**Blockly**

Blockly is a graphic programming editor that is web based. Blockly does not require any typing, and the user drags and drops blocks to create their program. Blockly can be used for many different purposes such as puzzles, mazes, turtle graphics, graphing calculator, code, plane seat calculator, and block factory. You mostly will only use Blockly to create Turtle Graphics, puzzles, or mazes.

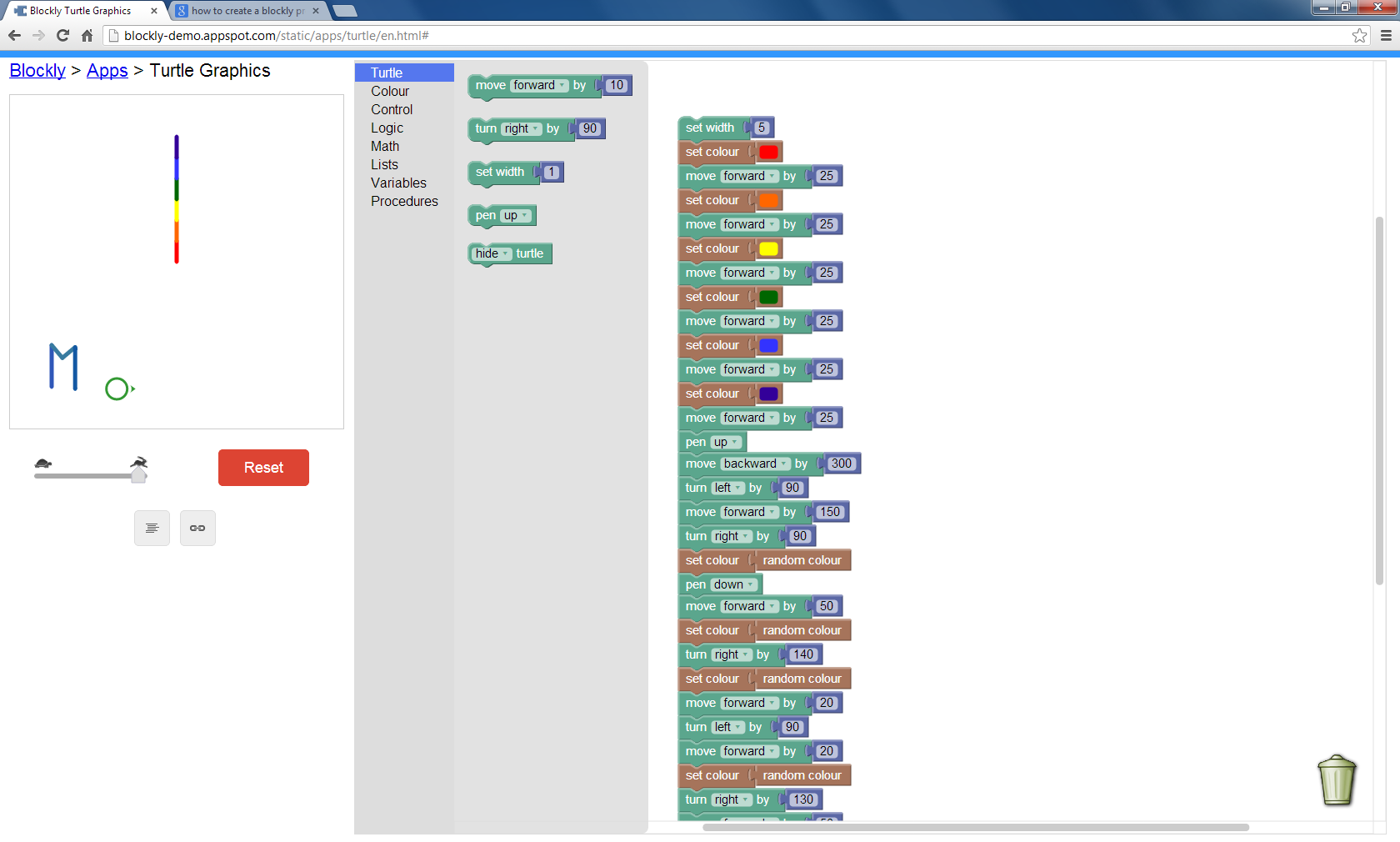
To create a Blockly Project:

1. Go to [http://blockly-demo.appspot.com/static/apps](http://blockly-demo.appspot.com/static/apps/index.html)
2. Click on the type of program (e.g. Turtle Graphics) you would like to create.
3. You will now be brought to a screen for the program you wish to create or run.

