Instructions:

Step 1: 3D Print the Part of the Robot or Purchase the robot body from the Amazon Link :

Step 2: Buy the Component list

Component List:

1. Arduino Nano

2. 8 X mg90 or sg90 Servo

3. 3 X 18650 Battery Cell with holder

4. 1 X UBEC DC to DC Step down 5V 3AMP Switch (or you can have any good 5V 3amp step down convertor)

5. General Purpose PCB, pin headers, bunch of wire to build custom Circuit Board **or you can buy a Nano expansion Board**

6. On off Switch

7. RC controller (I use fly sky 6 channel Controller for this project)

Step 3: Screw the servos to the body part (without servo horn)

Step 4: Once you get all the component first thing is to turn all the servos to 90 degrees, for that either build the custom Circuit board first or use the servo expansion shield and connect all the servo from pin 2 to pin 9 according to the pin structure given below then upload the servo calibration code.

Step 5: once all the servo are 90 Degree without moving them connect the servo horn to the servo motor maintaining this exact position of the robot

See this is important just like your brain needs to know the initial position of your legs to calculate the further step movement similarly your code needs to know the initial position of the robot to work as expected.
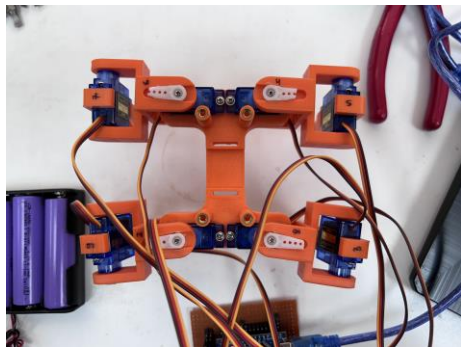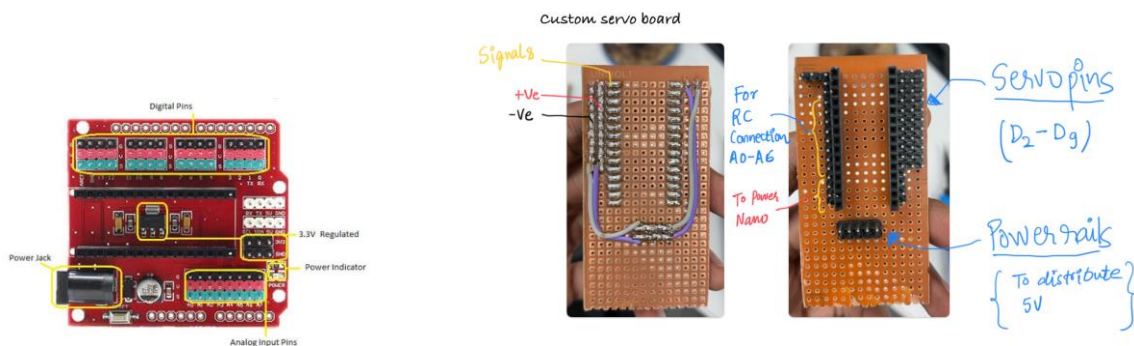
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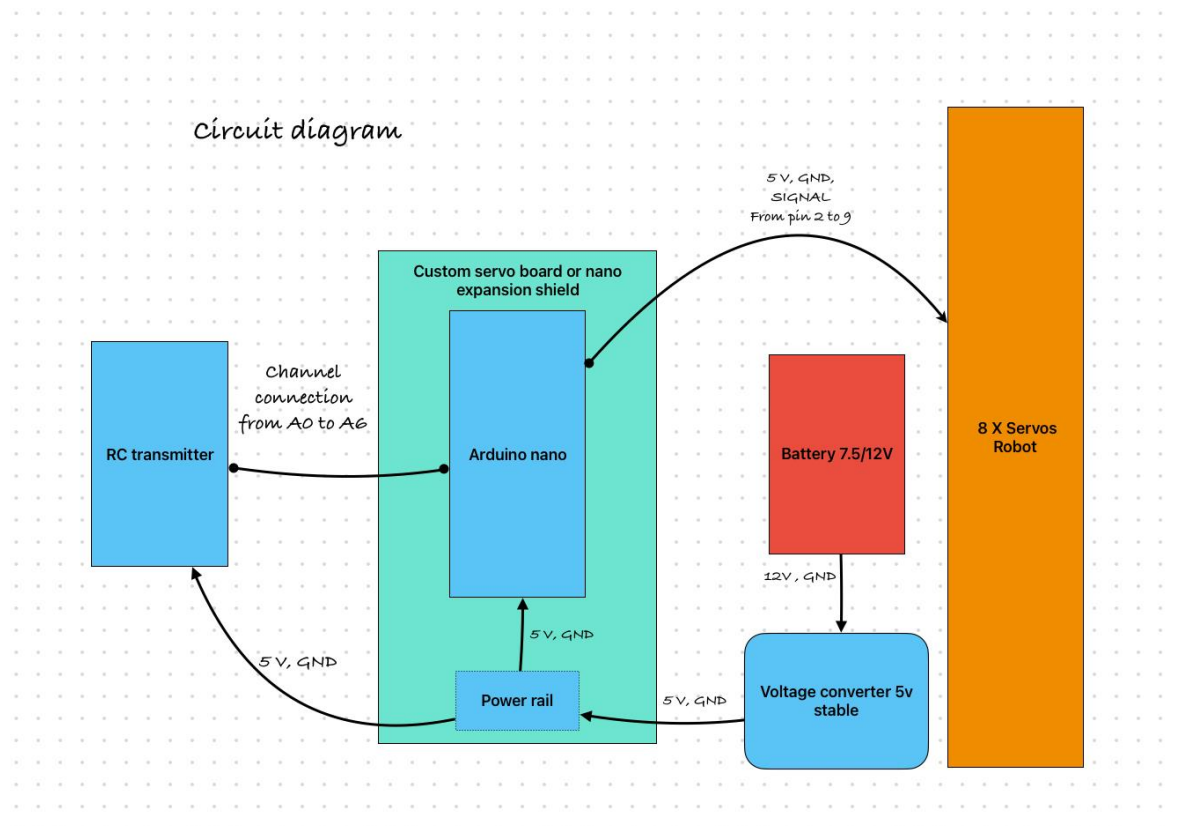
read again!!

