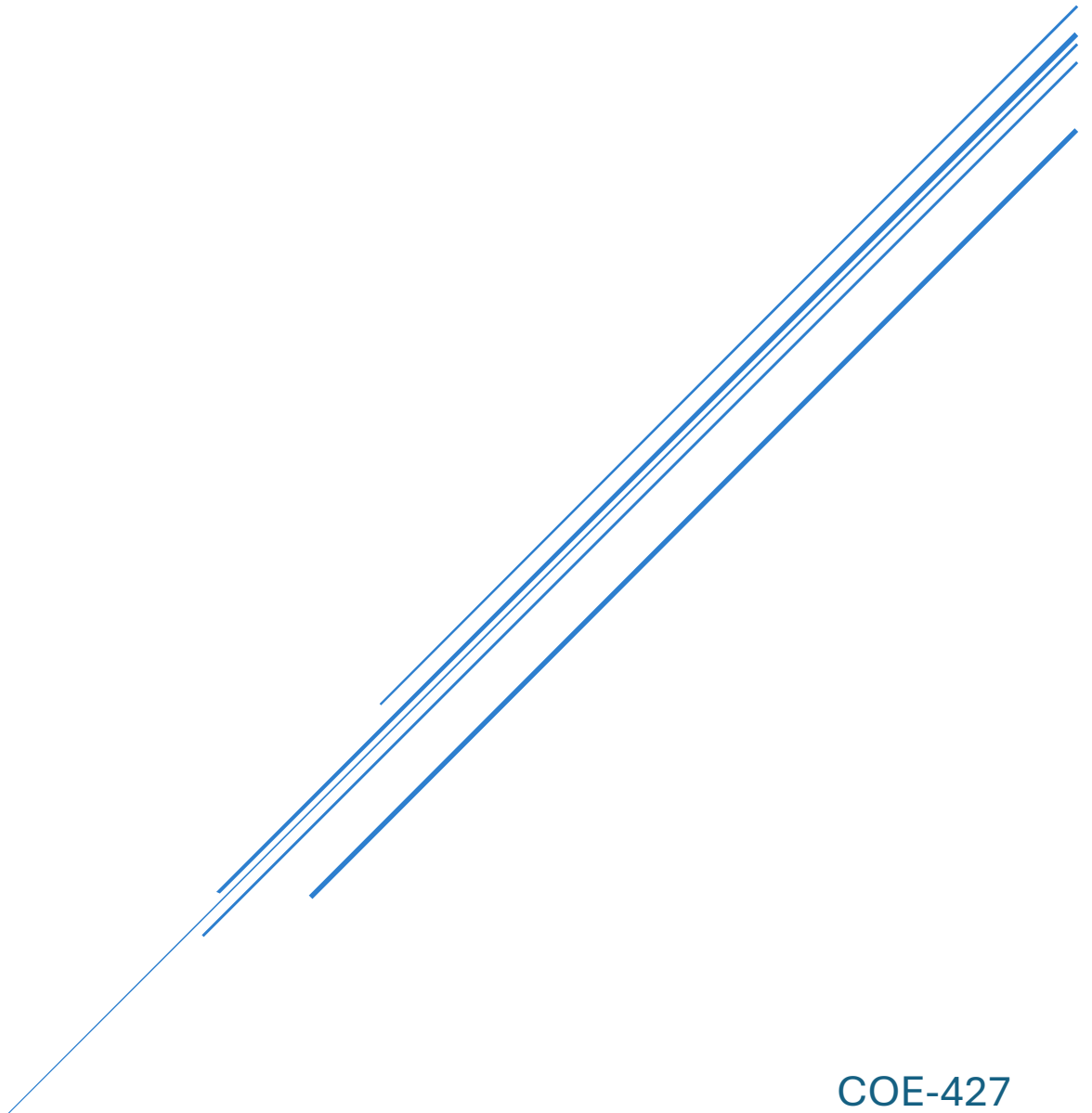


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202154790



COE-427  
Features Report

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## 1) Message History and Persistence

I added durable chat history so users can receive recent messages when they join late.