**Turtle Graphics**

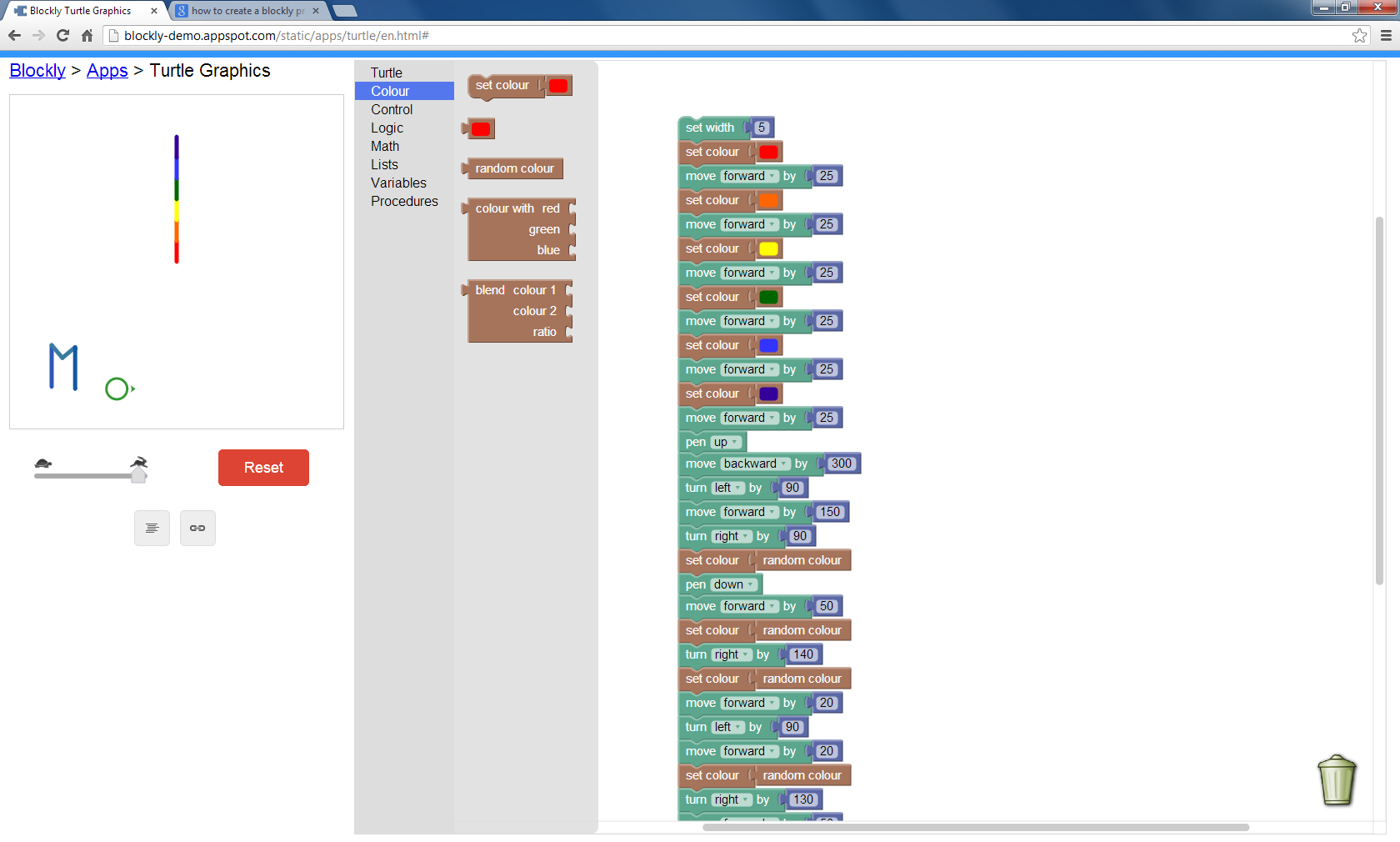
To find which block you would like to use, Blockly organizes them in categories (Turtle, Color, Control, Logic, Math, List, Variables, Procedures) Under each category there is a wide range of blocks you can use. To add a block to the program you simply drag it and drop it into the order that you want the actions to occur.

