

A Brave New World **Laboratory 1**

Due dates:

- **Part 1 (Lightbot) must be completed by the beginning of lecture Tuesday, October 1.**
- **Parts 2 and 3 must be completed by the beginning of lecture Thursday, October 3.**

In this week's "lab", you'll make your own contribution to one of the most important of websites that encourages collaboration among their users, Wikipedia. You will also wet your feet with programming, by playing a game called LightBot. After completing this assignment, you'll write a blog post on the course blog describing yourself and your experiences during the lab. (More details below.) You should follow the instructions and complete the lab on your own. However, as in all the labs in this course, discussion with friends is encouraged. You can email the class mailing list or the TAs if you get stuck.

Part 1: (45 minutes) Lightbot 2.0

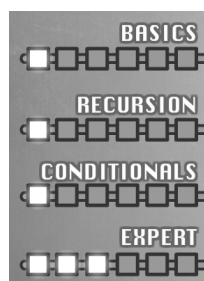
Lightbot is a game in which the goal is to program a virtual robot to light one or more squares on a floor that may be uneven or have other surprises.

1. Play <http://armorgames.com/play/6061/light-bot-20>

Wait a few seconds until you see the robot, and click play.

It is likely you will want to turn off the sound immediately, as this game is accompanied by some very annoying music (in my opinion).

In the upper right of the screen you will see little boxes that look like this:



Each box represents a puzzle, with boxes further to the right or further down being increasingly difficult.

If you hover over the question mark at the bottom middle of the screen, you will find a description of the instructions. Programming the robot consists of dragging instructions into the boxes marked “Main method”, “function 1” and “function 2”.

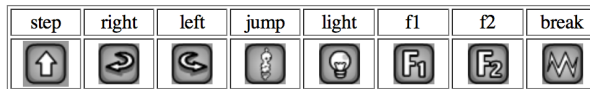
Additional details about how the game works can be found on the next page (borrowed from <http://www.cs.cmu.edu/~tcortina/15110sp12/lightbot/>)

See if you can do most of the basic puzzles and then try to do one or two recursion puzzles and one or two “conditionals” puzzles.

Don't worry if you find this difficult. It is difficult! Just do the best you can.

Additional Details About LightBot

In the game, the Lightbot is programmed by arranging icons representing discrete actions onto a grid. The possible actions are:



- step - Lightbot moves forward one step if this does not take it off the grid and the next tile is at the same level as the current tile.
- right - Lightbot turns right (clockwise) 90 degrees but stays on the current tile.
- left - Lightbot turns left (counter-clockwise) 90 degrees but stays on the current tile.
- jump - Lightbot jumps forward one step if the next tile is either one level higher or any number of levels lower than the current tile.
- light - Lightbot lights up the tile it is standing on if it has a deep blue color. If it is on a green tile, this causes Lightbot to "teleport" to another green tile as shown on the grid. If it is on a blue, purple, or orange tile, then its body color changes to that color. If it already that color, it changes its body color back to gray.
- f1 - Lightbot starts executing the commands shown in the Function 1 area. Once it is done, it returns back to where it left off in the command sequence (just after the f1 command).
- f2 - Lightbot starts executing the commands shown in the Function 2 area. Once it is done, it returns back to where it left off in the command sequence (just after the f2 command).
- break - Lightbot stops execution of the current method and returns back to where it left off in the previous method it was running. If it executes a break in main, then Lightbot stops.

A command (left, right, jump, etc.) can be "colored" so that it only occurs if Lightbot is the given color when it tries to execute that command. For example, the command



will cause Lightbot to jump only if it is currently blue. Otherwise, Lightbot doesn't jump. (You can create a colored command by first dragging the command into the robot's program area and then clicking the multicolor box and clicking the command until it turns into the color you want.)

