CMPM 120

Source Code Control

Install Git

https://git-scm.com/

Resources and Software

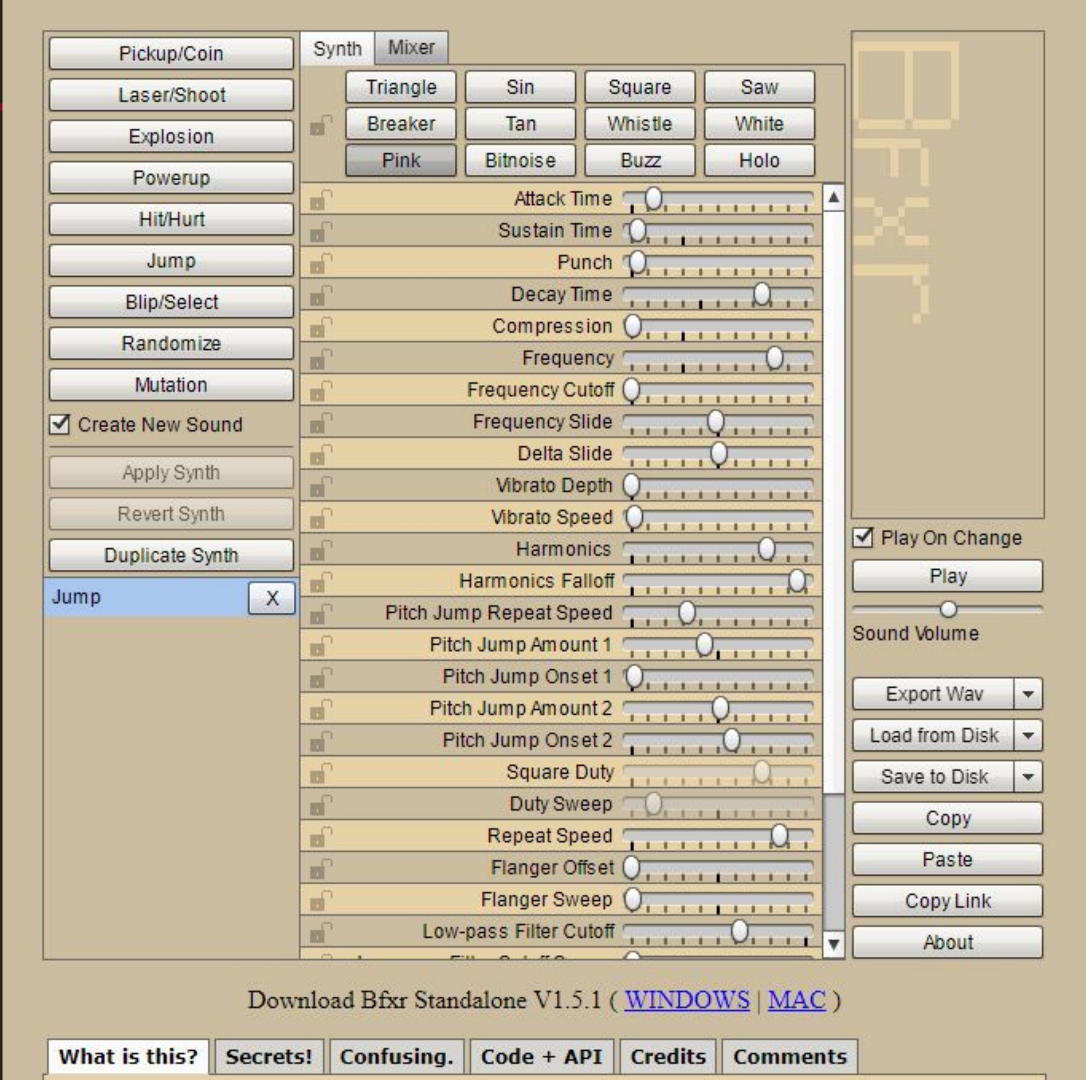
bfxr

https://www.bfxr.net

Sound effect generator

Browser version uses Flash

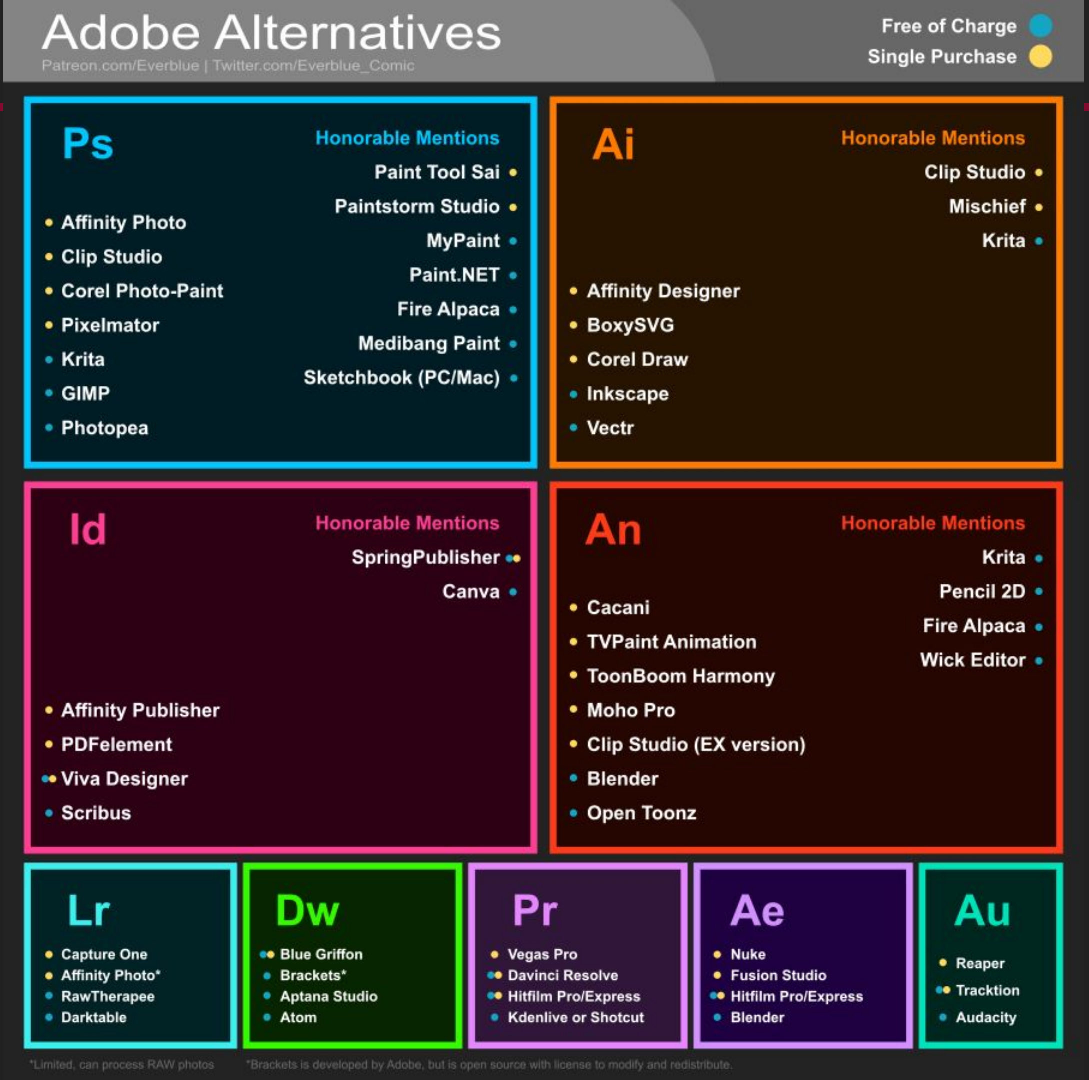
Also has a standalone downloaded version



Alternatives

https://www.patreon.com/posts/adobe-software-26834357

If you don't have a subscription to Adobe's software (Photoshop, etc.) then it's helpful to know about all of the free and inexpensive alternatives.



Adobe Alternatives

Patreon.com/Everblue | Twitter.com/Everblue_Comic

Free of Charge 🔵
Single Purchase 🟡

Ps

- 🟡 Affinity Photo
- 🟡 Clip Studio
- 🟡 Corel Photo-Paint
- 🟡 Pixelmator
- 🔵 Krita
- 🔵 GIMP
- 🔵 Photopea

Honorable Mentions

- Paint Tool Sai 🟡
- Paintstorm Studio 🟡
- MyPaint 🔵
- Paint.NET 🔵
- Fire Alpaca 🔵
- Medibang Paint 🔵
- Sketchbook (PC/Mac) 🔵