Turtle:



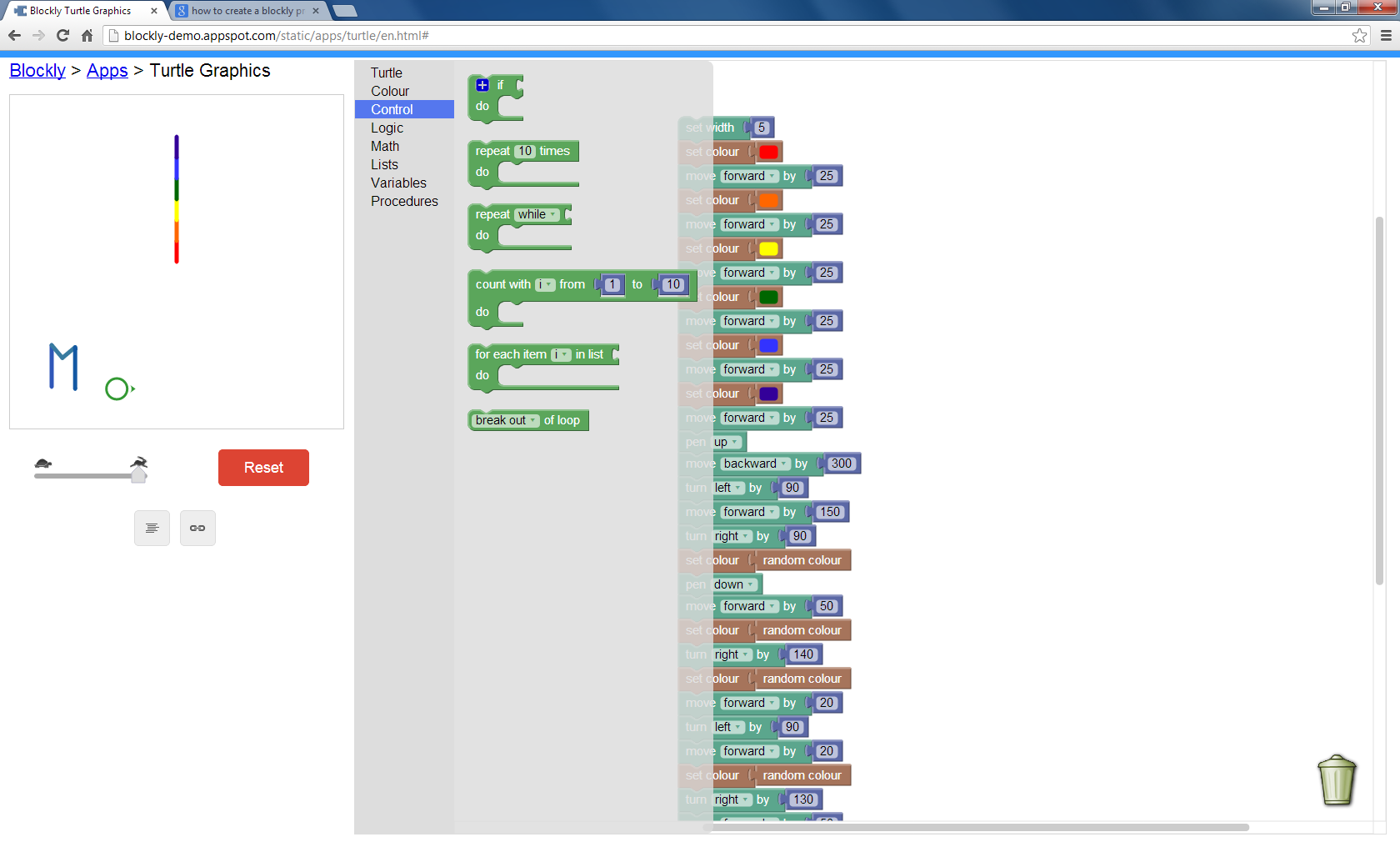
The turtle category looks like this. As you can see, there are different options for directions, and commands. To change the command the turtle does, you click the arrow next to direction and a drag down menu will appear for you to choose which direction. The blue blocks added to the side are increments in which you move. To change the amount a turtle moves, you either increase or decrease the amount in the move forward by block. To change the angle in which the turtle turns, you change the number in the turn right by, and to set the width you change the number in the set width.

