



# Designing a Minimal Digital Clock for Students

This presentation outlines the design and development of a distraction-free digital clock tailored specifically for students. Our goal is to enhance focus and productivity.



# The Importance of a Distraction-Free Clock

## Enhanced Focus

Minimizing extraneous features helps students concentrate.

- Removes notifications
- Reduces visual clutter

## Improved Productivity

A clear time display supports effective time management.

- Facilitates Pomodoro technique
- Aids in task allocation

# Key Design Principles for a Minimal Clock



## Simplicity

Focus on essential time-telling functions only.



## Readability

Large, clear digits for quick glances.



## Efficiency

Low power consumption for extended use.

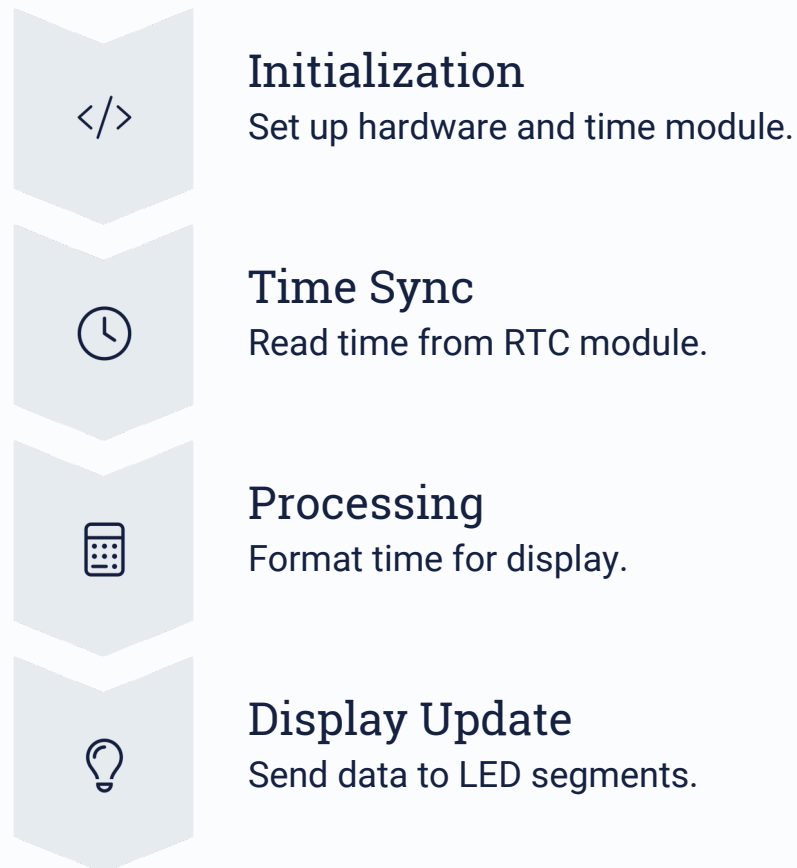


# Hardware Components and Cost Breakdown

Microcontroller (ESP32)	\$5.00	Brain of the clock
LED Display (7-segment)	\$3.00	Time display
RTC Module (DS3231)	\$2.00	Accurate timekeeping
Battery (LiPo)	\$4.00	Portable power
Casing (3D Printed)	\$1.50	Protective enclosure
Miscellaneous	\$2.00	Wires, resistors, etc.



# Software Architecture and Development Process





# User Interface and Interaction Design

## Single Button Control

A multi-function button for settings access.

- Short press: Toggle display
- Long press: Enter settings mode

## Clear Time Display

Only shows hours and minutes.

- Optional AM/PM indicator
- No seconds for minimal distraction

## Adjustable Brightness

Allows customization for different lighting conditions.

- Preserves battery life
- Reduces eye strain

# Usability Testing and User Feedback

- 1** — **Pilot Group**  
Distribute prototypes to 20 students.
- 2** — **Feedback Collection**  
Conduct surveys and interviews.
- 3** — **Iteration**  
Implement improvements based on input.
- 4** — **Final Review**  
Validate changes with key users.





# Deployment and Scaling for Student Use

## Open Source Design

Share hardware and software plans for community building.

## Partnerships

Collaborate with educational institutions for distribution.

## Student Workshops

Teach assembly and customization for DIY enthusiasm.







# Future Enhancements



## Temperature Sensor

Integrate ambient room temperature display.



## Subtle Alarm

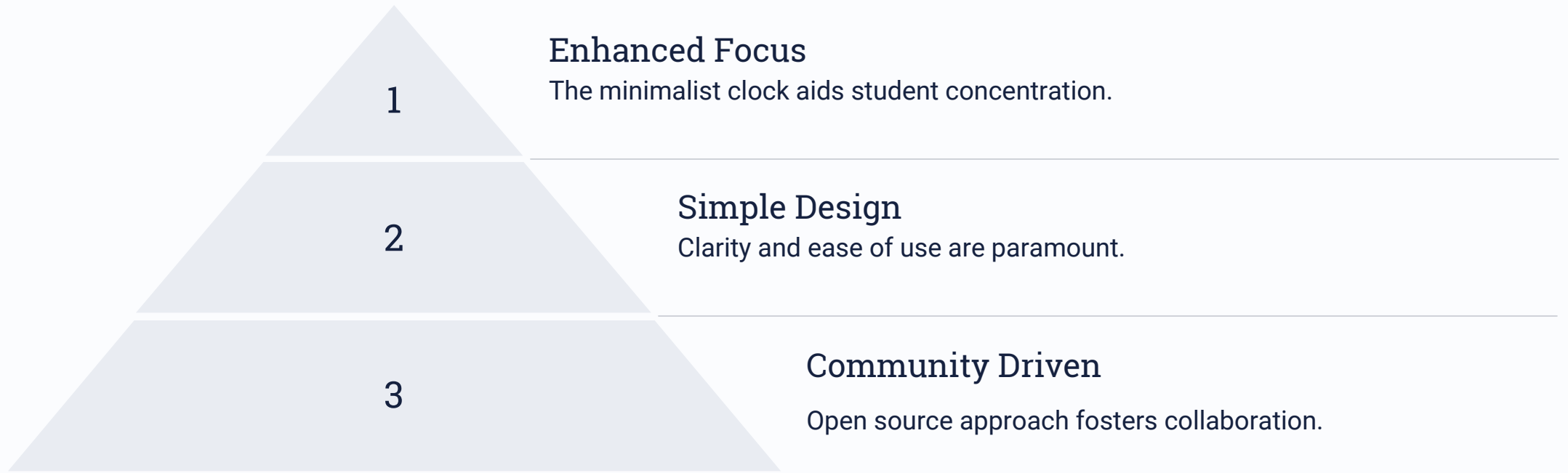
Add a gentle, non-disruptive alarm feature.



## Wireless Sync

Enable time synchronization via Wi-Fi.

# Key Takeaways and Next Steps



Our next steps involve refining the prototype, expanding testing, and exploring manufacturing options to bring this valuable tool to students globally.