

ELECTRONIC DIGITAL COMPUTER

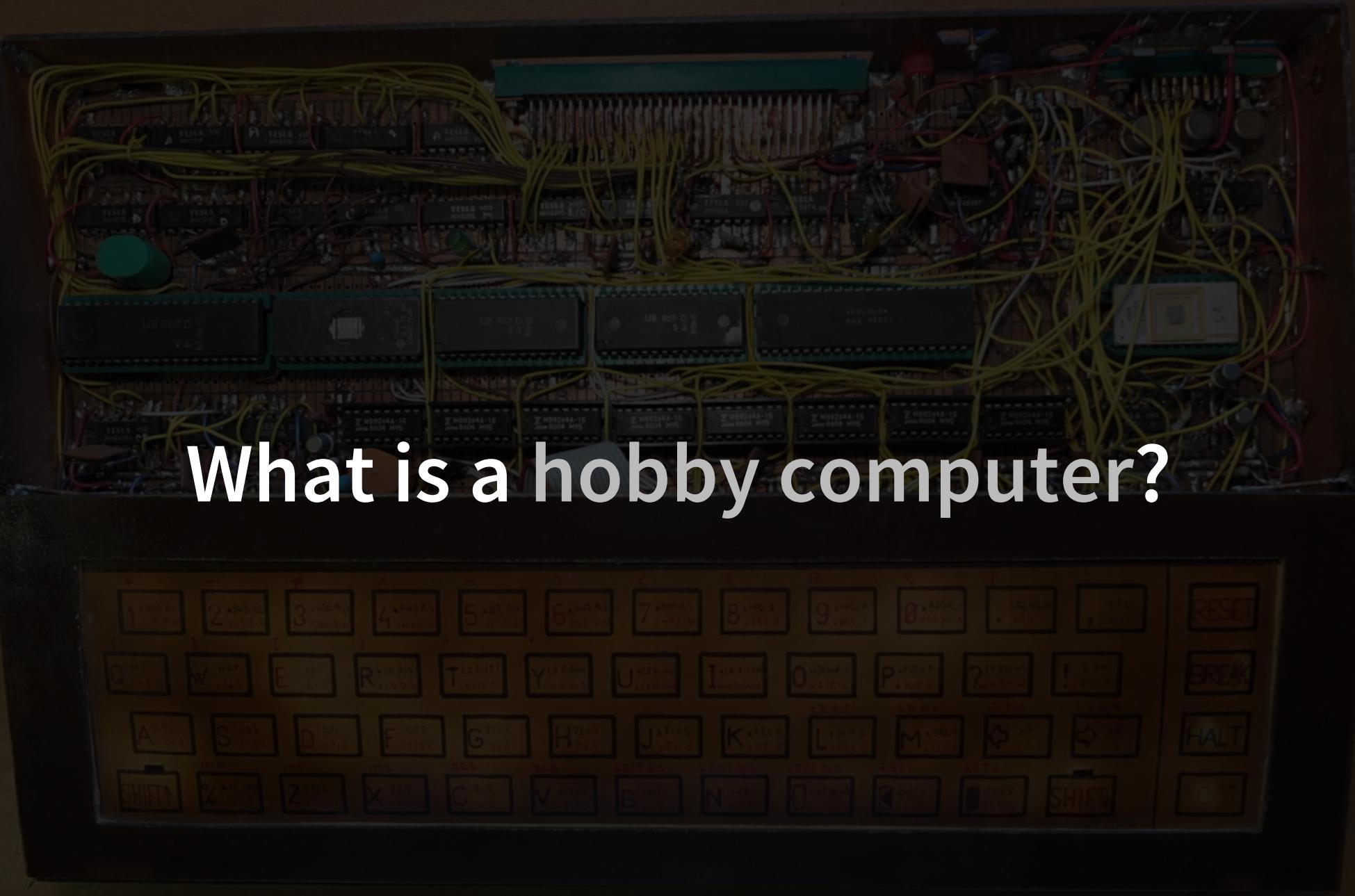
BUILD IT YOURSELF and CREATE YOUR OWN PROGRAMS

The Cloud is Your Free Hobby Computer

by [Les Orchard / @lmorchard](#)

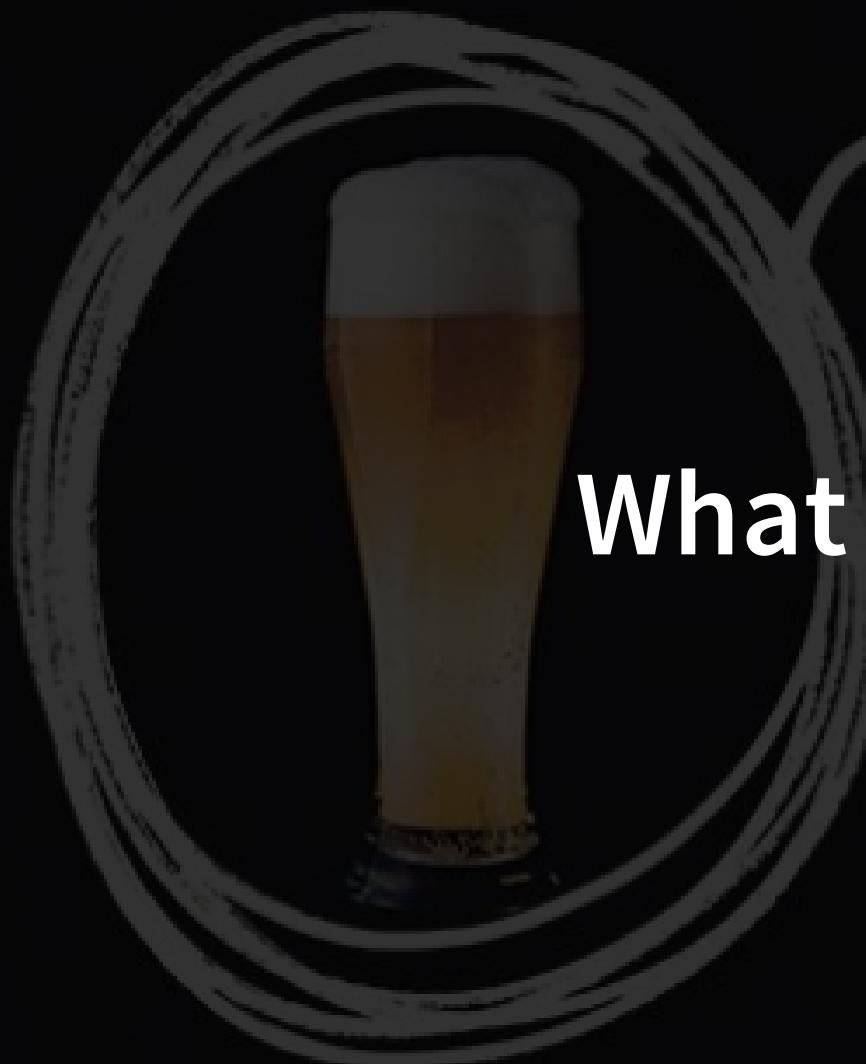
ERENT PROGRAMS...
AGE "HOW TO" BOOK

- GAMES ■ PREDICTING
- COMPUTER PROGRAMMING
- BINARY MATHEMATICS ■
- PROJECTS ■ COMPUTERIZED MEDICINE
- TRANSLATIONS ■ LOGIC ■