Colour:



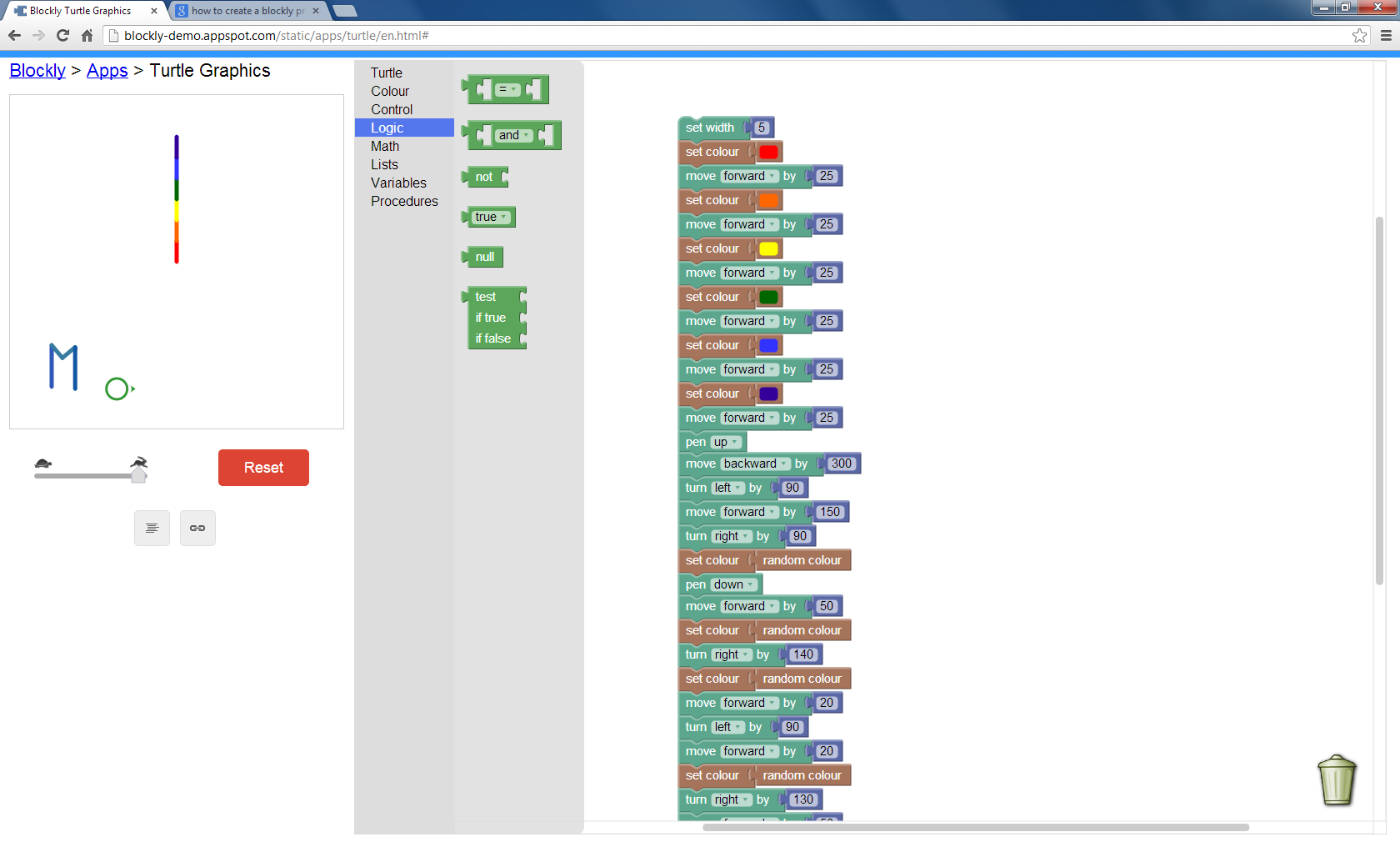
The color menu looks like this. This is used to change the color of the line the turtle leaves behind. Random color can be used if you want to make the color of the line the turtle leaves behind change each time.

