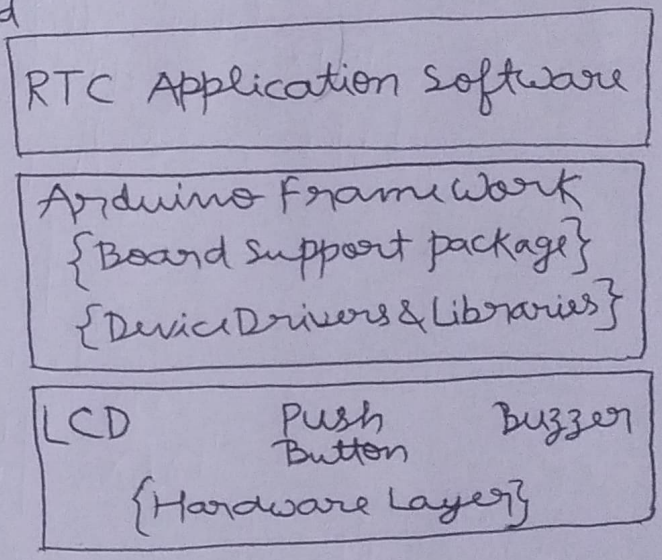
Real Time Clock (RTC)

→ It will be connected to IoT Gateway.
→ It is made by using Arduino UNO.
→ It provides precise time and date.
→ Its functionalities are time keeping & time editing.

Hardware Used =

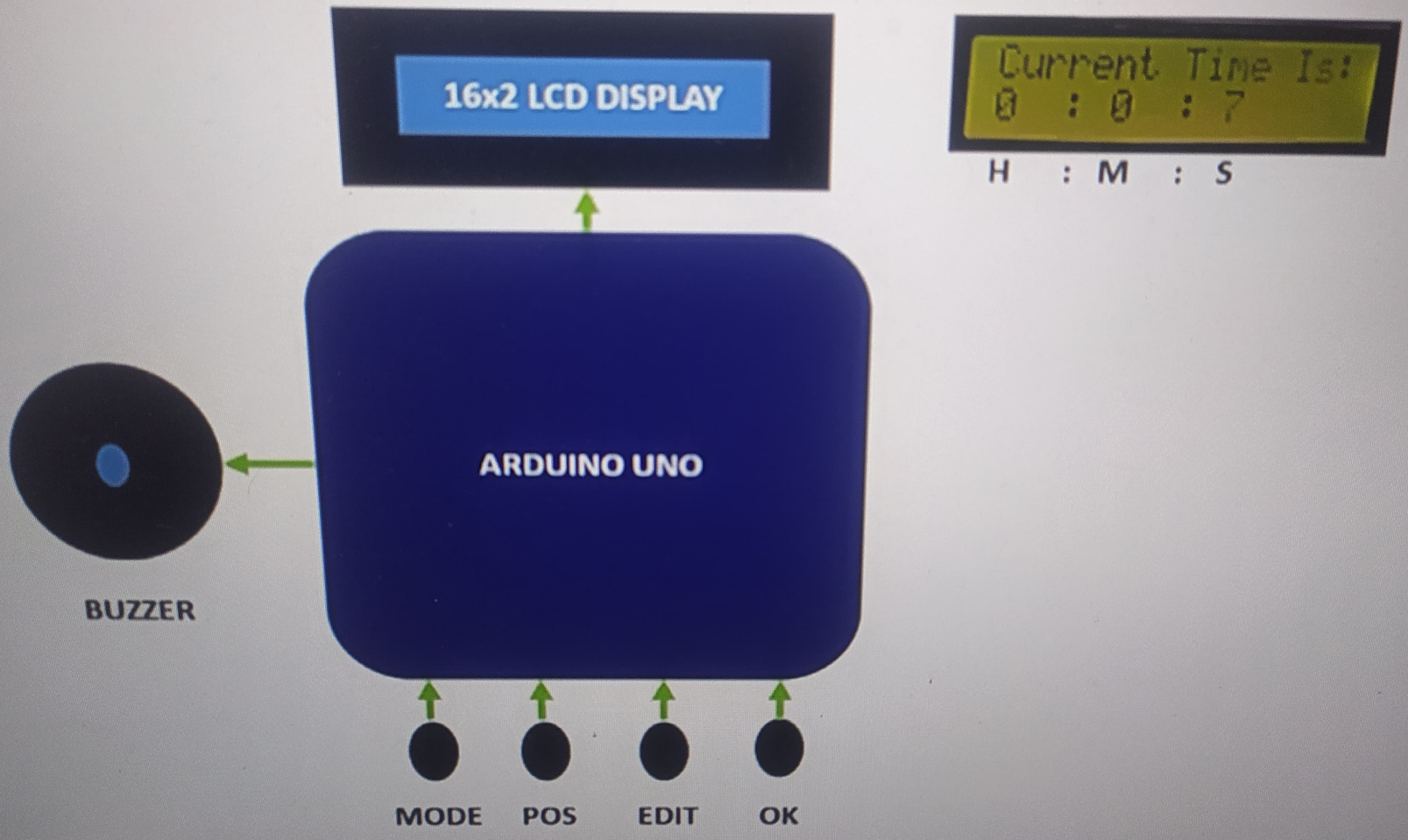
→ Arduino UNO
→ 16X2 LCD Display
→ Resistors
→ Piezo buzzer
→ 4 Push Buttons
→ Bread Board

