



# EVENT STREAM

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# EVENT STREAM

<Keep>  
<it>  
<simple>

Ibrahim  
Chikani

[Linkedin](#)  
[Github](#)

Nishitha  
Jogi

[Linkedin](#)  
[Github](#)

## COLLABORATION:

We communicated seamlessly, shared ideas, and tackled challenges together despite working remotely.

# PROBLEM STATEMENT

Design a probabilistic data structure that tracks the frequency of millions of real-time events with minimal memory and supports accurate percentile queries.



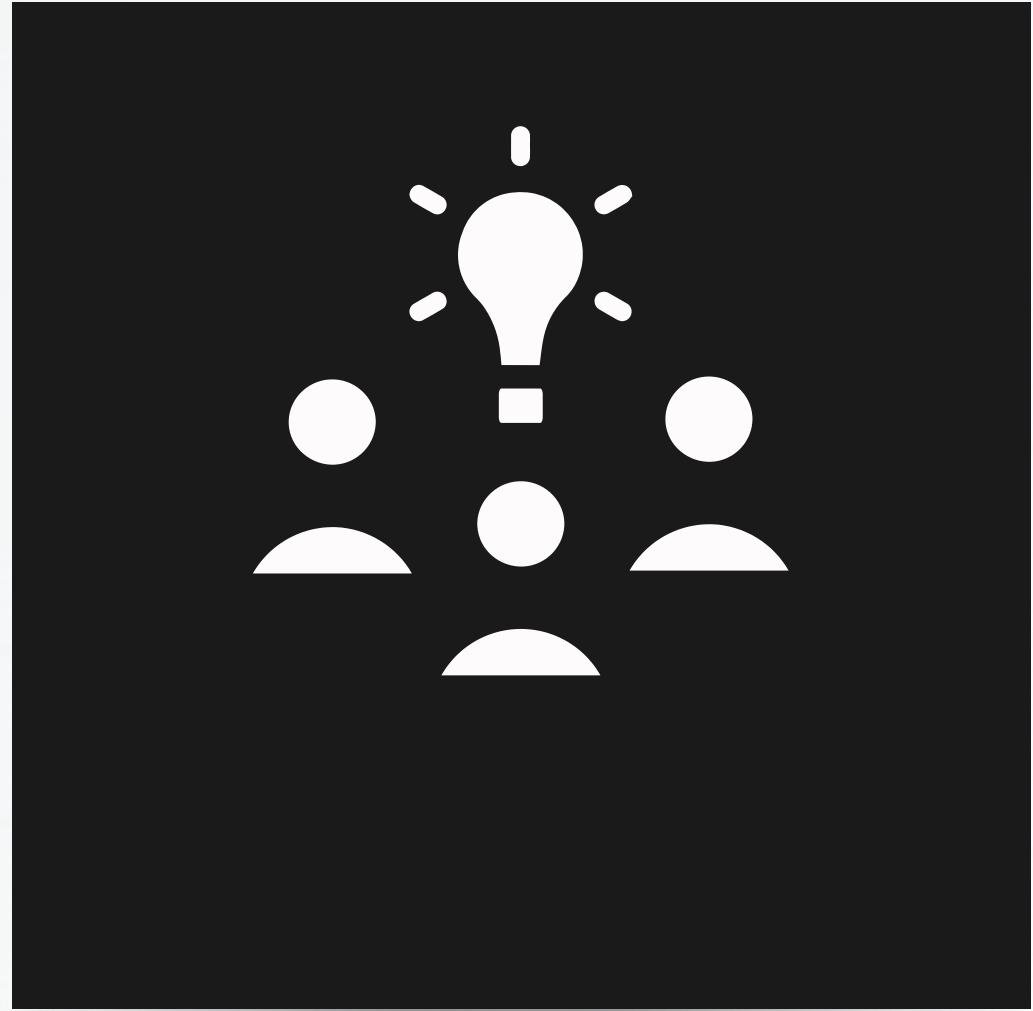
# THE EXPERIENCE

## What We Learned:

- Explored Count-Min Sketch, Cuckoo Filter, and KLL Sketch for efficient memory use and accuracy.