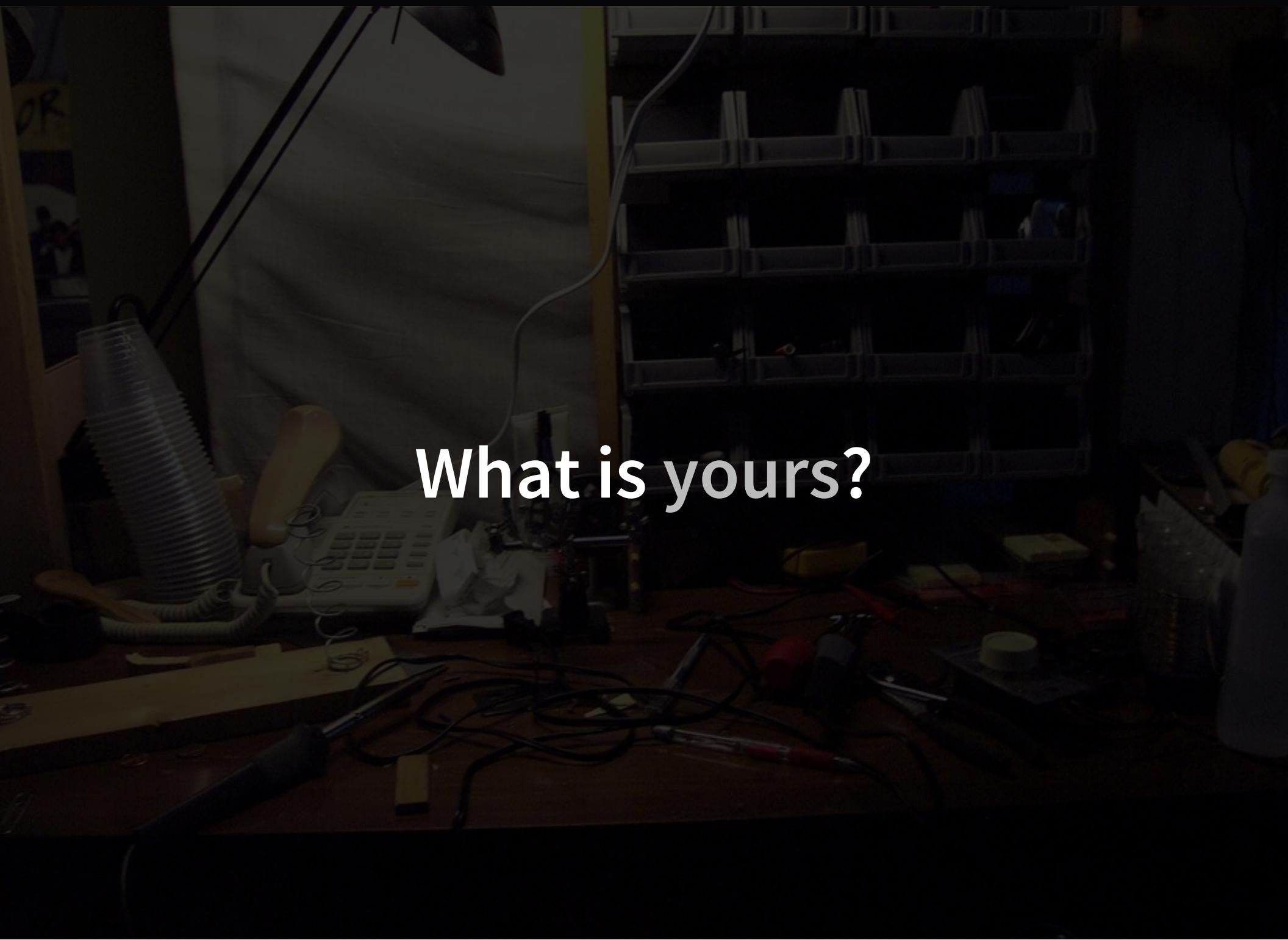
A close-up photograph of a vintage hobby computer's internal circuit board and keyboard. The circuit board is densely populated with various electronic components, including integrated circuits, resistors, capacitors, and connectors. Numerous yellow and red wires are visible, connecting the different parts. Below the board, a keyboard is shown with keys labeled with symbols like +, -, *, =, >, <, ^, ~, !, ?, and various letters and numbers. Some keys have multiple labels, such as 'LD ALU' and 'LD STA' on one key.

What is a hobby computer?



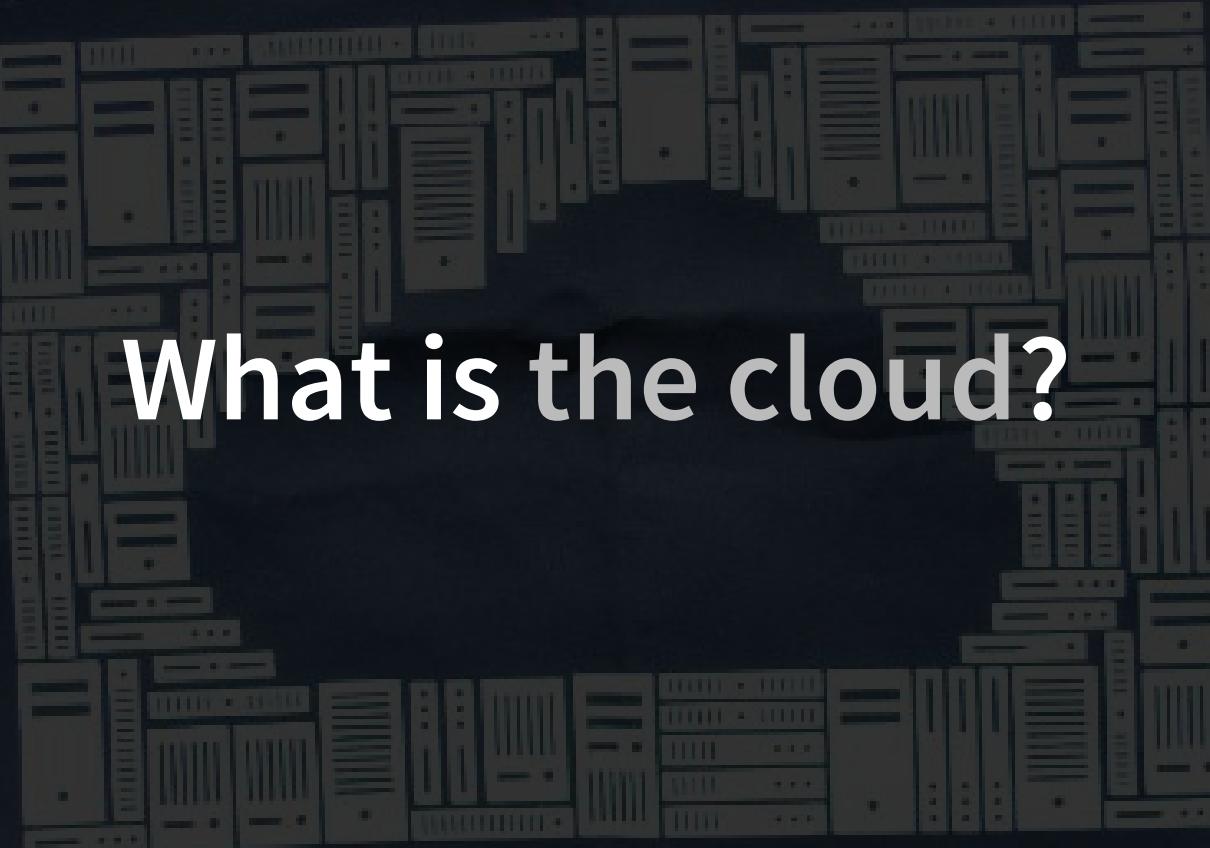
What is free?

