

Report Overview

This report summarizes all the activities carried out in the Blockchain Innovation Hub X Arbitrum Blockchain Software Development Bootcamp. It provides insight into the overall boot camp attendance rate, YouTube watch hours, social media activities, hackathon participation, and the participants' feedback.

Introduction

Blockchain Innovation Hub is a grantee of the QuestBook Arbitrum Domain Allocator Program. We ran a three-month (January-March 2024) hybrid blockchain development boot camp, featuring a hackathon, to onboard quality developers into the Arbitrum ecosystem. The program is divided into two tracks - front-end and back-end development.

Front-end developers learned how to integrate the Arbitrum SDK into their applications and develop amazing web3 UI/UX. Back-end developers, on the other hand, focused on building scalable backends using Node.js and integrating Arbitrum. Participants in both tracks learned Solidity and Ether.js.

The physical sessions were live-streamed and recorded, allowing participants to contribute in real-time and ensuring an all-round engagement. We believe these recorded classes will serve as resources for anyone interested in building on the Arbitrum chain in the future.

Key Milestones

- 800 registrations
- 164 preliminary selection
- 100 participants
- 43 completed the program
- 6 Projects submitted for the hackathon

Program Goals vs Achievements

Goal

Achievement

Achieved?

Achieve 500 registrations for the program.

Achieve 800 registrations for the program.

Yes

Create engagement with 100 active participants the program.

Achieved 100 participants

Yes

Target an 80-90% completion rate among participants.

Achieved 43% completion rate

No

Render assistance to participants in launching a minimum of 10 projects on Arbitrum.

Only 6 Projects deployed from the Hackthon

No

Provide live and recorded video sessions of every class within the program

Achieved 100% video recording

Yes

Receive anonymous feedback and ratings from participants.

We collected anonymous feedback and ratings from participants.

Yes

Create a program evaluation report 2-3 months after the program ends to analyse its long-term impact on the participants.

Pending

Pending

Sponsor/participate in pitching events for participants to onboard users into their projects.

Pending

Pending

Generate media coverage through billboard advertisements and social media promotions, with an expected reach of 25,000 to 50,000 people.

YouTube - 20,000+ impression

Yes

Put together an end-of-program report to highlight achievements.

Twitter - 15,773+ views

Yes

Generate a comprehensive monthly report on training progress.

We submitted monthly reports on Questbook, Arbitrum Forum and KarmaGap

Yes

Projects from the Hackathon

During the last week of the Bootcamp, a Twitter space was held on the 27th of February to announce the timeline of the Hackathon and explain the other Hackathon requirements to the participants. During this Twitter space, the judges for the Hackathon were introduced and asked to give useful tips for project development to the participants. The building and the submission period started from the 1st of March to the 23rd of March but was later extended due to a timezone error when setting up the hackathon on DoraHack. Individuals with strong affiliations and interests in the Arbitrum ecosystem were chosen as the hackathon judges. The Hackathon review started on March 24th, 2024, and ended on March 28th, 2024. They were able to review, grade, and give helpful comments on each of the Hackathon projects. The projects are outlined below:

1. Euterpe - First Place - \$1,500

This is a FanFi platform that connects music talents with their fans. As fans discover and appreciate talent, they can offer their full support, eliminating the need for artists to depend on record labels for funding. Instead, artists flourish within a decentralized community where everyone has equal chances and opportunities.

Vision

: Euterpe is empowering artists and fans to shape the future of music, together.

Github Repo: <https://github.com/tolu1/euterpe>

Demo URL:

<https://euterpe.vercel.app/>

Video presentation URL:

[Euterpe - Google Drive](#)

Payment URL:

[Arbitrum Transaction Hash \(Txhash\) Details | Arbiscan](#)

1. Dime - Second Place - \$1,000

A decentralized application (DApp) designed to help users manage their cryptocurrency savings and automate bill payments. Utilizing the efficiency and scalability of Arbitrum Layer 2 technologies, this DApp aims to provide a secure and user-friendly platform for financial management in the crypto space.

Vision

: A piggy bank (crypto savings) DApp that also automates utility bill payments.