## 2) What we changed (key files)

chat\_qos.xml: **defined a dedicated profile for chat messages that enables late-join history (reliable, transient-local, keep-last).**

Backend code – **writes/reads messages using the above QoS and persists them locally so the UI can replay, and search history on demand through search\_history.py (no UI changes).**

RTI backend now logs to chat.db (columns: ts, direction, from\_user, first\_name, last\_name, grp, text).

DDS late-join behavior is still provided via Connex QoS + Persistence Service; the app-level log is purely for search and auditing.

## 3) DDS-side implementation (late-join replay)

**Reliability:** set **RELIABLE** so messages are acknowledged and not dropped.

**Durability:** set **TRANSIENT\_LOCAL** so a writer keeps a cache of the last messages for late joiners.

**History:** **KEEP\_LAST (depth 50)** so a bounded window of recent messages is retained and delivered immediately to new readers in the same room/partition.

These settings are captured in Chat\_Library/ChatMessage\_Profile of chat\_qos.xml.

## 4) Application-side persistence & search

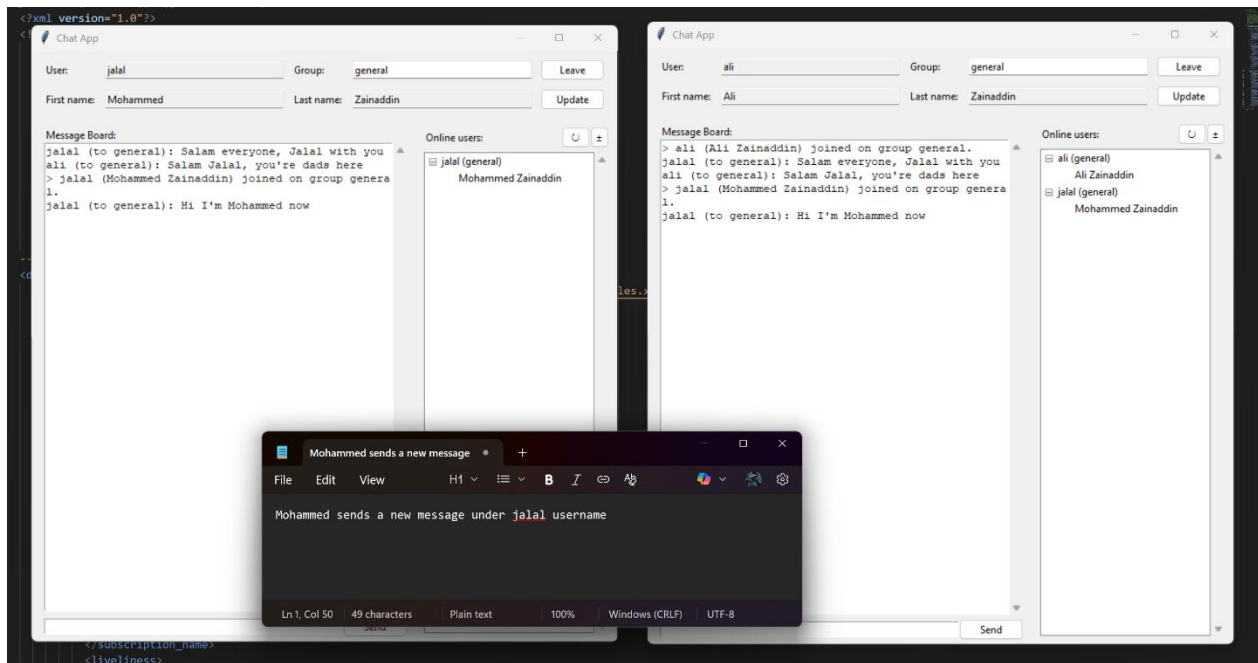
Local persistence: **messages are stored so the app can replay recent chat on join and keep a longer trail than the DDS history window.**