## How We Tackled the Problem:

- Ibrahim: Worked on Count-Min Sketch and hashing techniques to optimize data structure performance and ensure scalability.
- Nishitha: Focused on the Cuckoo Filter for efficient event tracking and minimizing hash collisions.



## Challenges Faced:

- Balancing memory constraints with accuracy.
- Debugging real-time integration.
- Integrating different data structures effectively.
- Balancing accuracy, memory efficiency, and real-time constraints.

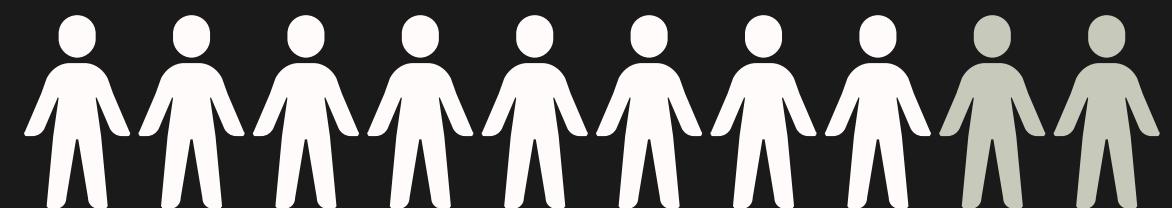
# COLLABORATION & TOOLS

## Technology Stack:

- Python, CityHash, Cuckoo filter custom KLL Sketch implementation.

## Our Dynamic:

- Leveraged each other's strengths to deliver an optimized solution within the time constraints.



# RESULTS & KEY TAKEAWAYS

## Results Achieved:

- Memory-efficient structure with 95% accuracy.
- Sub-millisecond query latency.

## Lessons Learned:

- Nishitha: Deepened knowledge of probabilistic data structures.
- Ibrahim: Enhanced ability to optimize under constraints.
- As a Team: Strengthened collaboration and problem-solving under pressure.

# OUR MOTIVATION TO PERFORM

## Teamwork:

Strong collaboration between Ibrahim and Nishitha enabled us to effectively split tasks, pushing our solution forward.

