^Z

Ctrl-ZINE

When the Web is full,
the devs will walk the Earth

About ^Z

Ctrl-ZINE (^Z) is a Ctrl-c.club/Smol Web collaborative zine that celebrates tech and the Smol Web. Started in March 2023, it runs a monthly issue, where anyone can download a PDF version and a pre-folded PDF version for home printing. No digital format of the content is maintained on a Website whatsoever. Some of the topics within these issues range from Smol Web protocols and communities (ActivityPub, Tildeverse), Web-adjacent protocols (Gopher, Gemini), alternative forms of communication (HAM radio, IRC), snippets of code, artwork, and anything tech-related that is an expression of self.

Those who contribute to ^Z are passionate about what they share. They want what is best for Us, the citizens of the Web. With that, anyone with that same passion is welcome and encouraged to contribute to future issues. Further info can be found in the Editorial section of this issue. May the Smol Web live forever!

Editorial:

Welcome to **Ctrl-ZINE Issue 12** (February, 2024). A new year is here, the zine is coming up on the completion of Vol.1 (12 issues) and the Smol Web and Ctrl-c is as lively and nuanced as ever - coding projects, people "federating" (joining federated social networks), small blogs and portfolios showing up online, independent of large, centralized services, retro computing projects being revisited/restored, people finding new and creative ways of computing - be it via solar-powered sailboat, or running a personal web server and the entirety of one's presence online with a tiny Raspberry Pi Pico - challenges and personal choice rise to the top when the top has failed the average Netizen.

I, your compiler, ~loghead, am re-embarking on compiling issues of ^Z. Issues 7-11 were published via Ctrl-c member ~singletona082, which we are all eternally grateful for. The issues turned out good, and made for some excellent reading material! :) But, as the slogan for this issue reads, life stuff happens, and one needs to step back from online projects. I can't speak for singletona's situation, but this slogan certainly rings true for me when I stepped away from Ctrl-ZINE.

Staying on-topic, this issue will be that of what the zine has always been - a celebration of tech and the Smol Web. By and for everyone! If this sounds like your cup of tea, then please, sit back and enjoy Issue 12. Don't hesitate to reach out for comments/inquiry: *loghead@ctrl-c.club*

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Thoughts on Interfaces
by ~mindhunter

Technology and the manner in which we interact with computers
have undergone significant changes over the course of history.
From archaic teletypes which printed the output of computers in
sheets of paper to modern smartphones that receives its host of
inputs from tactile stimuli, the technological landscape has
both widened in scope and magnitude in terms of the influence it
exerts on individual lives. At first, the obscure workings of
computers were only confined to a handful of experts who
possessed the technical prowess to handle such machines. But
with the invention of graphical interfaces, technology that was
formerly limited to a pronounced minority became widely
accessible, consequently revolutionizing the world by placing
unbelievably large amounts of information at the hands of anyone
with an internet connection and the requisite skills to
master an elegantly simple interface. The constructive side of
this development has been talked about rather frequently and to
such an extent that it creates a picture that almost makes us
believe that it has no actual repercussions. After all what
could possibly be disadvantageous about machines whose architect
intended his creation for the sole purpose of serving the
masses? Doesn't the rapid progress of technology merely result
in the dispensation of its resources as a tool for the greater
good of humanity? Or perhaps does our status of being the
creator of such machines blind us to the dangers of our own
creation?

To provide some context as to why the aforementioned statement
is not as far fetched as it seems, we are first obliged to
examine the evolution of computer interfaces. Initially, the
functional utility of computers more or less involved arithmetic
operations and was primarily used as a tool for sophisticated
mathematical computation. The earliest precursors of the

machines that we now hold in the palm of our hands only accepted inputs from punch cards. The punch card would contain instructions for the computer to execute and even the slightest of errors made it necessary to make them anew and repeat the entire process of handing them input. Interacting with computers through such inefficient means called for interfaces which modeled the manner in which we communicate with other human beings but like all technological advancements, there is always something that must be foregone. The effort which was directed towards elucidation of computer human interactions also significantly enlarged the gulf between
the understanding the user possessed of the machine and the machine itself. With the invention of teletypes and monitors which reduced the expenditure of both human and material resources, computers become slowly accessible to not only those who were intimately familiar with its inner machinations but also for the plebeian who could implicitly learn how the machine worked by experimenting with a visual interface that constricted the amount of control he exercised. The increasing layers of abstraction distilling the complexity of the machine also engendered an obliviousness to what lay underneath since it wasn't expedient for the end user to acquire needless information about the inner workings of computers as long as the interface allowed him to achieve the desired end. And thus the all powerful interface which was merely intended to facilitate communication effectively became the only gateway through which a
user could penetrate the sheer obscurity of all that was formerly transparent.