free
beer*

A dark, cluttered workshop or garage interior. In the foreground, a workbench is covered with various tools and equipment, including a power drill, a keyboard, and a stack of plastic cups. A yellow extension cord runs across the floor. In the background, there are shelves filled with containers and boxes, and a ladder leaning against a wall.

What is yours?

There is NO CLOUD, just



What is the cloud?

other people's computers

Borrowing Other People's Computers For Your Hobbies Without Paying Any Money

by [Les Orchard / @lmorchard](#)

GitHub

Search GitHub

Explore Gist Blog Help

Imorchard + ▾ 🔍 ⚙️ 📡



Les Orchard
Imorchard

Mozilla Corporation
Royal Oak, MI, USA
me@imorchard.com
<http://imorchard.com/>
Joined on Aug 23, 2008

212 Followers 513 Starred 128 Following

Organizations



Contributions Repositories Public activity

Edit profile

Imorchard created branch `master` at [Imorchard/cloud-hobby-computer-slides](#) 14 hours ago

Imorchard created repository [Imorchard/cloud-hobby-computer-slides](#) 14 hours ago

a day ago
Imorchard pushed to [patch-1](#) at [Imorchard/reveal.js](#)
88325fd markdown plugin should strip leading white space from all lines

Imorchard forked [hakimel/reveal.js](#) to [Imorchard/reveal.js](#) a day ago

2 days ago
Imorchard pushed to [master](#) at [Imorchard/blog.imorchard.com](#)
d543200 Okay, one more picture.

2 days ago
Imorchard pushed to [master](#) at [Imorchard/blog.imorchard.com](#)
349a0af New picture toward the bottom

2 days ago
Imorchard pushed to [master](#) at [Imorchard/blog.imorchard.com](#)
00d7c71 Copy thumbnail images locally
723ce71 Goodbye, Puck.
[View comparison for these 2 commits >](#)

Imorchard starred [db48x/emularity](#) 3 days ago

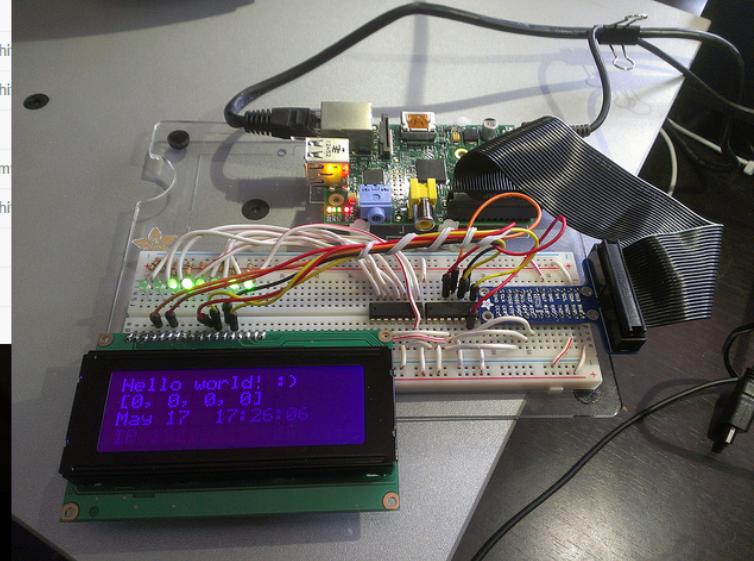
Imorchard starred [eeejay/espeak](#) 3 days ago

GitHub + Raspberry PI = <3

A screenshot of a GitHub repository page for "Imorchart / raspiriments". The repository description is "A dumping ground for my Raspberry Pi experiments — Edit". It shows 8 commits, 1 branch (master), 0 releases, and 1 contributor (Imorchart). The master branch has 8 commits, the latest being authored by Imorchart on May 18, 2013, with a commit message "Playing with using SPI rather than bit-banging on the shift registers". The commits list includes:

- gitignore: Initial commit
- Adafruit_CharLCD.py: Playing with using SPI rather than bit-banging on the shi...
- Adafruit_CharLCD_IPclock_ex...: Playing with using SPI rather than bit-banging on the shi...
- README.md: Initial commit
- ShiftOutputGPIO.py: First ugly hacks to make Adafruit_CharLCD work with m...
- ShiftOutputSPI.py: Playing with using SPI rather than bit-banging on the shi...
- button_led.py: First dump of tinkering
- lcd_shift_play.py: Further tinkering
- shift_play.py: Further tinkering