Control:



The Control menu looks like this. Control is used for general if statements and if the user wants the turtle to repeat actions multiple times.

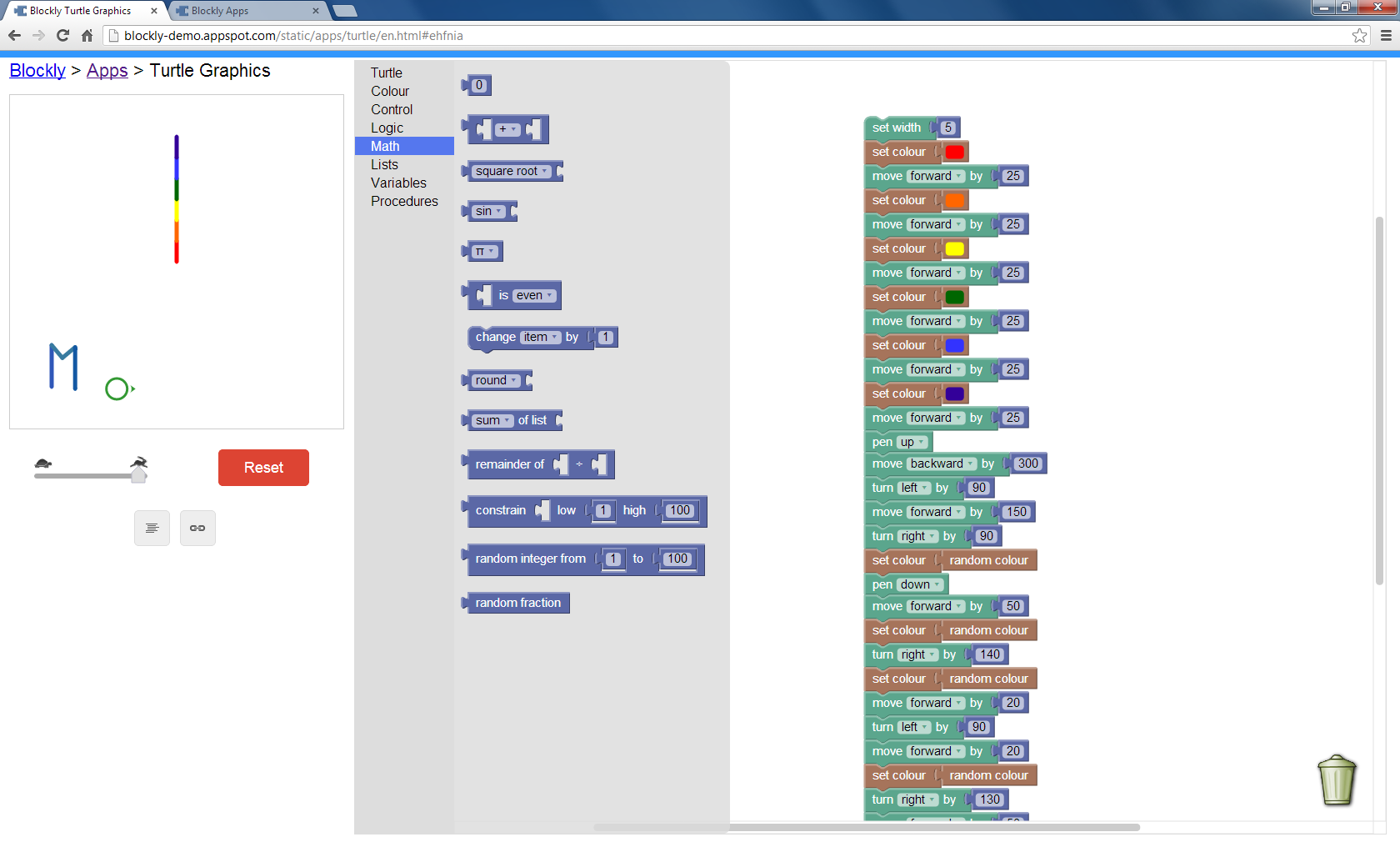
Logic:



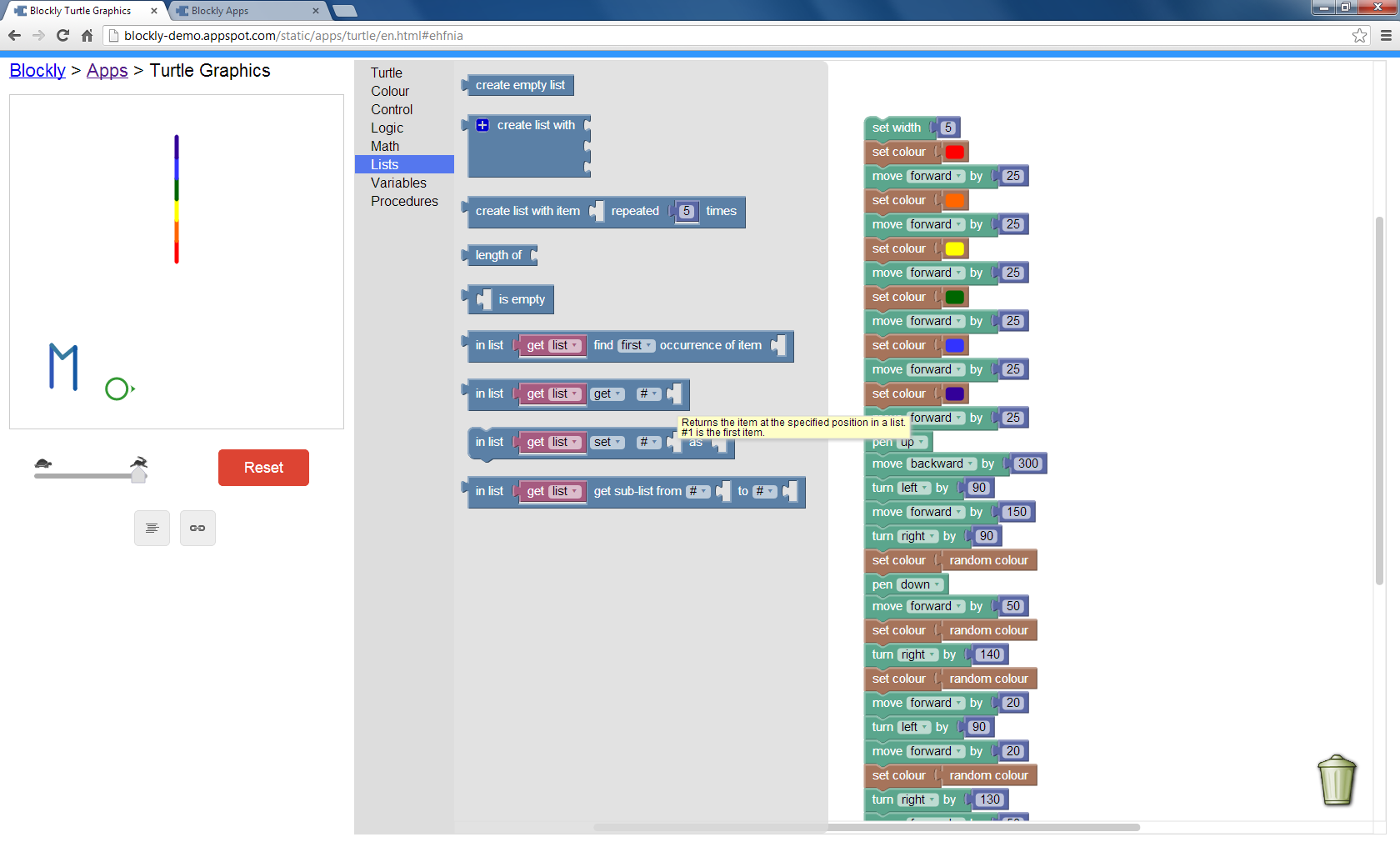
The Logic menu looks like this. This can be added to if statements when you want to check if something is equal to another, or if something ends up being true or false.

The following menus can be used for more complex programs.