At first sight, this appears to be very little price to pay for the unprecedented capabilities such progress has rendered possible but nonetheless there are also a few caveats that ensue which are worthy of consideration. The necessity to create

layers of abstraction which would simplify such an intricate underlying
mechanism obviously marked a significant feat in the history of computing because it precluded the need to familiarize oneself with all the details of how the system operated. By relinquishing control to the interface and ignoring what most deemed to be as trivial details, the user could direct all his mental resources towards the immediate task at hand, enabling him to attain his objectives without the fuss of scouring through manuals or thinking about how the system might be configured. Although this has perhaps done far more to further the democratic cause of equality than any political agenda by extricating the means to obtain knowledge from the throes of prerogative, the interface as it slowly begins to envelop the transparency of computers in its quest of simplicity also subverts the control a user can exert. The elegance that is so indispensable to an average user also inadvertently curtails the vagaries of how one can creatively employ their knowledge and skill in solving problems because the user finds himself in a position where he can only express himself within the confines of the limits prescribed by the interface. Limits which, under the pretense of protecting against irreparable damage potentially caused by experimentation, fetters the user by implicitly instructing not only how he must use his machine but also to
what end.

A Novice's view of LoRa and Meshtastic
by ~Singletona082

This is not me advocating going off in the woods, that the
modern world is trash, and the general grumpy noises that get
bandied about. I just want to share what I know about a thing I
think is neat, and hope to draw the attention of people smarter
than me to either find new uses, or explicitly rather than
theoretically rule out use concepts.

LoRa?

Long Range radio aimed at 'internet of things.' Having listened
to it? The Transmissions are a low to high ascending tone per
each 'sweep' where data is transmitted, with the next sweep
going back to a low tone. I have little idea why this is, though
there is information out there I won't insult the readership
here by copy-pasting and acting like I know more than I do. I
do know that longer lasting sweeps send less raw data than short
sweeps, but at the same time longer duration sweeps allow for
further transmission range. We're talking optimistically dialup
speeds for data transmission and more often than not you're
looking at 'can send SMS length messages' rather than 'slow
wifi.'

Interestingly the operational frequencies either closely or
exactly line up with amatur radio frequencies. Put a pin in that
for later.

The Google machine says there's some spectrum overlap between
LoRa and cell phones, which interests me given LoRa isn't

designed to carry enough bandwidth outside of the 2.4Ghz band to carry voice, yet differing cellphone technologies over the decades have been able to do that since.. well... their entire point. The key here is LoRa is both designed to operate at one watt (because of it being unlicensed,) and the nature of the transmission favoring range over bandwidth. Cellphones get the coverage they do because if they can connect to a tower (the bars on your phone,) you don't need a long range or a lot of power since the tower is a giant antenna high up that can then either transmit to other towers or use land lines. Useful for a nation/global system of communication. Less useful when the power goes out, or your'e in a place with no towers.

As someone looking in from the outside LoRa seems to excel at 'here are tiny devices that are raspberry pi sized if not smaller that can last days on a battery or get shoved in a solar panel.' There is the matter of range though. LoRa depends on line of sight and due to transmit power unless you're on top of a mountain you're getting maybe a mile/couple kilometers outside or maybe a few hundred feet inside.

Meshtastic

Take LoRa and pair it with an open source ecosystem of device firmware and apps so your phone (either iOS or Android,) or computer can act as the interface layer for a radio no bigger than a pack of gum or a deck of cards. Still have range problems ya? Make the radios that are all on the same channel pass everything they hear around til it reaches its end destination (or until it stops getting told there are nodes it can hear that haven't gotten the new message.) This gives situations where A can talk to C even if each can only see B. It can also result in A talking to Z with the message passed along the line. Or Z deciding the whole alphabet needs what it has to say.

