TABConf 2022

[B] Builder Day [C] Closing Ceremony [K] Keynote [L] Live-Code [P] Panel [R] Party [S] Socratic

[T] Talk [W] Workshop

OCTOBER 12 • WEDNESDAY

9:00am – 11:00am

Waffle House: let's fuel up before TABConf Builder Day

TABConf Builder Day starts today. If you're going to build on bitcoin today, you're going to need some protein. And if you're going to visit the southeast, you need to have the Waffle House experience. Knock out both tasks at once by walking to the Waffle House at the corner of Andrew Young and Centennial Olympic Park Drive for breakfast. There will be an informal hangout here. If you want to work on a specific project for Builder Day, message them and see if they'll be at breakfast.

Waffle House (135 Andrew Young International Blvd NW, Atlanta, GA 30303)

Note: this is not the one on Marietta St. This is the one on Andrew Young and Centennial. Confusing, I know. There's a Waffle House everywhere. You're in the south now, baby!

11:00am – 11:30am	B	**Builder Day - Doors Open**	Builder Zone
11:30am – 12:00pm	B	**Builder Day - Kick-off**	Builder Zone
12:00pm – 4:45pm	B	**BDK - Bitcoin Dev Kit** The Bitcoin Dev Kit (BDK) project (https://github.com/bitcoindevkit) provides a collection of tools and libraries to make it 10x easier to build secure, feature rich bitcoin wallets for applications on any platform.	Builder Zone
12:00pm – 4:45pm	B	**Bitcoin Design** *Speakers: Stephen DeLorme* Bitcoin Design is helping make Bitcoin more intuitive and accessible. As bitcoin's popularity continues to rise, it is essential that everyone be able to participate in this new economy regardless of technical expertise or geography. That can only happen if creators everywhere have the resources and community necessary to foster better bitcoin experiences.	Builder Zone
12:00pm – 4:45pm	B	**Core Lightning** *Speakers: niftynei, Gregory Sanders, Alex Myers, Dusty Dettmer* Core Lightning (previously c-lightning) is a lightweight, highly customizable and standard compliant implementation of the Lightning Network protocol. Core Lightning has been in production use on the Bitcoin mainnet since early 2018. https://github.com/ElementsProject/lightning Come hang out and get your dev machine setup for working on CLN; learn about reckless, the plugin manager; write your own plugin!	Builder Zone
12:00pm – 4:45pm	B	**Fedimint** *Speakers: Justin Moon* Fedimint is an open source protocol to custody and transact bitcoin in a community context, built on a strong foundation of privacy. If you are confident taking self-custody of your bitcoin and running your own nodes, we highly recommend you do so. Fedimint is a superior alternative to 3rd party custody. Fedimint is a mechanism for Bitcoiners and trusted community members to onboard their local communities to Bitcoin in a more accountable and private way. https://fedimint.org/	Builder Zone

12:00pm – 4:45pm B **Hands-on Simplicity** Builder Zone

Speakers: Christian Lewe

Simplicity is Russell O'Connor's reimagination of a language for expressing spending conditions that lock UTXOs. It is carefully designed to fulfill this role as best as possible, being fully verifiable and powerful enough to express any condition that you might want to express. On Builder Day, we want to show you why Simplicity "just makes sense," explore the Rust tooling around Simplicity and hack some Simplicity applications. Feel free to experiment; we are there to assist you. A lot of work has flown into teaching materials that we are excited to share with you and that make it easier than ever to immerse yourself in the next generation of blockchain languages.

Requirements: Understanding how UTXOs are locked by scripts and unlocked by witnesses (SegWit) would help. It would help to have seen a circuit diagram, once. (I'm really bad at electronics, so the bar is low.) If you are interested, look up Merkle trees. To use our tooling, you should know Rust. However, Simplicity can be completely understood without knowledge of any programming language.

12:00pm – 4:45pm B **LDK - Lightning Dev Kit** Builder Zone

Lightning Dev Kit (LDK) is the simplest way to integrate Lightning into your Bitcoin wallet. It is designed from the ground up to be easily customized to your application needs. LDK is a full implementation of the Lightning Network protocol, so you can focus on crafting custom-tailored user experiences. It is as lightweight as you need it to be and optimized to run on all embedded devices such as mobile phones, IoT devices, PoS terminals and more. https://lightningdevkit.org/

12:00pm – 4:45pm B **Lily Wallet** Builder Zone

Speakers: Kevin Mulcrone

Lily makes it easy to keep your Bitcoin safe using multisignature vaults. Lily has written an entire guide about how normal bitcoiners can easily keep their coins safe with enterprise level security thanks to hardware wallets and multisignature vaults. There are no excuses for not controlling your own keys today. https://lily-wallet.com/

12:00pm – 4:45pm B **SuredBits** Builder Zone

Speakers: Chris Stewart

SuredBits is a team of developers helping build the Discreet Log Contract specification. We also help users and businesses develop custom financial engineering solutions for problems that arise when dealing with bitcoin. https://suredbits.com

---

4:45pm – 5:15pm B **Builder Day - Wrap-up** Builder Zone

6:00pm – 8:15pm **Atlanta BitDevs - Socratic Seminar #12** NCR (864 Spring St NW, Atlanta, GA 30308)

Join us to discuss the latest technological developments in Bitcoin and Lightning! This special TABConf event will be a collaboration between multiple BitDevs communities.

Inspired by other BitDevs meetups around the US, our Socratic Seminar events are formatted to foster debate, information sharing and lively discussion.

