

## ALGORITHM **PoliceClearance\_IssuanceSystem**

DISPLAY **SIGN-IN PANEL**

LISTEN to USER EVENTS

IF USER EVENT == **Username** Click THEN

Ask user for **INPUT** Username

IF USER EVENT == **Password** Click THEN

Ask user for **INPUT** Password

IF **Username && Password == database entries** THEN

Go to **MAIN PANEL**

DISPLAY **MAIN PANEL**

LISTEN to USER EVENTS

IF USER EVENT == **Create Clearance** Click THEN

Call SubRoutine **Create\_Clearance**

ELSE IF USER EVENT == **Verify or Revoke Clearance** Click THEN

Call SubRoutine **VerifyORevokeClearance**

ELSE IF USER EVENT == **Manage Wanted List** Click THEN

Call SubRoutine **ManageWantedL**

ELSE IF USER EVENT == **Sign Out** Click THEN

END

ELSE

DISPLAY **"Sorry, neither the username nor the password you have entered matched from the database entries."**

Go Back to **SIGN-IN PANEL**

SUBROUTINE **Create\_Clearance**

DISPLAY **Create a Clearance Frame**

LISTEN to USER EVENTS

IF USER EVENT == **Click to Start Verification** Click THEN

Call SubRoutine **StartVerification**

ELSE IF USER EVENT == **Waiting For Verification Results** Click THEN

DISPLAY **Verification Guide** //message

ELSE IF USER EVENT == **Home** Click THEN

RETURN to **MAIN PANEL**

ELSE IF USER EVENT == **Sign Out** Click THEN

END

SUBROUTINE **StartVerification**

Open Camera Live Feed Window

Read **Frontal Face Haar Cascade's XML File**

Convert each **frame to grayscale**

IF face has near similar pattern on Haas Cascade THEN

Get count of **frontal face on frame**

Get position on frontal face/s

Display **green box** on frontal face/s

Display **count of faces** on GUI

IF USER EVENT == Pressed **'Space'** THEN

Capture frame from **Camera Window of user's face**

Extract **facial features** to identify the user

Compares **face to database** if it matches known faces

IF face has similar pattern on **Haas Cascade**

IF Face **!=** wanted list images THEN

DISPLAY **Face Verification (success)** //message

Go back to **Create a Clearance Frame**

Waiting For Verification Results **switches** to PASSED! Click to Proceed feature

IF USER EVENT == **PASSED! Click to Proceed** Click THEN

DISPLAY **Clearance Form**

IF USER EVENT == **bar below First Name** Click THEN

Asks user for **INPUT** First Name

IF USER EVENT == **Finalize** Click THEN

DISPLAY **"Last Name is Empty"**

Go back to **Clearance Form**

IF USER EVENT == **bar below Last Name** Click THEN

Asks user for **INPUT** Last Name

IF USER EVENT == **Finalize** Click THEN

DISPLAY **"Middle Name is Empty"**

Go back to **Clearance Form**

IF USER EVENT == **bar below Middle Name** Click THEN

Asks user for **INPUT** Middle Name

IF USER EVENT == **Finalize** Click THEN

DISPLAY **"Birthdate is Empty"**

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        Go back to Clearance Form
    IF USER EVENT == bar below Suffix Click THEN
        Asks user for INPUT Suffix
        IF USER EVENT == Finalize Click THEN
            DISPLAY "Birthdate is Empty"
            Go back to Clearance Form
    IF USER EVENT == bar below Birthdate (MM/DD/YYYY) Click THEN
        Asks user for INPUT Birthdate
        IF Birthdate != MM/DD/YYYY format
            DISPLAY "Date format is not acceptable"
            Go back to Clearance Form
        ELSE IF MM <12
            DISPLAY "Date format is not acceptable"
            Go back to Clearance Form
        ELSE IF DD <31
            DISPLAY "Date format is not acceptable"
            Go back to Clearance Form
        ELSE
            IF USER EVENT == Finalize Click THEN
                DISPLAY "Address is Empty"
                Go back to Clearance Form
    IF USER EVENT == bar below Complete Address Click THEN
        Asks user for INPUT Address
        IF USER EVENT == Finalize Click THEN
            DISPLAY "Birthplace is Empty"
            Go back to Clearance Form
    IF USER EVENT == bar below Place of Birth Click THEN
        Asks user for INPUT Birthplace
        IF USER EVENT == Finalize Click THEN
            DISPLAY "Purpose is Empty"
            Go back to Clearance Form
    IF USER EVENT == bar below Purpose Click THEN
        Asks user for INPUT Purpose
        IF USER EVENT == Finalize Click THEN
            Display "Do you really want to finalize (Clearance Form)?"
            IF USER EVENT == Yes Click THEN
                DISPLAY generated clearance
                IF USER EVENT == Print Clearance Certificate Click THEN
                    DISPLAY Police Clearance Certificate
                    IF USER EVENT == CTRL + P Pressed THEN
                        Prompt print layout
                        Save Police Clearance Certificate as PDF to
                        designated file location
                        RETURN to generated clearance
                    ELSE IF USER EVENT == Home Click THEN
                        RETURN to MAIN PANEL
                    ELSE IF USER EVENT == Sign Out Click THEN
                        END
            ELSE
                Go back to Clearance Form

