Elementary Systems Programming Project

01286120 Elementary Systems Programming

Software Engineering Program

Faculty of Engineering, KMITL

By

66010971 Chaiyanun Sakulsaowapakkul

RUST PROJECT: WINGMAN

The introduction

I would like to introduce my project from the third category, C3 Personal Data Management. I considered the name "Wingman" to mean someone who provides support and assistance to a friend in various situations. In the context of a to-do list, this name could suggest that this application is there to support and assist users in managing their tasks, just like a helpful friend or "wingman."

Overview

The Rust Task Manager is a command-line application that allows users to manage their to-do list by performing various tasks, including adding, viewing, editing, deleting, marking as complete, and exporting tasks to different formats.

Feature

The Rust Task Manager provides the following features:

- **Add Task**: Users can add a new task by specifying a title and a description for the task.
- **View Tasks**: Users can view the list of tasks along with their titles, descriptions, and completion status.
- **Edit Task**: Users can edit an existing task by providing the task number, a new title, and a new description.
- **Delete Task**: Users can delete a task by specifying its task number.
- **Mark as Complete**: Users can mark a task as complete by specifying its task number.
- **Export Tasks**: Users can export the list of tasks to a file in either JSON or YAML format. Users can specify the name of the output file and the format.

Command

- **‘add’** subcommand

cargo run -- add --title "Task Title" --description "Task Description"

- **‘view’** subcommand

cargo run -- view

- **‘edit’** subcommand

cargo run -- edit --task_number 1 --title "Updated Title" --description "Updated Description"

- **‘delete’** subcommand

cargo run -- delete --task_number 1

- **‘mark-complete’** subcommand

cargo run -- mark-complete --task_number 1

- **‘export’** subcommand

(export to **JSON**)
cargo run -- export --file_name "tasks" --format json

(export to **YAML**)
cargo run -- export --file_name "tasks" --format yaml

Example Usage

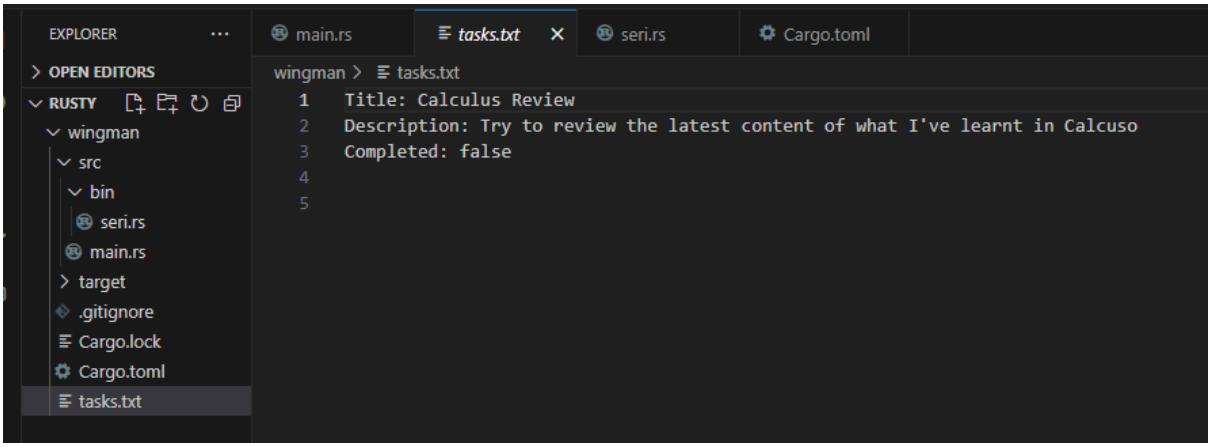
let's try adding a task! I will prompt

cargo run - -bin wingman add "Calculus Review" "Try to review the latest content of what I've learnt in Calculus!"

```
PS D:\Programming_Files\rusty\wingman> cargo run --bin wingman add "Calculus Review" "Try to review the latest content of what I've learnt in Calcuso"
    Finished dev [unoptimized + debuginfo] target(s) in 0.04s
     Running `target\debug\wingman.exe add "Calculus Review" "Try to review the latest content of what I've learnt in Calcuso"`
Task added successfully.
PS D:\Programming_Files\rusty\wingman>
```

Task added successfully.

