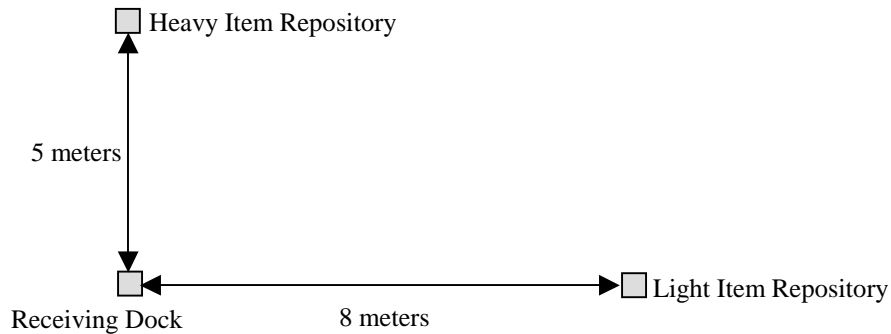


For this assignment, you will design a simple algorithm to “program” a robot to carry out a simple task. First you must read the *Robbie the Robot User Manual*, available from the same location as this document. The *User Manual* describes a very simple language that may be used to control the robot in question. You must express your algorithm in the robot language, RL, described in the *User Manual*.

The robot will operate in a simple industrial site, as shown below. There is a receiving dock where items are placed as they are delivered. These items fall into two categories, those that weigh less than 500gm and those that weigh 500gm or more. There are separate repositories for each category of item.



Initially the robot will be at the receiving dock, facing west (to the left).

The robot’s task is to take each item from the receiving dock, determine whether it is light (less than 500gm) or heavy, carry it to the appropriate repository and deposit it there. The robot should continue the process until there are no more items at the receiving dock, or there is an item at the receiving dock that is too heavy for the robot to lift.

The robot’s movements are restricted to East-West and North-South; i.e., it is not allowed to move diagonally.

The robot must count the number of light items and heavy items (separately).

The robot must also measure the total distance it has moved. After depositing each item, the robot must check to see if that distance is greater than 100 meters. If so, the robot should stop moving items.

Submitting Your Solution

You must submit your solution electronically using the Curator System. The CS 1044 Course Notes pack contains the *Student Guide to the Curator*. You should read that for instructions on how to submit your file to the Curator. The Curator System will be available early next week.

The Student Guide is also available at the Curator Project website:

<http://ei.cs.vt.edu/~eags/Curator.html>

Your file must be in a format that can be opened in MS Word. If you do not have MS Word, plain text files (as produced by Notepad, for example) are also acceptable.