1. Discussion topics are provided ahead of the event
2. The event moderator(s) leads the audience through the topics
3. Raise your hand to grab the mic and participate in the conversation
4. We go to a bar afterwards

- 6:00 PM - 6:30 PM: Come Early to Network - Free Food and Drink
- 6:30 PM - 6:45 PM: Overview of sponsors, announcements, and introductions
- 6:45 PM - 7:15 PM: Opening Presentation - TBD
- 7:15 PM - 8:15 PM: Socratic Seminar - TBD
- 8:30 PM - Midnight: Dinner / hangout at nearby bar (near the Omni Hotel at CNN Center)

https://www.meetup.com/atlantabitdevs/events/287231385/
https://atlantabitdevs.org/

[B] Builder Day [C] Closing Ceremony [K] Keynote [L] Live-Code [P] Panel [R] Party [S] Socratic

[T] Talk [W] Workshop

OCTOBER 13 • THURSDAY

9:00am – 10:00am W **Intro to Zero Knowledge Proof** Village: PlebDev

Speakers: Nadav Kohen

9:00am – 10:00am W **Simplicity Playground** Main Stage

Speakers: Burak

Title: Simplicity Playground

Duration:
30-60 Mins

What will I learn?
You will get to know Simplicity basics and how to write Simplicity programs with no prior background in bitcoin programming.

What will I get out of this workshop?
– Types, Terms, and Arguments in Simplicity
– Typing rules and strict script-wiz typing format
– Defining bits, bit-strings and byte-strings
– Writing and executing Simplicity programs

What knowledge do I need beforehand?
No programming skills are required.

Do I need to setup an environment or download any software?
Nope. Just bring your web browser.

Do I need access to a BTC or LN node?
No.

Anything else I should know?
No.

9:00am – 10:00am W **Watching for forks in the Bitcoin network** Village: BitDevs Socratic

Speakers: Thomas Sharp

Watching for forks in the Bitcoin network

Goals:
1. Understand what a fork is, and the need for a fork monitor.
2. Explain forkscanner, a rust implementation of fork monitoring, and how it uses the bitcoin network.
3. Demonstrate usage of the forkscanner.

Overall:
We'll talk about watching forks, stale blocks, potential double spend attempts.
We'll show our implementation of a fork scanner, and show how to bring it up and configure it.

Prerequisites:
Some basic BTC knowledge, though we can go over some of that for background info.
If they would like to follow along, I'd recommend installing docker, and nodejs.
Access to nodes will be needed, we can look at providing access to ours.

10:00am – 11:30am W **Build a fedimint module** Village: BitDevs Socratic

Speakers: Justin Moon

Most people are familiar with Fedimint as a federated chaumian mint, but you could build practically any application in a federated manner using Fedimint. In this workshop we'll build a Fedimint module which allows people to bet on the bitcoin price. Along the way you'll setup a Fedimint development environment, get a high-level tour of the codebase, and learn how existing functionality like ecash is implemented in Fedimint.

To get ready for the workshop, try to setup a fedimint developer environment yourself

If you get stuck, ask for help in discord

10:00am – 11:30am W **Building Lightning-based Authentication with LSATs** Main Stage

Speakers: Buck

Slides: https://docs.google.com/presentation/d/1lGONa4CpQz3nEXpO1oLBFiGa7st2YKUZyKWhhDLNb3s/edit?usp=sharing

Duration:

1.5 hours?

Can go longer or shorter depending on what's the most useful and valuable to participants given the rest of conference.

Goals:

- Learn about Lightning Service Authentication Tokens (LSATs), the 402 Response Error Code why macaroons are better than cookies, and how they can be used to build a better authentication ecosystem
- Practice parsing and validating LSATs with the LSAT Playground (https://lsat-playground.vercel.app/)
- Build your own custom paywall using LSATs by deploying a proxy server that is capable returning 402 responses and validating paid requests to access a restricted endpoint
- Extra credit: support for delegation- clients can sell restricted use of an LSAT they paid for to another user.

Pre-requisites:

(I'll probably need to update this as I actually try and build out the workshop exercise)

- Setup Polar (https://lightningpolar.com/) or similar for a local bitcoin and lightning network dev environment
- recommended knowledge: read up on LSATs from lightning labs' docs (https://lsat.tech/) and macaroons vs cookies (https://hackingdistributed.com/2014/05/16/macaroons-are-better-than-cookies/)
- play around with the LSAT Playground (https://lsat-playground.vercel.app/)

10:00am – 11:30am W **Intro to Multisig & Sovereign Recovery** Village: PlebDev

Speakers: Trey Sellers, Tyler Campbell, Justine Harper

What will I get out of this workshop?

A deeper understanding of multisig technology, as well as, how to build your own multisig wallet/address (and rebuild it) across multiple wallet software platforms.

What will I learn?

Multisig overview, single-sig vs multi-sig, building a multi-sig wallet, deep dive into recovering your multi-sig wallet, and intro to collaborative multi-sig custody.

Description

Join the Unchained team for a workshop all about multi-sig! Multisig is a bitcoin native protocol that allows you to build wallets created with multiple keys, while also establishing your own quorum of signatures needed to redeem (or spend) that bitcoin. In this workshop, we will be digging into the nuts and bolts of multisig and walking you through how to build your own. Good for beginners, or those who are just trying to continue to build their knowledge.

What knowledge do I need beforehand?

All are welcome – We will start with the basics!

Do I need to set up an environment or download any software?

Nope!

Do I need access to a BTC or LN node?