Now the program will generates a 'tasks.txt" file to store the information



Let me try using the option view

cargo run –bin wingman view

```
PS D:\Programming_Files\rusty\wingman> cargo run --bin wingman view
    Finished dev [unoptimized + debuginfo] target(s) in 0.03s
     Running `target\debug\wingman.exe view`
Viewing tasks:
Task 1: Title: Calculus Review, Description: Try to review the latest content of what I've learnt in Calcuso, Completed: false
PS D:\Programming_Files\rusty\wingman>
Connected to Discord
```

Viewing tasks:

Task 1: Title: Calculus Review, Description: Try to review the latest content of what I've learnt in Calcuso, Completed: false

Oh no! looks like I've made a mistake, a typo in the <description>. I will edit it then.

cargo run --bin wingman edit 1 "Calculus Review" "Make sure that I ACTUALLY review it"

```
PS D:\Programming_Files\rusty\wingman> cargo run --bin wingman edit 1 "Calculus Review" "Make sure that I ACTUALLY review it"
    Finished dev [unoptimized + debuginfo] target(s) in 0.03s
     Running `target\debug\wingman.exe edit 1 "Calculus Review" "Make sure that I ACTUALLY review it"`
Task edited successfully.
PS D:\Programming_Files\rusty\wingman>
Connected to Discord
```

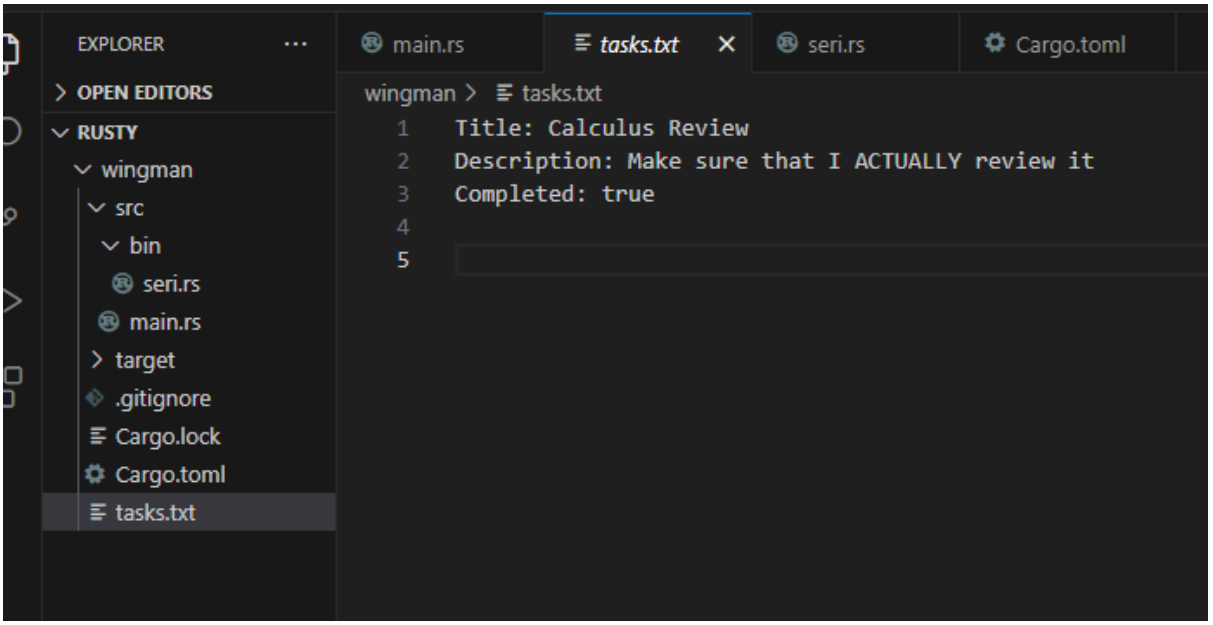
Task edited successfully.