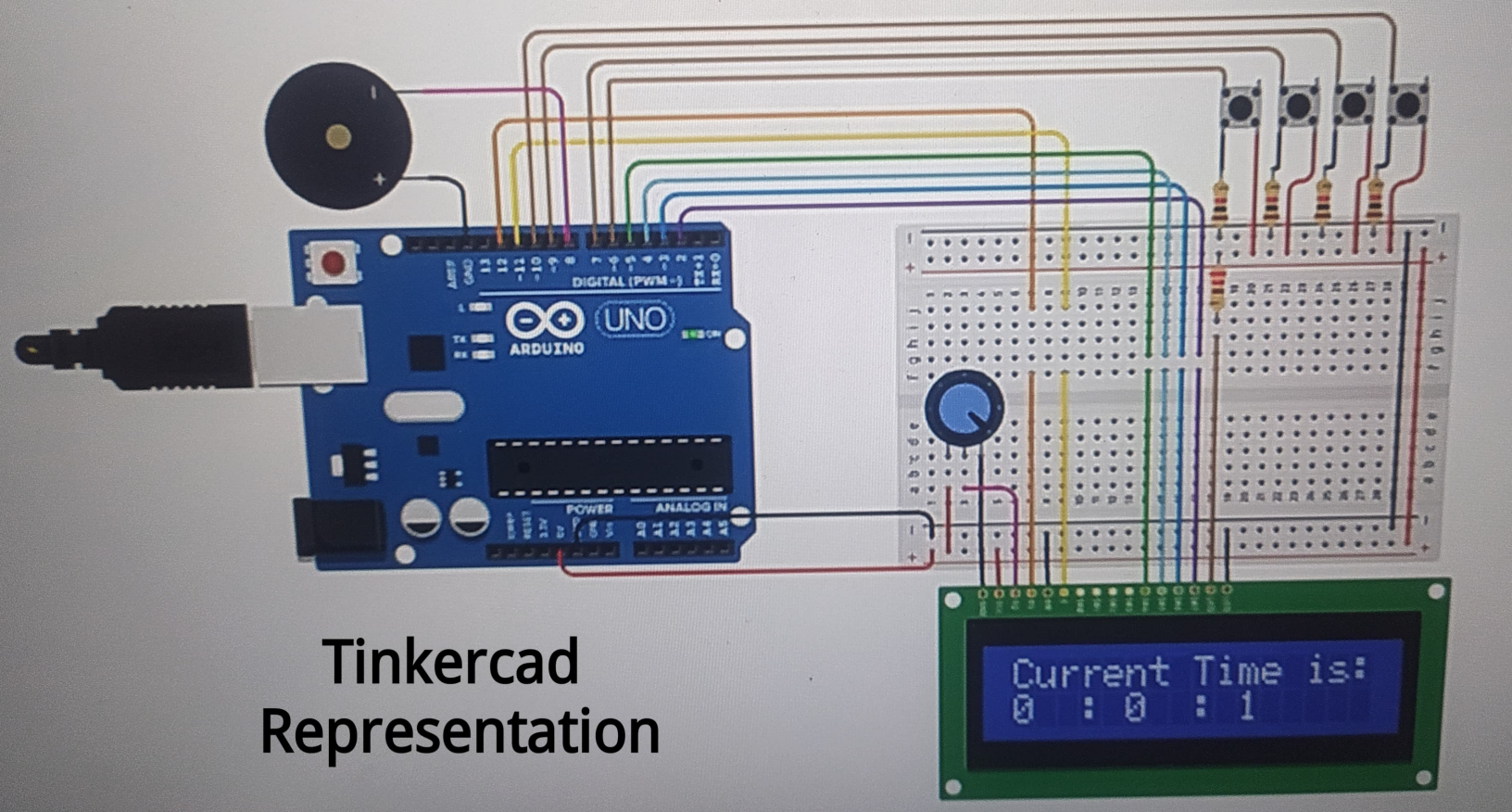
Real Time Clock [Architecture]



Need to Use It =

→ Display time in H:M:S format
→ provision for Editing time.
→ Time preserving not needed.
→ Minimum cost (↓)
→ Battery power not needed.
→ RTC keeps track of the current time and date.
→ Available as a separate Integrated circuit.


16x2 LCD DISPLAY
Current Time Is:
0 : 0 : 7
H : M : S
ARDUINO UNO
BUZZER
MODE
POS
EDIT
OK



Tinkercad Representation

```
// C++ code
//
/*
  LiquidCrystal Library - Hello World

   Demonstrates the use of a 16x2 L
CD display.
  The LiquidCrystal library works wit
h all LCD
  displays that are compatible with t
he  Hitachi
  HD44780 driver. There are many o
f them out
  there, and you  can usually tell the
m by the
  16-pin interface.

  This sketch prints "Hello World!" to
 the LCD
  and shows the time.

  The circuit:
  * LCD RS pin to digital pin 12
  * LCD Enable pin to digital pin 11
  * LCD D4 pin to digital pin 5
  * LCD D5 pin to digital pin 4
  * LCD D6 pin to digital pin 3
  * LCD D7 pin to digital pin 2
  * LCD R/W pin to ground
  * LCD VSS pin to ground
  * LCD VCC pin to 5V
  * 10K resistor:
  * ends to +5V and ground
  * wiper to LCD VO pin (pin 3)
*/

#include <LiquidCrystal.h>

int seconds = 0;

LiquidCrystal lcd_1(12, 11, 5, 4, 3, 2)
;

void setup()
{
  lcd_1.begin(16, 2); // Set up the nu
mber of columns and rows on the L
CD.

  // Print a message to the LCD.
  lcd_1.print("hello world!");
}

void loop()
{
  // set the cursor to column 0, line 1
  // (note: line 1 is the second row, s
ince counting
  // begins with 0):
  lcd_1.setCursor(0, 1);
  // print the number of seconds sin
ce reset:
  lcd_1.print(seconds);
  delay(1000); // Wait for 1000 millis
econd(s)
  seconds += 1;
}
```