low → High)	User opens Settings Panel	Cursor responsiveness updates accordingly	Sensitivity change not applied until restart	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

	Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
5	Play tutorial animation for "Pinch to Click"	User opens Help Screen	Demo animation plays smoothly	Animation freezes midway on some devices	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
6 Show open palm	Hand visible in front of camera	Cursor appears and follows hand movement	Cursor appears but lags	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3), PALASH KUNDU(22-48495-3), ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

	Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
7	Perform pinch gesture	Hand visible in front of camera	Click action is triggered	Click registered	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
8 Swipe hand left	Hand visible in front of camera	App navigates to previous screen	App does not respond	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
9 Swipe hand right	Hand visible in front of camera	App navigates to next screen	App navigates incorrectly	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
10 Move hand with brush tool selected	Drawing mode active	Drawing begins on canvas	Drawing starts with delay	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3), PALASH KUNDU(22-48495-3), ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
1 Select new color 1 from palette	Drawing mode active	Brush color updates	Color updates correctly	Pa ss

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
1 Select new brush 2 size	Drawing mode active	Brush size updates	Brush size remains unchanged	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
13 Tap undo icon	Drawing mode active with strokes	Last stroke removed	Undo works intermittently	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
14 Tap redo icon	Drawing mode active after undo	Previously undone stroke restored	Redo not functioning	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
15 Tap clear canvas icon	Drawing mode active	All strokes removed	Canvas clears successfully	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
16 Perform zoom-in gesture	Drawing mode active	Canvas zooms in	Zoom works as expected	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
17 Perform zoom-out gesture	Drawing mode active	Canvas zooms out	Zoom out not responsive	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
18 Move hand while zoomed in	Drawing mode active	Canvas pans accordingly	Canvas jumps unexpectedly	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
19 Tap settings icon	App running	Settings panel opens	Opens correctly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
20 Tap save button after changes	Settings panel open	Settings saved and applied	Settings saved but not applied	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
21 Tap cancel button	Settings panel open	Changes discarded	Changes discarded correctly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
22 Tap help icon	App running	Help screen opens	Opens correctly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
2 Scroll through 3 gesture list	Help screen open	All gestures listed with descriptions	Some gestures missing	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
24 Tap close icon	Help screen open	Help screen closes	Closes correctly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
25 Launch app	Device powered on	App opens to Home Screen	App opened perfectly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3)

	, ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
26 Reopen app from background	App previously opened	App resumes to last state	App restarts instead	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3), PALASH KUNDU(22-48495-3), ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
27 Continue drawing and navigating	App running for 30+ minutes	App remains stable	App slows down significantly	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
28 Perform gestures with both hands	Two hands in camera view	Primary hand recognized, secondary ignored	Both hands interfere with detection	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3), PALASH KUNDU(22-48495-3), ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
2 9 Perform swipe gesture quickly	Hand moves rapidly	Gesture detected correctly	Gesture show perfectly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
30 Perform pinch gesture	Room lighting below 50 lux	Gesture detected with reduced accuracy	Gesture not detected	Fail

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3), PALASH KUNDU(22-48495-3), ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System

Description:

This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.

Precondition (If any):

1. System with webcam available
2. Application installed and running
3. Adequate lighting conditions (unless testing poor/bright light scenarios)
4. User seated within 1–2 meters from webcam

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
3 Perform open palm 1 gesture	Strong backlight present	Gesture detected	Gesture shown perfectly	Pa ss

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
3 Perform swipe 2 gesture	Multiple objects behind hand	Gesture detected	Gesture show with background	pa ss

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
3 Perform open palm 3 gesture	App running	Cursor appears	Cursor remains hidden	Fai l

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3)

	, PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025
Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
34 Move hand slowly	App running	Cursor follows hand movement	Cursor works perfectly	Pass

Project Name: Gesture-Based Cursor Control and Drawing System Using Hand Tracking	**Test Designed By:** Group 6 (ANANNYA TITHI(22-48992-3) , PALASH KUNDU(22-48495-3) , ESRATUL JANNAT JUI(22-49013-3), TANSIF TUSHAN(22-48514-3))
Test Case ID: UI-HT-01 to UI-HT-35	**Test Designed date:** August 30, 2025
Test Priority (Low, Medium, High): Mixed (Core cursor functions = High, Drawing & gestures = Medium, Stress/edge cases = Low)	**Test Executed By:** TONNY SHEKHA KAR, Group 6 Members
Module Name: UI + Gesture Recognition + Drawing Canvas	**Test Execution Date:** September 3, 2025

Test Title: Functional, Usability, and Performance Testing of Gesture-Based Cursor and Drawing System	
Description: This test validates the usability, accuracy, and reliability of the gesture-controlled cursor and drawing system. It includes functional gesture tests, UI interface validation, environmental edge cases (lighting, multiple hands), and extended usage scenarios to ensure system stability.	
Precondition (If any): 1. System with webcam available 2. Application installed and running 3. Adequate lighting conditions (unless testing poor/bright light scenarios) 4. User seated within 1–2 meters from webcam	

Test Steps	Test Data	Expected Results	Actual Results	Status (Pass/ Fail)
3 Perform pinch 5 gesture	App running	Click action triggered	click registered	Pa ss

Post Condition: System exits gracefully, saving progress (if drawing mode was active), and webcam is released properly.

- F_a= modules added
- F_c = modules changed
- F_d = modules deleted