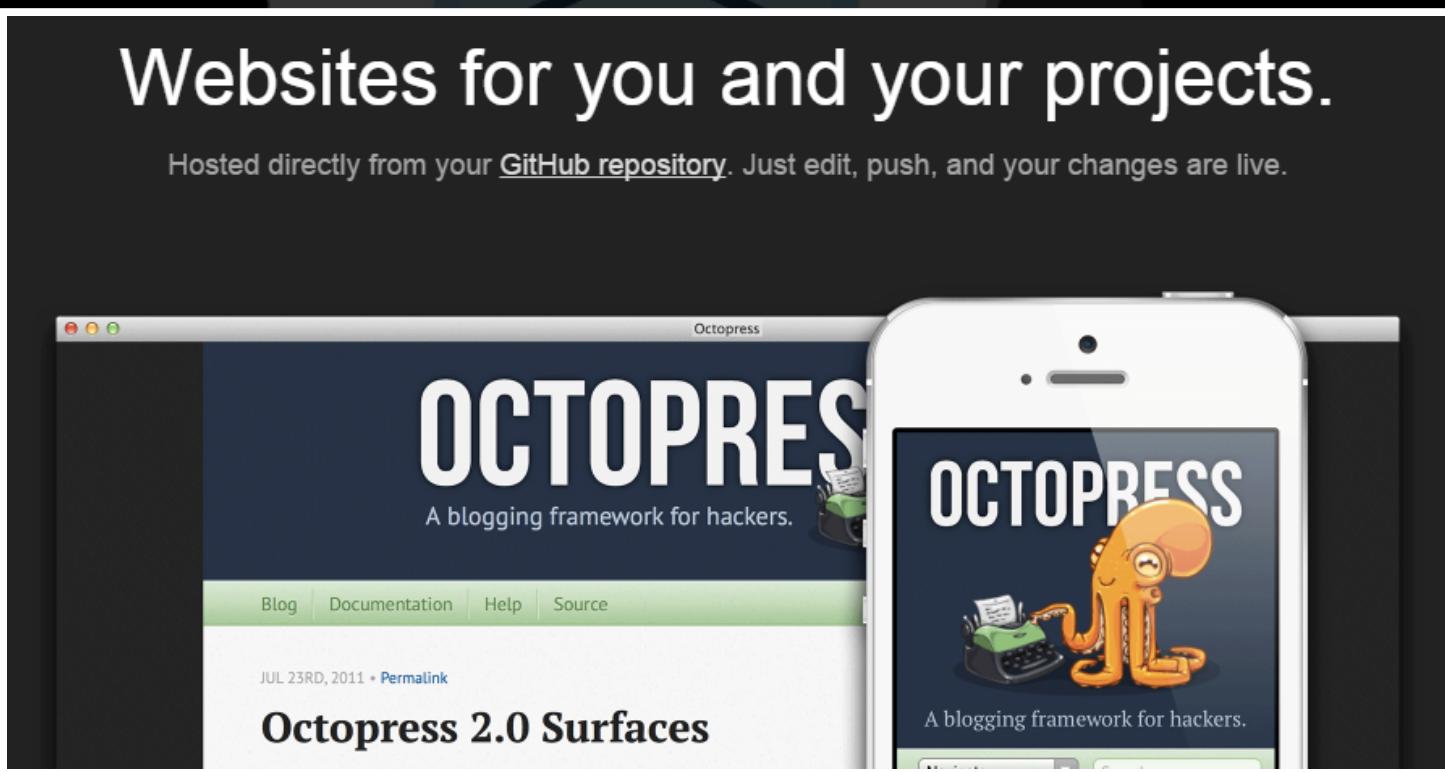
The GitHub interface also shows 2 unwatched repositories, 1 star, and 0 forks. To the right of the code pane, there are sections for Issues (0), Pull requests (0), and Wiki.



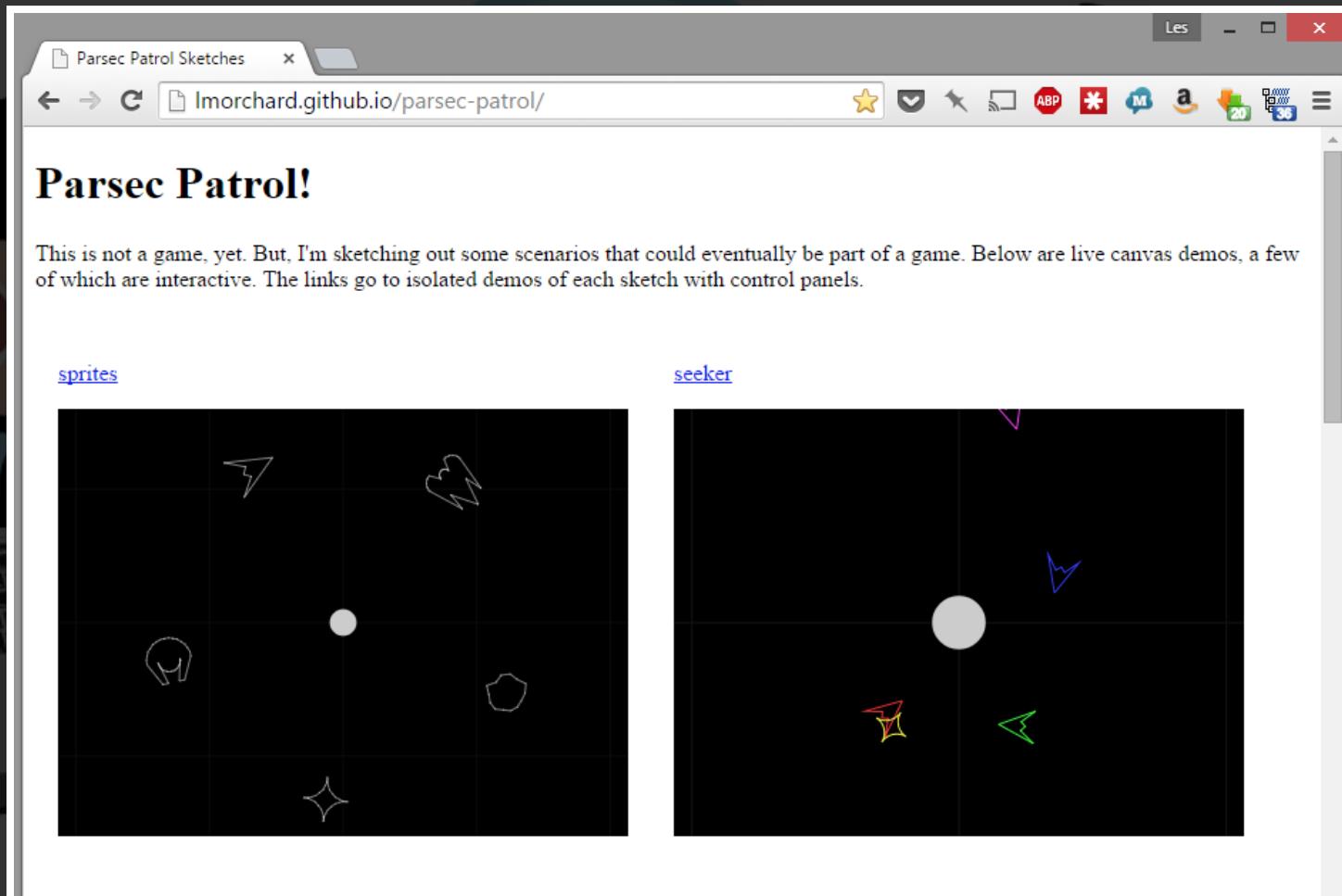
GitHub Pages

Websites for you and your projects.

Hosted directly from your [GitHub repository](#). Just edit, push, and your changes are live.