Nope!

Anything else I should know?

We will be raffling off a Coldcard Mk4 as well as some other swag at the end of the workshop for those who actively participate.

11:30am – 12:30pm W **Attacking lightning** Village: BitDevs Socratic

Speakers: Tony

Attacking Lightning Workshop

Time Duration:

60 Minutes

Goals:

- What will attendees get out of this workshop?
- Hands on experience exploiting known vulnerabilites on Lightning
- What will attendees learn?
- They will learn what some of the vulnerabilities are on Lightning and how to exploit them and defend from them.

Description:

- Describe the overall workshop and spirit of what will happen.
- This will be very "Red Team" / "Hack The Box" style where attendees will have a simulated Lightning Network on their computer (via custom polar docker nodes) and their job is to "Capture The Flags" via attacking the other simulated nodes. Such attacks include things like channel jamming to stop payments, finding unannounced channels, inserting themselves into routes to find payments between two nodes, etc.
- The spirit is to have fun but also learn how some of the attacks can be a concern.
- I will help walk people through it and ideally present so people can follow along, but they are also encouraged to experiment on their own.

Prerequisites:

- Any recommended knowledge needed?
- How to use Polar and understand basic Lightning networking / opening channels / making payments.
- Any setup of an environment / software downloaded?
- Polar with custom docker images. Instructions will be given on how to do this.
- Is access to BTC or LN node needed?
- Only locally via Polar.
- Anything else?
- Requires own computer with Docker & Polar installed.

11:30am – 12:30pm W **Demystifying Elliptic Curves** Village: PlebDev

Speakers: Asher

Demystifying Elliptic Curves

runtime: approx 1h

We provide a gentle introduction to elliptic curve cryptography, including continuous and finite point spaces, point addition, and point multiplication, with application to ecdsa signatures, secret sharing and encrypted messaging. The material is presented in a visual manner supported with interactive dashboards. This allows for an intuitive grasp of the basic components behind bitcoin scripting with no prior knowledge of programming languages required. All materials are available on github, and attendees are encouraged to contribute https://github.com/asher-pembroke/elliptic

---

11:30am – 12:30pm W **Intro to Rapid Gossip Sync with LDK** Main Stage

Speakers: Arik Sosman, Conor Okus

Goals: Attendees will get an overview of the Rapid Gossip Sync protocol, how to use it and how it improves the UX in certain environments such as mobile.

Description:

- What is Rapid Gossip Sync?
- RGS vs P2P
- A walkthrough of using RGS to fetch channel graph data
- Visualise the network graph in a browser using d3.js

Prerequisites:

- General lightning network knowledge is beneficial
- Access to a laptop with node.js installed
- The workshop GitHub repo can be found here - https://github.com/arik-so/rgs-workshop

Join our Discord - https://discord.gg/5AcknnMfBw

1:30pm – 3:00pm W **Starter kit for building your own bitcoin hardware project with MicroPython** Village: PlebDev

Speakers: Keith Mukai

Workshop title:

Starter kit for building your own Bitcoin hardware project w/MicroPython

Workshop description:

What if you could devise your own Bitcoin hardware device from a cheap, off-the-shelf microprocessor board? What new, innovative solutions would you create?

Keith will walk you through the building blocks you'll need to get started. We'll build a Bitcoin-enabled custom MicroPython firmware for a variety of inexpensive microprocessor boards (e.g. ESP32, Raspi RP2040, STM32). We'll compile in Bitcoin Core's secp256k1 library for fast elliptic curve calculations. We'll also include Stepan Snigirev's "embit" library (used by Specter Desktop, Specter-DIY, SeedSigner) to provide higher-level Bitcoin functions; I don't know how to sign a psbt or what to do with secp256k1 but Stepan's library does!

We'll then briefly discuss incorporating displays, UI/graphics libraries (LVGL), cameras, buttons, etc.

From this starting point you'll be able to build ANY Bitcoin hardware project you can imagine, coding it in easy, mostly-familiar MicroPython (essentially the same as Python 3 but with some limitations).

Prerequisites for attendees:

* Basic Linux and Python proficiency.
* Laptop w/Docker installed. Downloading dependencies (compilers, etc) ahead of time will speed things up.
* ZERO experience with MicroPython or microprocessor boards required.

Supplies needed:

Attendees will receive a FREE esp32-S2 kit, courtesy of Bitcoin Magazine! All you need to bring is a laptop and a micro USB cable.

1:30pm – 3:30pm W **Packaging Your Favorite Open Source Project for Start9 EmbassyOS** Village: BitDevs Socratic

Speakers: Matt Hill, Dread

Workshop Title:

Packaging Your Favorite Open Source Project for Start9 EmbassyOS

Time Duration:

- How much time is needed to complete the workshop?

Ideally, 2 hours.

Goals:

- What will attendees get out of this workshop?

If they follow along on with their own Embassy One, they will get their own custom app running on their EmbassyOS

What will attendees learn:

Service Packaging Best Practices for the Start9 EmbassyOS

Description:

- Describe the overall workshop and spirit of what will happen.

Are you tired of waiting for your favorite Bitcoin applications to show up on your Start9 Embassy? Have you ever wanted to use your own custom web-based application hosted on your own server?

This workshop will show you step-by-step how to package, install, and run your choice of software on Embassy. Minimum development experience is needed, as this workshop will be just the beginning of your hero's journey into service packaging for Embassy. Get ready to join the community of package developers building out the future of sovereign computing!

Prerequisites:

- Any recommended knowledge needed?