As of right now most of the devices are kinda DiY with only a few 'ready out of the box.' Given the target audience as of right now are tinkerers and people who feel comfortable flashing device firmware that isn't a bad way to go to keep costs down. Up sides and Down sides. it's all a matter of trade offs, and while I'm someone who would prefer ready made solutions I'm just glad it's being worked on and is available in the market to be iterated on rather than waiting and waiting endlessly for a 'perfect' device that costs way too much considering they only really work when you have several t oscatter around an area.

Uses

Go youtube or look up 'Meshtastic Uses.' You're going to get a lot of talk about emergency communications and disaster scenarios. This isn't a bad way to look at it. Little radios you can scatter through a neighborhood in suburbia or even in more rural areas so if there's a brownout or storm or whatever theoretically everyone can still send texts to see how everyone else is doing, or you're a hiker on a trail and the area is blanketed with these things. You can use that to get a message out in a place where cell coverage isn't a guarantee, or even setting up a pop-up low powered network so your team has a minimal level of coordination. These are all uses I encourage and am glad are being talked about.

Instead my personal attention is on experimentation and general use. Biking with a group, or hiking, or going to a convention you can use this to keep track of everyone in the group thanks to the radios all pinging eachother either using their own GPS or the phone's GPS to send location data for tracking. Similarly you can set these up in a location where cell service is thready but you want to keep in touch while everyone is spread out during ... oh.. .setting up an outdoor event.

Me personally? My family has a modest hobby farm. The idea of using these to ping my phone as an alert if a gate is opened/closed in the middle of the night, or the shop with all our expensive things is opened in the night, or if there's a break i nthe fence appeals to me. Fine, yes wifi solutions exist, but when you don't need to say a lot at any one time and these little guys almost beg t obe attached to other sensor packages or connected to solar, or just plain attached to decorative bits around and about? It's a fun option.

Experimentation

Currently Meshtastic does not allow for voice within its app, but in theory the 2.4Ghz LoRa units allow for voice, and there is some experimentation on that front. Would be interesting to see that develop. Ditto seeing if the 915Mhz range of transmitters tested to see if something like gemini would be a viable web alternative in an off grid situation. Is it the best use of the resource? Probably not, but it's an interesting (to me) use case.

Definitely want to see if voice comms can be added to the radio band that gives bandwidth for voice, because i feel that would blow a hole wide open for normies and the less technically inclined; 'Here scatter these about and around. This one is in a solar light. That one is a weatherproof box that plugs into an outdoor socket, this one looks like a decorative gnome. Here is the little radio your phone can pair to so it can talk to all the other ones. Now you and the neighbors can keep in touch almost as if you had a phone even if storms knock everything out.'

I want 'normies' to want to use this. It's a case of 'the more radios are out there the longer range my experiments may have to play with.' If nothing else relatively cheap gear with ways to

interface with technology people already largely have as a
matter of course rather than spending ten times as much for
something you need to pass a bunch of tests to use. It could
well be nothing. It could help spark the younger generation.

Given Ctrl-C is 'a place to poke and play' an entire radio
protocol in an unlicensed band segment with little oversight
feles like something that lines up quite well with that mission
statement.

Flipping The Bird - the Twitter thing (as I saw it) 2009-2019
by ~loghead

Mmm, I remember AOL chats in 1998. Talk about a dopamine rich
adrenaline rush every time I sat at my PC w/ espresso in-hand!
It was game time: Everyone. Everywhere. Let's chat and party!

Se La Vie AOL

Enter Twitter, 2009. I refrained from social media until then.
MySpace seemed addictive. Facebook looked monstrously lame.
Twitter, "let's try it out", I thought.

A few moments in and I knew I'd be there for a hot minute (a hot
minute turning to a decade). People talking, celebrities
talking. Celebrities talking TO ME! (WTF?!) And not like a
popular Twitch streamer, I mean like a celebrity I just watched
on HBO the night before. "What was this world?"

