

## Project One -- Karel the Robot

Project One: Final Due Date -- Friday March 7th no later than 3 pm.

Attendance is required in Lab for all Karel the Robot work. You are expected to submit your programs to your TAs while in lab. If you choose not to be in lab and have access to Karel, the program must be received by the TAs no later than 3 pm on Friday March 7<sup>th</sup>. (Just before Spring Break starts.) Submission is done via email.

For this project name your program file should be named

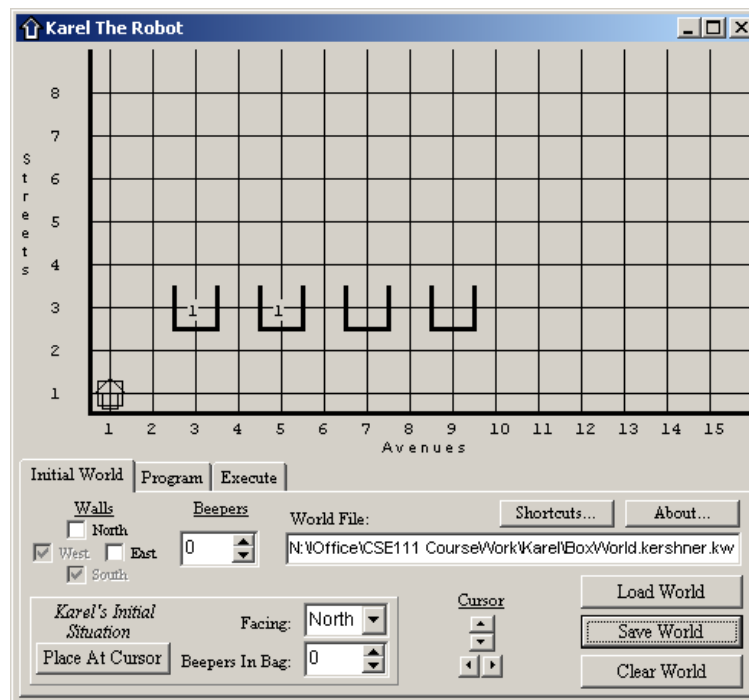
BoxProgram.yourlastname

In place of the word yourlastname put your last name. So my file would be named BoxProgram.kershner Karel's programming language will add the extension .kp  
My file would then have the name: BoxProgram.kershner.kp

### Problem Statement:

Karel starts at the Origin (Street 1, Avenue1) facing North. There are four boxes in a row. Have Karel pick up beepers from the first two, deposit them in the last two and go home to the origin and face north.

Clearly the problem statement is not sufficiently detailed to be able to write a program. Writing the program is your job. Below is a picture of the World Karel will be working with for this Project. You can try downloading it from the Web, or simply recreate it on your own in the lab (recreating it is easier).



The purpose of this project is to demonstrate that you understand the concept of creating new instructions for Karel to follow. This is carefully explained in Chapter-3 in your textbook and will be discussed in class on Friday 2/29/03.

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Project One is worth 100 points.

1. Your program must solve the problem stated above. It must work properly. It must compile correctly and end with a turnoff command and not an error message. (50 points)
2. You must create the new instruction **turnright** for Karel to use. (10 points)
3. You must create two additional new instructions that help Karel solve the problem. (20 points)

These newly created instructions must be useful to Karel and you must use each one more than once in your program. Ideally, your instructions should be useful enough to be used with all four boxes.

If you create more than two new instructions that are useful in your program, you can earn up to 10 points extra credit (5 points for each additional new instruction up to a maximum of two)

4. You must return Karel to the start (origin) from which it begins its travels. (10 points)
5. Karel must end up facing North. (5 points)
6. You must email your TA with your BoxProgram.yourlastname.kp Your email message needs to contain your First and Last Name and your Person number as well as your program as an attachment. If you do not know how to do this your TA can show you how to accomplish this task. (5 points)

Simply printing off your program and handing it to your TA is not sufficient. You will get NO (ZERO) credit for turning in a printed copy. The TAs will Execute your code to see if it works.