Recommended: basic programming background

Any setup of an environment / software downloaded:

Environment Setup is optional but recommended. Setup instructions here: https://start9.com/latest/developer-docs/getting-started/environment-setup

Is access to BTC or LN node needed:

No.

Anything else:

Optional in order to follow along, bring your own Embassy,
or your own DIY Equipment (Raspberry Pi, 1TB SSD Drive, 32GB SD Card)

1:30pm – 3:30pm W **Working with the Taro Protocol** Main Stage

Speakers: Hannah Rosenberg

Title:

Working with the Taro Protocol

Duration:

90 mins

Workshop Goals:

After the workshop attendees should...

- Have a solid understanding of what Taro is and what it can and can't do
- Understand some basic Taro use cases
- Be able to differentiate between Taro universe types
- Understand the basics of how fungible assets are transferred on the Lightning Network
- Have experience installing and configuring Taro, and created their own (regtest/testnet) asset

Description:

This workshop is designed for tech savvy Bitcoiners who want to dive into the Taro protocol! After 90mins attendees will leave with a solid understanding of what Taro is, how it can be used, and will gain some hands-on experience with the Taro client.

Prerequisites:

- A solid understanding of the Bitcoin protocol, familiarity with the Lightning Network, and a basic understanding of Taproot.
- Access to a computer with GoLang installed and a regtest/testnet Bitcoin node setup.
- Some familiarity with Linux/Unix as all examples and demos will be shown on a Ubuntu server.

Recommended reading/viewing prior to the workshop:

- https://youtu.be/-yiTtO_p3Cw
- https://docs.lightning.engineering/the-lightning-network/taro

3:00pm – 3:30pm W **Magma Channel Shop, Earn Income with your liquidity** Village: PlebDev

Speakers: Jesse

Workshop Title:
Magma Channel Shop

Time Duration:
15-30 mins

What will attendees get out of this workshop:
Experience purchasing a channel and posting a channel offer on Magma

What will attendees learn:
How to use Magma Channel Marketplace, Valuing Liquidity on Lightning, How to post an offer, How to buy a lightning channel.

Description:
Attendees will learn fundamentals of lightning liquidity and what makes it valuable. Magma channel marketplace will be explained, enabling attendees to post an offer of bitcoin liquidity and to buy an offer if they would like.

Prerequisites:
Available for LND nodes and is a standard offering for Umbrel, Raspiblitz, and Voltage.

Is access to BTC or LN node needed?
Yes, bitcoin and a lightning node are required.

Anything else?
A willingness to learn! Voltage can set you up with a node, but participation requires that your node already has a channel and is visible in the lightning network graph. This sometimes takes several hours after opening a channel.

3:30pm – 4:30pm W **Getting started with lnc-web** Main Stage

Speakers: Evan Kaloudis

Workshop Title:
Getting started with lnc-web

Time Duration:
45-60 min

Goals:
Attendees will get an overview of how Lightning Node Connect works and be able to get started with building our own lightning web apps with lnc-web

Description:
- Overview of LNC
- Overview of lnc-web
- Overview of Lightning Terminal and getting an LNC connection string
- Walkthrough of setting up LNC connection
- Walkthrough of available calls
- Demo app

Prerequisites:
- General knowledge of LN recommended
- LND node with LITD on mainnet or testnet required
- Node.js required
- Experience with ReactJS frontend recommended

3:30pm – 5:00pm W **Remote signing for lightning node** Village: PlebDev

Speakers: Paul Itoi

Hosted by Evan & Jules

Workshop Title:

Remote Signing for Lightning Node

Time Duration:

1-1.5 hours

Goals:

- What will attendees get out of this workshop?

Hands on experience running learning real life use cases for separating the private keys from hosted lightning nodes.

They get to take home a prototype board that works with Core lightning (possibly greenlight as well).

What will attendees learn:

How to flash, pair and use a remote signing device running the Validated Lightning Signer with Core Lightning (artist formerly known as c-lightning)

https://vls.tech (they will launch their site soon)

Recommended knowledge needed:

Ability to use CLI for tailing logs.

Prerequisites:

https://github.com/stakwork/sphinx-key/blob/hardware-readme/sphinx-key/README.md

- Is access to BTC or LN node needed?

No, we will host or Voltage will assist in booting up Core lightning nodes.

Anything else?

They will need to run Sphinx on their mobile device to configure the signer hardware.

3:30pm – 6:30pm W **98% Real bitcoin smart contracts - Learn by playing a fun game.** Village: BitDevs Socratic

Speakers: Jeremy Rubin

98% Real Bitcoin Smart Contracts™
Learn by playing a fun game.

Time Duration:
- How much time is needed to complete the workshop? 3 - 3.5 Hours

Goals:
- What will attendees get out of this workshop?
- Good Vibes
- Play a fun game

What will attendees learn:
- Understanding how to architect Federated Smart contracts with Judica's Software
- Basics of Sapio
- Basic Bitcoin DeFI Concepts
- Rollups
- Alternative Market Makers
- NFT-ized Positions (Bundling into a new asset)
- Bonded Attestation Chain (Off chain protocol for ensuring honest event sequencing)
- https://rubin.io/bitcoin/2021/12/17/advent-20/
- How to define rules for automated Bitcoin contract execution
- Types of smart contracts that can be built in Bitcoin
- What it takes to deploy to the real world

Description:
- Describe the overall workshop and spirit of what will happen.