## Healthy Competition:

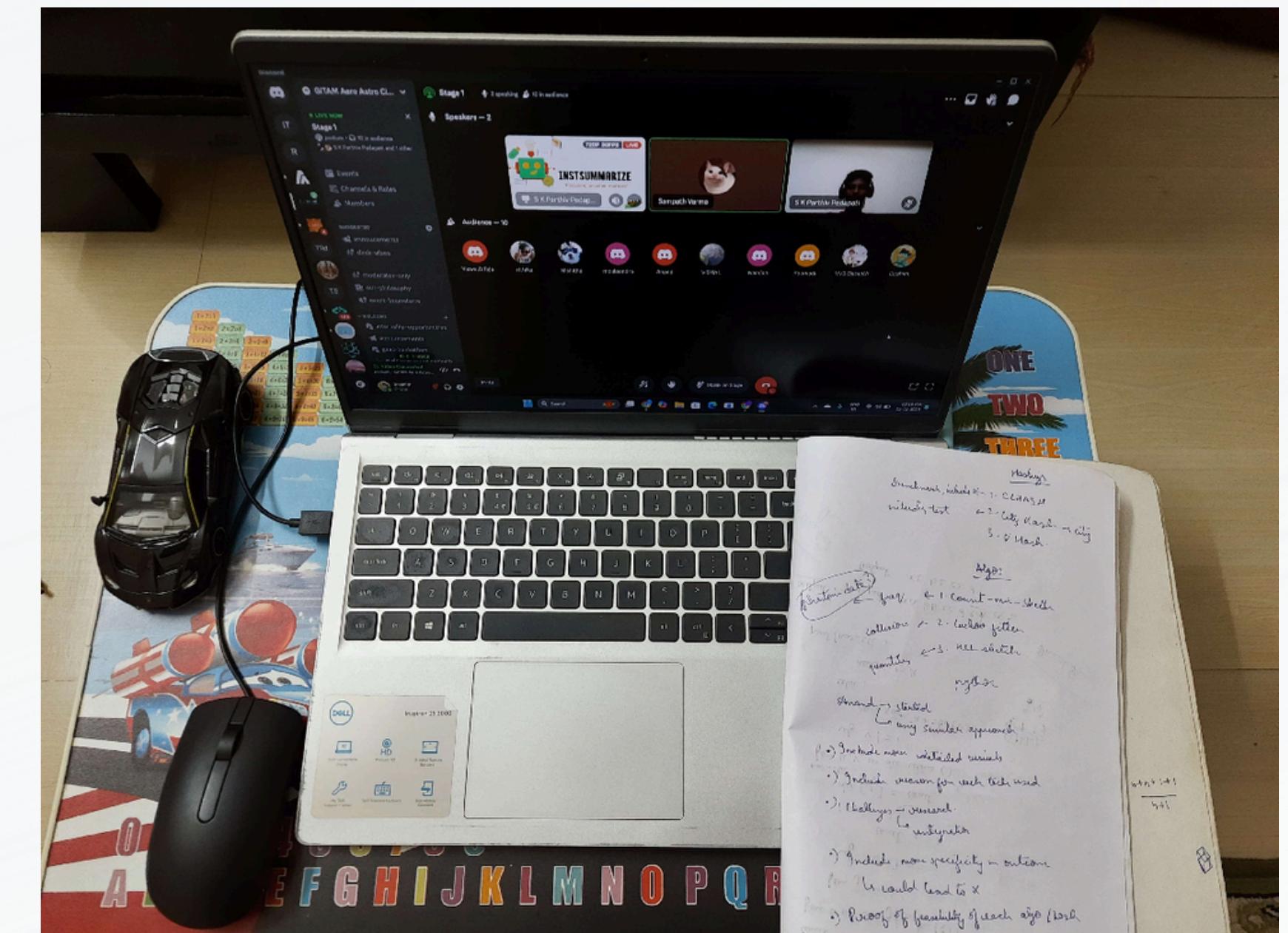
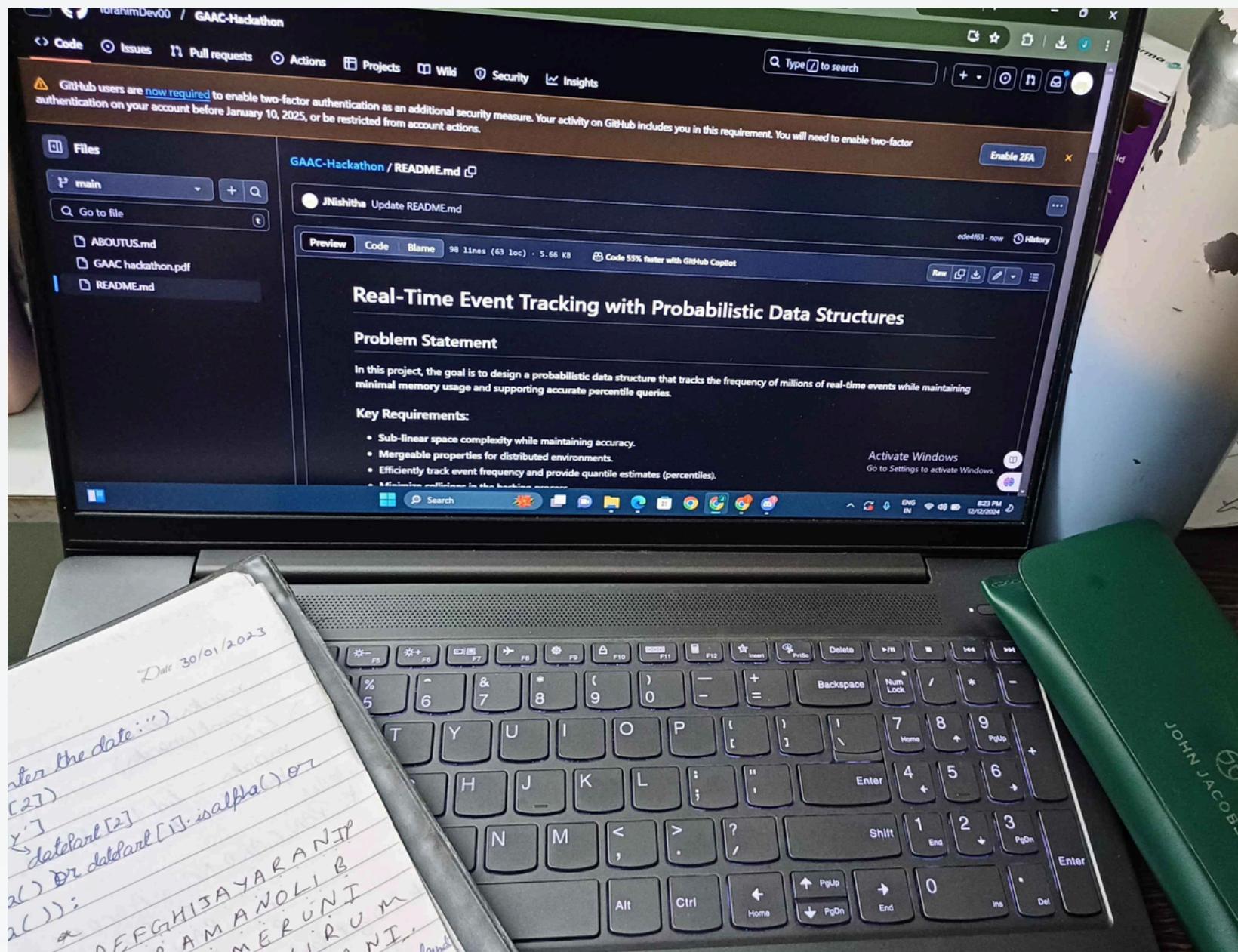
Observing other teams' progress motivated us to innovate further and refine our technical implementation.