Ai

- 🟡 Affinity Designer
- 🟡 BoxySVG
- 🟡 Corel Draw
- 🔵 Inkscape
- 🔵 Vectr

Honorable Mentions

- Clip Studio 🟡
- Mischief 🟡
- Krita 🔵

Id

- 🟡 Affinity Publisher
- 🟡 PDFelement
- 🔵🟡 Viva Designer
- 🔵 Scribus

Honorable Mentions

- SpringPublisher 🔵🟡
- Canva 🔵

An

- 🟡 Cacani
- 🟡 TVPaint Animation
- 🟡 ToonBoom Harmony
- 🟡 Moho Pro
- 🟡 Clip Studio (EX version)
- 🔵 Blender
- 🔵 Open Toonz

Honorable Mentions

- Krita 🔵
- Pencil 2D 🔵
- Fire Alpaca 🔵
- Wick Editor 🔵

Lr

- 🟡 Capture One
- 🟡 Affinity Photo*
- 🔵 RawTherapee
- 🔵 Darktable

Dw

- 🔵🟡 Blue Griffon
- 🔵 Brackets*
- 🔵 Aptana Studio
- 🔵 Atom

Pr

- 🟡 Vegas Pro
- 🔵🟡 Davinci Resolve
- 🔵🟡 Hitfilm Pro/Express
- 🔵 Kdenlive or Shotcut

Ae

- 🟡 Nuke
- 🟡 Fusion Studio
- 🔵🟡 Hitfilm Pro/Express
- 🔵 Blender

Au

- 🟡 Reaper
- 🔵🟡 Tracktion
- 🔵 Audacity

*Limited, can process RAW photos

*Brackets is developed by Adobe, but is open source with license to modify and redistribute.

More Tools & Resources

http://ludumdare.com/compo/tools/

http://ludumdare.com/compo/2013/12/19/list-of-content-generators-resource-sites-2/

https://github.com/Kavex/GameDev-Resources

https://globalgamejam.org/jammer-resources

https://game-development.zeef.com/david.arcila

Today we learn

Git

Objectives

You should be able to...

- ➔ Describe what **source code control** is
- ➔ Demonstrate how to **create a repository** and **commit changes**
- ➔ **Pull** and **push** from a remote repository
- ➔ Create **branches** and **merge** them
- ➔ Demonstrate how to **fix a merge conflict**

Problem Solving

Define the actual problem

Think about it

Plan a solution, including alternate plans

Carry out the plan

Look Back: verify you solved the original problem.

Pair up

One of you will be the **listener** and the other the **problem solver**

Problem Solver

Discuss the problem with your partner

Define the problem out loud

Start to **solve the problem**, talking out loud: your partner is only there to listen

Go back over any part of the problem that you wish. Use words like "I'm stuck. I'd better start over" or "No, that doesn't work...let's see"

Record what you think you learned

Listener

You are a **questioner,** not a critic.

Encourage the problem solver to keep talking, but do not interrupt

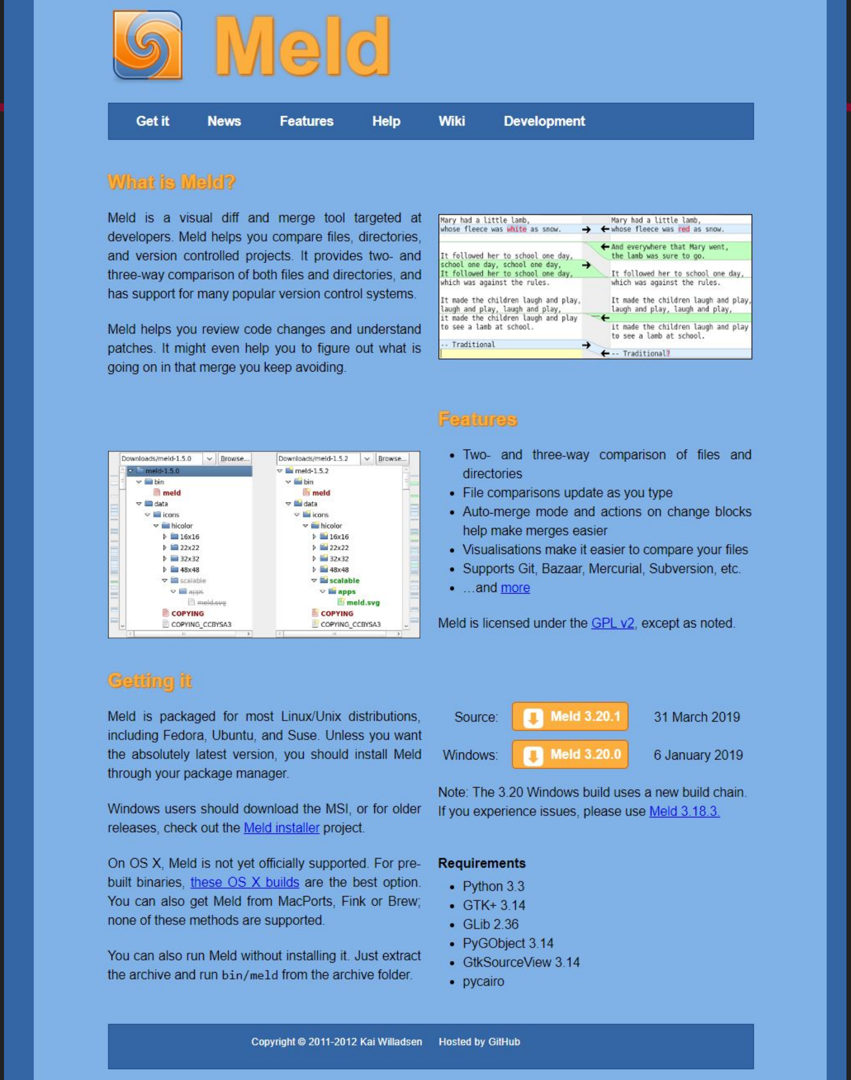
Make sure that you **understand** what the problem solver is doing: stop them and say "I don't understand" or "I can't follow that"

