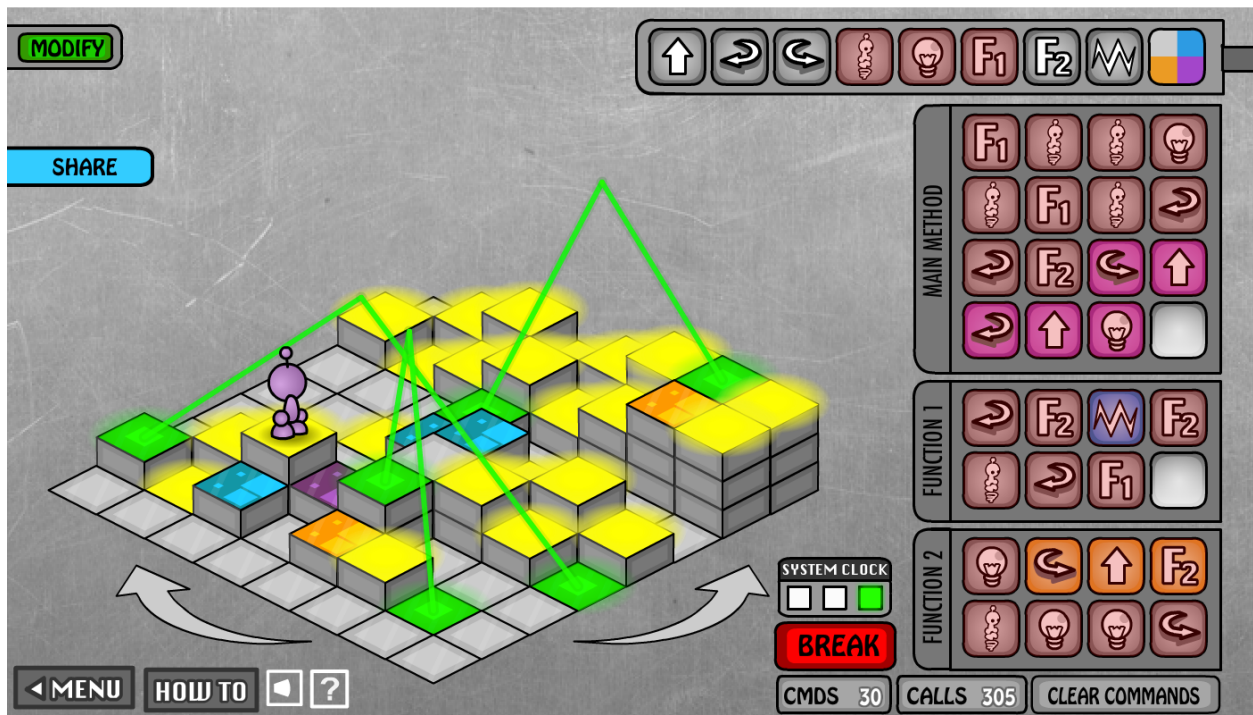
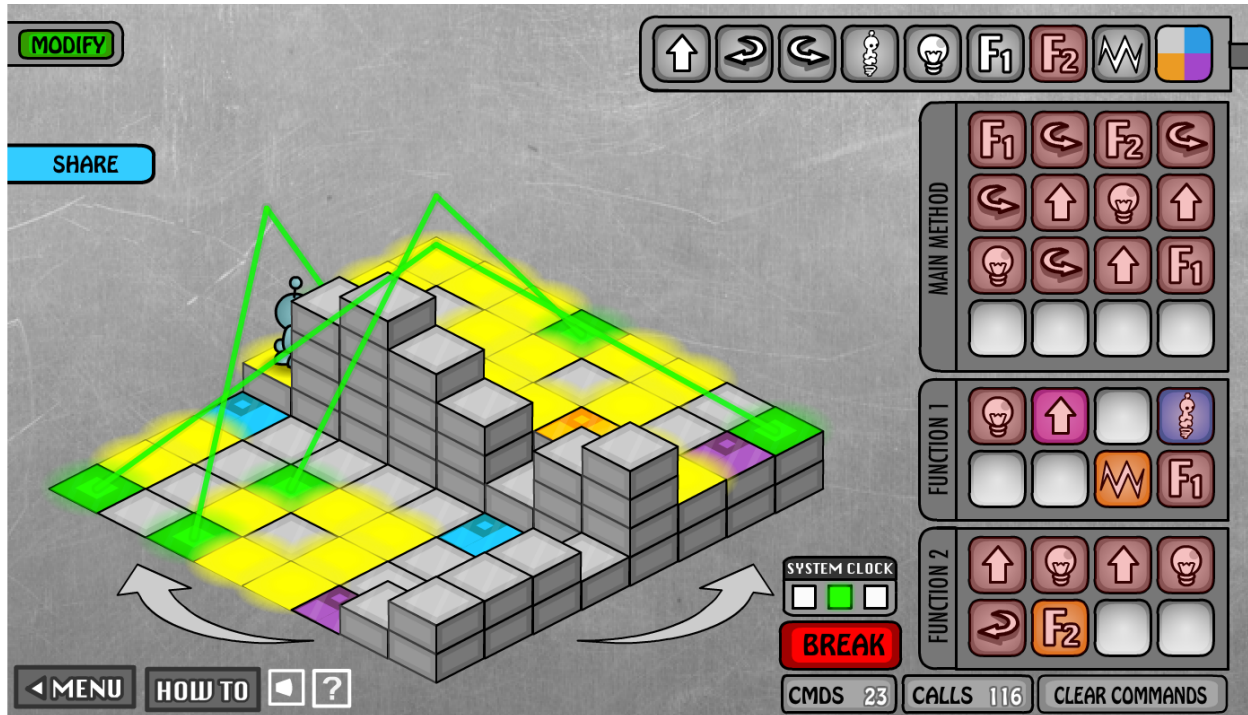


CS101 Project 1 Lightbot Levels



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Lightbot is a puzzle game that programs a robot to walk around a level and light up all the blue tiles to yellow. The project demonstrates computing tools and techniques such as procedures, loops and recursion to solve problems. Procedures are established through the series of commands defined as Proc1 and Proc2. Loops are designed with recursion as a procedure may refer to itself to repeat its own commands. Abstraction distinct between the external properties of the robot's movement and the details of the entity's internal composition which is the robot's program.

Challenges that I faced in this project were mostly due to the recursion. In order to set recursion into procedures, the process must end at a certain place, or it would just be a loop of the same instructions. Therefore, recursions are stopped when the Lightbot robot lid a light on a different colored square. This would allow the instructions of the robot to be changed to different commands and continue the main procedure. These functions can call themselves within their own codes in recursions, but transitioning these recursions makes the program more complex.

One of the lessons I learned when constructing my two levels on Lightbot is the complexity of abstraction. Making a level doesn't only take brainstorming, but it also takes an understanding on how to interact with the systems. Abstraction arranges the complexity of computer systems and hides everything, but the relevant data about an object in order to reduce complexity and increase efficiency. Constructing the procedures were of the robot were much more difficult than constructing the level designs because the procedures had to be very specific so that it lights all the blue squares.