Github Repo

: [GitHub - DimeSave/Dime: BIH x Arbitrum Bootcamp 2023-2024 Hackathon Project. Link to presentation slide:](https://github.com/DimeSave/Dime)
https://drive.google.com/file/d/17f5cHDitk9g7spgi6ZiZQFyi_2n20Bur/view?usp=sharing

Demo URL

: <https://dime-app-smoky.vercel.app/>

Video presentation URL

: [Dime: A Decentralized Crypto Payment Scheduling Application | Loom](#)

Payment URL

: [Arbitrum Transaction Hash \(Txhash\) Details | Arbiscan](#)

1. The Cypher School - Third Place - \$500

This is a decentralized application (dApp) powered by Arbitrum technology, redefining the learning landscape by merging blockchain and Web3 advancements. This platform aspires to create a decentralized hub for education, ensuring transparency, incentivized learning, and community-driven development.

Vision

: to revolutionize the learning experience by leveraging Arbitrum blockchain and Web3 technologies. The platform aims to create an inclusive and decentralized ecosystem that empowers learners, educators, and content creators while fostering a collaborative and transparent learning environment.

Github Repo

: [GitHub - Prebbydev/web3-school-platform](https://github.com/Prebbydev/web3-school-platform)

Demo URL:

<https://web3-school-platform-yuip.vercel.app/>

Video presentation URL

: https://youtu.be/9rxk_1Uq6Bw?si=JYmALiUGWk2RKyFz

Presentation Slide URL

: <https://www.canva.com/design/DAGAVhooxb0/rtmlSb8P2wgb1eCCL8hnCQ/edit>

Payment URL:

[Arbitrum Transaction Hash \(Txhash\) Details | Arbiscan](#)

1. Litrah

A decentralized system for token swapping.

Vision

: To solve the issue of converting tokens into another

Github Repo:

[GitHub - dannylincs/swapdapp](https://github.com/dannylincs/swapdapp)

Demo URL

: <https://swapdapp8.vercel.app/>

Video presentation URL

: <https://youtu.be/tet0xRr-J1Y>

1. PoOS

A user-friendly decentralized system designed to solve the problem of counterfeit products and manipulation in the supply chain industry.

Vision

: To solve the problem of counterfeit products in the supply chain industry.

Github Repo

: [Repositories · GitHub](#)

Demo URL

: <https://p-oos-frontend.vercel.app/>

Video presentation URL

: [poos_demo.mp4 - Google Drive](#)

Presentation Slide URL

: https://www.canva.com/design/DAF_IH2CZXA/2zgLcPspzEKyGC0R-lqdPg/edit

1. Access Lite DApp

A groundbreaking Web 3.0 Real Estate application designed with Arbitrum to redefine the way we interact with the real estate market. With a focus on seamless access and cutting-edge technology, our platform aims to provide users with unparalleled transparency and efficiency in property exploration, transactions, and management.

Vision:

To redefine the real estate experience and usher in a new era of accessibility and innovation.

Github Repo:

[GitHub - tobatosin/AccessLite](#)

Demo URL:

<https://accesslite.vercel.app/>

Video presentation URL

: [Accelite Real Estate DEMO on Vimeo](#)

Judging Rubrics

All the Hackathon projects submitted via Dorahack were evaluated based on the following criteria:

- Innovative use of Arbitrum Technology (30 points)
- Originality (20 points)
- Complexity (10 points)
- Potential for mass adoption (20 points)
- User Experience (20 points)

Training Methodology

For the boot camp, we used Arbitrum Sepolia testnet. Also, students learned how to deploy smart contracts and claim test funds from L2FAUCET. Over 300 contracts were deployed by the students on Arbitrum Sepolia. The students also used the Arbitrum SDK and learned how to integrate it into their Hackathon Project. Below are some of the videos from the boot camp:

[
(<https://www.youtube.com/watch?v=ssHeOBLCD9c>)
[
(<https://www.youtube.com/watch?v=EtJvGQpYzzg>)
[
(<https://www.youtube.com/watch?v=QzxH-Q2WmOI>)
[
(<https://www.youtube.com/watch?v=-BZo7YQyvy4>)
[
(<https://www.youtube.com/watch?v=-pHypxT17Cg>)
[
(<https://www.youtube.com/watch?v=mzI9MNCUS28>)
[
(<https://www.youtube.com/watch?v=GUg0DpKDF8w>)
[
(<https://www.youtube.com/watch?v=aK9WzARyxrA>)
[
(https://www.youtube.com/watch?v=DL5_YzzP8QY)
[
(<https://www.youtube.com/watch?v=Lasgc7JVjI0>)

Participation Rate

At the beginning of the program, 800 participants registered. This number was narrowed down through a preliminary selection process to 164 candidates, culminating in a final selection of 100 candidates. Out of the 100 candidates selected, 54 opted for the front-end track, while 46 pursued the back-end development path within the program.

We prioritized inclusivity, ensuring equal opportunities for both male and female candidates, and applying a balanced set of selection criteria uniformly across all participants.

Of the participants selected, 16 opted for onsite classes while the remaining 84 participants attended the classes virtually.

Throughout the two months of boot camp, our goal was to maximize participant engagement, as evidenced by two key indicators: the rate of assignment submissions and attendance. We consistently aimed for high performance in these areas to gauge the program's effectiveness.

The rate of attendance reduced as the Bootcamp came to an end while the YouTube watch rate increased significantly. Two major factors contributed to participants not attending the live classes: school/work commitments and internet connectivity issues. We provided immediate solutions for each of these challenges.

The attendance rates dropped in the second month compared to the first, due to learners' inability to attend the live classes. This led to an increase in the amount of time spent watching our YouTube content and the impressions received on the channel. This trend highlighted learners' preference for flexible learning options and also showed that external parties benefited from the program's content.

Attendance Rate

Total YouTube Impression

YouTube Watch time per hour with views

Attendance vs Completion

Social Media Engagement

Below is a list of links to some of the participant's engagement with the boot camp on social media.

https://x.com/_southieb/status/1775118942152847750?s=46

<https://x.com/qazman001/status/1775117228997832871?s=46>

<https://x.com/amityclev/status/1774113224817832054?s=46>

<https://x.com/omoalade62/status/1773952441907581216?s=46>

https://x.com/i_am_adeyeye/status/1755285430763766008?s=46

<https://x.com/omoalade62/status/1770816711953989831?s=46>

https://x.com/wonder_nw/status/1757137639088472556?s=46

https://x.com/_breezy_bbygirl/status/1762571534554591569?s=46

https://x.com/i_am_adeyeye/status/1744329863945732551?s=46

https://x.com/wealth_thefirst/status/1761006827255267505?s=46

https://x.com/wonder_nw/status/1751701946522579103?s=46

https://x.com/wonder_nw/status/1757137639088472556?s=46

[linkedin.com](https://www.linkedin.com)

KAZEEM LUKMAN on LinkedIn: #blockchain #web3 #arb

First time Hackathon, first-time win:

For the past 3 months, I have been dedicated learning Blockchain Development, sponsored by The Arbitrum Foundation and...

[linkedin.com](https://www.linkedin.com)

Bolarinwa Muhdsodiq on LinkedIn: Gm Gm My journey as a web3 developer has...

Gm Gm My journey as a web3 developer has taken an exciting turn with my recent inclusion in the Arbitrum Blockchain Bootcamp, bootcamp organized by the...

Some Assignments from the Students

[Medium – 13 Jan 24](#)

Common Security Vulnerabilities in Blockchain Systems and Mitigation Strategies:

Blockchain technology stands as a formidable force, promising decentralization, transparency, and security. However, even the most robust systems are not void of vulnerabilities. Some of which are...

Reading time: 2 min read

[Medium – 12 Jan 24](#)

Arbitrum Sequencers, their importance, and limitations.

The Sequencer is a specially designated Arbitrum full node which, under normal conditions, is responsible for submitting users' transactions onto L1. As a Layer 2 scaling solution, they address...

Reading time: 1 min read

[Darleneprecious](#)

Arbitrum Sequencers, their important, and limitations.