Judica is building a complete toolchain that unlocks a new paradigm for Bitcoin Smart Contract Development. Does that sound Big, Complicated, and Scary? It doesn't have to be – to make it easy and fun to learn, we've created a low-latency multiplayer bitcoin mining empire-building game that is backed by 98% Real Bitcoin Smart Contracts™ that you can join us to play.

After a few solid play sessions, we'll dive into how it all works under the hood and relates to non-game applications, followed by an open discussion on the frontier of what you can build.

Prerequisites:
- Any recommended knowledge needed?
- To Play:
- Setting up / Configuring software (git, installing dependencies, building)
- comfortable with basic command line usage
- To Learn:
- Knowledge of how Bitcoin Transactions work
- Knowledge of the capabilities of Bitcoin Script
- Any setup of an environment / software downloaded?
- Game software (to be distributed at workshop / Builder Day)
- Support for Unix (Mac / Linux) OS, Limited Windows Support
- Is access to BTC or LN node needed?
- Come with a Local Bitcoin Core Node on laptop or otherwise reachable (mainnet Pruned OK, we may connect to custom Signets day-of)

Anything else?
- Open mind, good attitude
- Optional: Come with a group of up to 5 people (we'll pair up people who come without)

4:30pm – 6:30pm W **Integration of Lightning into webApps** Main Stage

Speakers: Nate

What will I get out of this workshop?

You will gain a basic familiarity of the integration of both backend and frontend webapp development with lightning functionality.

What will I learn?

You will learn the basic functions and processes to connect a lightning node to webapps.

Description

Follow along with the devs of Voltage as they walk through the process of connecting a lightning node to a pre-built webapp project. Only a laptop is required to participate. All knowledge levels are welcome to join in. This will be a beginner friendly workshop. We are hoping to inspire and grow confidence in the developer community to integrate lightning into more applications.

What knowledge do I need beforehand?

- Basic python or JS.
- Familiarity with LND encouraged but not required.

Do I need to setup an environment or download any software?

No. We will be utilizing a pre-built environment to keep it simple, but you may clone it if you wish during the workshop setup.

Do I need access to a BTC or LN node?

No. It will be provided as part of the workshop, including liquidity so we can skip as much set-up as possible and get right into the fun.

5:00pm – 6:30pm W **Setting up Vortex on your lightning node** Village: PlebDev

Speakers: Ben Carman

Workshop Title:

Setting up Vortex on your lightning node

Time Duration:

1 - 1.5 hours

Goals:

- What will attendees get out of this workshop?

- A setup testnet(or signet) node with a coinjoined channel
- an understanding of what vortex is and how it works
- knowledge of how to set vortex up on their own node

Description:

- Describe the overall workshop and spirit of what will happen.

Plan:

- intro on what vortex is
- over view of the software
- tutorial on setting it up
- get everyone in the room to do a coinjoin ✌️

Prerequisites:

- Any recommended knowledge needed?
- Any general knowledege about running a BTC/LN node is helpful
- Any setup of an environment / software downloaded?
- git
- java
- sbt
- Is access to BTC or LN node needed?
- yes, both

- Anything else?

- testnet or signet funds

[B] Builder Day [C] Closing Ceremony [K] Keynote [L] Live-Code [P] Panel [R] Party [S] Socratic

[T] Talk [W] Workshop

OCTOBER 14 • FRIDAY

9:30am – 10:00am	K	**André Neves Keynote** *Speakers: André Neves*	Main Stage
9:30am – 10:15am	T	**PlebLab Presents: Coach Kyle's Corner** *Speakers: Kyle Murphy* Got questions about starting up a dev lab, running hackathons, or building startups? Come get some insights from PlebLab founder Kyle Murphy.	Village: PlebDev
9:30am – 5:00pm		**Bitcoin Gaming**	Village: Gaming
9:30am – 5:00pm		**NextGen Activities** *Speakers: Elly Pembroke*	Village: NextGen
10:00am – 10:45am	P	**Inheritance planning panel and Q&A** *Speakers: Josh Jalinski, Justine Harper, Jared Pierce, Terrence Yang* Are you a responsible hodler, but you're not sure what will happen to your Bitcoin when you are no longer around to control the keys? Learn about inheritance planning strategies and pitfalls from experienced lawyers and financial planners. They will answer your questions and help you avoid the worst case scenario: not being prepared at all.	Village: NextGen
10:00am – 10:45am	T	**When the Bulls are Away, the Devs Will Play: Finding and Teaching Bitcoin Devs** *Speakers: Adam Jonas* Come for the memes but stay for an analysis of the bitcoin developer shortage and what we can do about it.	Main Stage
10:15am – 11:00am	T	**Nostr Workshop** *Speakers: Brill Saiton* You've heard about Nostr, come learn about building on it from Super Testnet, Lightning Escrow's world class CTO.	Village: PlebDev
10:45am – 11:45am	S	**Welcome & Socratic Panel: The "G" Word** *Speakers: Jeremy Rubin, Matt Corallo, Buck* Bitcoin is rife with complexity. Generally speaking, this complexity is most widely understood to manifest as an extension of the feature-set available to the network and the interactions among users who exercise these functions in their unique contexts. But complexity also exists within the processes which govern modifications to Bitcoin's consensus critical code pathways. Understanding, improving upon and ensuring robustness in these processes is vital to Bitcoin's long term survival. In this panel we will investigate different perspectives on these processes and how we as a community can constructively work together in an increasingly adversarial world.	Village: BitDevs Socratic
11:00am – 11:45am	P	**Onchain Panel** *Moderators: Daniel Ameli* *Speakers: Andrew Chow, Gloria Zhao, Murch, Pieter Wuille*	Main Stage
11:00am – 12:20pm	L	**Live Code-athon: niftynei (Blockstream / CLN / Base58)** *Speakers: niftynei* Come do some 'coder' bingo, eat some popcorn, and watch leet hackers work on a something live!	Village: PlebDev
11:30am – 12:30pm		**Lunch**	Hallway