GitHub Pages



GitHub

Git is free as in speech
GitHub is free as in beer
Your stuff stays yours
GitHub is very hackable
Git is hard

Travis CI

lmorchard/parsec-patrol  build passing

Current Branches Build History Pull Requests Settings ▾

master Play with hybrid raycasting and potential steering for collision avoidance

Les Orchard authored and committed

150 passed
Commit 0546d04
Compare e07a8a2..0546d04
ran for 1 min 36 sec
about a month ago

Remove Log Download Log

```
1 Using worker: worker-linux-968a87ce-2.bb.travis-ci.org:travis-linux-13
2
3 Build system information
4
5 git clone --depth=50 --branch=master git://github.com/lmorchard/parsec-patrol.git lmorchard/parsec-patrol
6 nvm install 0.10
7 #####
8 Now using node v0.10.37
9
10 $ node --version
11 v0.10.37
12
13 $ npm --version
14 1.4.28
15
16 $ nvm --version
17 0.23.3
18
19 $ npm install
20 $ export DISPLAY=:99.0
21 $ sh -e /etc/init.d/xvfb start
22 $ gulp build
23 $ ./node_modules/karma/bin/karma start karma.conf.js --single-run --browsers Firefox
24 INFO [karma]: Karma v0.12.31 server started at http://localhost:9876/
25 INFO [launcher]: Starting browser Firefox
26 INFO [Firefox 31.0.0 (Linux)]: Connected on socket 6ES2Q0bAnVV_infBayqQ with id 63921610
27
28 Components
29 getManager()
30   ✓ should fetch "TestCounterComponent" manager by name
31 TestCounterComponent
32   ✓ should be named "TestCounterComponent"
33   ✓ should support .create()
```

Travis CI + GitHub Pages = <3

31 lines (30 sloc) | 1.009 kb

Raw Blame History

```
language: node_js
env:
  global:
    - secure: "iiAWfVJ90ogzcg146acbQYzVth25a0++8701XbV0/fR6gkRU535FcLb8jIoFpOdDMAwyXlw/q1ZkxJKknrXW7vPRrYmQo3ijsAbV23piv71eOt0Xzd951"
    - GH_OWNER: lmorchard
    - GH_PROJECT_NAME: parsec-patrol
node_js:
  - 0.8
branches:
  only:
    - master
before_script:
  - npm install -g grunt-cli bower
after_success:
  - git submodule add -b gh-pages https://${GH_OAUTH_TOKEN}@github.com/${GH_OWNER}/${GH_PROJECT_NAME} site > /dev/null 2>&1
  - cd site
  - node ../app/scripts/util/cleanup.js ../dist/index.html
  - if git checkout gh-pages; then git checkout -b gh-pages; fi
  - git rm -r .
  - cp -R ../dist/* .
  - cp ../dist/* .
  - git add -f .
  - git config user.email "me@lmorchard.com"
  - git config user.name "Les Orchard"
  - git commit -am "adding the yeoman build files to gh-pages"
  - git push https://${GH_OAUTH_TOKEN}@github.com/${GH_OWNER}/${GH_PROJECT_NAME} HEAD:gh-pages > /dev/null 2>&1
script:
  - npm install
  - bower install
  - grunt
```

Travis CI

Free as in beer

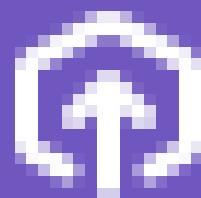
Works with GitHub

Runs your tests (& other code) on demand

Slow during peak usage hours

Heroku

Heroku + GitHub = <3



Deploy to Heroku

Heroku + GitHub = <3

The screenshot shows the Heroku dashboard interface. On the left, there's a sidebar with a purple background. It features a 'Dashboard' button, a user icon for 'me@lmorchard.com', and a 'Personal Apps' section. Below the sidebar, a small box displays 'LATEST FROM THE BLOG' with a link to 'Announcing Heroku Elements - The Marketplace for the Builders of the App Economy'. The main area of the dashboard is titled 'New App'. It shows a preview of a self-hosted chat app called 'Let's Chat' with the URL `sdelements/lets-chat#master`. The app preview includes the text 'Deploy your own Let's Chat Self-hosted chat app for small teams'. Below this, there are fields for 'App Name (optional)' containing 'chatty-chat', which is marked as available. There are also 'Region' and 'Add-ons' sections. Under 'Add-ons', there's a 'MongoLab' option set to 'Sandbox' and 'Free'. At the bottom, there's a 'Config Variables' section with a field containing 'production' next to the key '* NODE_ENV'.

Dashboard

me@lmorchard.com

FAVORITES

★ Favorite any app to pin it here in the sidebar

Personal Apps

LATEST FROM THE BLOG
Announcing Heroku Elements
- The Marketplace for the Builders of the App Economy

Create a New App | Heroku

New App

let's Chat

Deploy your own

Let's Chat

Self-hosted chat app for small teams

`sdelements/lets-chat#master`

App Name (optional)

chatty-chat

chatty-chat is available

Region

United States Europe

Add-ons

MongoLab Sandbox Free

Edit

Config Variables

* NODE_ENV

Configures Express for production

production

Heroku + GitHub = <3

The image is a composite of two screenshots. On the left, a screenshot of a GitHub repository page for 'sdelements / lets-chat'. The page shows a 'Heroku' section with a heading 'Easy deployment' and a button labeled 'Deploy to Heroku'. A note says 'For a fast and easy deployment to Heroku, try this button:'. On the right, a screenshot of a web browser window titled 'Login - Let's Chat' showing the URL <https://chattychat.herokuapp.com/login>. The page displays a 'Sign in' form with fields for 'Username or Email' and 'Password', and buttons for 'I need an account' and 'Sign in'.

Heroku + GitHub + Travis CI = <3<3<3

Travis CI Blog Documentation

Heroku Deployment

Travis CI can automatically deploy your [Heroku](#) application after a successful build.

For a minimal configuration, all you need to do is add the following to your

`.travis.yml`:

```
deploy:  
  provider: heroku  
  api_key: "YOUR API KEY"
```

Heroku

Free as in beer

Works with GitHub & Travis CI

Your code works elsewhere

Free apps shut down after inactivity

Cloud9

The screenshot shows the Cloud9 IDE interface with the following components:

- Top Bar:** Shows the title "eve-crest-fun - Cloud9" and a URL "https://ide.c9.io/lmorchard/eve-crest-fun".
- Toolbar:** Includes standard menu items like File, Edit, Find, View, Goto, Run, Tools, Window, Help, Preview, and Run.
- Left Sidebar:** A "Workspace" sidebar with a tree view of the project structure:
 - eve-crest-fun
 - bin
 - data
 - lib
 - app
 - di
 - apiadd.js
 - emdr.js
 - index.js
 - scamarket.js
 - server.js
 - updatechars.js
 - models
 - public-src
 - test
 - data
 - test.js
 - views
 - Commands
 - Navigate
- Code Editors:** Two code editors are visible:
 - `eveData.js`: Contains JavaScript code for handling market orders from the EMDR stream.
 - `test.js`: Contains a Mocha test suite for asset parsing, including tests for regional market scans, market group items, and Scimitar fitting.
- Terminal:** A terminal window titled "bash - lmorchard-ei" showing the output of a command that parses asset data, resulting in a JSON object with fields like count, _id, regionID, typeID, typeName, volume, buy, sell, and count.
- Bottom Status Bar:** Displays the current time (13:77), the language (JavaScript), and the number of spaces used (Spaces: 2).
- Right Sidebar:** Includes sections for Collaborate, Outline, and Debugger.

Cloud9

Free as in beer

Works with GitHub & Travis CI & Heroku

Your code works elsewhere

Free Linux machine is very tiny

The story so far...