Do **not** give hints. Pointing out errors is fine.

Git Demonstration

Merge tools

https://meldmerge.org/



What is Meld?

Meld is a visual diff and merge tool targeted at developers. Meld helps you compare files, directories, and version controlled projects. It provides two- and three-way comparison of both files and directories, and has support for many popular version control systems.

Meld helps you review code changes and understand patches. It might even help you to figure out what is going on in that merge you keep avoiding.

```
Mary had a little lamb,                    Mary had a little lamb,
whose fleece was white as snow.      →  ←  whose fleece was red as snow.

                                        ←  And everywhere that Mary went,
It followed her to school one day,         the lamb was sure to go.
school one day, school one day,      →
It followed her to school one day,         It followed her to school one day,
which was against the rules.               which was against the rules.

It made the children laugh and play,       It made the children laugh and play,
laugh and play, laugh and play,            laugh and play, laugh and play,
it made the children laugh and play     ←
to see a lamb at school.                   it made the children laugh and play
                                           to see a lamb at school.
-- Traditional                       →
                                        ←  -- Traditional?
```

Features

- Two- and three-way comparison of files and directories
- File comparisons update as you type
- Auto-merge mode and actions on change blocks help make merges easier
- Visualisations make it easier to compare your files
- Supports Git, Bazaar, Mercurial, Subversion, etc.
- …and more

Meld is licensed under the GPL v2, except as noted.

Getting it

Meld is packaged for most Linux/Unix distributions, including Fedora, Ubuntu, and Suse. Unless you want the absolutely latest version, you should install Meld through your package manager.

Windows users should download the MSI, or for older releases, check out the Meld installer project.

On OS X, Meld is not yet officially supported. For pre-built binaries, these OS X builds are the best option. You can also get Meld from MacPorts, Fink or Brew; none of these methods are supported.

You can also run Meld without installing it. Just extract the archive and run `bin/meld` from the archive folder.

Source:	Meld 3.20.1	31 March 2019
Windows:	Meld 3.20.0	6 January 2019

Note: The 3.20 Windows build uses a new build chain. If you experience issues, please use Meld 3.18.3.

