

CODE:

```
import cv2

import random

import mediapipe as mp

# Initialize MediaPipe

mp_hands = mp.solutions.hands

hands = mp_hands.Hands(static_image_mode=False,
                        max_num_hands=1,
                        min_detection_confidence=0.7)

mp_draw = mp.solutions.drawing_utils

# Gesture Mapping

gesture_map = {

    0: "Rock",

    2: "Scissors",

    5: "Paper"

}

def get_finger_count(hand_landmarks):

    finger_tips = [8, 12, 16, 20]

    thumb_tip = 4

    count = 0

    # Get landmarks

    landmarks = hand_landmarks.landmark

    # Check fingers

    for tip in finger_tips:

        if landmarks[tip].y < landmarks[tip - 2].y:

            count += 1

    # Check thumb (horizontal)
```

```

if landmarks[thumb_tip].x < landmarks[thumb_tip - 2].x:
    count += 1

return count

def get_winner(user, computer):
    if user == computer:
        return "Draw"
    elif (user == "Rock" and computer == "Scissors") or \
        (user == "Scissors" and computer == "Paper") or \
        (user == "Paper" and computer == "Rock"):
        return "You Win!"
    else:
        return "Computer Wins!"

# Start webcam
cap = cv2.VideoCapture(0)

while True:
    ret, frame = cap.read()
    if not ret:
        break

    # Flip and convert color
    frame = cv2.flip(frame, 1)
    rgb_frame = cv2.cvtColor(frame, cv2.COLOR_BGR2RGB)
    results = hands.process(rgb_frame)

    user_move = None
    if results.multi_hand_landmarks:
        for hand_landmarks in results.multi_hand_landmarks:
            count = get_finger_count(hand_landmarks)
            user_move = gesture_map.get(count)

```

```
mp_draw.draw_landmarks(frame, hand_landmarks, mp_hands.HAND_CONNECTIONS)
```

```
if user_move:
```

```
    computer_move = random.choice(list(gesture_map.values()))
```

```
    winner = get_winner(user_move, computer_move)
```

```
cv2.putText(frame, f"Your Move: {user_move}", (10, 30),
```

```
            cv2.FONT_HERSHEY_SIMPLEX, 1, (255, 255, 0), 2)
```

```
cv2.putText(frame, f"Computer: {computer_move}", (10, 70),
```

```
            cv2.FONT_HERSHEY_SIMPLEX, 1, (255, 0, 255), 2)
```

```
cv2.putText(frame, f"Result: {winner}", (10, 110),
```

```
            cv2.FONT_HERSHEY_SIMPLEX, 1.2, (0, 255, 0), 3)
```

```
cv2.imshow("Rock Paper Scissors", frame)
```

```
if cv2.waitKey(10) & 0xFF == ord('q'):
```

```
    break
```

```
cap.release()
```

```
cv2.destroyAllWindows()
```