## Goal-Oriented Approach:

Our aim to lead with accuracy and optimization kept us focused on delivering the best solution.

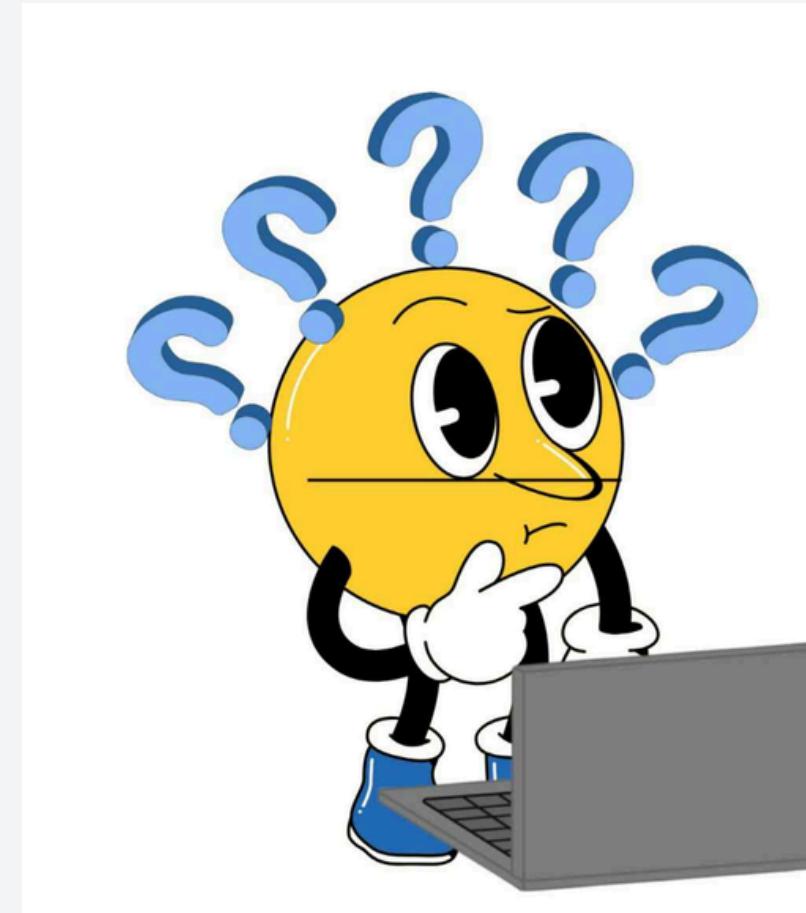
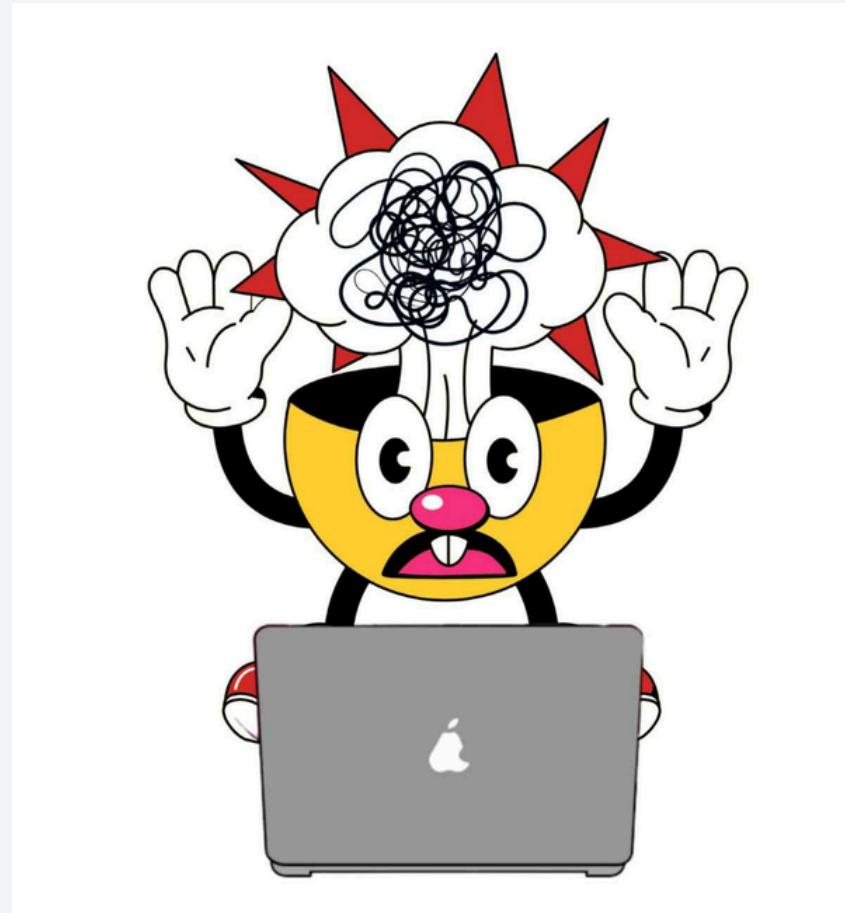
Team Member 1	Team Member 2	Day 1	Day 2
Ibrahim	Nishitha	130	
Viswa Teja	Rithika	120	
Sampath	Parthiv	100	
Prasanna	Dil Barash	90	
Anand	Nandan	90	
Narayana	Geetha	50	
Aditya	Bhargav	40	
Vishal	Gokul	30	
Vydhika	Likhith	0	