Free as in beer

You can pay for better support

Works well with others

Your can take your stuff with you

Google App Engine

Dashboard – Admin Console < http://appengine.google.com/dashboard?&app_id=admin-console

Google app engine cschalk@google.com | My Account | Help | Sign out

admin-console 39 « Show All Applications

Main

- [Dashboard](#) **Dashboard**
- [Quota Details](#)
- [Logs](#)
- [Cron Jobs](#)
- [Task Queues](#)
- [Blacklist](#)

Data

- [Datastore Indexes](#)
- [Datastore Viewer](#)
- [Datastore Statistics](#)
- [Blob Viewer](#)

Administration

- [Application Settings](#)
- [Developers](#)
- [Versions](#)
- [Admin Logs](#)

Billing

- [Billing Settings](#)
- [Billing History](#)

Resources

- [Documentation](#)
- [FAQ](#)
- [Developer Forum](#)

Charts Requests/Second all 24 hr 12 hr 6 hr

Billing Status: Free - [Settings](#) Quotas reset every 24 hours. Next reset: 16 hrs

Resource	Usage		
CPU Time	0%	17.53 of 2135039823346.01 CPU hours	
Outgoing Bandwidth	0%	1.42 of 8589934592.00 GBytes	
Incoming Bandwidth	0%	3.16 of 8589934592.00 GBytes	
Total Stored Data	80%	1277.67 of 1600.00 GBytes	
Recipients Emailed	0%	114 of 2000000000	

Current Load

URI	Req/Sec current	Requests last 8 hrs	Avg CPU (API) last hr	% CPU last 8 hrs
/api/appversion/isready	1.4	25.58K	122 (29)	5%
/dashboard	0.9	19.14K	665 (48)	21%
/api/appversion/addfile	0.7	15.91K	337 (55)	8%
/api/updatecheck	0.6	10.55K	9 (0)	0%
/	0.4	9.80K	78 (32)	1%

Errors

URI	Count	% Errors last 8 hrs
/api/appversion/cr	3364	100%
/robots.txt	268	
/api/request_logs	232	7.1%
/api/appversion/ro	155	
/api/datastore/idx	129	9.4%

Google App Engine

Free as in beer

Self-contained silo of services

Your code only works on GAE

There are a few open source alternatives

There are only a few open source alternatives

Google Docs

```
=ImportXML("http://api.eve-marketdata.com/api/price_type_solarsystem_buy_max.xml?  
type_id=&JOIN("", "$B5:$B30)&"&solarsystem_id=30002187", "/emd/val")
```

Trade! ★

File Edit View Insert Format Data Tools Add-ons Help Last edit was 14 days ago

Collateral

	A	B	C	D	E	F
1	Collateral	Freight (vol)	Freight (col)	ISK/M3	Profit	Profit %
2	\$2,751,937,658.08	\$122,201,953.13	\$144,476,727.05	\$7,389.24	-\$117,664,773.95	-5.13%
4	Name	TypeID	Volume	Amarr - Buy	GE-8JV - Sell	Spread
5	Dominix	645	50000	\$194,000,002.00	\$225,000,000.00	\$30,999,998.00
6	Eagle	12011	10000	\$160,321,123.01	\$150,000,000.00	-\$10,321,123.01
7	Moa	623	10000	\$12,000,000.07	\$7,500,000.00	-\$4,500,000.07
8	Scythe	631	10000	\$8,350,025.65	\$8,000,000.00	-\$350,025.65
9	Tengu	29984	10000	\$137,413,002.27	\$185,000,000.00	\$47,586,997.73
10	Sabre	22456	5000	\$37,000,022.58	\$40,000,000.00	\$2,999,977.42
11	Adaptive Invulnerability Field II	2281	5	\$1,561,058.01	\$1,000,000.00	-\$561,058.01
12	Inertia Stabilizers II	1405	5	\$385,005.42		-\$385,005.42
13	Damage Control II	2048	5	\$339,105.33	\$420,420.42	\$81,315.09
14	Magnetic Field Stabilizer II	10190	5	\$736,001.19	\$399,999.97	-\$336,001.22
15	Nanofiber Internal Structure II	2605	5	\$185,100.06	\$449,999.11	\$264,899.05
16	Overdrive Injector System II	1236	5	\$333,000.05	\$1,439,999.70	\$1,106,999.65
17	Medium Capacitor Control Circuit	31372	10	\$1,087,166.89		-\$1,087,166.89
18	Nanite Repair Paste	28668	0.01	\$18,502.86	\$24,000.00	\$5,497.14
19	Warp Disruption Field Generator	28654	50	\$4,999,133.80	\$5,999,999.99	\$1,000,866.19
20	Medium Azeotropic Ward Salubr	8433	10	\$872,161.00	\$1,200,000.00	\$327,839.00
21	Medium Shield Extender II	3831	10	\$469,012.00	\$597,999.00	\$128,987.00
22	Medium S95a Remote Shield Bo	8585	10	\$461,002.15	\$600,000.00	\$138,997.85
23	Medium Capacitor Battery II	3496	10	\$794,000.07	\$1,949,999.00	\$1,155,998.93
24	Warp Disruptor II	3244	5	\$1,066,010.13	\$1,996,999.87	\$930,989.74
25	Warrior II	2488	5	\$271,116.00	\$150,000.00	-\$121,116.00
26	200mm AutoCannon II	2889	5	\$426,113.35		-\$426,113.35
27						