12:00pm – 12:45pm	P	**Offchain Panel** *Moderators: Paul Itoi* *Speakers: Olaoluwa Osuntokun, Valentine Wallace, Bastien Teinturier, Gregory Sanders, Tadge Dryja* Come find out what's coming in the next chapter of the Lightning network. We'll discuss the tradeoffs between privacy and reliability and you'll learn about trampoline payments, eltoo, asynch payments, and more.	Main Stage
12:00pm – 4:00pm		**Chess Tournament** *Speakers: Mike Jarmuz*	Village: Gaming
12:15pm – 1:15pm	S	**Socratic Panel: Transaction Introspection** *Moderators: Ras @coinward* *Speakers: Burak, Keagan, Sanket Kanjalkar* Covenants offer the promise to extend Bitcoin into something more useful than its already proven to be, but require serious consideration. This panel will dive into the ascendant topics most critical to the covenant discussion. We'll attempt to elucidate a clearer picture of the various implementations which add more transaction introspection to the bitcoin protocol. Following the noteworthy approaches to implementing covenants that introduce new opcodes can be a rollercoaster. We've got a great group that can not only help get everyone up to speed, but peek into the future that may already be possible with bitcoin script as it exists today.	Village: BitDevs Socratic
12:30pm – 2:00pm	L	**Live Code-athon: Rachel Rybarczyk (Stratum v2)** *Speakers: Rachel Rybarczyk* Come grab a "coder" bingo card, get some popcorn, and watch some leet coders work on code live. Some in-person, some remote.	Village: PlebDev
1:00pm – 1:45pm	P	**Legal Panel** *Moderators: Justine Harper* *Speakers: Hussein Badakhchani, Zack Shapiro, Stan Sater*	Main Stage
1:45pm – 3:00pm	S	**Socratic Session: Bitcoin Development** *Speakers: Ben Carman, Murch* A focused Socratic Seminar on Bitcoin protocol development. Topics will be selected from mailing lists, prominent github repos, network graphs, research papers, vulnerability reports and other sources.	Village: BitDevs Socratic
2:00pm – 2:45pm		**Intro to tinkercad for 3d printing** *Speakers: Aria Pembroke*	Village: NextGen
2:00pm – 2:45pm	P	**Stablecoins on lightning** *Moderators: Graham Krizek* *Speakers: Olaoluwa Osuntokun, Ryan Gentry*	Main Stage
2:00pm – 3:30pm	L	**Live Code-athon: Evan Kaloudis (Zeus)** *Speakers: Evan Kaloudis* Come grab a "coder" bingo card, get some popcorn, and watch some leet coders work on code live. Some in-person, some remote.	Village: PlebDev
3:00pm – 3:45pm	T	**ROAST: Robust Asynchronous Schnorr Threshold Signatures** *Speakers: Tim Ruffing*	Main Stage
3:00pm – 3:45pm	W	**Intro to digital logic** *Speakers: Silas Pembroke* We will use a digital logic simulator to show how fundamental logic gates can be combined to create adders, multipliers, and binary counters. This interactive course has specifically been designed for TabConf by Silas.	Village: NextGen

3:15pm – 3:45pm	T	**CoinPools** *Speakers: Antoine Riard* We'll recall the privacy notions for second-layers (counterparties confidentiality, protocol usage, contract content confidentiality, third party leaks, the types of privacy leaks and attacks), how CoinPool enables to uplift many L2s in a single wrapper, and the specific "new" attacks vectors against multi-party constructions and potential mitigations.	Village: BitDevs Socratic
3:30pm – 5:00pm	L	**Live Code-athon: Rusty Russell (Blockstream / CLN)** *Speakers: Rusty Russell* Come grab a "coder" bingo card, get some popcorn, and watch some leet coders work on code live. Some in-person, some remote.	Village: PlebDev
4:00pm – 4:30pm	T	**Provably Bug-free BIPs & Implementations** *Speakers: Jonas Nick* Writing good specifications is hard. Misinterpretations of seemingly minor aspects can result in catastrophic vulnerabilities in implementations. Therefore, in the BIP draft "Half-Aggregation of BIP 340 Schnorr signatures" recently published by Blockstream Research, we use a different approach than previous cryptography BIPs. Most importantly, our draft includes a _formal_ specification (a mathematically precise description of the scheme) written in the hacspec language, a subset of rust. This type of specification allows using software tools to prove security properties and the absence of certain kinds of bugs. Moreover, developers are able to write implementations whose behavior is provably identical to that of the specification.	Village: BitDevs Socratic
4:00pm – 4:45pm	T	**Lightning is Broken AF (But We Can Fix It)** *Speakers: Matt Corallo*	Main Stage
4:00pm – 4:45pm	W	**Interplanetary Bitcoin** *Speakers: Asher* Let a former NASA scientist virtually take you on a journey through space. We will point out Blockstream satellites, discuss timechain synching with extraterrestrial nodes, and take audience suggestions for planets, stars and galaxies to visit.	Village: NextGen
4:00pm – 6:00pm		**Chess Finals** *Speakers: Mike Jarmuz*	Village: Gaming
4:35pm – 7:30pm	W	**Codex32** *Speakers: Andrew Poelstra* Codex32 is an error-correcting code designed to be computable without the use of electronic computers. Users can compute and verify checksums by hand; we have provided lookup tables, volvelles and worksheets to assist with this process. The codex32 checksum, like all linear codes, is compatible with Shamir's Secret Sharing Scheme, a mechanism to split a secret into many "shares", such that the original secret can be reconstructed from some number of them. In SSSS, users choose a threshold value k, typically 2 or 3; they then generate k-many random shares, and then compute a number of derived shares (up to 31 in total). A random secret can then be computed from any k shares. If the initial random shares have a valid codex32 checksum, then so will all the derived shares and the final secret.	Village: BitDevs Socratic