ELSE IF face has NO similar pattern on Haas Cascade THEN
    DISPLAY Face Verification (denied) //message
    Go back to StartVerification
ELSE IF no face detected THEN
    DISPLAY "Camera frame must detect one face"
    DISPLAY "Face Verification not successful. Try again to proceed"
    Go back to StartVerification
ELSE IF face == wanted list images THEN
    DISPLAY Wanted Image Match
    Go back to Create a Clearance Frame
    Waiting For Verification Results switches to Verification Failed
    IF USER EVENT == Verification Failed THEN
        DISPLAY Wanted Image Match
        Go back to Create a Clearance Frame
ELSE IF USER EVENT == 'Esc' Pressed THEN
    Close Camera Live Feed Window
    DISPLAY "Client Face Verification aborted."
    DISPLAY "Face Verification not successful. Try again to proceed"
    Go back to Create a Clearance Frame

RETURN

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SUBROUTINE VerifyORevokeClearance
  DISPLAY Manage Clearance Interface
  LISTEN to USER EVENTS
  IF USER EVENT == Verify Clearance Click THEN
    Call SubRoutine VerifyClearance
  ELSE IF USER EVENT == Select Clearance Click THEN
    Open File Explorer
    Ask user to locate Clearance file to be verified
    IF Clearance file IN clearance database THEN
      DISPLAY Clearance file details
      Call SubRoutine RevokeFeature
  ELSE IF USER EVENT == Home Click THEN
    RETURN to MAIN PANEL
  ELSE IF USER EVENT == Sign Out Click THEN
    END
SUBROUTINE VerifyClearance
  Get each frame
  Pass each frame to PYZBAR Library
  Scan each frame for QR Code
  IF QR CODE detected THEN
    Display green box on borders of QR Code
    IF USER EVENT == Pressed 'Space' THEN
      Capture frame from Camera Window of QR code
      Decode QR code
      Extract encoded information
      Get QR Code result
      IF QR code in clearance database THEN
        DISPLAY Clearance file details
        Call SubRoutine RevokeFeature
      ELSE IF QR Code NOT in clearance database THEN
        DISPLAY No records found for this clearance
        Go back to VerifyORevokeClearance
      ELSE
        DISPLAY "The current frame cannot detect QR Code. Please Press [SPACE] only if there's QR
on the frame."
      ELSE IF USER EVENT == 'Esc' Pressed THEN
        Close Camera Live Feed Window
        DISPLAY "Clearance Verification aborted."
        DISPLAY "Clearance scanning did not finish"
        Go back to VerifyORevokeClearance
    RETURN
  SUBROUTINE RevokeFeature
    ADDS Revoke Clearance Feature
    IF USER EVENT == Revoke Clearance Click THEN
      Ask user if it is sure with the action
      IF USER EVENT == Yes Click THEN
        Revoke clearance
        DISPLAY "Clearance revoked successfully"
        Go back to Manage Clearance Interface
        DISPLAY details of revoked clearance
      ELSE
        Go back to Manage Clearance Interface
    ELSE
      DISPLAY File Error //message
      RETURN to Manage Clearance Interface

SUBROUTINE ManageWantedL
  DISPLAY Manage Wanted List Frame
  LISTEN to USER EVENTS
  IF USER EVENT == Remove From Wanted List Click THEN
    Open File Explorer
    Ask user to locate Wanted file from wanted_list folder
    IF Wanted file IN wanted_list folder THEN
      DISPLAY "Do you really wanted to delete this image?"
      IF USER EVENT == Yes Click THEN
        DISPLAY "Wanted image deleted successfully"
        Remove wanted image from wanted_list folder
      ELSE

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                DISPLAY "Wanted image deletion cancelled."  
                Go back to Manage Wanted List Frame  
ELSE  
    DISPLAY "You cannot remove files outside from wanted_list folder."  
RETURN to Manage Wanted List Frame  
  
ELSE IF USER EVENT == Import Wanted Image Click THEN  
    Open File Explorer  
    Ask user to locate image file to import on wanted_list folder  
    DISPLAY "Do you really want to import this image as a wanted?"  
    IF USER EVENT == Yes Click THEN  
        DISPLAY "Wanted image imported successfully"  
        Add selected image file on wanted_list folder  
    ELSE  
        DISPLAY "Importation of the selected wanted image cancelled."  
        Go back to Manage Wanted List Frame  
RETURN to Manage Wanted List Frame  
ELSE IF USER EVENT == Home Click THEN  
    RETURN to MAIN PANEL  
ELSE IF USER EVENT == Sign Out Click THEN  
    END
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