Google Docs

Free as in beer

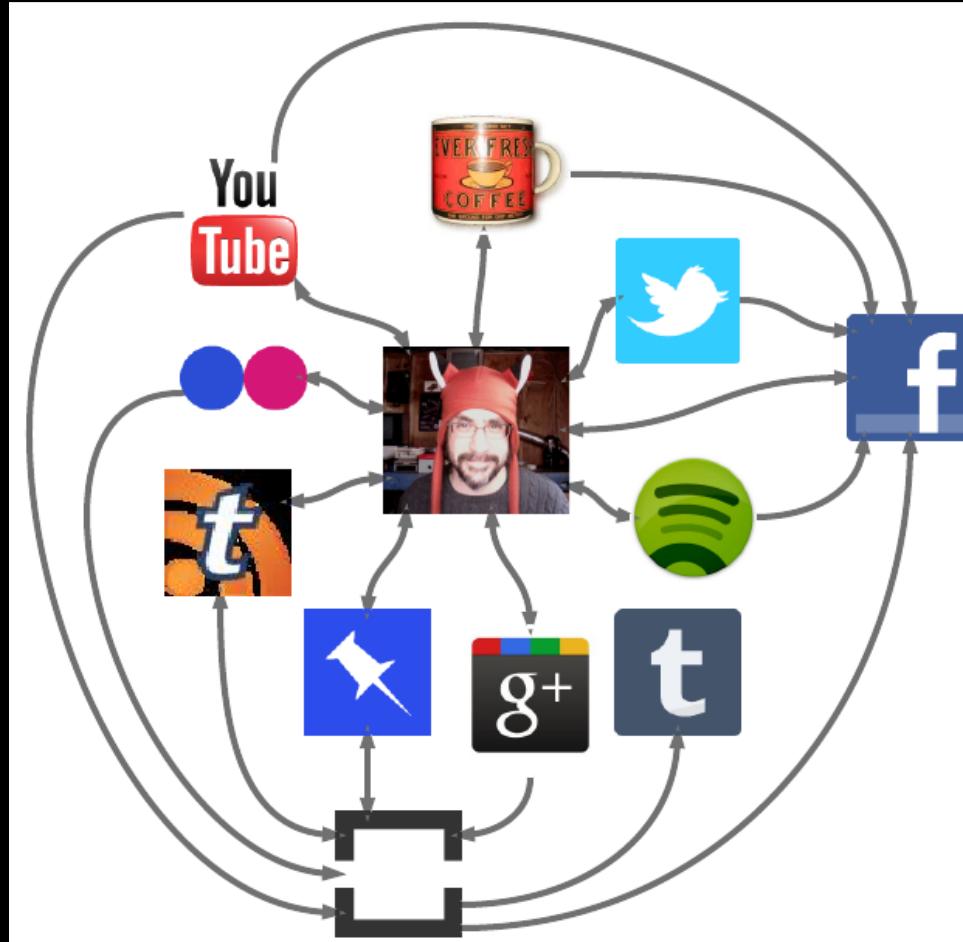
Works with almost any web service

My spreadsheets are locked-in

Ad supported

Paid "Apps for Work" option available

IFTTT



IFTTT

My Recipes

IF

Do

Published

Favorites

IF Recipes run automatically in the background.

[Create a Recipe](#)[Filter ▾](#)

If new feed item from <https://medium.com/feed/@lmorchard/has-recommended>, then add a public bookmark to deusx



