Chat for All

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Distributed Computing CPSC 4387

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Introduction

❖A simple Communications platform
❖Enhance the way parents and teacher converse
❖Quality Performance
❖Inclusive

Distributed Systems

Communication and collaboration with network devices
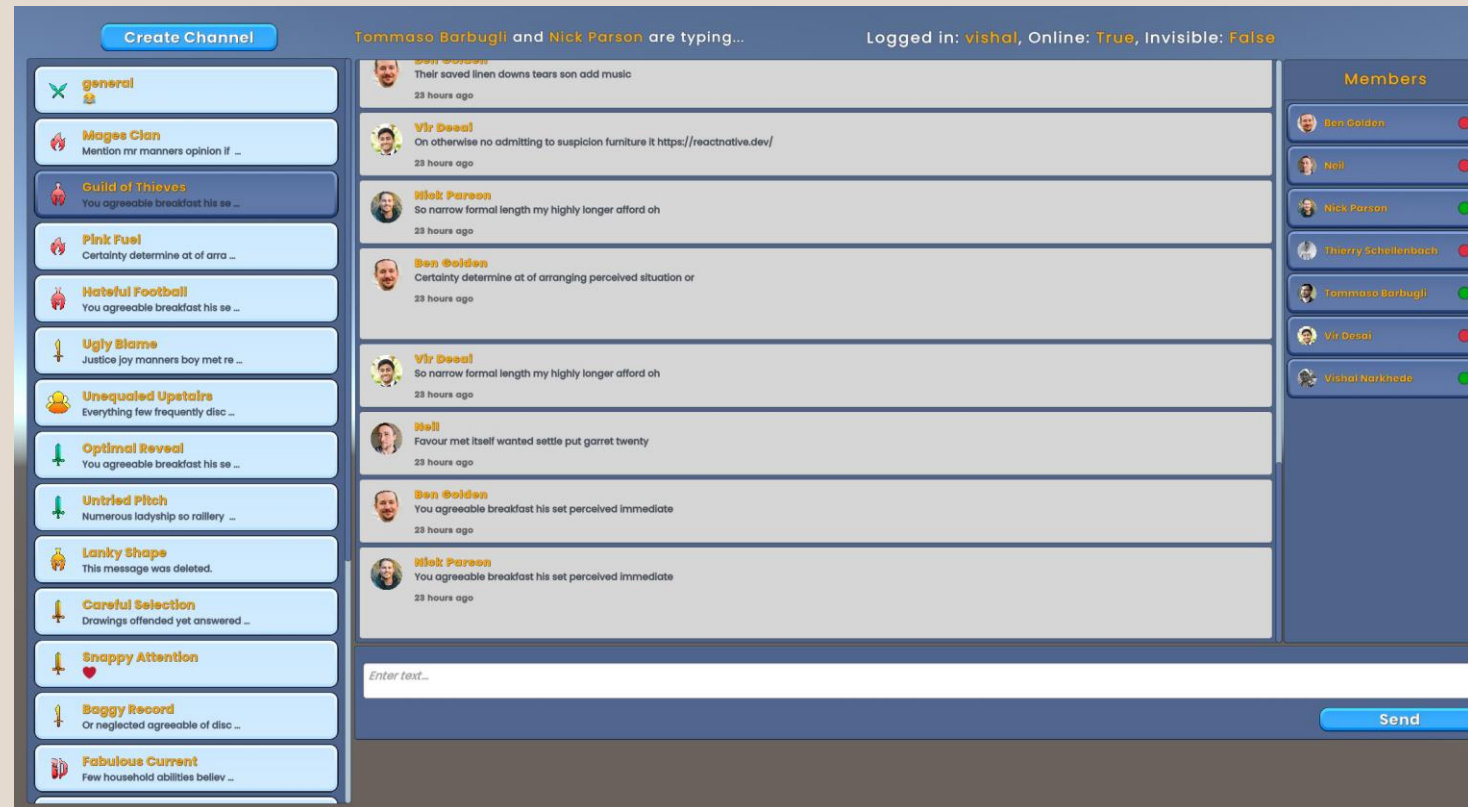High availability, fault tolerance, scalability

Key Benefits:
❖ Resilience: Operates even when components fail
❖ Efficiency: Supports concurrent processes
❖ Scalability: Handles growth in users/devices

How its used here?
❖ Seamless communication and reliability with message delivery

My Vision

❖ Real Time Messaging

❖ Messaging for 2+ people

❖ User Friendly Interface

Implementation

❖ Unity
  ❖ 2-D

❖ C#
  ❖ Primary for Unity
  ❖ Handle
    ❖ Message processing,
    ❖ Error recovery,
    ❖ Core functionality

❖ Netcode for GameObjects
  ❖ Unity's networking library
    ❖ Implement distributed
      communication between devices
  ❖ Real time syncing

Challenges

Coding Bugs	Testing	Time Management	Visual Aspect
❖ Was an easier fix than I had thought ❖ Used Chat GPT to help ❖ Adding Users Roles: Teacher and Parent	❖ Network not attached to an object ❖ Just was building incorrectly ❖ Took up all my time	❖ Took up so much time, I fell behind sadly (but also kind of funny)	❖ Was not able to make it pretty

Future Improvements

❖ . Maybe use WebGL

❖ Would love to add visuals

❖ Fix the sizing
  ❖ Was looking really good but I changed a format, and I forgot which one it was on before

❖ Would need to fix and make the functionalities of assigning users
  ❖ Maybe via menu

Conclusion

❖ T'was hard indeed
❖ Had a lot of fun through the struggle
❖ Learned how to use ChatGPT for error handling

Resources

❖ Java Guide. *Unity Multiplayer: Setting up Netcode for GameObjects | Create a multiplayer game in Unity.* YouTube, https://www.youtube.com/watch?v=lNC8dIdDoqE. Accessed 5 Dec. 2024.

❖ Unity. *Getting Started with Unity Netcode for GameObjects (NGO).* YouTube, https://www.youtube.com/watch?v=GlciuxL0N5Q. Accessed 5 Dec. 2024.

❖ Brackeys. *How to Make a Multiplayer Game in Unity! (2023).* YouTube, https://www.youtube.com/watch?v=y69wBS13wwA. Accessed 5 Dec. 2024.

❖ GameDevHQ. *Creating a Real-Time Chat System in Unity.* YouTube, https://www.youtube.com/watch?v=WMJS7sVp2FQ. Accessed 5 Dec. 2024.

❖ PeerDH. *Building a Real-Time Chat System in Unity.* PeerDH, https://peerdh.com/blogs/programming-insights/building-a-real-time-chat-system-in-unity. Accessed 5 Dec. 2024.

❖ Unity Technologies. *About Netcode for GameObjects.* Unity Multiplayer Documentation, https://docs-multiplayer.unity3d.com/netcode/current/about/. Accessed 5 Dec. 2024.

❖ GeeksforGeeks. *What is Distributed Computing?* GeeksforGeeks, https://www.geeksforgeeks.org/what-is-distributed-computing/. Accessed 5 Dec. 2024.

❖ OpenAI. *ChatGPT* (December 5, 2024 version). OpenAI, 2024, https://chat.openai.com/.