Recording Real World Values

Challenge Description

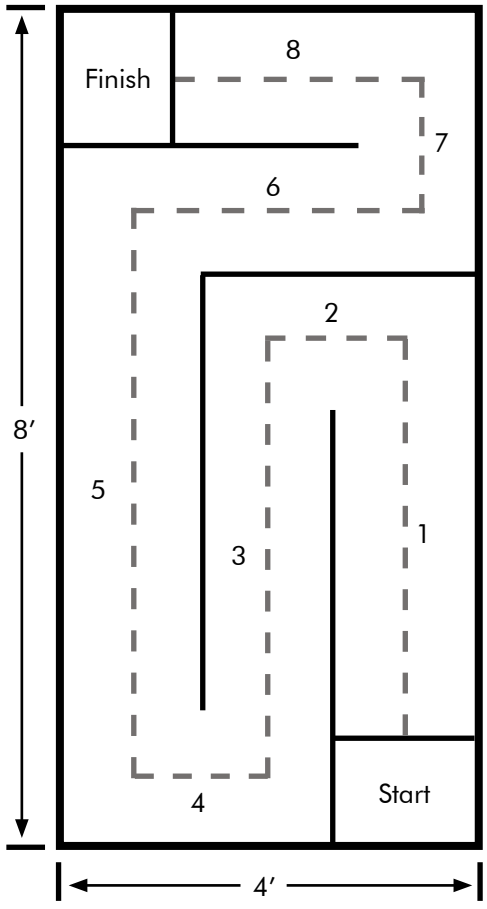
Create a new program and configure the touch sensor and left and right encoders on your robot, using the Motors and Sensors Setup. Then include the sample code below to create a program that keeps track of the encoder values, until the touch sensor resets them. Once your program is complete, download and run it on the robot, but keep your robot connected to the computer over VEXnet or USB.

Place your robot at the beginning of each straightaway, press the touch sensor to reset the encoders, and push your robot until the end of the section. Use the "Robot > Debug Windows > Sensors" window to record the encoder values in the Chart on the following page. (See page 3 for details on using the "Sensors" window.)

Materials Needed

- Black electrical tape
- Scissors (or cutting tool)
- Pencil
- Ruler (or straight edge)

Board Specifications



Note: Diagrams are not drawn to scale

Sample Code

```
1  task main()
2  {
3    while(1 == 1)
4    {
5      //If the touch sensor is pressed
6      if(SensorValue[touch] == 1)
7      {
8        //Clear the encoders
9        SensorValue[rightEncoder] = 0;
10       SensorValue[leftEncoder] = 0;
11     }
12     wait1Msec(10);
13   }
14 }
```

Recording Real World Values

Chart

Straight Section	Right Encoder (counts)	Left Encoder (counts)
1st		
2nd		
3rd		
4th		
5th		
6th		
7th		
8th		

Create and run a program using the encoder values you recorded.
Did your robot accurately traverse the sections of the course where you recorded the values?

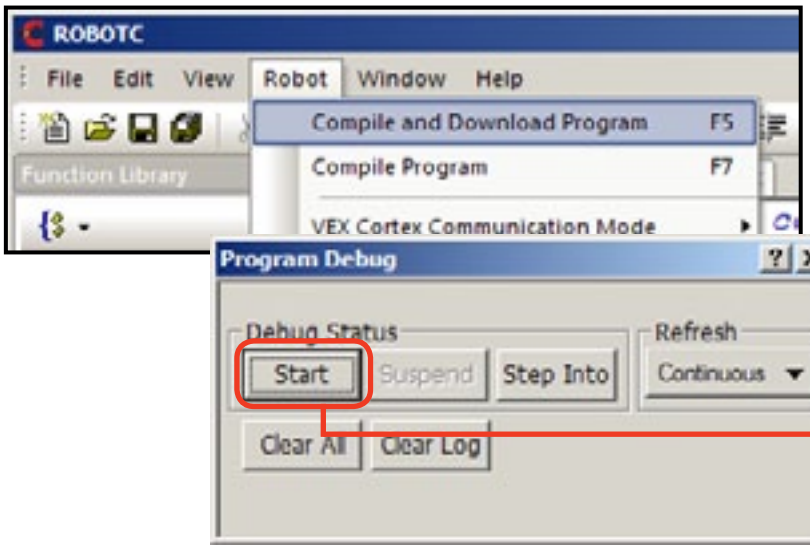
Which section, if any, was the most problematic for the robot? Speculate as to why.

