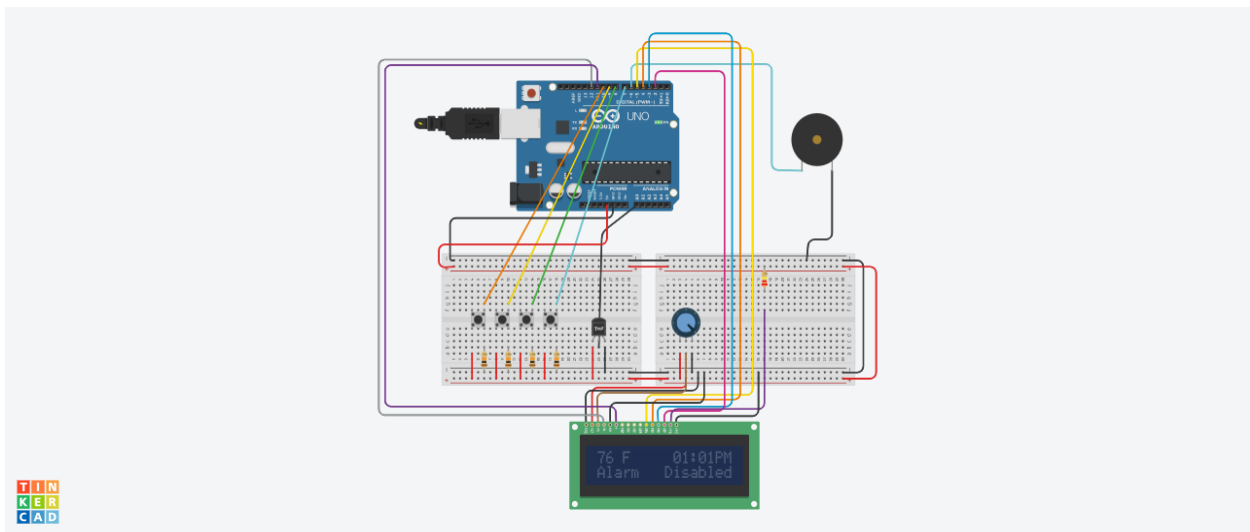# CMP3006

Embedded Systems Programming

Spring 2021 Term Project

Project 's Goal

Creating a digital alarm clock using Ardunio microcontroller using ThinkerCad.

The time can be displayed as 2 form, AM and PM. Can switch between 12h and 24h.

An Alarm can be setted and be snoozed from 5 to 60 mn. Alarm can be turned off to on and on to off.

Temperature displayed on the screen can switch between Fahrenheit (F) and Celsius (C).

Library

#include <LiquidCrystal.h>

LiquidCrystal library used for to control Liquid Crystal Displays (LCDs) based on the Hitachi HD44780 (or a compatible) chip set, which is found on most text-based LCDs.
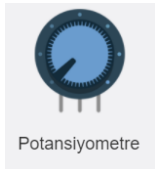
Constructor: LiquidCrystal lcd(12, 11, 5, 4, 3, 2)

Components

→ "U2",1," Arduino Uno R3"

Arduino Uno R3

→ "Rpot1",1,"250 kΩ Potentiometer "

Potansiyometre

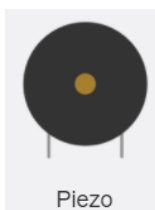→ "R2, R3, R4, R5",4,"10 kΩ Resistor"

Rezistör

"R6",1,"220 Ω Resistor "
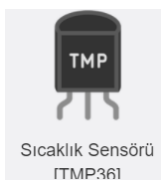
"U3",1," LCD 16 x 2 "

→ "S1, S2, S3, S4",4," Press Button"
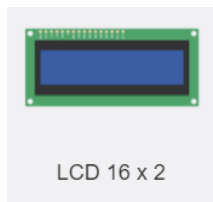

Basma düğmesi

→ "PIEZO1",1," Piezo" -> For the vibration of the alarm

Piezo

→ "U4",1," Temparature Sensor [TMP36]" "Analog"

Sıcaklık Sensörü
[TMP36]

→ LCD 16x2

LCD 16 x 2

Requirements

1-Current time *(Switchable between "00:00-24:00" and "00-12 AM/PM")*

2-Alarm time *(with a symbol indicating ON/OFF)*

3-Temperature *(Switchable between Celsius and Fahrenheit)*

Buttons & Functions

Orange cable:

#define but1 10: on long press-> clockSetup() ; on pressed-> switch between 12h and 24h

Yellow cable:

#define but2 9: on long press-> alarmSetup() ; on pressed-> switch between on and off

Green cable:

#define but3 8: on pressed-> switch between C and F

Blue cable:

#define but4 7: on pressed-> snooze()

-Gülce Külahçıoğlu 1731380