Alrighty! I just reviewed Calculus, now let's mark it as complete

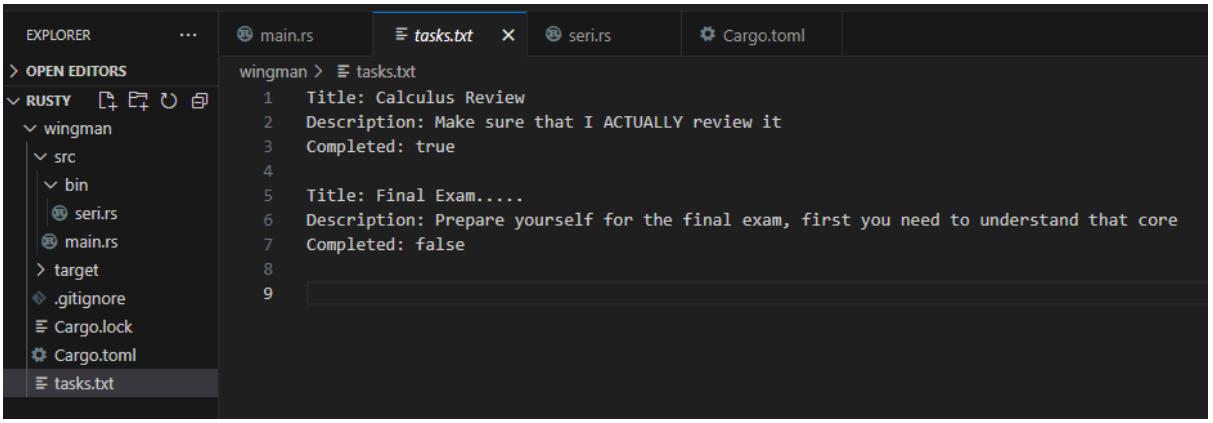
cargo run --bin wingman mark-complete 1

```
PS D:\Programming_Files\rusty\wingman> cargo run --bin wingman mark-complete 1
    Finished dev [unoptimized + debuginfo] target(s) in 0.03s
     Running `target\debug\wingman.exe mark-complete 1`
Task marked as complete.
PS D:\Programming_Files\rusty\wingman>
Connected to Discord
```

Task marked as complete.