5:00pm – 6:00pm W **Keysigning Party!** Village: PlebDev

Speakers: niftynei, Murch

Got a GPG Key? Key signing parties are an opportunity to expand your keyring of people you've verified (in-person).

If you want to attend, please sign-up and submit your exported public key by email to murch@murch.one in advance.

Bring a drivers license/passport or other identity document, if you want others to attest to you identity.

What?

• Exchange GPG keys with other attendees

Who?

• Developers who want to use their keys to sign releases
• Others who want to help each other to attest their keys' authenticity

How?

• 5:00: Meet, chat, and handout list of fingerprints
• 5:10–5:30: Present each attendee's fingerprint
  • Each fingerprint is presented separately on a slide
  • Key owner confirms fingerprint and UID, reads last 16 characters of fingerprint
  • Other attendees mark entry on their personal list as desired
• 5:30–5:45: Check other attendees' identification where requested
• 5:45–end: Hang out

Before?

• Submit your public key, fingerprint and UID by email to Murch by 2022-10-14, 12pm

After?

• Certify the keys of other attendees
• Send public key with added signature to key owner. Encrypt it to the owner's key, and send it to the owner's email address corresponding to the UID you signed.

7:00pm – 10:00pm R **Afterparty** STATS Brewpub (300 Marietta Street NW, Atlanta, GA)

[B] Builder Day [C] Closing Ceremony [K] Keynote [L] Live-Code [P] Panel [R] Party [S] Socratic

[T] Talk [W] Workshop

OCTOBER 15 • SATURDAY

9:30am – 10:00am	T	**PlebLab Presents: Coach Kyle's Corner** *Speakers: Kyle Murphy* Got questions about starting up a dev lab, running hackathons, or building startups? Come get some insights from PlebLab founder Kyle Murphy.	Village: PlebDev
9:30am – 10:00am	T	**Simplicity: Formally Verified Programmable Money** *Speakers: Christian Lewe* One of the revolutions of Bitcoin was the invention of programmable money, i.e., money which is owned by programs that release their funds upon presenting a witness. The ability to express complex spending conditions is what gave rise to multisig, the Lightning network and other schemes. Unfortunately, Bitcoin Script, the language used to write these programs, is quite restrictive and makes it hard to verify that programs are correct. Simplicity is our vision of a language that satisfies the unique needs of the blockchain: Everything that one might want to express can be expressed. Everything that one might want to verify can be verified. This is a difficult balance because highly expressive languages tend to be hard to verify. Also, what needs to be expressed and what needs to be verified turn out to be tough questions. In this talk, we answer the question of what Simplicity is, clearly and succinctly. We look at the structure of a Simplicity program and its execution, various add-ons and existing applications. We want to see the true nature of Simplicity, which turns out to be intuitive and simple.	Village: BitDevs Socratic
9:30am – 11:30am	W	**Base58's World Famous Bitcoin LARP** *Speakers: niftynei* So you run your own node, but what if you could *be* a bitcoin node? Come live roleplay bitcoin in this 2-hour hands-on workshop What is a bitcoin node? What does it do? How do transactions flow through the network and get mined? In this 2-hour workshop, we'll live-action role play the bitcoin network. We'll see how transactions get made, how they get to miners, what work a bitcoin node does and how it helps secure the network. You'll get a front-line view of how miners create blocks and transactions get spent, how difficulty readjustments impact block production, and what re-orgs and network splits look like. No prior knowledge of bitcoin or running a node is required, but highly recommended to get the most out of this workshop.	Village: NextGen
9:30am – 5:00pm		**Bitcoin Gaming**	Village: Gaming
10:00am – 10:15am	T	**The Human Rights Foundation** *Speakers: Alex Li*	Main Stage
10:00am – 10:30am	P	**PlebLab Presents: How to build a PlebLab in your town** *Speakers: Keyan, Car, Kyle Murphy* Founders fireside chat with Keyan, Car, and Kyle of PlebLab ATX	Village: PlebDev
10:10am – 10:25am	T	**TABConf Sponsors I VOLTAGE** *Speakers: Graham Krizek*	Main Stage
10:30am – 11:00am	P	**The Road from Pleb to Dev?** *Speakers: Car, Austin, Keyan* PlebDev fireside chat with Car from PlebLab and a Special Guest	Village: PlebDev
10:30am – 11:00am	T	**How to Run the Biggest Lightning Node on the Network** *Speakers: Bastien Teinturier*	Main Stage

