GEAR/TCEA Robotics

Challenge 3: Stay in Touch

Challenge 3.1: Touch, Stop and Go

THE OBJECT:

After learning how to program the robot to move in Challenge 2, this challenge aims at learning how the robot can stay in touch with its environment using the touch sensor. The object for the first part of the challenge is to design and build a touch sensor attachment for your robot and make the robot react on touch sensor input.

CHALLENGE TASKS:

1. Add a touch sensor to your robot that points straight up. Ensure that the input end of the sensor is highest/tallest element of your robot so that it is easy to touch with your hand while the robot is in motion. Try to do this task WITHOUT referring to any manual or other printed building instructions.

2. Connect the touch sensor with the brick using a connection wire. Which port did you choose?

3. Create a program that moves the robot forward until the robot's touch sensor is pressed by a team member. This type of program will require the use of a wait block. Experiment with the three different states of the touch sensor wait block: pressed, released and bumped.

4. What are the differences between the three different states of the touch sensor wait block: pressed, released and bumped? Explain those differences below.

5. See if your team can expand the program that will allow team members to start and stop the program multiple times using the touch sensor. For example, if you use a loop in your program, the robot could move forward until the touch sensor is pressed or bumped, wait three seconds, and then continue to move until the touch sensor is activated again.