## 5) Problems Faced

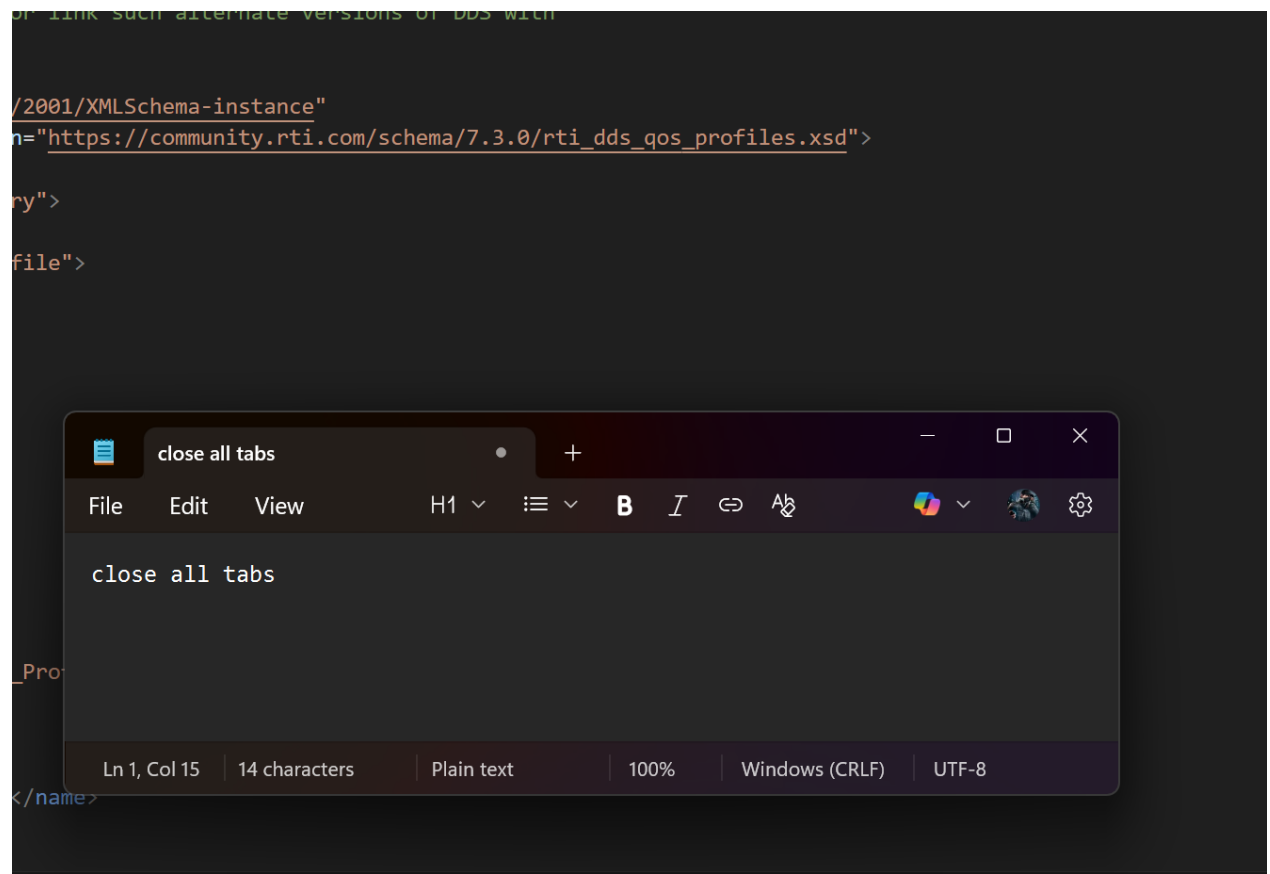
No GUI implementation for the search history of a specific message, only using CLI