Requirements

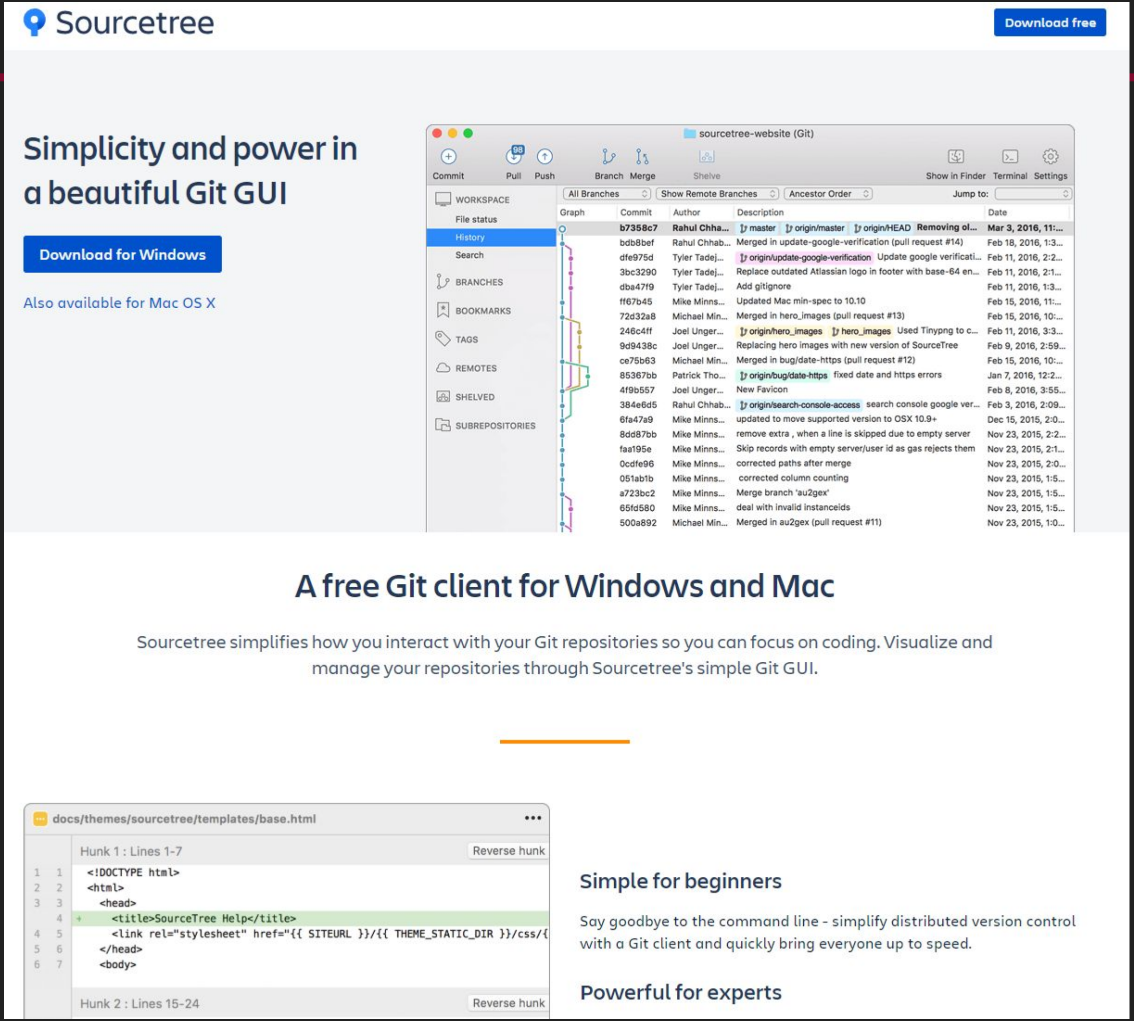
- Python 3.3
- GTK+ 3.14
- GLib 2.36
- PyGObject 3.14
- GtkSourceView 3.14
- pycairo

Git tools

https://www.sourcetreeapp.com/

https://www.gitkraken.com/

https://git-scm.com/downloads/guis



Simplicity and power in a beautiful Git GUI

sourcetree-website (Git)

Graph	Commit	Author	Description	Date
	b7358c7	Rahul Chha...	master origin/master origin/HEAD Removing ol...	Mar 3, 2016, 11:...
	bdb8bef	Rahul Chhab...	Merged in update-google-verification (pull request #14)	Feb 18, 2016, 1:3...
	dfe975d	Tyler Tadej...	origin/update-google-verification Update google verificati...	Feb 11, 2016, 2:2...
	3bc3290	Tyler Tadej...	Replace outdated Atlassian logo in footer with base-64 en...	Feb 11, 2016, 2:1...
	dba47f9	Tyler Tadej...	Add gitignore	Feb 11, 2016, 1:3...
	ff67b45	Mike Minns...	Updated Mac min-spec to 10.10	Feb 15, 2016, 11:...
	72d32a8	Michael Min...	Merged in hero_images (pull request #13)	Feb 15, 2016, 10:...
	246c4ff	Joel Unger...	origin/hero_images hero_images Used Tinypng to c...	Feb 11, 2016, 3:3...
	9d9438c	Joel Unger...	Replacing hero images with new version of SourceTree	Feb 9, 2016, 2:59...
	ce75b63	Michael Min...	Merged in bug/date-https (pull request #12)	Feb 15, 2016, 10:...
	85367bb	Patrick Tho...	origin/bug/date-https fixed date and https errors	Jan 7, 2016, 12:2...
	4f9b557	Joel Unger...	New Favicon	Feb 8, 2016, 3:55...
	384e6d5	Rahul Chhab...	origin/search-console-access search console google ver...	Feb 3, 2016, 2:09...
	6fa47a9	Mike Minns...	updated to move supported version to OSX 10.9+	Dec 15, 2015, 2:0...
	8dd87bb	Mike Minns...	remove extra , when a line is skipped due to empty server	Nov 23, 2015, 2:2...
	faa195e	Mike Minns...	Skip records with empty server/user id as gas rejects them	Nov 23, 2015, 2:1...
	0cdfe96	Mike Minns...	corrected paths after merge	Nov 23, 2015, 2:0...
	051ab1b	Mike Minns...	corrected column counting	Nov 23, 2015, 1:5...
	a723bc2	Mike Minns...	Merge branch 'au2gex'	Nov 23, 2015, 1:5...
	65fd580	Mike Minns...	deal with invalid instanceids	Nov 23, 2015, 1:5...
	500a892	Michael Min...	Merged in au2gex (pull request #11)	Nov 23, 2015, 1:0...

