T1A3
CLI Application

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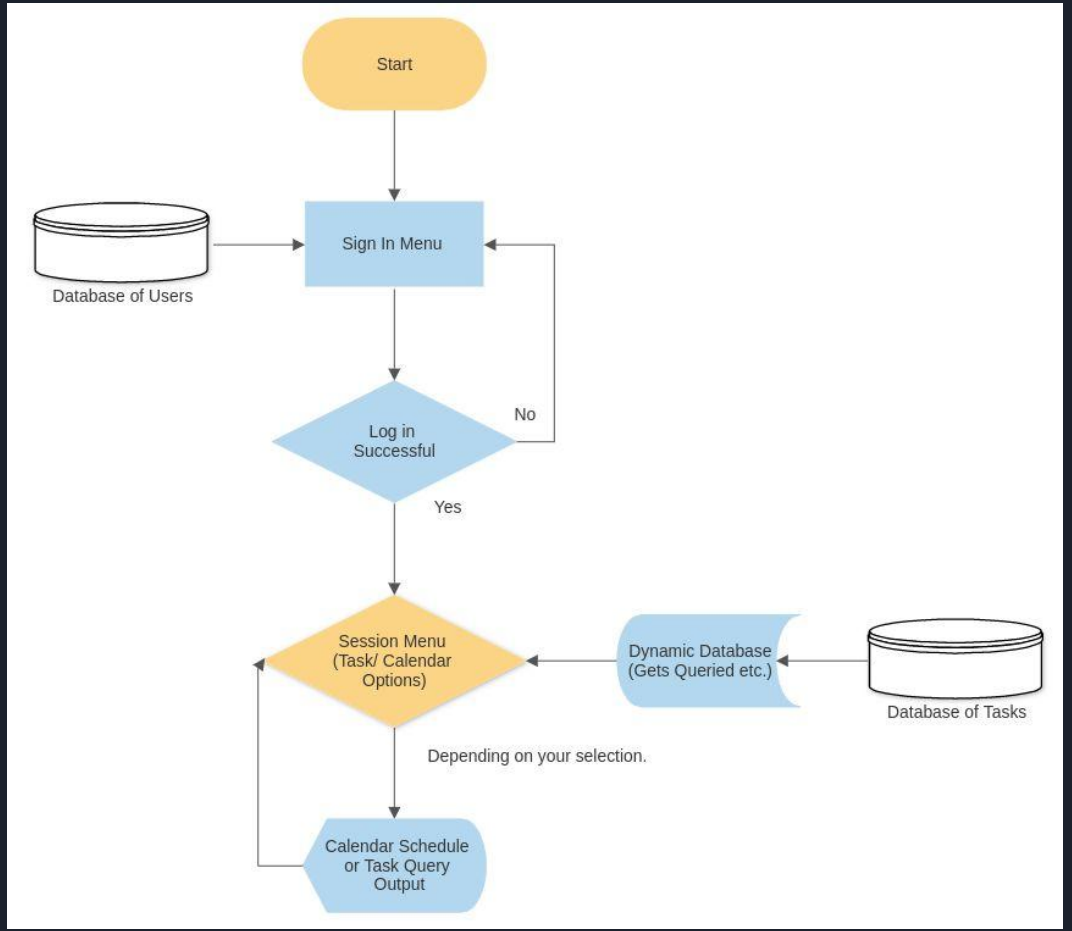
Concept: Calendar Task Tracker

Productivity scheduling application:

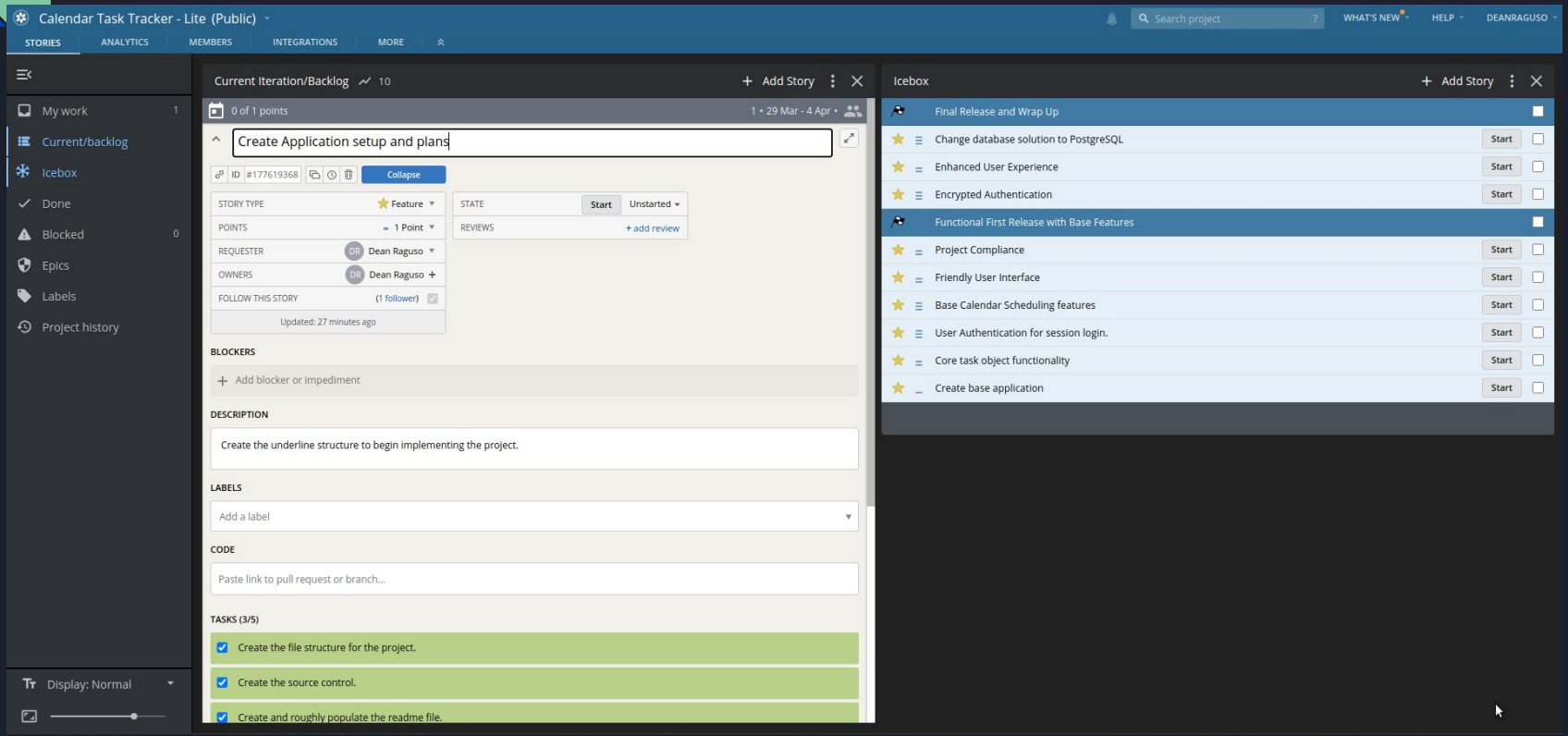
- Create and Store tasks in persistent memory.
- Optimises the Order of task completion for Efficiency.
- Prints basic Calendar Schedule Plan.
- Has user login and basic protection.

Plan

- Login Menu (Sign In, Create Account, exit)
  - Proceed
- Session Menu (Create/Delete/Edit/View Task, or Optimise/Print Calendar)
  - Proceed
- Output Based on selection, then return to menu.