After the player finishes building the program, they press the "Run" button and watch Lightbot operate under the control of the program. Commands are grouped into three procedures: a "main method", a "function 1", and a "function 2". When executing a procedure Lightbot, generally, executes each command of the procedure left-to-right, top-to-bottom. That is, Lightbot first performs the left-most action in the top row of that procedure, then proceeds performing the actions left-to-right within each row, moves to the left-most command of the next lower row after completing each row, and finally stops when the end of the procedure is reached. (The "f1", "f2" and "break" commands alter the order of execution, but even when such commands are present, this left-to-right, top-to-bottom ordering defines each procedure's "command sequence".)

Part 2: Wikipedia (1 hour)

As you undoubtedly already know, Wikipedia is a free online encyclopedia written entirely by its users. Anyone can add to or edit any page of Wikipedia, and as a result, the number of subjects it covers has grown dramatically in a short amount of time (it was started in 2001, and currently contains more than 4 million articles in English alone).

1. Visit <http://en.wikipedia.org>.

If you haven't used Wikipedia before (or even if you have), spend a little time browsing the articles. Follow links from the front page to get started, or search for something you like using the search utility.

2. Visit <http://meta.wikimedia.org/wiki/Meta:Sandbox> to experiment with Wikipedia's editing environment. This is a kind of scratch page to allow new users to learn how to edit in Wikipedia.

- a. Click on the "edit" tab that appears on the top of the Sandbox page.
- b. A large text box will appear. Enter some text, and click "Show Preview" to see the results. You can also click "Save Page" to commit your edit to Wikipedia.
- c. Experiment with the formatting buttons that appear above the large text box, and also with the symbols you can insert by clicking the links near the bottom of the page. Note that Wikipedia uses a special "markup" language to control the appearing of text. For example, you will see buttons for making text italicized or bold, etc.

3. Once you are comfortable with editing, make a real contribution to Wikipedia.

- a. Find a page that discusses a topic you are interested in and know something about. It can be anything from your favorite band to your favorite book to some scientific topic. Really anything.

- b. Edit the page to add some information, correct some existing information, or otherwise improves it in a substantive way. (If you are really ambitious, you can start a brand new page on a topic that Wikipedia doesn't cover yet.)
 - If you are having trouble with this, note that your contribution does not have to be terribly momentous. For example, you could find the page on your favorite movie, and add a section of memorable quotes. Or, you could add a useful link to the "External Links" section of the page.
 - Summarize your changes in the "Edit Summary" box that appears below the editing area. This helps other contributors track modifications to the page.
 - Be sure your contribution has some value, and cannot be interpreted as vandalism.

Part 3: Blogging (< 1 hour)

This quarter we're going to have a class blog for our class. You, the students, are the blog authors. (The staff will occasionally contribute too.) We'll ask you to write short blog posts about a variety of topics over the course of the quarter. Your posts will be visible to the rest of the class, but not to members of the general public. We hope to generate some interesting discussion. You are also expected to read other students' post and comment on them. Part of your course grade will come from these activities.

1. **Visit the course blog:**
<https://courses.cs.washington.edu/BraveNewWorld13/wp-login.php>
2. **Login with your username and password.**
3. **Configure your settings**
 - a) **Click "Profile" in the left column**
 - b) **Fill in the first and last names, if they are not already filled in.**
 - c) **Change your Nickname if you want to.**
 - d) **Change the Password.**
 - e) **Click "Update Profile"**
4. **Post a blog entry.**

- a. In the left column, click “Posts” and “Add new”
- b. Use the “Introductions / Lab 1” category - select it in the bottom right.
- c. In about 200-300 words, introduce yourself to the class and say a bit about your interests. Tell why you are taking the class and what you hope to learn.
- d. For the remainder of the blog post, describe what you did during this lab. Your post should contain the following elements.
 - i. A link to the Wikipedia page you modified. You should also explain why you chose this page, and what changes you made.
 - ii. A paragraph describing your experience playing LightBot. (For example: Was it fun? How far did you get? What strategies did you use?)
- e. Click “Publish” to post your blog entry. You can also click “Save Draft” to save a draft of your post before you are ready to publish it.
- f. To see other people’s posts, click on the word “Brave New World” followed by “Visit Site” in the upper left.