Wiring PCA9685 to Arduino Uno for Servo Control

1. Power Connections

- Arduino 5V -> PCA9685 VCC (powers the chip logic)

- Arduino GND -> PCA9685 GND (common ground)

- External 5V(2A-10A) + -> PCA9685 V+ (servo power)

- External 5V - -> PCA9685 GND (also connect to Arduino GND)

2. I2C Communication

- Arduino A4 -> PCA9685 SDA (Data line)

- Arduino A5 -> PCA9685 SCL (Clock line)

- Required for servo control via I2C.

3. Connecting Servos

Each servo connects to one of the 3-pin headers on PCA9685 (Channels 0-15):

- Signal (Yellow/White) -> Top Row (PWM signal)

- V+ (Red) -> Middle Row (External 5V)

- GND (Black/Brown) -> Bottom Row (Common GND)

4. Summary Table

From	To	Purpose
Arduino 5V	PCA9685 VCC	Chip Logic Power
Arduino GND	PCA9685 GND	Common Ground
External 5V +	PCA9685 V+	Servo Power
External 5V -	PCA9685 GND	Common Ground
Arduino A4	PCA9685 SDA	I2C Data
Arduino A5	PCA9685 SCL	I2C Clock