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#1

Hardmath123**Scratcher**
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Hacking your own custom blocks

A [tutorial](#)

Basically, in this tutorial I'm going to demonstrate how to mess with blocks offline so that you can manually insert reporters in forbidden spaces, and even create custom blocks.

[Step 1: Setup](#)

Open up a new Scratch 2.0 project and make a new custom block. For this tutorial, I'm going to make a block that automates a boring thing: adding a value many times to a list. You will be able to, with one block, add an arbitrary value to a list, an arbitrary number of times.

Make a new Scratch project, and add a new custom block:

```
define [Fill [list] with [a],(n) times]
repeat (n)
  add [a] to [list v]
```

Pretty straightforward. Remember to make a list to get the list blocks!

[Step 2: Downloading a project](#)

Now select *File>>Export to local drive* to save it to your local disk. In the popup, rename it to "Hack.zip". Note the ".zip", not ".sb2". Pick any place to save it. Now, unarchive the zip.

On Mac or Windows, just double-click the zip file. On Mac and Linux, you can also use the "unzip" command-line utility.

```
$ cd ~/path/to/zip's/folder
$ unzip Hack.zip
```

You should get a whole bunch of goodies:

- project.json!
- 0.png: this is the image which contains pen trails/stamps
- 1,2,3.svg: costumes and backgrounds
- 0.wav: sounds

The second two items are the defaults loaded into a project.
(At this point, you can safely delete the zip file.)

Step 3: Modifying the code!

Now, open up project.json in your favorite text editor/code editor. Here's what you should see:

```
{
  "objName": "Stage",
  "lists": [{
    "listName": "dummy",
    "contents": [],
    "isPersistent": false,
    "target": "Stage",
    "x": 5,
    "y": 5,
    "width": 102,
    "height": 202,
    "visible": true
  }],
  "sounds": [{
    "soundName": "pop",
    "soundID": 0,
    "md5": "83a9787d4cb6f3b7632b4ddfeb74367.wav",
    "sampleCount": 258,
    "rate": 11025,
    "format": ""
  }],
  "costumes": [{
    "costumeName": "backdrop1",
    "baseLayerID": 3,
    "baseLayerMD5": "790f7842ea100f71b34e5b9a5bfbcaa1.svg",
    "rotationCenterX": 240,
    "rotationCenterY": 180
  }],
  "currentCostumeIndex": 0,
  "penLayerMD5": "279467d0d49e152706ed66539b577c00.png",
  "tempoBPM": 60,
  "children": [{
    "objName": "Scratch Cat",
```

Don't panic! I'll walk you through it.

The format you see with all the colons and brackets is called JSON ([JavaScript](#) Object Notation). It's a simple notation to describe data structures. Read more [here](#), but for now I'll explain the basics as we go.

If you have a search utility in your text editor (try ctrl-F), look for "Scratch Cat" (the name of the sprite in which we added the custom block).

These lines are what we will be messing with. "objName" means the sprite's name, and "scripts" is a list of scripts.

Replace that bit, up to but not including the line "sounds" with:

```

"objName": "Scratch Cat",
"scripts": [[28,
              101.9,
              ["procDef", "Fill %m.list with %s , %n times", ["li
st", "a", "n"], ["", "something", 10], true],
              ["doRepeat", ["getParam", "n"],
               ["appendToList:", ["getParam", "a"], ["ge
tParam", "list"]]]
              ]]]

```

All I did was replace a text input with a list drop down. A complete list of %-things can be found [here](#), courtesy nXll. I also changed the input to the append function. Finally, I changed the default values in the first line for a professional look.

Step 4: Reuploading

Now save the json file and quit. You need to re-zip these files.

On Windows, right-click the folder in which you saved the original zip, and choose "Send to">>"Compressed (Zipped) folder". On Mac, right-click the folder and select "Compress...". On Mac and Linux you can also use the "zip" utility basically the same way we did above. Rename the new file to "Hack.sb2".

Open up the Scratch project and select File>>Import from local drive. If it gives you any warnings, select "Ok". Enjoy!

[Safari 6.0.5 on a MacBook Pro 13"](#) running [Mac OSX Mountain Lion 10.8.4](#) with [Flash Player 11.7.700.225](#).

```
Hardmaths-MacBook-Pro:~ Hardmath$ sudo make $(whoami) a sandwich
```

Feb. 3, 2013 06:00:10

#2

Imaginelit

I can't seem to make the inputs go after specific words, so I'm pretty sure I can just change the format in the file, right?