

**Project Title:**

**Hot Plate Reflow Soldering Machine**

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## **Abstract:**

Soldering tiny SMD components can be quite challenging, but the process can also be automated. This can be done by applying soldering paste and baking it, either in a (reflow) oven or on a hot plate (like a cooking plate in your kitchen). Around the web, I've seen many DIY reflow ovens; in my opinion they have one big downside: they take up a lot of space. So I decided to build a hotplate instead.

The hotplate is fully programmable, so that any reflow profile can be added. The reflow process is then fully automated. Let's get building!

## **Introduction:**

Reflow soldering is a process in which a solder paste (a sticky mixture of powdered solder and flux) is used to temporarily attach one or thousands of tiny electrical components to their contact pads, after which the entire assembly is subjected to controlled heat. The solder paste reflows in a molten state, creating permanent solder joints. Heating may be accomplished by passing the assembly through a reflow oven, under an infrared lamp, or (unconventionally) by soldering individual joints with a desoldering hot air pencil.

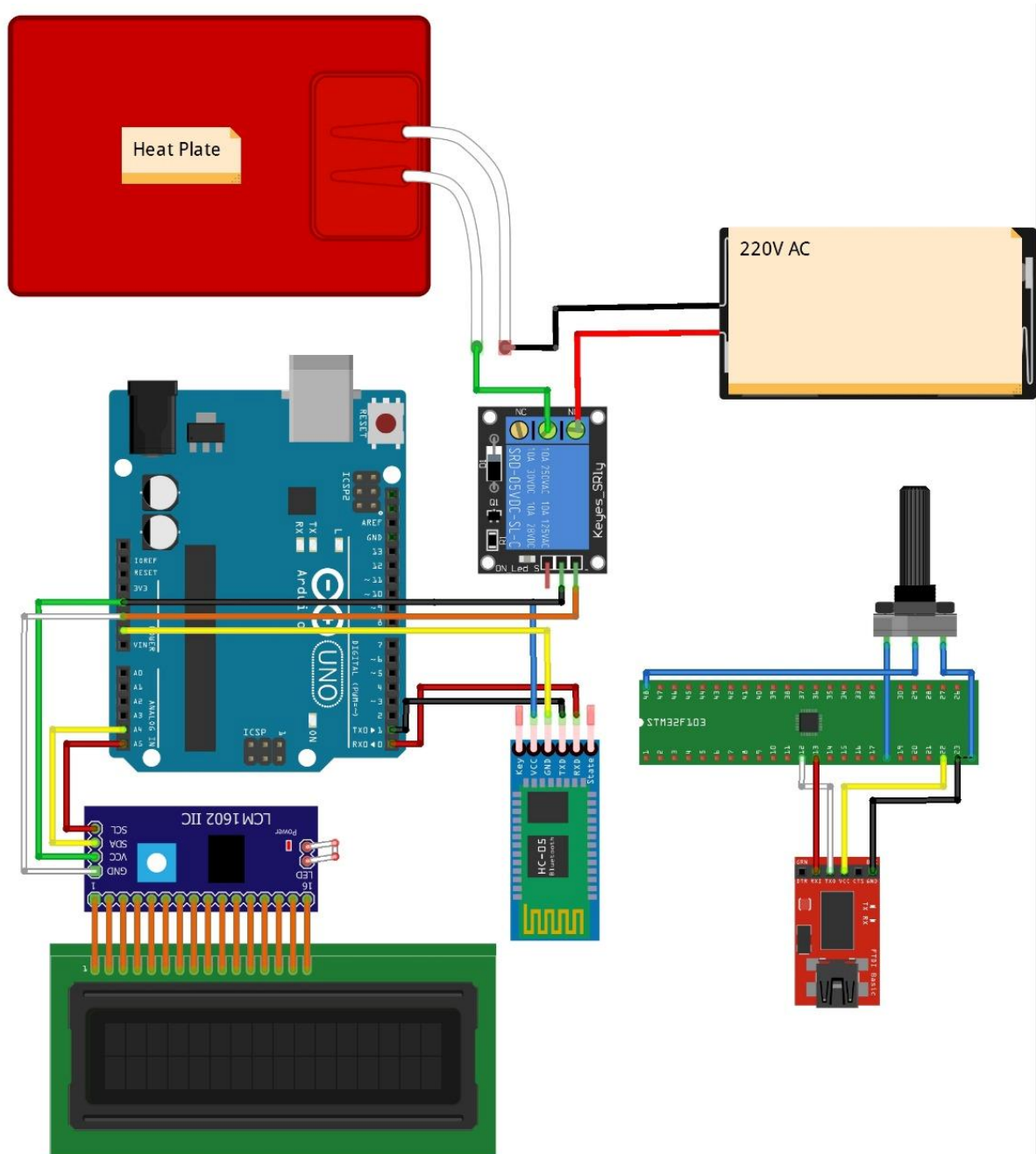
## **Objectives:**

1. Making easy to solder the tiny component

## **Problem Statement:**

**How to overcome the problems that we face while soldering the tiny SMD, SMT component on the PCB.**

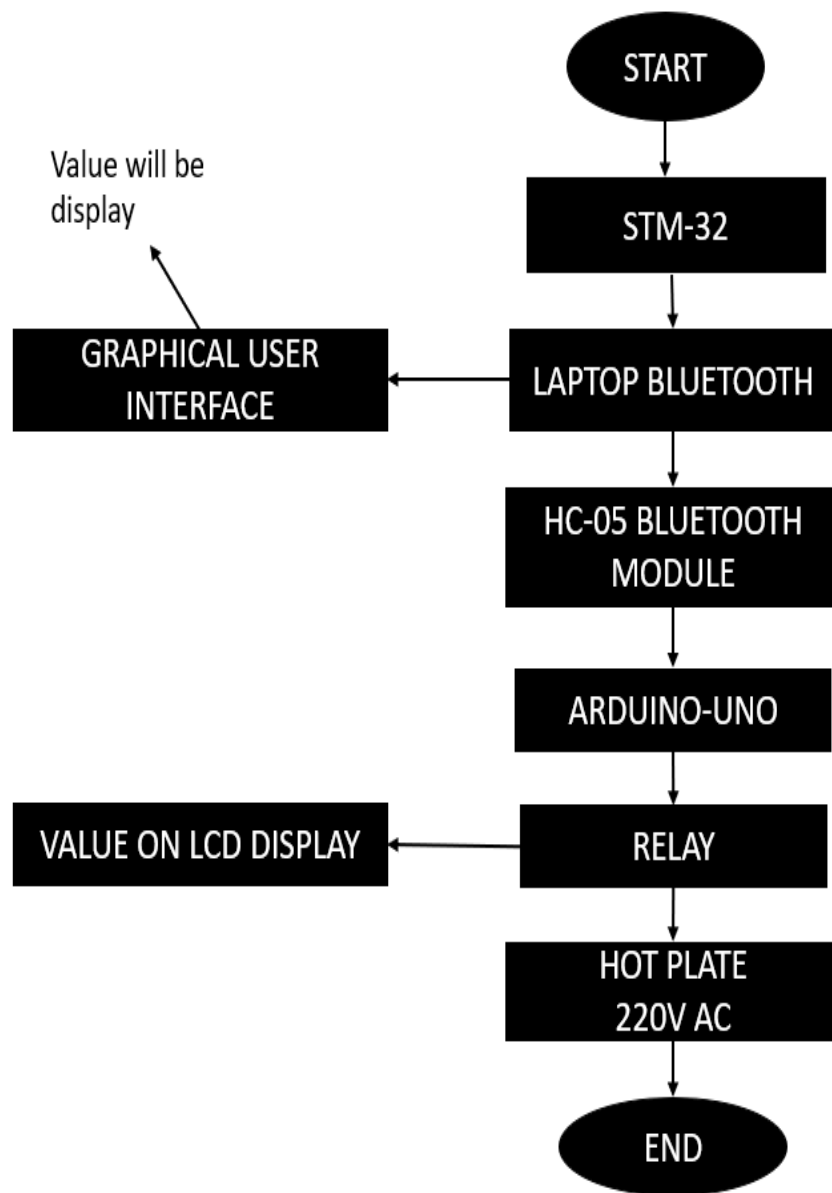
## Circuit Diagram:



fritzing

## Flow of Project:

### Soldering machine flow chart



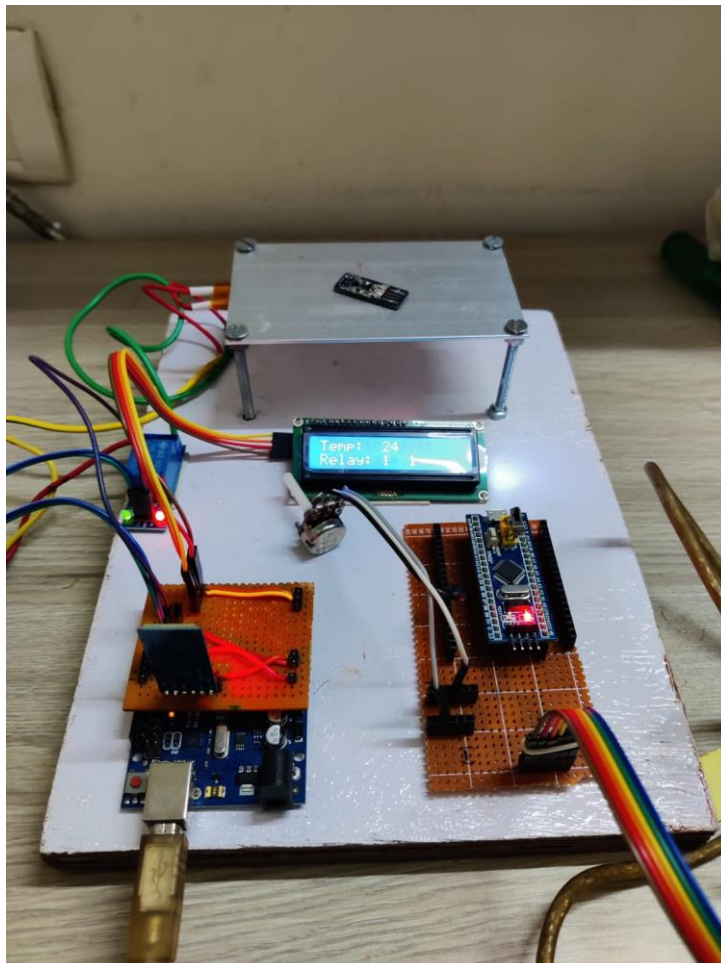
## Software and Hardware requirement (Components):