Does not store messages using RTI History backend tool/s

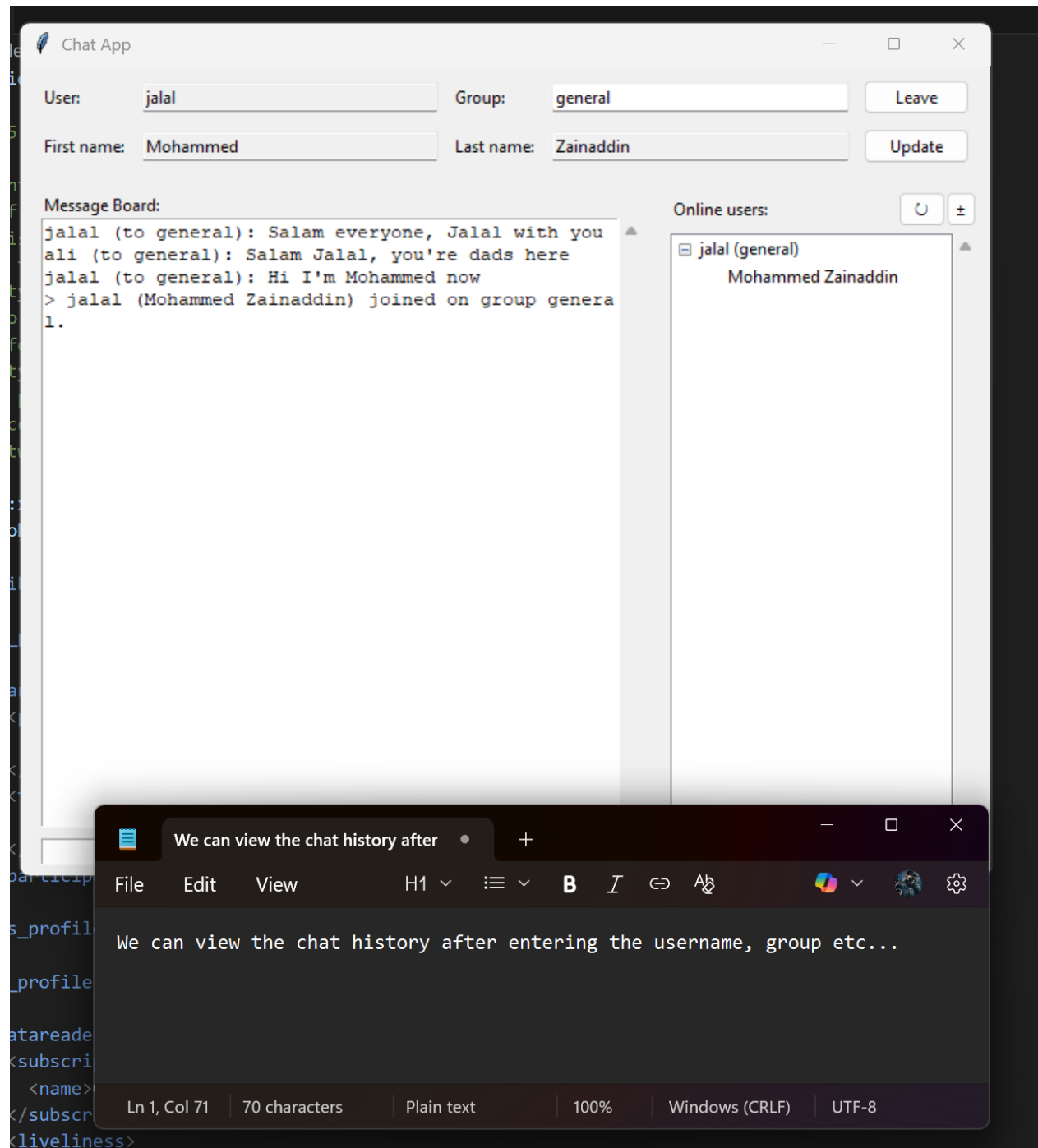
## 6) Output screenshots implementation



## Close all GUI tabs to test message history functionality



## Run a GUI tab to test message history functionality



Search for a specific message using search\_history.py to view messages stored on chat.db

```
(rti_venv) PS C:\Users\jajal\OneDrive\Desktop\COE427\Distributed-Computing> python .\COE427_HW1\chat_app\python\search_history.py --group general --query Salam --limit 50 --db chat.db
>>
[out] jalal: {"_type": "chat", "from": "jalal", "to": "general", "group": "general", "text": "Salam everyone, Jalal with you"}
[in] jalal: {"_type": "chat", "from": "jalal", "to": "general", "group": "general", "text": "Salam everyone, Jalal with you"}
[out] ali: {"_type": "chat", "from": "ali", "to": "general", "group": "general", "text": "Salam Jalal, you're dads here"}
[in] ali: {"_type": "chat", "from": "ali", "to": "general", "group": "general", "text": "Salam Jalal, you're dads here"}
```