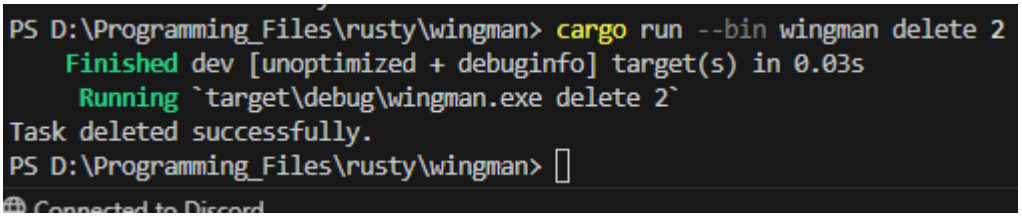


Can add more tasks as you wish

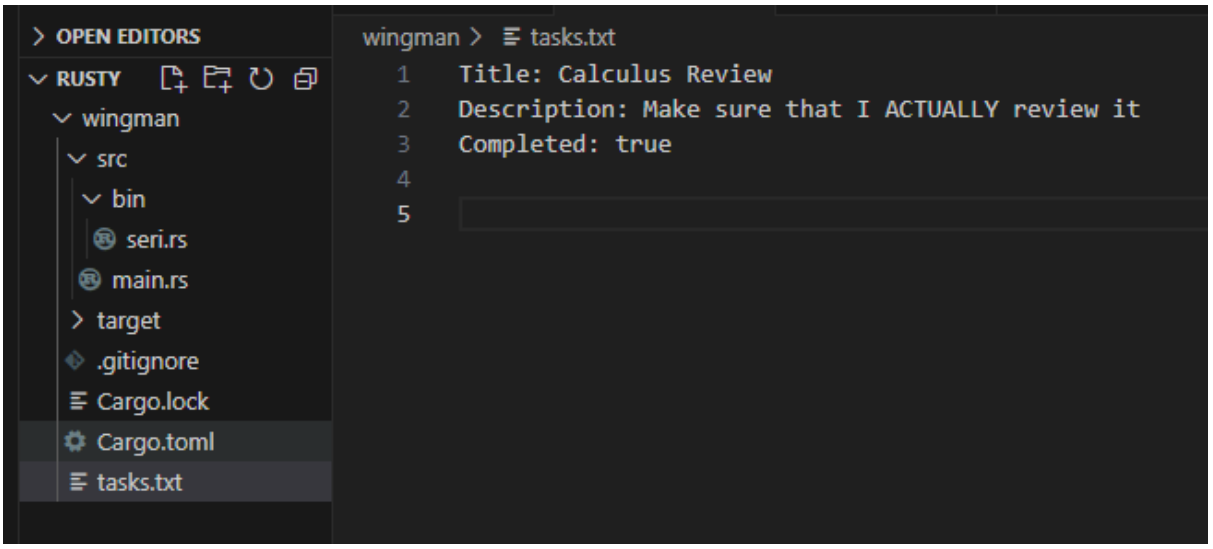


Kind of redundant, maybe I should delete the second task

cargo run --bin wingman delete 2



Woopsy! Task 2 is gone

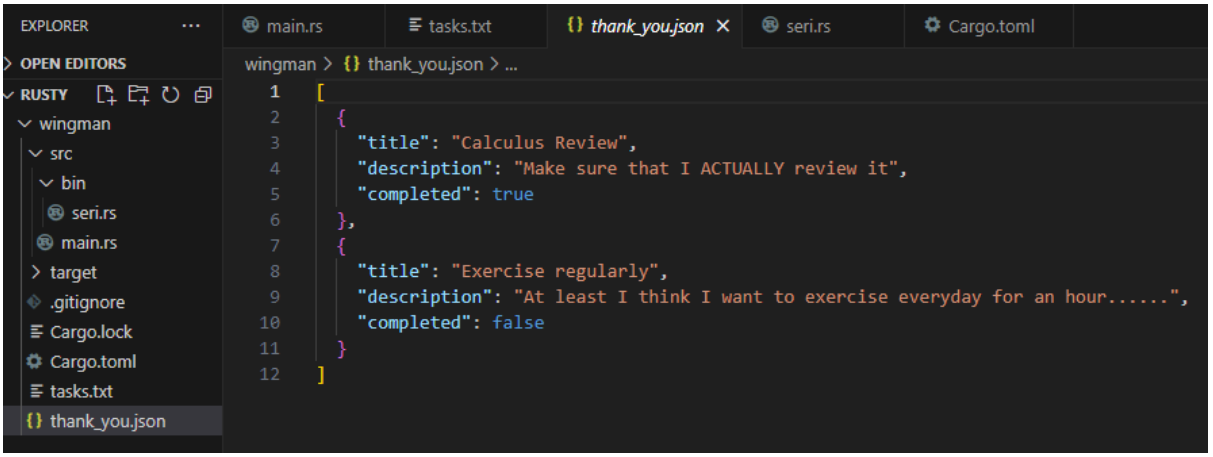


Let’s export it to JSON format

cargo run --bin wingman export thank_you json

```
PS D:\Programming_Files\rusty\wingman> cargo run --bin wingman export thank_you json
    Finished dev [unoptimized + debuginfo] target(s) in 0.03s
     Running `target\debug\wingman.exe export thank_you json`
Tasks exported to JSON successfully.
PS D:\Programming_Files\rusty\wingman>
```

Tasks exported to JSON successfully.