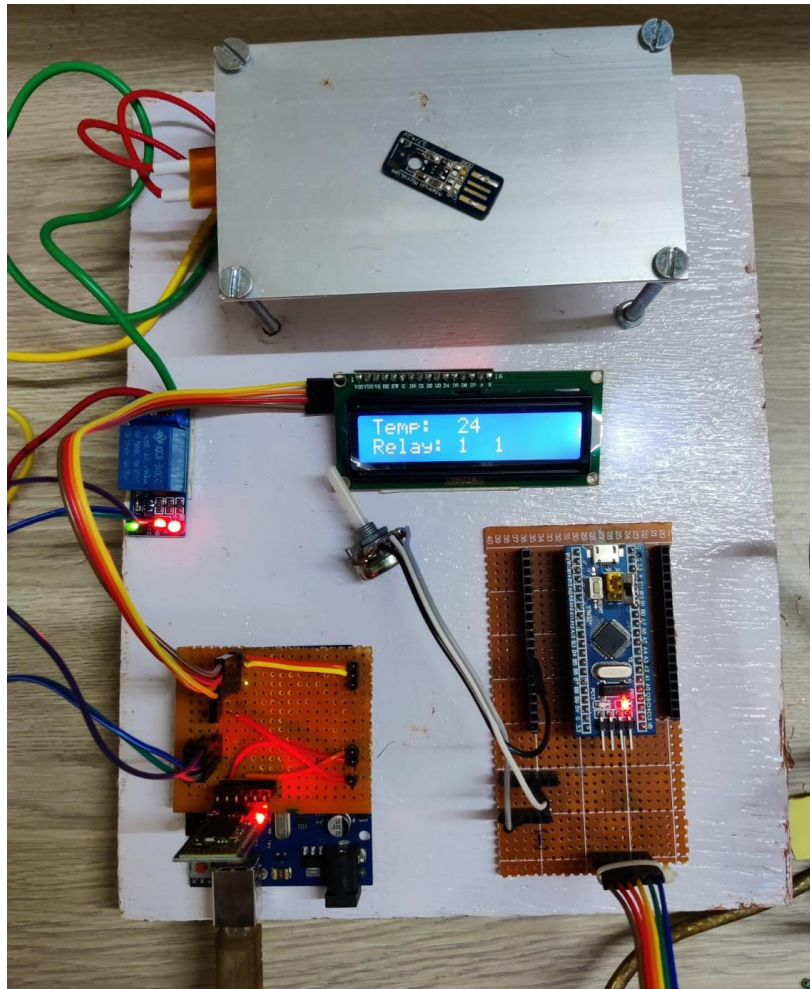
1. Heat Plate
2. Arduino Uno
3. 5V Supply
4. LCM 1062 IIC
5. Stm-32 F103C8T6
6. AC Switch Board
7. AC Lamp, LED
8. 10k pot
9. Bluetooth HC-05
10. LCD panel
11. Python, Arduino-C

## Component cost estimation:

This Project will cost up to 2500 to 3000

## Output:





```

Users > sahil > Desktop > V2 ----- Final-Re
# V2

# Reflow Final Main - Code
# OK tested - working - code

import time
from tkinter import *
from tkinter import messagebox
from tkinter import ttk
from turtle import bgcolor
from flask import flash
import serial

root = Tk()
root.geometry("600x600")
root.configure(bg='#9ECE9A')
root.title("Reflow Panel")

# Declaration of variables
trig = 0
tog = 0
count = 0
coin = True

thisdict = {"Temp": "55", "Rel


```

Start Reflow

55

Temperature

0

Relay Status

Below Range

Relay Status

MS
OUTPUT
DEBUG CONSOLE
TERM

Users\sahil> conda activate base  
 Users\sahil> & C:/Users/sahil/ana

**Innovativeness:**

In the Under-Developing concept of reflow of hot plate, we are contributing our Innovative way of making it work for a Better Experience and Easy to use with higher efficiency in soldering work.

**References:**

<https://electronoobs.io/tutorial/270#>