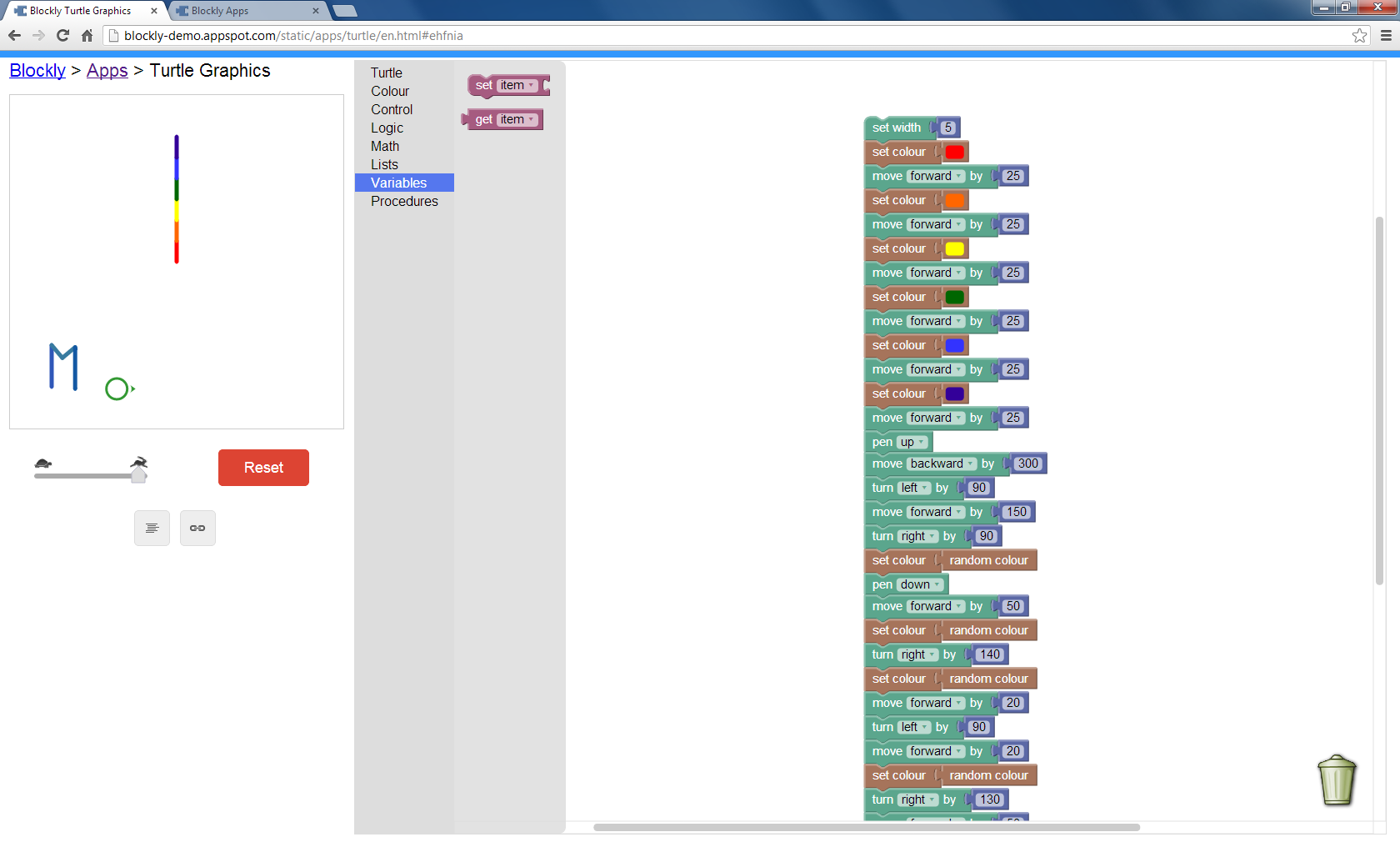
Math:



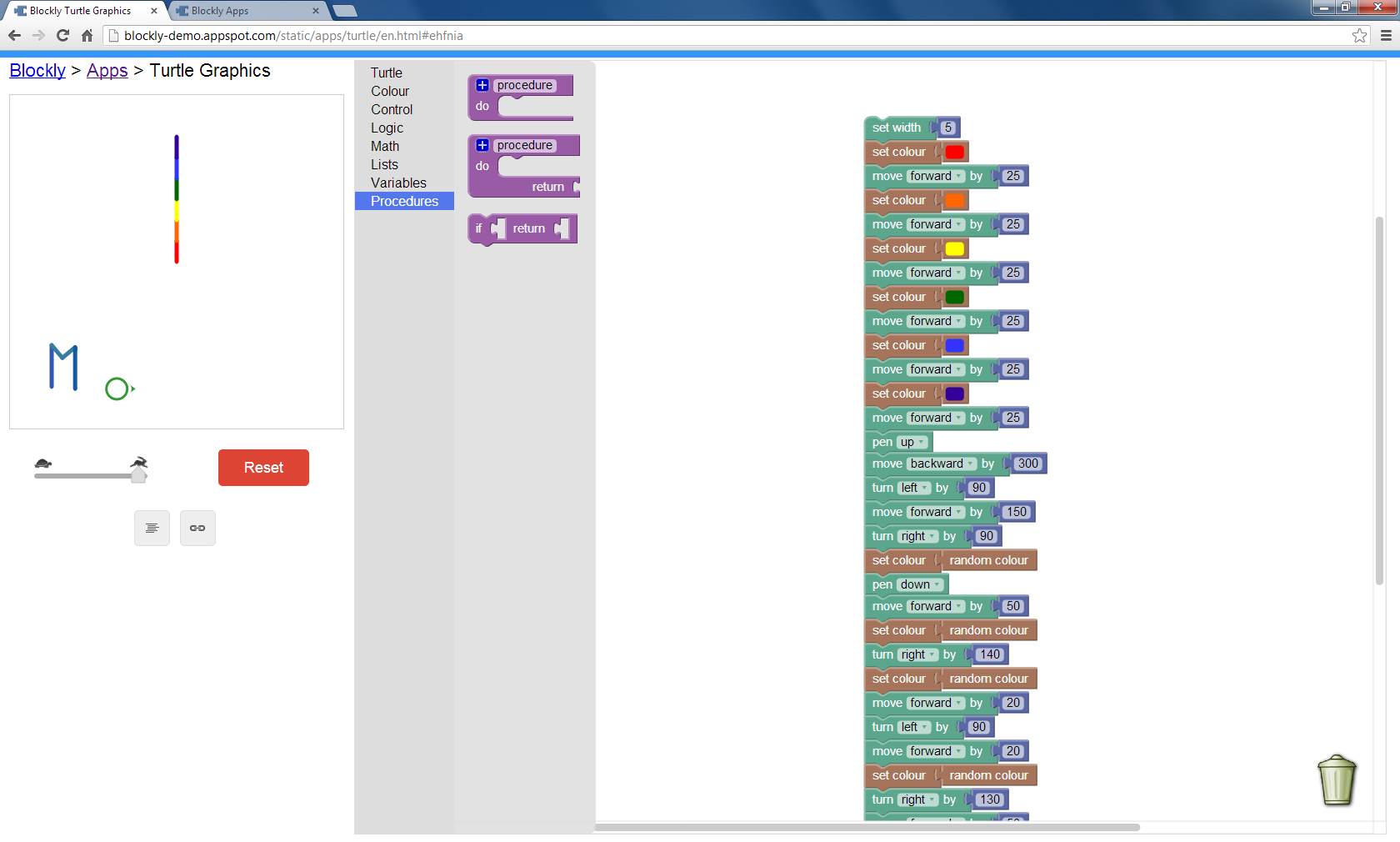
Lists:



Variables:



Procedures:



**Maze** **Blockly**

The maze version of Blockly cannot be used to create a maze, but you can play maze games on Blockly. The user drags and drops the commands the person must go through to reach the end point in the maze. As you go up in levels, they will get harder and you will have fewer blocks to use, so you have to use the blocks it gives you and logically organize them to go to the next level. By stacking blocks on top of each other it’s similar to having loops and if statements. The user continuously goes through the loop until they are finished or the loop or if statement no longer executes. Certain blocks can be used to reduce the number of blocks you need to include. These blocks are “repeat until finished” that you can use only 2 blocks to move in a straight line with 4 squares instead of 4 move forward blocks. By doing so, this makes the program more efficient.

**Here is the link to a Blockly program that I created, showing the many things a turtle can do in Turtle Graphics.**

http://blockly-demo.appspot.com/static/apps/turtle/en.html#ehfnia