Was this method easier than the "Trial & Error" method used in the past?

Was it faster?

Debugger Window: Sensors

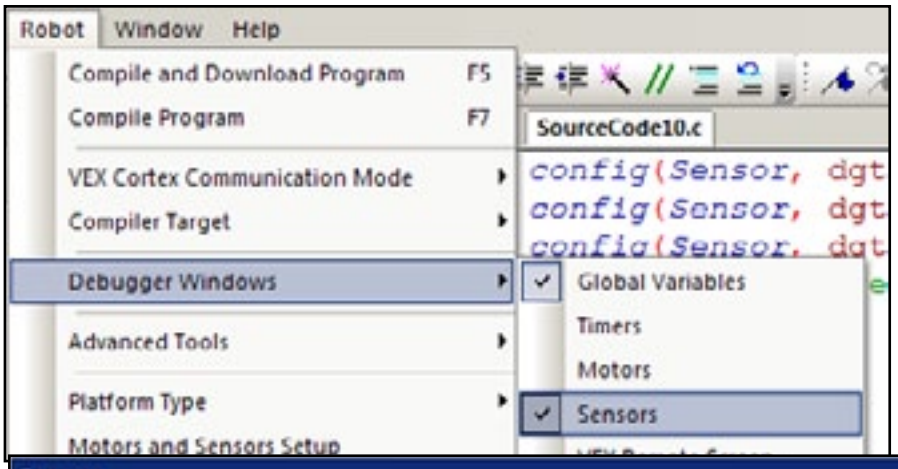
The Sensors window is a powerful part of the ROBOTC debugger. When shown, it displays the current status of all sensors configured on your robot. Use the following steps to open the Sensors window and view the information it provides.



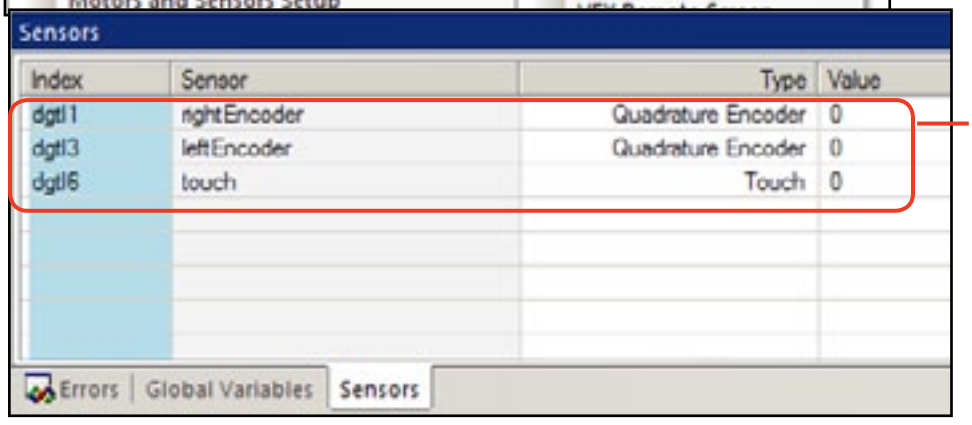
Robot > Compile and Download Program
Compile and Download your program to the robot.

Program Debug
The Program Debug window will open once the download is complete.

Start Button
Press the "Start" button to initialize the program.



Robot > Debugger Windows > Sensors
Open up the Sensors window.



Observe Values
The current value of any sensors configured using the "Motors and Sensors Setup" window are viewable under the Sensors section.

For example, touch sensors will display a 1 (pressed) or a 0 (not pressed), and encoders will show their current count.