

homework unit F, part 1

- This assignment will be worth 10 points in total, 10% of your term grade.
- This is PART 1 of two parts, given out in class on Monday November 13. The second part will be given out in class on Thursday November 16.
- **Both parts of the assignment will be due on Thursday November 30 IN CLASS. Please bring a hardcopy to class!**
EXTENDED TO MONDAY DECEMBER 4, 2006.

Name:

Group Assessment: to be done in the labs with your partner

- After you get each program to work, draw the code in the boxes provided. Partial credit will be given! You will have 3 1/2 class periods dedicated to labs to complete this assignment: half of Monday November 13, and all of Thursday Nov 16, Monday Nov 20 and Monday Nov 27.
- **Demonstrate each working program for your instructor.**

1. comparing programs

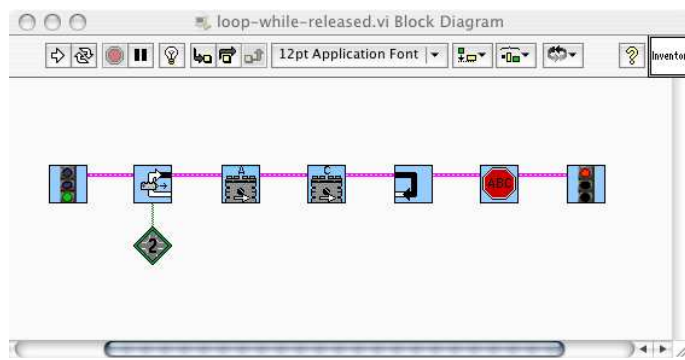
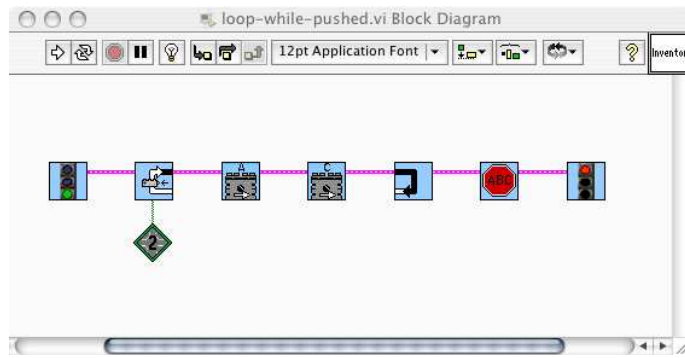
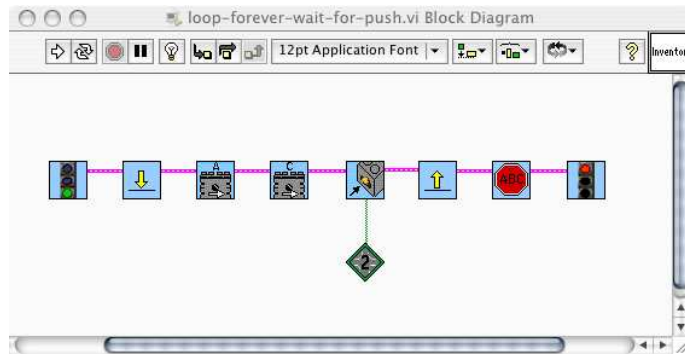
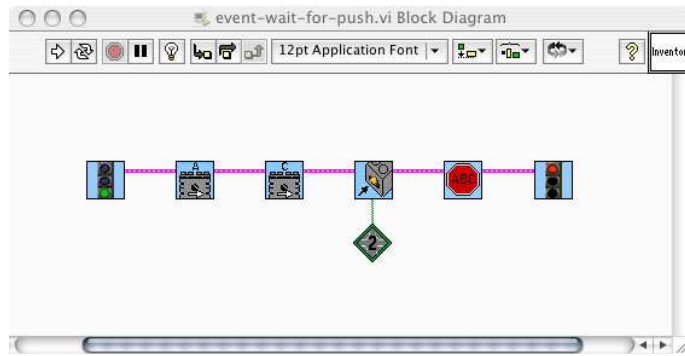
Examine each of the following 4 programs on the next page and compare how they work.

You can try programming your robot with each program and seeing how it behaves differently with each one—if it behaves differently with each one.

Write down your observations.

Then write down your explanation for why the robot did what it did, and your final analysis about how each program is different.

(2 points)



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- This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

2. programmer-defined functions

Modify your program from the end of unit E to use *subroutines*:

If your robot sees something black, it should stop for one second, then go backwards for two seconds, then go forward again.

If it sees something silver or gold, it should stop for one second, then turn to the left and go forward again.

It should do this behavior forever.

- (a) Create a subroutine for what to do when the robot sees something black.
- (b) Create another subroutine for what to do when the robot sees something gold.
- (c) Modify the rest of your program so that it *calls* the subroutines and the robot behaves as described above.

Draw your code in the box below. Demonstrate your working program for your instructor.
(3 points)

