DeepSleep AlertClock

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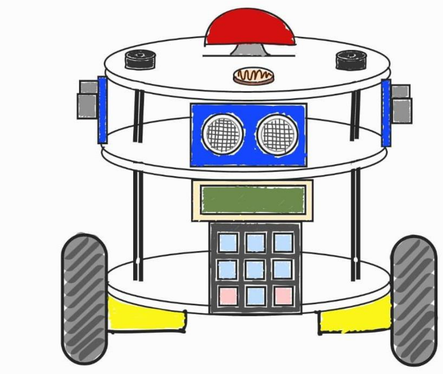
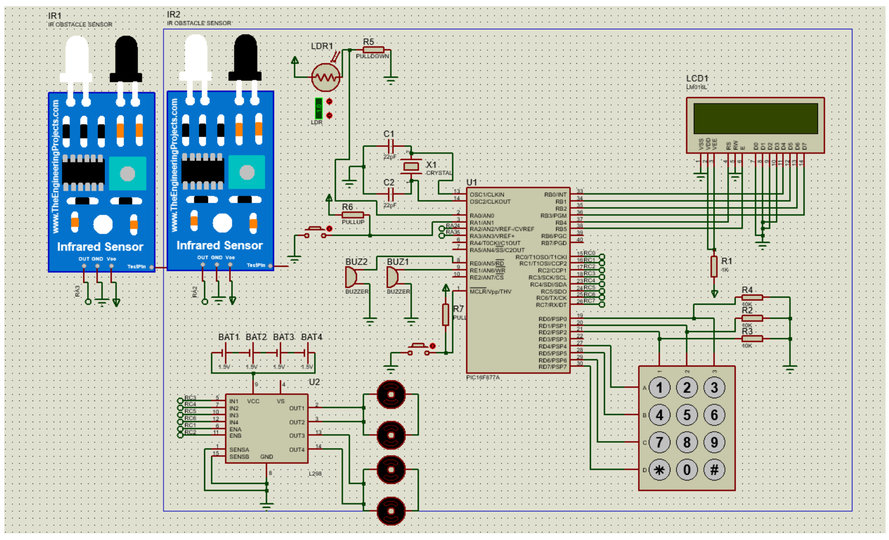


Introduction

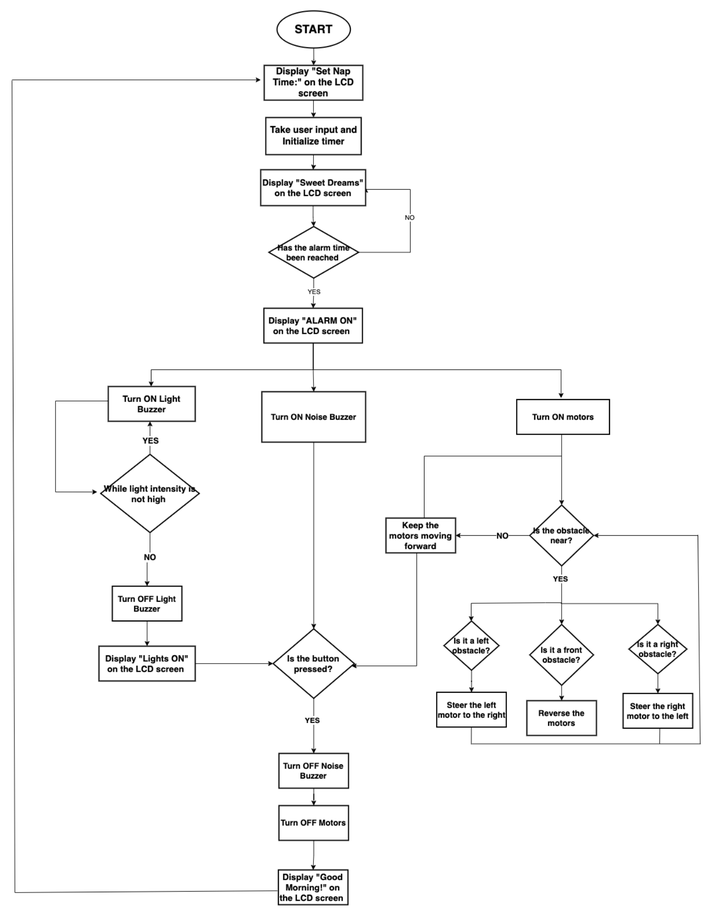
The project presents the design and development of the DeepSleep AlertClock, a smart alarm clock specifically designed for heavy sleepers, using the PIC16F877A microcontroller. Users can enter their desired wake-up time, and the clock employs a dual-buzzer system to ensure effective waking of the users, this involves turning on the lights and engaging in physical activity as part of the process to deactivate the alarm. This poster details the mechanical, electrical, and software components that automate the DeepSleep AlertClock and discusses the design process.

Design

DeepSleep AlertClock was designed using PIC16877A interfaced with 16x2 LCD, 3x4 Keypad, IR sensor, two Buzzers, Push Button, LDR, H-bridge and two Motors. It was programmed using C language using MicroC software. The electrical design illustrates the connections, while the software design outlines the project's operational logic.



Figure(1):Circuits Design



Figure(2):Software Design

Results

Once the alarm is set, the two buzzers will activate at wake-up time, the buzzer that is controlled by the LDR won't turn off unless the lights are turned on, meanwhile the second buzzer will remain activated along with the motors until the push button is pressed.

figure(3): DeepSleep AlertClock

figure(4):Initial Interface

figure(5):While sleeping

Figure(6): Time to wake, Alarm on! Buzzers and motors are on

Figure(7):When light is on, one buzzer is off

Figure(7):After pressing the button motors and the Second buzzer are off

Conclusion

In today's fast-paced world, every minute counts. The value of time is paramount, and keeping appointments requires unwavering discipline. To combat the challenges of a busy schedule and ensure we wake up refreshed and ready to tackle the day. This inspired the creation of the DeepSleep AlertClock, a device designed to help individuals wake up promptly and stay on schedule to enhances productivity, time management, and reinforcing the importance of discipline in achieving one's goals.

Through this project, we aim to encourage the sleeper to take physical action upon waking and accomplish their planned tasks.