

Programming Project / C++ Morse Code Diary

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I. Task Description

Student 1 is responsible for managing the diary content:

- Adding new diary entries (converted and saved in Morse code)
- Deleting diary entries
- Modifying existing diary entries
- Viewing all diary entries (in decoded text or raw Morse format)

Student 2 is responsible for interacting with the diary:

- Searching diary entries by keyword (decoded)
- Viewing only the entries that contain a specific word
- Viewing a specific entry by index/date
- Exporting all entries to a readable text file

II. Data Structures Used by the Team

The following classes will be used:

- Date: int day, int month, int year
- Entry: Date date; std::string text; (stored in Morse code)
- MorseConverter (utility class): static maps for encoding/decoding characters to/from Morse code

III. File Structure

The following files will be used:

diary.txt

A file where all diary entries will be stored, one per entry, in Morse code format.

morse_map.txt

A file containing the Morse code dictionary used for encoding and decoding.

search_results.txt

A temporary file where the user can export the decoded entries that contain a given word.

logs.txt

A file to track changes made to the diary: adds, deletes, and modifications, with timestamps.

IV. Interacting with Executables

Application 1 – Diary Manager

Offers the following options:

`./app_1.exe view_entries [-decoded]`

View all diary entries. By default, entries are shown in Morse code. If the `-decoded` flag is used, the entries will be shown in normal text.

`./app_1.exe add_entry`

Adds a new diary entry for the given date. The text is converted to Morse code and stored in `diary.txt`. The action is logged in `logs.txt`.

`./app_1.exe delete_entry`

Deletes the entry matching the given date from `diary.txt`. The action is logged in `logs.txt`.

`./app_1.exe modify_entry <new_text>`

Modifies an existing entry with new text (converted to Morse). The old entry is

replaced in diary.txt, and the change is logged.

`./app_1.exe view_log`

Displays the content of logs.txt to show the history of actions performed.

Application 2 – Diary Reader

Offers the following options:

`./app_2.exe view_entry [-decoded]`

Displays a specific diary entry by date. If -decoded is provided, the text is shown in normal format.

`./app_2.exe search_word`

Searches through all decoded entries in diary.txt. Shows all entries that contain the specified word.

`./app_2.exe export_search_results`

Exports all entries containing the given word (decoded) to search_results.txt.

`./app_2.exe view_export`

Displays the content of search_results.txt on the screen.