

A decorative graphic on the left side of the slide consisting of white lines and circles on a blue gradient background, resembling a circuit board or a stylized tree structure.

UNISHELL: YOUR PERSONAL ASSISTANT FOR A BALANCED WORK-LIFE

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PROBLEM: DEFINITION AND EXPLANATION OF THE PROJECT IDEA

- Working on a computer for extended periods can lead to health and productivity issues
- Lack of movement, dehydration, and poor time management are common problems
- Need for reminders to take breaks, drink water, and manage time effectively

SOLUTION: INTRODUCTION TO UNISHELL

- Developed Unishell – a personal productivity assistant in the shell
- Implemented in C, utilizing multithreading and signal handling
- Provides reminders for Pomodoro technique, hydration, and physical movement

UNISHELL

Welcome to Your Personal Assistant

This program assists you in maintaining regular breaks and reminds you to drink enough water and move around.

Commands:

<code>cd</code>	- Change the current directory
<code>set_timer [T] [M]</code>	- Set the duration for a specific timer in minutes
	- [T]: Timer type either POMODORO_TIME, MOVE_REMINDER_TIME, or WATER_REMINDER_TIME.
	- [M]: The new time in minutes.
<code>start_pomodoro</code>	- Start the Pomodoro Timer
<code>stop_pomodoro</code>	- Stop the Pomodoro Timer
<code>start_water</code>	- Start the Water Reminder Timer
<code>stop_water</code>	- Stop the Water Reminder Timer
<code>start_move</code>	- Start the Movement Reminder Timer
<code>stop_move</code>	- Stop the Movement Reminder Timer
<code>show_timers</code>	- Show the status of all timers
<code>start_all</code>	- Start all timers
<code>stop_all</code>	- Stop all timers
<code>exit</code>	- Exit the program
<code>help</code>	- Show this help again

Please enter a command:

SOLUTION

POMODORO TECHNIQUE

- Pomodoro Technique breaks work into intervals separated by short breaks
- Helps maintain focus and prevent burnout
- Unishell's Pomodoro Timer implements this technique

HYDRATION REMINDER

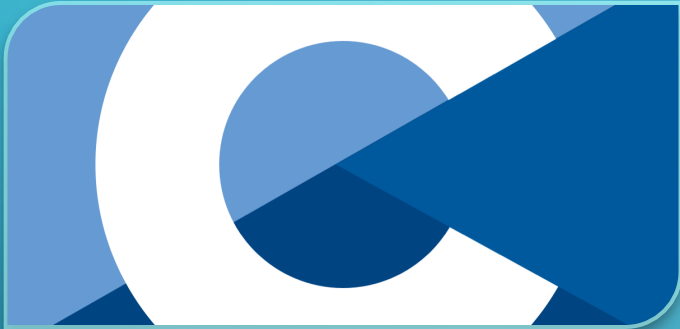
- Dehydration can lead to decreased cognitive performance
- UniShell's Hydration Reminder encourages regular water intake
- Periodic notifications remind the user to stay hydrated

MOVEMENT REMINDER

- Extended periods of sitting can lead to health issues
- UniShell's Movement Remider encourages regular physical activity
- Regular prompts to get up and move around

DEMO

LESSONS LEARNED



C PROGRAMMING

Gained experience with C programming

```
if (pthread_create(&pomodoro_thread, NULL, pomodoro_thread_func, NULL) != 0)
{
    fprintf(stderr, "Error creating pomodoro thread\n");
}
```

MULTITHREADING AND SIGNAL HANDLING

Learned about multithreading and signal handling

```
if (args[0] == NULL)
{
    printf("Please enter a command\n");
}
```

ERROR CHECKING AND EXCEPTION HANDLING

Importance of error checking and exception handling in software development

CONCLUSION

- UniShell is an effective tool for improving productivity and maintaining health
- Future improvements: customize reminder messages, add more productivity techniques
- Thank you! Questions?