still not?

Just put servo in the position so that whenever you run servo calibration code the robot maintains this position, don't think too much!

'Servo Calibration Position'

Step 6: Now just use the circuit diagram to build the circuit and upload the main code and open the serial monitor (at same baud rate written in the code) then use respective character to do respective function.

Circuit diagram

RC transmitter

Channel connection from A0 to A6

Custom servo board or nano expansion shield

Arduino nano

5 V, GND, SIGNAL From pin 2 to 9

Battery 7.5/12V

8 X Servos Robot

12V, GND

5 V, GND

Power rail

5 V, GND

Voltage converter 5v stable

5 V, GND

Step 7: if you want to control the robot using RC first connect the RC channel pins to the A0 to A6 pin according to the channels then run RC analysis code and use serial monitor to analyse your channel values

Note and use these channel values to build a logic for your robot

For example:

Suppose these are your channel values

Channel number (acc. to the pin (don't change the pin once set))	Normal value (without moving the joystick)	Min Value (pull the joystick one side)	Max Value (Pull the joystick on another side)
CH 1	100	400	800

Then you can see in the code as reference for how I use this value and determine the 3 controls for each channel

'0' for value within range of (200 to 600) this is **stop**

'1' for value greater than 600 this is **forward**

'-1' for value less than 200 this is **backward**

You can build your own logic according channel values and channel number it's just mapping the values and use them as required

"If you still don't understand and want a video of how to use RC controllers in your project just message me on my Instagram or comment it in any video"

Best of luck!!!