

**Brooklyn** College  
The City University of New York

*Exploring Robotics (CORC 3303)*

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## UNIT F Lab : RoboCupJunior Soccer

### vocabulary

- RoboCupJunior soccer field
- RoboCupJunior electronic soccer ball

### materials

Make sure you have all of the following materials before you start the lab:

- lego go-bot with bumper sensor and light sensor
- RoboCupJunior soccer field
- RoboCupJunior electronic soccer ball

## instructions

### 1. modify the robot's the light sensor

- Modify the robot's light sensor so that it is point straight out in front of the robot, instead of pointing toward the floor. It will use this to see the electronic soccer ball, which transmits infra-red (IR) light. The light sensor will read this as a very bright value, probably returning a value greater than 55.
- Keep the second light sensor of the robot looking to read the floor and tell whether it is heading toward the "white" goal or the "black" goal.

### 2. start up RoboLab

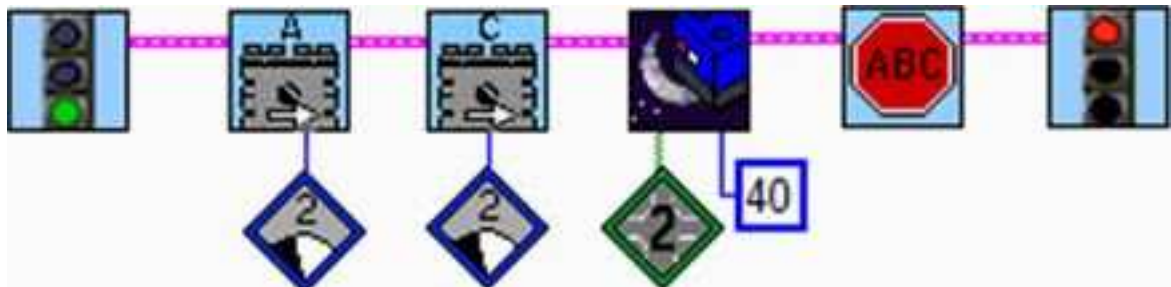
### 3. find the icons

- Locate the **functions palette**. See if you can find each of the following **icons**. What do you think each icon does? In the boxes below, next to each icon, write down your ideas.

### 4. create your program

- Use the mouse to select, drag and drop RoboLab **icons** onto your canvas and **wire** them together, creating the following program:



### 5. download your program

### 6. run the program

- What did your robot do? Is that what you expected? Write your answer below.

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## 7. programming challenges

- Program the robot to play a simple game of soccer using two tasks. One task should make the robot spin around until it sees the soccer ball, using a light sensor pointing forward and looking for something very bright; then the robot should move toward the bright object. The second task should make the robot turn around and move away if it bumps into anything.