A free Git client for Windows and Mac

Sourcetree simplifies how you interact with your Git repositories so you can focus on coding. Visualize and manage your repositories through Sourcetree's simple Git GUI.

docs/themes/sourcetree/templates/base.html

Hunk 1 : Lines 1-7

```
 <!DOCTYPE html>
 <html>
   <head>
+    <title>SourceTree Help</title>
     <link rel="stylesheet" href="{{ SITEURL }}/{{ THEME_STATIC_DIR }}/css/{
   </head>
   <body>
```

Hunk 2 : Lines 15-24

Simple for beginners

Say goodbye to the command line - simplify distributed version control with a Git client and quickly bring everyone up to speed.

Powerful for experts

GitHub and Alternatives

https://github.com/

https://bitbucket.org/product

https://about.gitlab.com/product/source-code-management/

More Debugging Tips

Useful random debugging advice

1. When you find a problem, change something so that same problem can't happen again
   a. assert()
   b. Keep a debugging notebook
2. Make debug tools
   a. Quicker feedback is better
   b. Display values live if possible
3. Only make one change at a time and then test it
4. Just because you paused the game doesn't mean it's paused
   a. And stopping one update doesn't mean you stopped all of them
5. console.log() is slow
   a. Faster to print an array as a string than to individually print the contents

Useful random debugging advice

Walk through your code step by step, explaining to yourself what is supposed to happen

Useful random debugging advice

1. When you find a problem, change something so that same problem can't happen again
   a. assert()
   b. Keep a debugging notebook
2. Make debug tools
   a. Quicker feedback is better
   b. Display values live if possible
3. Only make one change at a time and then test it
4. Just because you paused the game doesn't mean it's paused
   a. And stopping one update doesn't mean you stopped all of them
5. console.log() is slow
   a. Faster to print an array as a string than to individually print the contents

Useful random debugging advice

1. When you find a problem, change something so that same problem can't happen again
    a. assert()
    b. Keep a debugging notebook
2. Make debug tools
    a. Quicker feedback is better
    b. Display values live if possible
3. Only make one change at a time and then test it
4. Just because you paused the game doesn't mean it's paused
    a. And stopping one update doesn't mean you stopped all of them
5. console.log() is slow
    a. Faster to print an array as a string than to individually print the contents

Useful random debugging advice

1. When you find a problem, change something so that same problem can't happen again
    a. assert()
    b. Keep a debugging notebook
2. Make debug tools
    a. Quicker feedback is better
    b. Display values live if possible
3. Only make one change at a time and then test it
4. Just because you paused the game doesn't mean it's paused
    a. And stopping one update doesn't mean you stopped all of them
5. console.log() is slow
    a. Faster to print an array as a string than to individually print the contents

Useful random debugging advice

1. When you find a problem, change something so that same problem can't happen again
   a. assert()
   b. Keep a debugging notebook
2. Make debug tools
   a. Quicker feedback is better
   b. Display values live if possible
3. Only make one change at a time and then test it
4. Just because you paused the game doesn't mean it's paused
   a. And stopping one update doesn't mean you stopped all of them
5. console.log() is slow
   a. Faster to print an array as a string than to individually print the contents

AABB characters and slopes

An example of a real-world physics-and-debugging problem in a game with 2D physics like yours

https://twitter.com/eevee/status/1133248372624613376