10:30am – 11:30am	S	**Socratic Session: Lightning Development** *Speakers: Evan Price* A focused Socratic Seminar on lightning protocol development. Topics will be selected from mailing lists, prominent github repos, network graphs, research papers, vulnerability reports and other sources.	Village: BitDevs Socratic
11:00am – 12:30pm	L	**Live Code-athon: t-bast (ACINQ / Eclair)** *Speakers: Bastien Teinturier* Come do some 'coder' bingo, eat some popcorn, and watch leet hackers work on a something live!	Village: PlebDev
11:10am – 11:55am	P	**Bitcoin UX Design** *Moderators: Stephen DeLorme* *Speakers: paul, Sahil Chaturvedi*	Main Stage
11:30am – 12:30pm		**Lunch**	Hallway
11:30am – 5:00pm		**NextGen Activities** *Speakers: Elly Pembroke*	Village: NextGen
12:00pm – 12:30pm	T	**Segwit Explained vbytes: Common Misconceptions** *Speakers: Murch*	Main Stage
12:00pm – 1:00pm	S	**Socratic Panel: Attacks on Lightning** *Moderators: Tony* *Speakers: Antoine Riard, Clara Shikhelman* As adoption of the lightning network increases, so too do concerns around the various known attack vectors. These attacks touch many layers of the lightning network stack: user's privacy can be undermined, in-flight HTLCs can be exhausted, channel closes can be pinned, among other concerning vectors. This panel will be an investigation of those attacks and discussion around their proposed mitigations.	Village: BitDevs Socratic
12:30pm – 1:10pm	T	**Silent Payments and Alternatives** *Speakers: Ruben Somsen*	Main Stage
12:30pm – 2:00pm	L	**Live Code-athon: Kody Low (Base58)** *Speakers: Kody Low* Come grab a "coder" bingo card, get some popcorn, and watch some leet coders work on code live. Some in-person, some remote.	Village: PlebDev
1:15pm – 2:00pm	P	**Mining Panel** *Speakers: Bob McElrath, Rachel Rybarczyk, Matt Corallo*	Main Stage
1:30pm – 2:30pm	S	**Socratic Panel: Federated L2 Schemes** *Moderators: Evan Price* *Speakers: Jeremy Rubin, Eric Sirion, Ruben Somsen* 2022 has seen renewed interest in federated layer two schemes. This panel will be an exploration of three such schemes: the Mercury statechain protocol, the Judica VM and Fedimint. Will will discuss their designs, the challenges of implementation, their respective privacy models, security tradeoffs and what roles they will play in scaling Bitcoin.	Village: BitDevs Socratic
2:00pm – 3:30pm	L	**Live Code-athon: Ben the Carman (The Bitcoin Co)** *Speakers: Ben Carman* Come do some 'coder' bingo, eat some popcorn, and watch leet hackers work on a something live!	Village: PlebDev
2:10pm – 2:55pm	P	**Education Panel** *Moderators: Elly Pembroke* *Speakers: Dulce Villarreal, Lucas de C. Ferreira, niftynei, Santos Hernandez, Carla Kirk-Cohen, Robert Malka*	Main Stage

3:00pm – 3:30pm	T	**Braidpools** *Speakers: Bob McElrath* In this talk I will present a new structure for braidpool which I call the Unspent Hasher Payment Output (UHPO) mechanism (a decentralized share accounting system and analog of bitcoin's UTXO set, for the pool), which is a direct evolution of p2pool and is enabled by new work on MuSig2 and the FROST/ROAST Schnorr threshold signature algorithms.	Village: BitDevs Socratic
3:10pm – 3:55pm	T	**Signet lightning** *Speakers: Richard Safier*	Main Stage
3:30pm – 5:00pm	L	**Live Code-athon: Valentine Wallace (Spiral/LDK)** *Speakers: Valentine Wallace* Come do some 'coder' bingo, eat some popcorn, and watch leet hackers work on a something live!	Village: PlebDev
3:45pm – 4:15pm	T	**Eltoo on LN: Idea to Implementation** *Speakers: Gregory Sanders* Eltoo was an idea proposed over 4 years ago in order to simplify certain smart contracting protocols such as the Lightning Network and Statechains. Only in 2022 has interest in proving out the idea picked up. I will present a brief history as well as a status update on the project to bring Eltoo to life in the Lightning Network.	Village: BitDevs Socratic
4:10pm – 4:55pm	P	**Non-Lightning Layer 2** *Speakers: Paul Sztorc, Justin Moon, Burak*	Main Stage
5:15pm – 5:45pm	C	**Closing Remarks** *Speakers: Matt Hill*	Main Stage
6:00pm – 6:45pm	C	**Closing Ceremony** *Speakers: Milou, Brianna Honkawa d'Estries, Michael Tidwell, Brandon Iglesias, Stephen DeLorme*	Main Stage
6:00pm – 7:00pm		**Trivia** *Speakers: Ben Carman, Ras @coinward, Evan Price* A followup to last year's hardcore Bitcoin trivia. This year there will be two rounds: one on Bitcoin Lore/History, and another on Bitcoin/Lightning technical questions. Multiple choice. Get ready to rumble! Prizes sponsored by CardCoins!	Village: BitDevs Socratic
8:30pm – 11:30pm	R	**The TABConf Official Unofficial Afterparty** Presenting: The TABConf Official Unofficial Afterparty! We had an official afterparty and a very successful **unofficial** afterparty last year… so THIS YEAR, we're doing the same thing. Join us this Saturday at TOP DRAFT for drinks and great conversation on the last night of the event. Please note,TOP DRAFT is located in the Omni South Tower, 4th floor, between the check-in area and the sky bridge.	Top Draft Bar (Omni South Tower 4th Floor - between the check-in and the skybridge)