FACIAL EXPRESSION RECOGNITION SYSTEM

### **Course:** Software Engineering

### **Project Title:** Facial Expression Recognition Using Computer Vision

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**Test Script 1: Emotion Detection from Static Image**

**Framework**: Modular Testing

**Pseudocode (Modular)**

FUNCTION test\_detect\_emotion(image\_path, expected\_emotion):

image = load\_image(image\_path)

processed\_image = preprocess\_image(image)

result = model.predict(processed\_image)

ASSERT result == expected\_emotion

**Test Data Table**

|  |  |  |
| --- | --- | --- |
| **Test Case ID** | **Image Path** | **Expected Emotion** |
| TC1 | images/happy1.jpg | Happy |
| TC2 | images/sad1.jpg | Sad |
| TC3 | images/angry1.jpg | Angry |
| TC4 | images/surprised1.jpg | Surprised |

**Test Script 2: Real-Time Emotion Detection from Video**

**Framework**: Data-Driven Testing

**Pseudocode:**

FOR EACH test\_data IN test\_dataset:

video\_stream = open\_stream(test\_data['video\_path'])

FOR EACH frame IN video\_stream:

emotion = model.predict(preprocess\_frame(frame))

log\_result(frame.timestamp, emotion)

validate\_results(test\_data['expected\_emotions\_log'], system\_log)

**Test Data Table**

|  |  |  |
| --- | --- | --- |
| **Test Case ID** | **Video Path** | **Expected Emotions Log** |
| TC5 | videos/bright\_light.mp4 | [Happy, Happy, Neutral...] |
| TC6 | videos/dark\_room.mp4 | |  | | --- | | [Sad, Neutral, Sad...] |  |  | | --- | |  | |
| TC7 | videos/busy\_background.mp4 | [Angry, Angry, Neutral...] |

**Test Script 3: API-Based Emotion Detection**

**Framework**: Keyword-Driven Testing

**Pseudocode:**

KEYWORDS = {

"LOGIN": login(username, password),

"UPLOAD\_IMAGE": upload\_image(image\_path),

"GET\_EMOTION": get\_emotion(),

"ASSERT\_RESULT": assert\_emotion(expected)

}

FUNCTION execute\_test\_case(keyword\_sequence):

FOR EACH keyword IN keyword\_sequence:

EXECUTE(KEYWORDS[keyword.action])

**Test Script Table**

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case ID** | **Step** | **Keyword** | **Parameters** |
| TC8 | 1 | LOGIN | username="test1", password="1234" |
|  | 2 | UPLOAD\_IMAGE | image\_path="images/happy2.jpg" |
|  | 3 | GET\_EMOTION |  |
|  | 4 | ASSERT\_RESULT | expected="Happy" |
| TC9 | 1 | LOGIN | username="test2", password="abcd" |
|  | 2 | UPLOAD\_IMAGE | image\_path="images/sad2.jpg" |
|  | 3 | GET\_EMOTION |  |
|  | 4 | ASSERT\_RESULT | expected="Sad" |