# CMP3006 Embedded Systems Programming Spring 2022 Term Project

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The goal of this project is to create a digital clock with alarm functionality, temperature sensing and snooze function.

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| Name | Quantity | Component |
| Buzzer | 1 | Piezo Buzzer |
| B1,B2,B3,B4 | 4 | Push Button |
| R1,R2,R3,R4,R5,R6 | 6 | Resistor |
| TempSensor | 1 | Temperature Sensor(TMP36) |
| 1,2 | 2 | Breadboard Small |
| Lcd | 1 | LCD 16x2 |
| Potentio | 1 | Potentiometer |
| Arduino | 1 | Arduino Uno R3 |

User can navigate through the real time analog clock with the use of push buttons.

Short pressing (less than 5.5 seconds) to B1 can switch the mode of the clock from AM/PM to 24h mode.

Long pressing to B1 can lead the user to change the real time clock and with the use of B2 and B3 user can decrease or increase the amount he/she wants. Pressing B1 will let the user to set the real clock hour minute and period of the day.

In order to set the clock and exit the setup, user must press B4.

Short pressing to B2 can activate the bell icon in the clock which means that alarm is on, and piezo buzzer will buzz. During the alarm user must press B4 in order to snooze the alarm.

Long pressing to B2 will let the user to set the alarm to his/her liking and B4 button will exit the setup again.

Pressing B3 will switch Celsius degress temperature to Fahrenheit degress and pressing it again will turn Fahrenheit into Celsius degrees temperature.

User can simply interact with TMP36 in order to test the temperature measurement of the circuit.

Below you can find the Tinkercad simulation of the project I have created:

https://www.tinkercad.com/things/1P3tooZjKDQ-neat-uusam-lappi/editel?sharecode=sMITS4BrMaG44AVIq8GgXo5fNUyzhbjnaUTNJF7RiwE