created February 10, 2015
last run April 09, 2015
run 5 times



tt-rss starred to pocket read later



created April 03, 2014
last run October 18, 2014
run 51 times

IFTTT

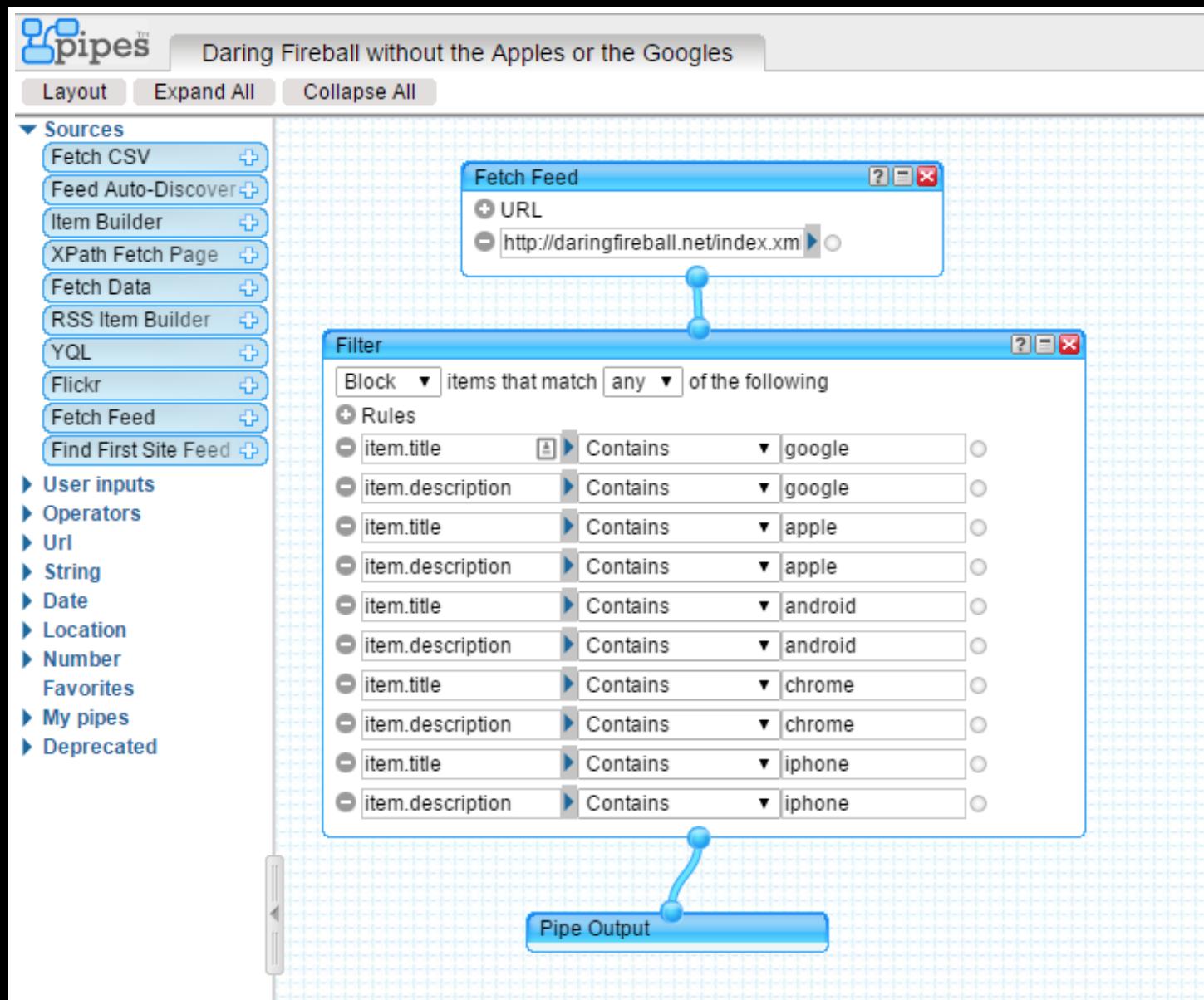
Free as in beer

Works with 150+ services

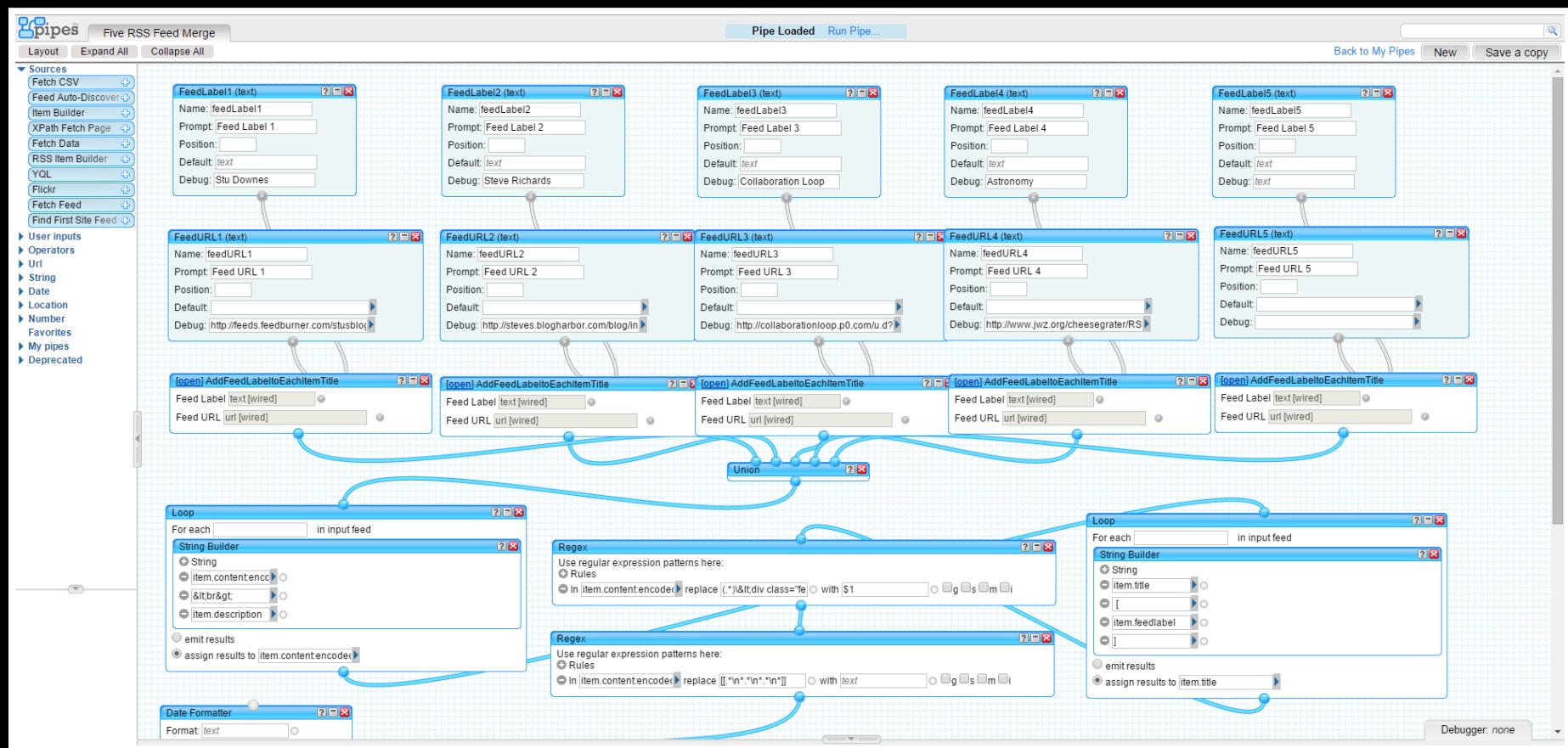
My recipes are locked-in

No paid support option

Yahoo! Pipes



Yahoo! Pipes



Yahoo! Pipes

Les Orchard
@lmorchard

How is Yahoo! Pipes still in operation? I mean, I'm still using it, but how is it still there?

RETWEETS 5 FAVORITES 3

8:33 PM - 21 Apr 2015

Reply to @lmorchard

Daniel Raffel @danielraffel · 2h
@lmorchard shhhhh

sungo @sungo · 2h
@lmorchard Quiet! They'll notice that VM is still online.

Dave Townsend @EnglishMossop · 2h
@lmorchard they built them pipes to last back then

and (C). Large paper shelf with a paper feed

Yahoo! Pipes

Free as in beer

Works with RSS feeds everywhere

Pipes are locked-in

No paid support option

Does Yahoo! even know it still exists?

Amazon Web Services

The screenshot shows the AWS Management Console with the service catalog. The top navigation bar includes the AWS logo, a search bar, and dropdown menus for Services and Edit. The main content area is titled "Amazon Web Services" and is organized into several categories:

- Compute**: EC2 (Virtual Servers in the Cloud), Lambda (Run Code in Response to Events), EC2 Container Service (Run and Manage Docker Containers).
- Storage & Content Delivery**: S3 (Scalable Storage in the Cloud), Storage Gateway (Integrates On-Premises IT Environments with Cloud Storage), Glacier (Archive Storage in the Cloud), CloudFront (Global Content Delivery Network).
- Database**: RDS (MySQL, Postgres, Oracle, SQL Server, and Amazon Aurora), DynamoDB (Predictable and Scalable NoSQL Data Store), ElastiCache (In-Memory Cache), Redshift (Managed Petabyte-Scale Data Warehouse Service).
- Networking**: VPC (Isolated Cloud Resources), Direct Connect (Dedicated Network Connection to AWS), Route 53 (Scalable DNS and Domain Name Registration).
- Administration & Security**: Directory Service (Managed Directories in the Cloud), Identity & Access Management (Access Control and Key Management), Trusted Advisor (AWS Cloud Optimization Expert), CloudTrail (User Activity and Change Tracking), Config (Resource Configurations and Inventory), CloudWatch (Resource and Application Monitoring).
- Deployment & Management**: Elastic Beanstalk (AWS Application Container), OpsWorks (DevOps Application Management Service), CloudFormation (Templated AWS Resource Creation), CodeDeploy (Automated Deployments).
- Analytics**: EMR (Managed Hadoop Framework), Kinesis (Real-time Processing of Streaming Big Data), Data Pipeline (Orchestration for Data-Driven Workflows), Machine Learning (Build Smart Applications Quickly and Easily).
- Application Services**: SQS (Message Queue Service), SWF (Workflow Service for Coordinating Application Components), AppStream (Low Latency Application Streaming), Elastic Transcoder (Easy-to-use Scalable Media Transcoding), SES (Email Sending Service), CloudSearch (Managed Search Service).
- Mobile Services**: Cognito (User Identity and App Data Synchronization), Mobile Analytics (Understand App Usage Data at Scale), SNS (Push Notification Service).
- Enterprise Applications**: WorkSpaces (Desktops in the Cloud), WorkDocs (Secure Enterprise Storage and Sharing Service), WorkMail (Secure Email and Calendaring Service).

Amazon Web Services



Amazon Web Services

blog.lmorchard.com It's all spinning wheels and self-doubt until the first pot of coffee.

» 2013 » November » 19 »

Parsec Patrol Diaries: Why a Game?

html5, parsecpatrol, webdev

I decided to start writing [a retro space game for the web](#), because I thought it might be a good way to exercise a lot of interesting technologies and have fun to boot. You know, like how [sending rockets into space yields astronaut ice cream & anti-shock trousers back down on Earth](#). But, I've also wanted to make games all the way back to my Atari 2600, Commodore 64, and Apple II days – because [Warren Robinett](#) is my hero.



About me



Hi there! My name is Les Orchard. I'm a {web,mad,computer} scientist; home{brew,roast}er; and {tech,scifi} writer with a habit of serial enthusiasm working for the Mozilla Corporation living near Detroit, Michigan, USA.

Related Links

2014 Feb 24 » [quakejs.com](#)
2014 Nov 16 » [HTML5 Drag and Drop Avatar Changer with Resizing and Cropping | CSS-Tricks](#)
2014 Oct 06 » [Antialiased Native vs. JavaScript](#)

A dark, low-light image showing a person's hand holding a wrapped gift. The gift is wrapped in brown paper with the words "WRAP IT UP" printed on it. The background is dark and out of focus.

WRAP
IT
UP

Wrapping up