Arbitrum offers a layer 2 solution that addresses Ethereum's scalability issues. It processes transactions off of the Ethereum mainnet, making them quicker and more affordable. The role of sequencers Sequencers likely refers to entities responsible...

[GitHub](#)

[GitHub - Darleneprecious/solidity-training](#)

Contribute to Darleneprecious/solidity-training development by creating an account on GitHub.

[github.com](#)

[wondernwadei/Arithmetic/blob/main/arithmetics.sol](#)

```
// SPDX-License-Identifier: MIT pragma solidity ^0.8.0;

contract Arithmetics {

function findOddNumber(uint x) public pure returns (bool) {
    return x % 2 != 0;
}
function findEvenNumber(uint x) public pure returns (bool) {
    return x % 2 == 0;
}
function getMostSignificantBit(uint x) public pure returns (uint) {
    uint msb = 0;
    while (x > 0) {
        msb = x;
        x >>= 1;
    }
    return msb;
}

}
```

[github.com](#)

[wondernwadei/BIHAssignments/blob/main/upgraded_donation.sol](#)

```
// SPDX-License-Identifier: MIT pragma solidity ^0.8.0;

contract Charity {

uint256 immutable target;
uint256 public currentDonations;
uint256 public deadline;
address public charity;

event donationMade(address indexed donor, uint amount);

struct Donation {
    address donor;
    uint amount;
}

mapping(address => Donation) donations;

constructor(uint256 target_, uint256 deadline_) {

This file has been truncated. show original
```

[Vulnerability Of Blockchain Technology\]](#)

[github.com](#)

[Qazman-Bandwidth/Arbitrum-Bootcamp2024/blob/main/training6.sol](#)

```
// SPDX-License-Identifier: MIT

pragma solidity ^0.8.19;

contract getEvenOddandMSB {

int num;
string output;

function setNumber(int n) public
{
    num=n;
}
```

```

if (num % 2 == 0)
{
    output = "The number is Even";
}
else
{
    output = "The number is odd";
}

```

This file has been truncated. [show original](#)

[github.com](#)

[GitHub - AJTECH0001/Donation_contract](#)

[main](#)

Contribute to AJTECH0001/Donation_contract development by creating an account on GitHub.

[github.com](#)

[AJTECH0001/arithmetic6/blob/main/traning6.sol](#)

```

// SPDX-License-Identifier: MIT pragma solidity ^0.8.19;

contract ArithmeticContract { function isOdd(uint256 number) public pure returns (bool) { return number % 2 != 0; }

function isEven(uint256 number) public pure returns (bool) {
    return number % 2 == 0;
}

function findMostSignificantBit(uint256 number) public pure returns (uint8) {
    uint8 bitPosition = 0;
    while (number > 0) {
        number = number >> 1;
        bitPosition++;
    }
    return bitPosition;
}

```

This file has been truncated. [show original](#)

[Developer Lab.](#)

[Arbitrum Sequencers: Importance and Limitations](#)

The Sequencer is a key component of the Arbitrum Blockchain that is responsible for submitting transactions onto the L1 chain. While it can take different forms, the current Sequencer is a centralized entity. However, regardless of its form, the...

[sepolia.arbiscan.io](#)

[Arbitrum Solidity Contract Source Code Verification - Bytecode - ABI \(Version 2\)](#)

Solidity Contract Source Code Verification tool help you verify and publish your Solidity Source Code

[Medium – 12 Jan 24](#)

[The benefits and limitations of using blockchain technology in your project.](#)

Imagine a digital ledger, like a shared Google spreadsheet where everyone can see the transactions. Each transaction is like a new line...

Reading time: 3 min read

[Medium – 12 Jan 24](#)

[ALL YOU NEED TO KNOW ABOUT ARBITRUM SEQUENCER VALIDATORS.](#)

In the arbitrum blockchain validators are grouped into Active, Defensive, Watchtower, and Sequencer Validators. our area of focus today will be the sequencer validators. ARBITRUM's SEQUENCIAL...