So after jamming it up on the new-New Media platform for a
while, I realized that I would restart my coffee addiction and
caffeine intake. To do a thing it must be done right.

A dusk-lit stroll in mid-2009 saw me to the Save a Lot grocer
down the road. Starbucks Espresso Roast purchase I filled the Mr
Coffee coffee filter to the brim with grounds, and brewed a mug
full. I was ready for my nosedive into Dopamine Ocean.

Tila Tequila (prior to her batshittiness) had a large following,
as did Ashton Kutcher and Kat Von D. Tommy Lee of Motley Crue, a
few tech journalists, and the litany of gossip bloggers I knew
over the years - this is what would make up my feed.

Here's how it (the narrative) went — in a loose timeline -
2009-2019

Mid-2009: YouTubers are annoying, musicians should put music
videos on YouTube, MTV should have music videos again, Retweets
should be a feature, not a manual task, celebrities are dumb.
Look at this stupid celebrity! Oh my God, so and so celebrity
responded to me! <3

2010: Taylor Swift is extremely popular. Twitter is extremely
popular. Did you hear Facebook has 1 billion members now? Will
Twitter get that big? Fail Whale. Twitter should host video.
Which Twitter app do do use? Android or iPhone? BOO!, either
way.

2011: Man, everybody is a hipster. Gotye is great. Adele is
great. YouTube musicians are great. Glad some artists have
videos on YouTube now. So and so blog is becoming a book? Cool!
So and so blog got bought out and is being retired? Not cool!
People can jus Tweet news stories now, no need to have
publications.

2012: Shit, ads. Why is my Timeline no longer chronological? No
one has responded in a while. Do celebrities just NOT talk to
anyone anymore?

2013: Wow, this journalist has more followers than this Oscar
nominee! Let's LiveTweet The Oscars! Let's LiveTweet ALL the big
events and shows! Cambridge Analytica? Yea I heard of it — glad
I don't use Facebook. Snowden was right, I suppose.

Early-2014: Look at these segments of Twitter – politics Twitter, technology Twitter, Infosec Twitter, YouTube Twitter – so many things going on, still...

Late-2014: BLM. This world is unjust. So many people documenting everything – everything is on video, everything vulnerable. Hope things work out.

2015: New Media Twitter, Content Creator Twitter, Journalism Twitter, Meme Account Twitter, anyone who does anything that garners a Verified badge Twitter – the pendulum has swung. Twitter and it's Internet superiority has won. The World Wide Web of Twitter – cancel your phone number, give them your Twitter handle, instead.

Early-2016: Trump? President? Pfff! His show sucked, he'll die of a cocaine overdose before he manages to get nominated. Have you read the news anyway? Then entire Western world "knows" Hilary will win, so...

Late-2016: Oh. His ego will likely be gratified now that he has high office. A sane approach to politics, perhaps? In honor of the sacred seat of office of the POTUS? No? Ok. Hey, where did my Twitter Timeline go? Hundreds of them left!

2017, 2018: Trump, everything sucks, news is centralized, people want Instagram for sanity, Twitter can/should be good, but f*** Twitter

2019: Ffs I have to leave Twitter. Account closed. Re-opened. Account closed and obscured password so I don't remember it. Recover via e-mail. I am too addicted to this shit. I will die of depression if I do not leave Twitter. Closing account now, Sept 1 2019.

…and there it ended

I haven't been back since. That's a decade recap of things
happening when I could have been doing better things.

Here's to tiny blogs, the Smol Web and real communities!

And there we have it - **Issue 12 of Ctrl-ZINE** and the completion of Volume 1! It has been a year (almost) since starting ^Z! Vol.2 and Issue 13 will begin March 2024 (30 days!). So there's a thing to definitely look forward to.

Be it the Web, or all the (inter)connected protocols and devices we've spun onto the Blue Dot, none is better than the straight forward and humble communities and communication of those here and about. AI may write articles and render illustrations, IoT devices might make a couple easy tasks ever so slightly easier, AR/VR headsets might change the way everyone uses computers (such as smartphones, for example) - but what is DONE with this technology, what one derives from it, this is what *actually* benefits mankind. May we go forward wisely.

Your humble (human) compiler,
~loghead