

Sprint 2 Requirements

User can choose to manually input schedule or have AI input schedule

- As a user, I want to be able to create my own schedule or have my schedule built for me. Given 2 options: Manual Schedule Builder and Automatic AI Scheduler, I will be able to choose either one that fits my narrative.
- If I choose to manually build my schedule then I will be taken to a page where there is an empty schedule with times listed and drop down menus for each timeslot where I can choose a task for that timeslot. There will also be a "Save Schedule" button to confirm my manual schedule
- If I choose to automatically build my own schedule, I will choose tasks presented to me in a checkbox format and after I have chosen all of the tasks I want to complete that day I will click a 'Next' button which will take me to the schedule builder page where tasks are automatically placed in timeslots for me. I will then be able to save the schedule using the "Save Schedule" button.
- If no tasks are selected in automatic mode, show an error.
- After successfully saving the schedule, I should be able to return to the main menu clicking the home button.
- Saved schedules will be saved to the database for schedule storage and retrieval.
- File to be created is "manual_scheduler.py" and functions to be created such as "save_schedule()" and "generate_schedule()".

Automatically build schedule by placing tasks into available time slots in a day

- The program will intelligently place tasks in time slots available. They will be placed in time slots based on time-of-day preferences, so that the schedule follows a natural daily rhythm without manual time management
- It should be able to distinguish "morning" (5:00 am - 12:00 pm), "afternoon" (12:00 pm - 5 pm), "evening" (5 pm - 9 pm), and "night" (9 pm - 4 am)
- tasks will be assigned to morning, afternoon, evening, and night based off of when those tasks are usually performed
- no two tasks should overlap in time
- tasks should respect their assigned time periods
- the schedule should use available time efficiently
- once the schedule has been built, the schedule should be displayed to the user and show
- all scheduled tasks with start and end times
 - clear time periods
 - no overlapping time slots
- files to be created are "auto_scheduler.py", "time_periods.py", and "task categorizer.py"

Allow a user to set a fixed time for entire schedule (e.g., build schedule for 8:00 AM - 10:00 PM)

- As a user, I want to be able to set a fixed time for my schedule. I should be able to start the day off at 6 am or 12 pm, whichever one i prefer so that the automatic scheduler only plans tasks within my actual available hours.
- I should be prompted to enter the start time and end time (HH:MM AM/PM format). there should also be a default time of 8 AM - 10 PM.
- When the times are submitted, the start time must be before the end time and a minimum schedule duration of 1 hour is required. the maximum schedule duration will be 24 hours. invalid times will show clear error message with retry option
- Given set custom time boundaries, when the automatic scheduler is ran all tasks must be scheduled within the custom time range and the schedule display will clearly show the custom time range.
- function like `get_time_boundaries()` and `day_start` and `day_end` parameters should be made to fulfill this requirement.

Let user mark certain tasks as “flexible” or “fixed” (must happen at a specific time)

- As a user with both time-sensitive and flexible commitments, I want to be able to mark tasks as either “fixed” (specific time) or “flexible” (any time), so that the automatic scheduler respects my commitments while optimally placing flexible tasks around them
- Given I am viewing my task list, when i edit or add a new task i should be able to set the type as flexible or fixed. all tasks will have a type of flexible by default.
- When a task is marked as fixed, i should be able to set its specific time
 - time must be valid in HH:MM AM/PM format
 - time must be within schedule bounds
 - conflicts between other fixed tasks should be prevented
- Given a mix of flexible and fixed tasks
 - the automatic scheduler will place fixed tasks in their respective timeslots
 - flexible tasks are scheduled around fixed tasks
 - no flexible task will overlap with any fixed task
 - gaps between fixed tasks are filled with flexible tasks
- if an overlap is detected
 - show clear error message listing conflicting tasks
 - provide options to modify fixed task times
 - prevent schedule generation until conflicts resolved

Add a break time setting (e.g., “add a 15-minute break between tasks”)

- as a user i want to be able to have a break in between my tasks to prevent burnout and maintain productivity. i want to automatically add in breaks between scheduled tasks so that my schedule includes necessary rest periods without manual planning and follows a healthy work rhythm

- When setting up schedule preferences and configuring break settings there should be an option to set
 - break duration in minutes between tasks
 - disable/enable automatic breaks
- When breaks enabled, schedule should have
 - breaks inserted between consecutive tasks
 - no breaks before the first task and after the last task
 - breaks should respect the total schedule time boundaries
- When reviewing schedule, the user is allowed to
 - manually remove specific breaks
 - add breaks where needed
 - modify break durations for specific intervals