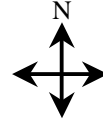


For this assignment, you will design a simple algorithm to “program” a robot to carry out a simple task. First you must read the *Robbie the Robot User Manual*, available from the same location as this document. The *User Manual* describes a very simple language that may be used to control the robot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

The robot will operate on a level field, as shown below. A collection of 100 Permian Age salt samples, ranging in weight from 100 gm to 500 gm are arranged in a line, spaced 10 cm apart. (This does not mean that there will necessarily be a rock weighing 100 gm.) No two rocks have the same weight (to the nearest gram). Each of the rock samples is small enough for Robbie to drive over it easily. Initially, Robbie is located exactly 1 meter west of the first rock, facing east. (We always express Robbie's location in terms of the point below his arm.)



Robbie's task is to determine which of the 100 rocks is the lightest, move that rock 1 meter south, and then return to his starting position. None of the other rocks can be in a changed position when Robbie is done.

Your assignment is to design an algorithm to guide Robbie in carrying out this task, and to express your design in RL. You may only use the RL commands described in the *User Manual*. You should include comments explaining the purpose of the commands in your algorithm; it is not necessary to provide a comment for every single command, but major logical sections should be explained.

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 either an MS Word document or a plain text file.