# OUR WORKSPACE

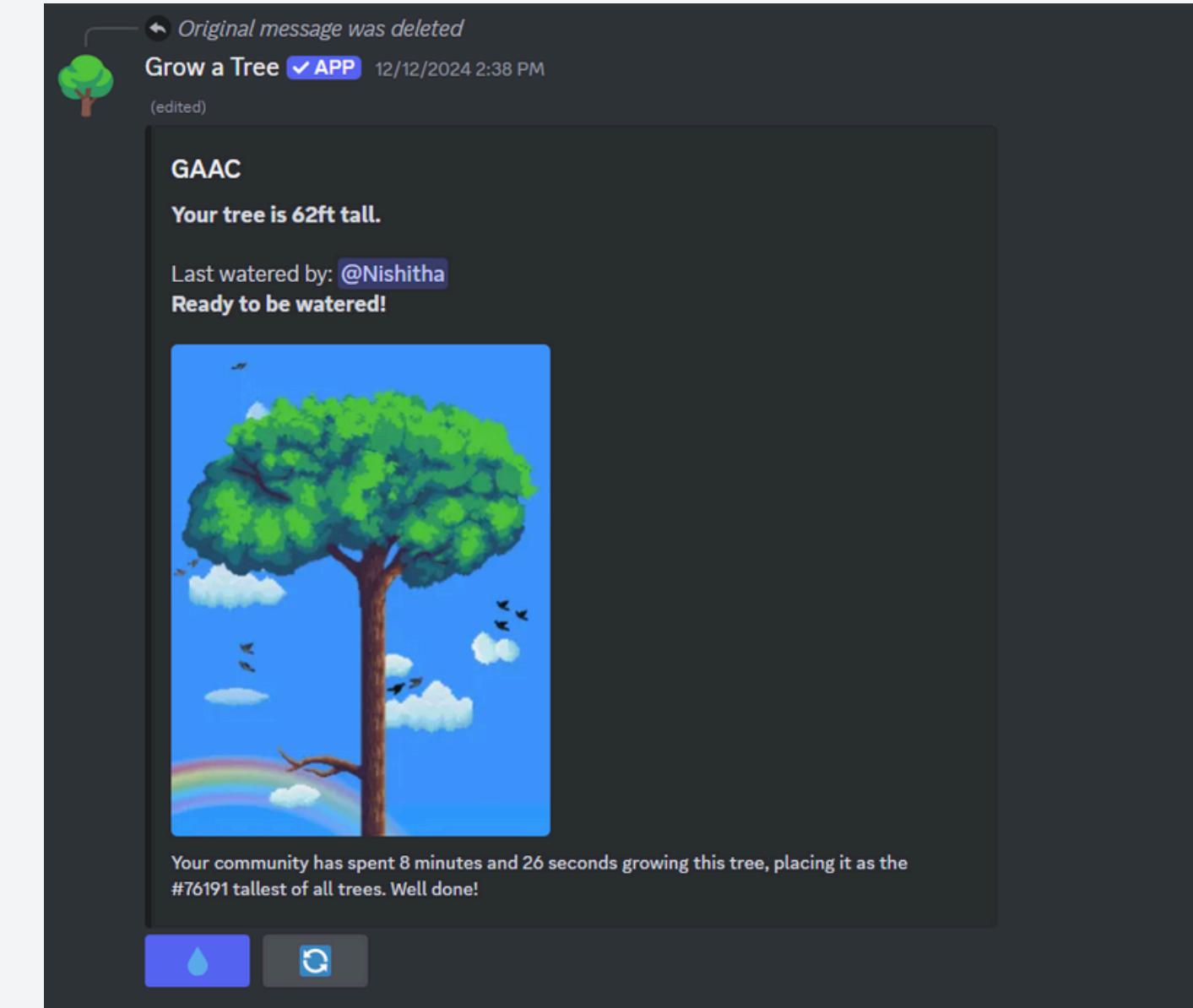


# OUR FUN LITTLE TASKS

Emoji Making Challenge:



Watering the Tree:





# THANK YOU!