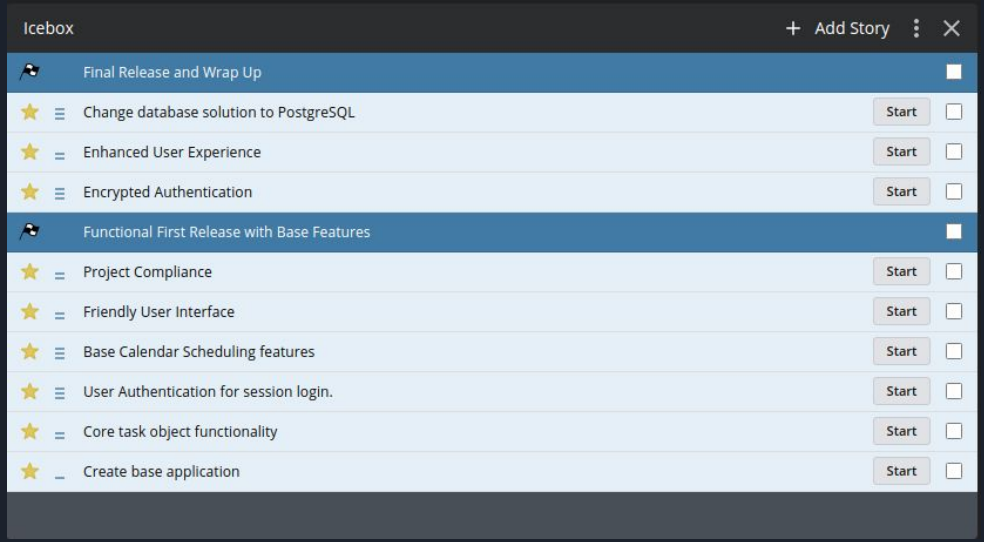
Project Management - Pivotol Tracker

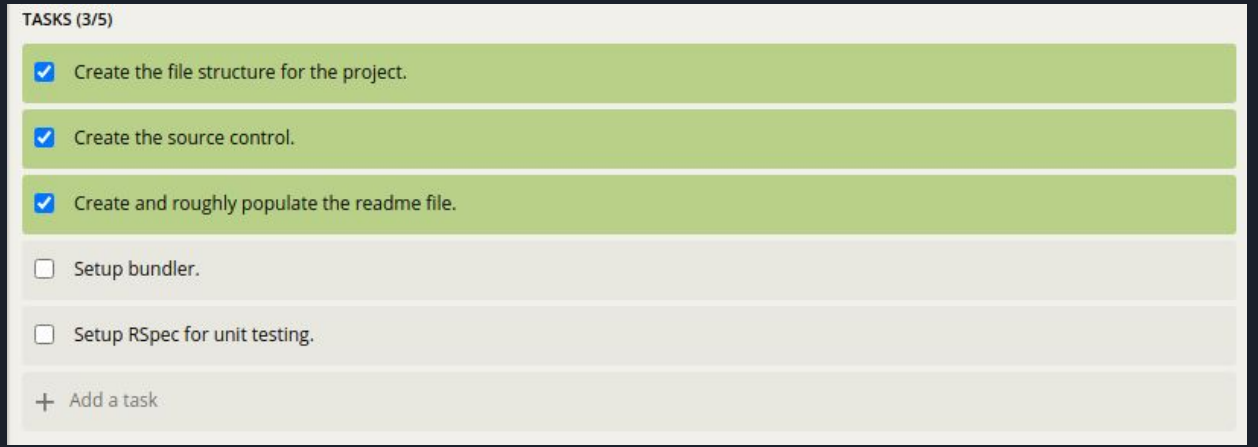


Basic Idea

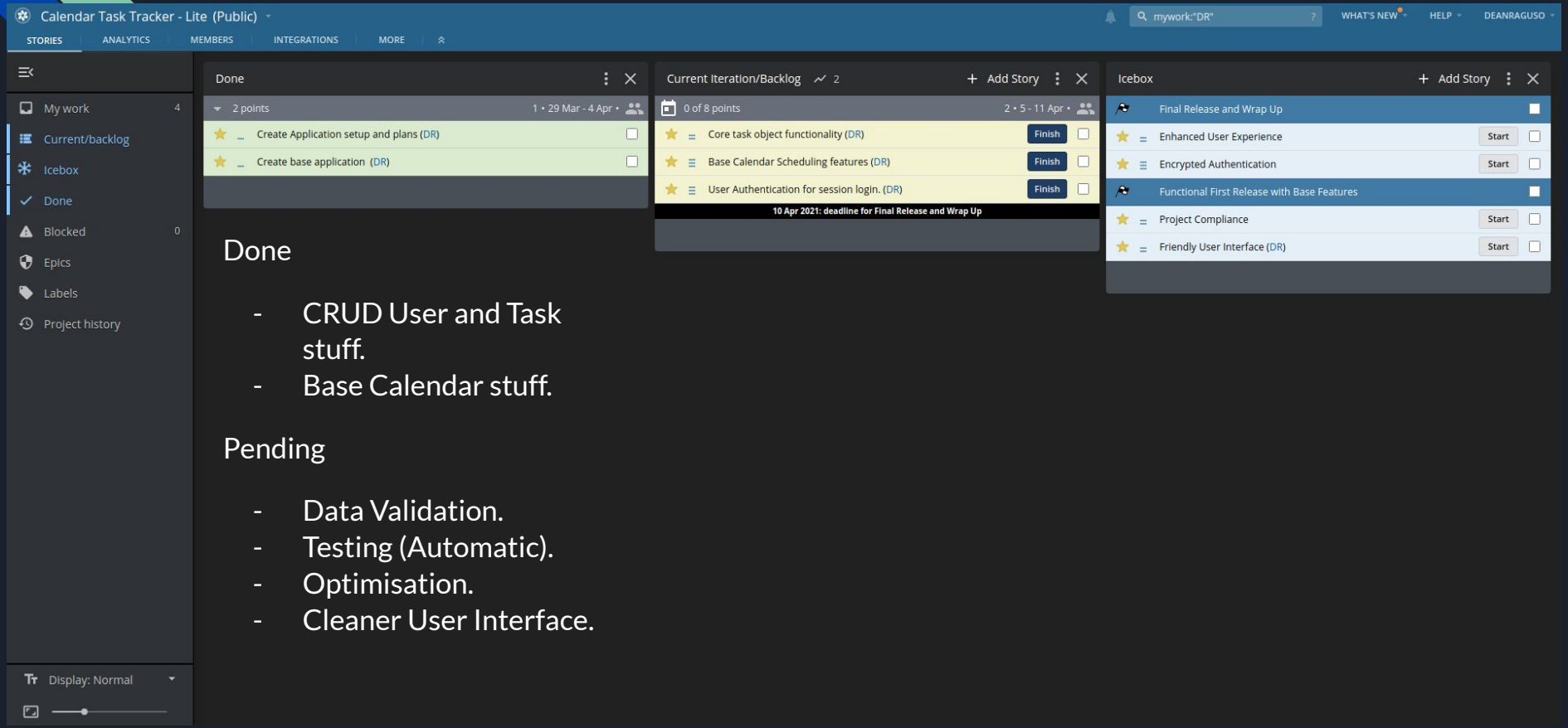
Sprints were planned in backlog (Icebox), containing tasks, each with a title, description, difficulty and sub-tasks to check off.

Once all tasks from a sprint are checked done, the sprint is done, and can be accepted as complete.





Overview (Currently)



Done

- CRUD User and Task stuff.
- Base Calendar stuff.

Pending

- Data Validation.
- Testing (Automatic).
- Optimisation.
- Cleaner User Interface.

Interface

Session Menu

```
You are now logged in!
Welcome to CTT-Lite
n: New Task
s [task id]: Show Task
e [task id]: Edit Task
d [task id]: Delete Task
c [days]: Print Calendar
o: Optimise Schedule
q: Sign Out
exit: Close Application
```

Calendar Print

```
Day 1 with 6.0 hours of work:
        0       1
Day 2 with 5.5 hours of work:
        2       3
Day 3 with 5.0 hours of work:
        4       5
Day 4 with 2.6 hours of work:
        10      17
```

New Task Interface

```
Enter task title: A Random Task
Enter task description: Self-explanatory m8
Enter task importance (1/10): 6
Enter task urgency (1/10): 8
Enter task estimate duration in hours: 4.20
Enter task due date (dd mm yyyy): 04 05 2021
```

Sign In Interface

```
s: Sign In
c: Create Account
exit: Exit Application
```

Code Layout

- Session (Main Class, instances the UserManager and TaskManager)
  - UserManager (Loads User Database, Config and Instances Users)
    - User (Each individual User is saved as a user object)
  - TaskManager (Loads in Task Database, Config and Instances Tasks)
    - Task (Each individual task object, holds id, user_id, and all data)
    - Calendar (Class that holds methods for creating and optimising the plan)
      - Schedule (Array-like class, holds collection of days and tasks within)

Lessons Learned

- Agile Project Management tools are amazing for a high-level direction in your project.
- Don’t reinvent the wheel. (I had no choice - or didn’t know otherwise)
  - Recreating user authentication and persistent data storage was painful.
- Build Data Validation in First!
  - Many errors were simply due un-initialized variables, or strings I hadn’t yet coerced to a number.