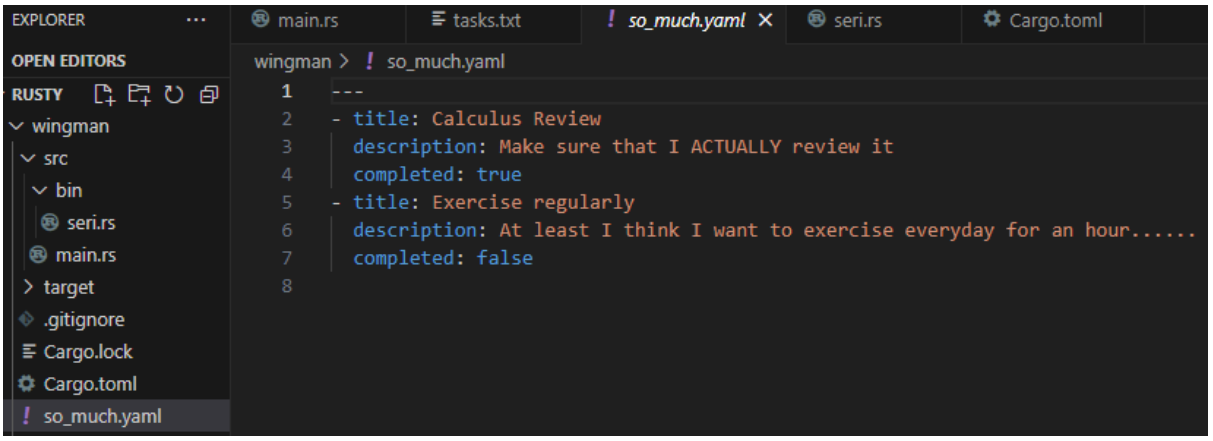


Let's do the same for YAML

cargo run --bin wingman export so_much yaml

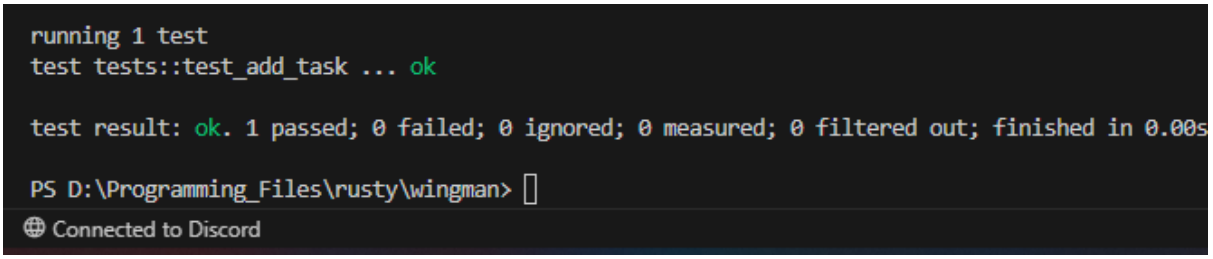
```
PS D:\Programming_Files\rusty\wingman> cargo run --bin wingman export so_much ya
    Finished dev [unoptimized + debuginfo] target(s) in 0.03s
     Running `target\debug\wingman.exe export so_much yaml`
Tasks exported to YAML successfully.
PS D:\Programming_Files\rusty\wingman>
```

Tasks exported to YAML successfully.



I also added a simple test case.

```rust
#[cfg(test)]
mod tests {
    use super::*;
    use std::fs;

    const TEST_FILE_NAME: &str = "test_tasks.txt";

    #[test]
    fn test_add_task() {
        let mut tasks = Vec::new();
        let title = "Test Task";
        let description = "This is a test task description.";

        add_task(&mut tasks, title, description);

        assert_eq!(tasks.len(), 1);
        assert_eq!(tasks[0].title, title);
        assert_eq!(tasks[0].description, description);
        assert!(!tasks[0].completed);

        let _ = fs::remove_file(TEST_FILE_NAME);
    }
}
```



Dependencies

serde = { version = "1.0", features = ["derive"] }

serde_json = "1.0"

serde_yaml = "0.8"

clap = "2.33"

link to my github

https://github.com/sharincy/Wingman

I also have some prototype to Wingman, they are in

seri.rs and menu_base.rs

Both of them are the prototype of the current version, they are menu based (If interested, you can check them in the github link I provided).