

Activity

Servo Motor

Angry Bird



In this activity you will learn how to program evive to control servo motor angle using PictoBlox and create an angry bird project.

STEP-BY-STEP

1. Connect the servo motor to evive's servo motor S2 channel as shown in the figure.
2. Open **PictoBlox**, connect evive, select the Board as evive, and upload firmware.

Note the color of three wires of Servo. Brown wire will go towards left in evive.



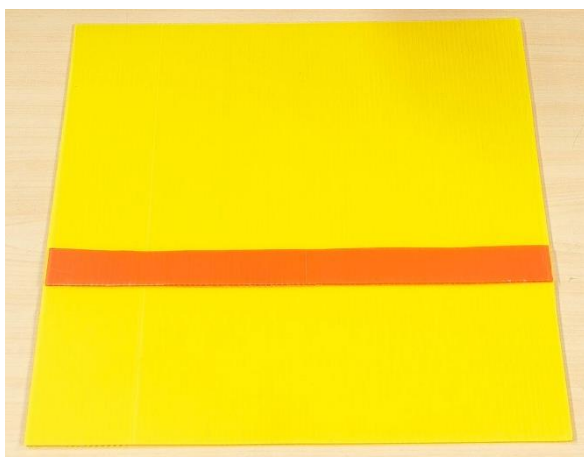
CONTROLLING SERVO MOTOR

3. Make the script to set the servo motor angle to the user input angle.
4. Run the script and check if the servo motor is responding correctly. Set the servo motor angle to **90 degrees** in the end.

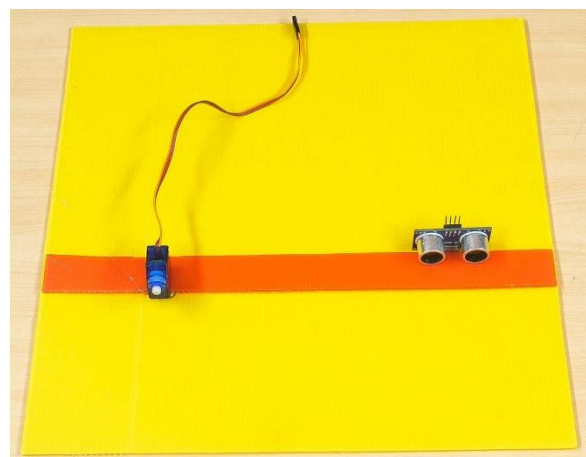


ANGRY BIRD

5. In this activity, we will control the servo motor angle depending on whether the ultrasonic sensor detects object or not.
6. Cut a cardboard in the dimension of 30 cm x 30 cm. This will act as our base upon which we will place our entire assembly of servo and ultrasonic sensor.
7. Cut a small strip of the dimension 2.5 cm x 30 cm to place the servo and the ultrasonic. Paste the strip on the base as shown below using glue gun.

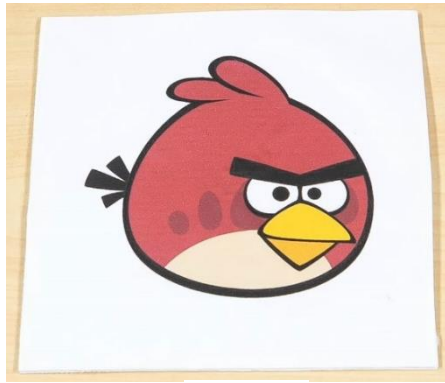


STEP 6-7



STEP 8

8. Take the ultrasonic sensor and attach it on the red strip on one side of the base using hot glue. On the other side of the red strip, attach the servo motor using hot glue.



STEP 9



STEP 10



STEP 10

9. Now take a square cutout of 15cm x 15cm and glue the angry bird cutout on it. Cut the square cardboard in the shape of the angry bird.

10. Attach an ice cream to the bird. At the other end of the ice-cream stick attach the servo horn as we need to attach it to the servo head.

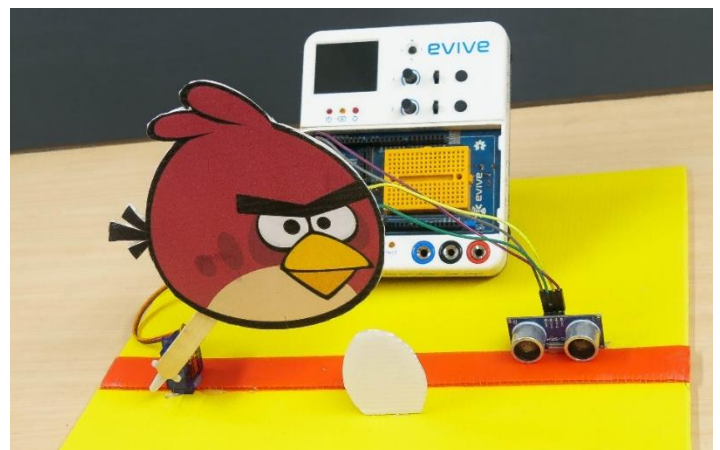
11. Take the small cardboard piece and cut it in the shape of the egg and fix it on the base at some distance from the servo and the ultrasonic sensor.



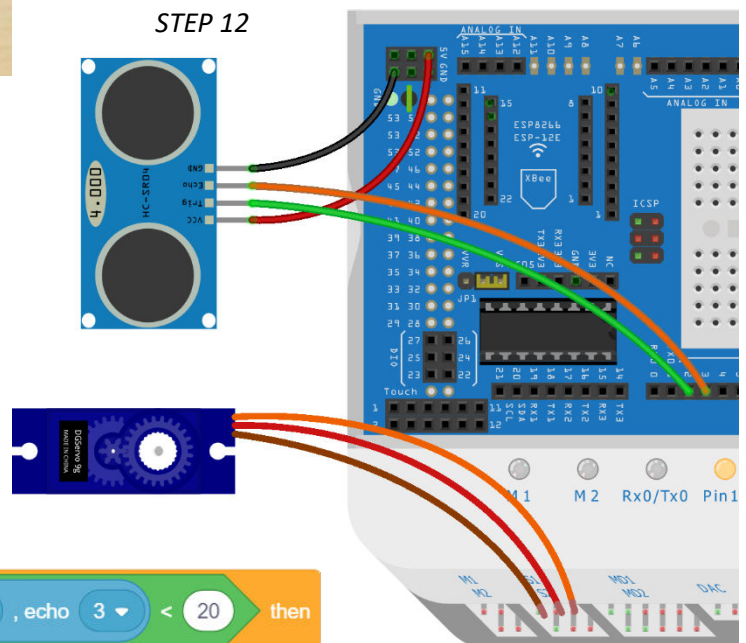
STEP 11

12. Fix this angry bird assembly onto the servo head.
13. Connect the servo motor to servo channel 1 and the ultrasonic sensor as following:

- GND of sensor to GND of evive.
- VCC of sensor to 5V of evive.
- TRIG of sensor to digital pin 2 of evive.
- ECHO of sensor to digital pin 3 of evive.



STEP 12



Circuit Diagram

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when evive starts up
  forever loop
    if (get ultrasonic sensor distance (cm) | trig 2, echo 3 < 20) then
      set servo on Channel 1 to 180 angle
      wait 0.03 seconds
    else
      set servo on Channel 1 to 100 angle
      wait 0.03 seconds
  
```

14. Make the following script in PictoBlox and Upload it.