Project Report

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Link: https://www.tinkercad.com/things/iq9EYz4xcT1-brilliant-curcan/editel

setup():

I am setting up the project in this function.

loop():

In this function I am reading the buttons, updating the timer and calling all functions. (Exceptions: setNumber(), printTime())

Animations():

In this function I am doing the blinking animation. For doing this, I created 2 variables named whichClockTime and whichAlarmTime. These are representing the hours, minutes or seconds. If whichClockTime is 0 In the clock, hours is blinking. Animations are working with the timer. I created a boolean named animations and I am changing it with opposite of it every second so if animation variable is true, Animations function is deleting the variables on screen, else it's not doing anything.

Buttons():

For the buttons I created a settingsMode integer. First button is always for changing it. When pressed the first button it is increasing the settingsMode integer. I wrote a line about resetting the settingsMode if it is 3. So there are 3 different modes are available.

First Mode:

Second Button is activating or deactivating the alarm clock. Third Button is changing the clock type; AmPm or 24 hour clock. Fourth button is changing temperature between celsius and fahrenheit.

Second Mode:

Second mode is changing the clock. For the second mode, second button is changing cursor location. Third button is increasing the value and the fourth button is decreasing the value. In default Hour is selected. When the Second button pressed, it's going to the minute. If pressed again an again it's going hour to minute, minute to second, second to hour.

Third Mode:

It's working like the second mode but it's changing the alarm clock. Second Button is also changing the cursor location. Third and fourth buttons are again doing same thing. But in this mode there is no sec variable. It's just working with hours and minutes.

Clock():

I created some variables named hh,mm and ss. These are representing hours or minutes or seconds. In this function I integrated the working logic of the clock and I created 2 variable as well. One of it is isAP and the other one is isAM. isAP is checking the clocks current mode. AMPM or 24 hour. isAM is checking is clock AM or PM.

Alarm():

For the Alarm, I created 2 variable as AlarmHours and AlarmMins. I didn't created a variable for seconds. It is checking the clock's hh and mm variables and comparing them with AlarmHours and AlarmMins. If they are same, It's ringing. While it's ringing if anybody press the fourth button, it is stopping the ringing.
Temperature()
I integrated the celsius and fahrenheit calculations. I created a HeatMode integer. If this integer is 1, else it's showing the fahrenheit.

setNumber():

It's just for the visualization. If any value is less than 10, this function is adds a leading zero to the number.

printTime()

It is printing the clock values and if the clock is working with AM PM mode, it is adding them.