Reading time: 1 min read

github.com

[Amity808/arbitrum-bootcamp/blob/main/CampaignDonation](https://github.com/Amity808/arbitrum-bootcamp/blob/main/CampaignDonation)

```
// SPDX-License-Identifier: MIT pragma solidity 0.8.9;

contract Donation { //

uint256 donationLength;

struct Donate {
    address payable owner;
    string description;
    uint256 goalAmount;
    uint256 amountRaised;
    bool done;
}

mapping (uint256 => Donate) public _donate;

modifier onlyCampaignOwner(uint256 _campaignId) {
    require(msg.sender == _donate[_campaignId].owner, "Only the campaign owner can call this function");
```

This file has been truncated. [show original](#)

Participants Feedbacks

We asked the participants for their opinions on the Blockchain Innovation Hub X Arbitrum Bootcamp and Hackathon through a survey form. The feedback from the participants gave us more insights into what needed to be improved or changed in future Bootcamps or Hackathons. Some of the feedbacks to the survey are as follows:

The majority of the participants feel confident about their knowledge of Arbitrum technology compared to the beginning of the Hackathon. Some feel they are fairly good with it while a few of the participants think their knowledge of Arbitrum is excellent.

For the overall experience on the BIH X Arbitrum Bootcamp, most of the participants were quite satisfied with it. All of the participants who filled out the survey form mentioned their interest in continuing to build on the Arbitrum ecosystem after the Bootcamp ended.

The majority of the participants are interested in participating in other Hackathons organized by Arbitrum or BIH

91.3% of the participants that did the Hackathon chose that they would be willing to continue with their Hackathon projects if the grant is provided.

Partnerships and Collaborations

To attract participants, we partnered with various communities and exceeded our initial registration target within just one week. This approach has been proven to be the most effective. Below are the list of collaborations we had:

1. GDG Ibadan DevFest 2023 - <https://x.com/blockchainih/status/1730647135148712096?s=20>
2. Arbitrum Campus Connect - <https://x.com/blockchainih/status/1729846995999686704?s=20>
3. OOUTech Community - https://x.com/OOU_Tech/status/1732411761587020017?s=20
4. Tech Starters Conference by Amazing Tech Community (ATC) Africa - <https://x.com/blockchainih/status/1733790662334533873?s=20>
5. Across the Niger Meetup - https://x.com/Edwin_Xploit/status/1734848781554778361?s=20

Challenges and Recommendations

Attendance Strategy:

We advise against enrolling college students and working professionals in the programs to improve attendance rates. Additionally, we suggest allocating more slots to participants who can attend in person.

Submissions Improvement:

We recommend requiring assignment submissions on a weekly or monthly basis, rather than after each live class.

Completion Rate:

To improve course completion rates among developers, we suggest incentivizing participation to encourage their engagement throughout the entire boot camp.

What's Next?

Certificates

We are issuing two certificates:

1. Certificate for Participation (POAP) - <https://drops.poap.xyz/drop/171874/detail> - minting starts soon.
2. Certificate of Completion

[

Screenshot 2024-04-04 at 3.39.37 PM

1290×945 86.2 KB

](https://global.discourse-cdn.com/standard17/uploads/arbitrum1/original/2X/8/8208f56b4c51586cc2e20627c7cb987464e3aabc.jpeg)

Specimen

Internships and Job Placement

We will be sending a list of jobs available within the ecosystem to the participants. Also, we will reach out to some projects to see if there are opportunities for internships.

Key Questions for Future Development

Career Path:

What comes next for these developers? Will they advance as active developers or transition into roles as builders in the Arbitrum ecosystem?

Support Structures:

Are there any structured pipelines in place to retain these developers, regardless of their chosen path?

Ecosystem Engagement

: How do we ensure that these developers are primarily contributing to the Arbitrum ecosystem and making a significant impact within it?

Conclusion

The Blockchain Innovation Hub X Arbitrum Bootcamp attained key milestones encompassing registrations, selection process, completion of the program, and acceptance of projects for the hackathon event as well as the grading of these projects and awarding of prizes to the winners. Special thanks to [@Manugotsuka](#) [@cattin](#) for their support.