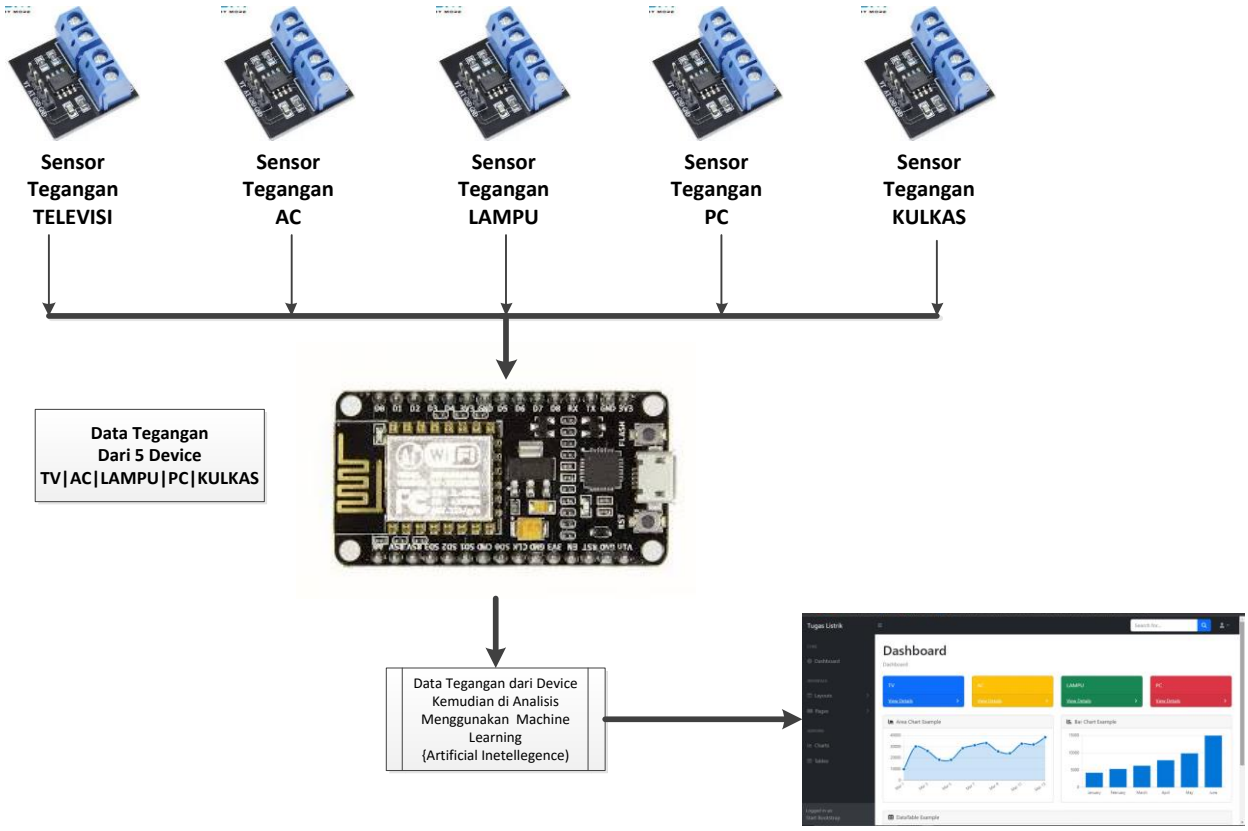
Technical Test AI & IoT Mentor #SIC

Step by Step Progress

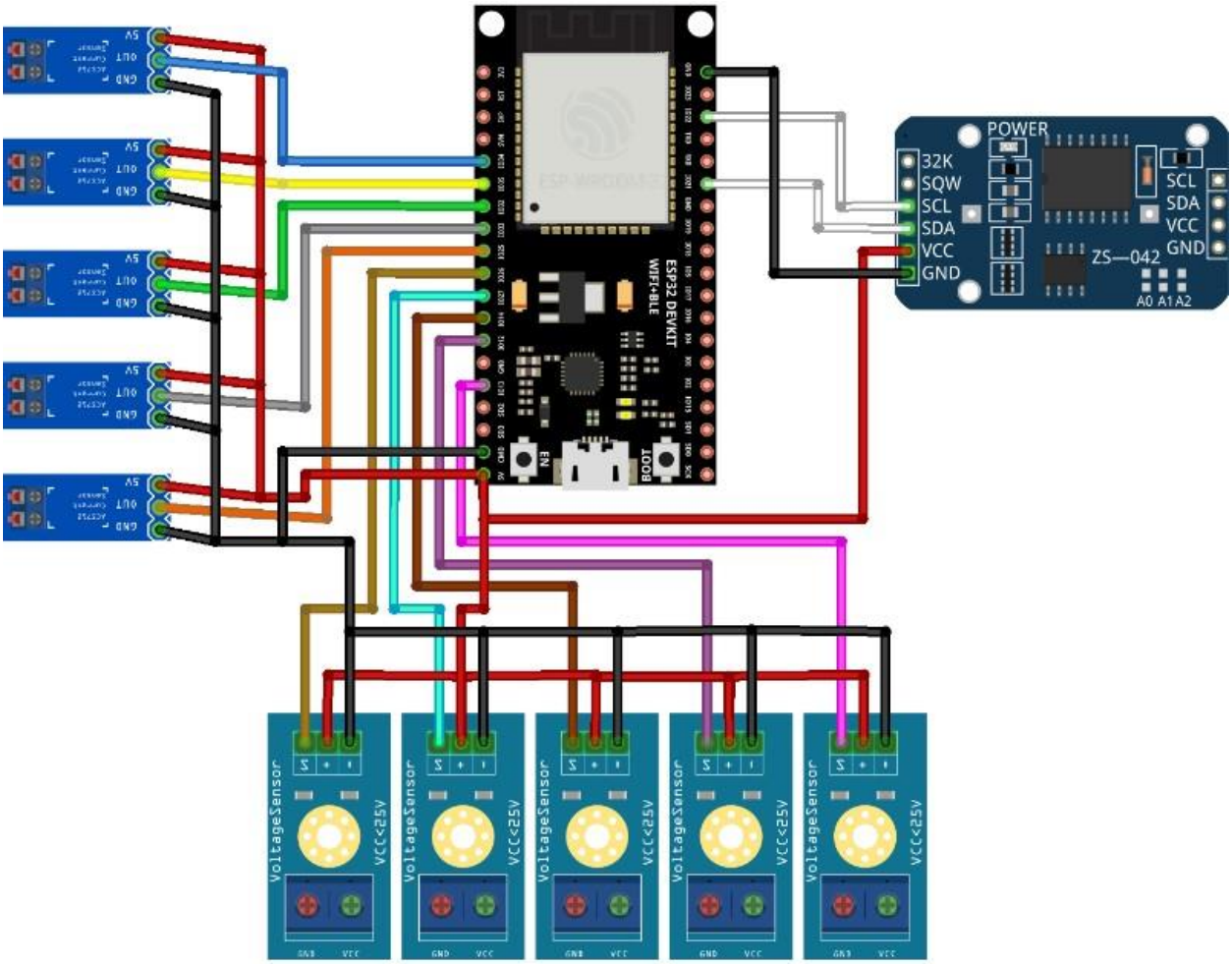
1.Membuat program mikrokontroler ESP32 terdiri dari untuk mendteksi sensor tegangan dan arus dengan delay waktu tetentu pada beberapa perangkat seperti TV, AC, Lampu, PC dan Kulkas. Output dari tugas ini adalah data Tegangan dan Arus (Daya) dari masing-masing perangkat yang di monitoring dengan waktu delay yang telah ditentukan (missal pengiriman data setiap 5 menit).

RANCANGAN DESAIN SYSTEM

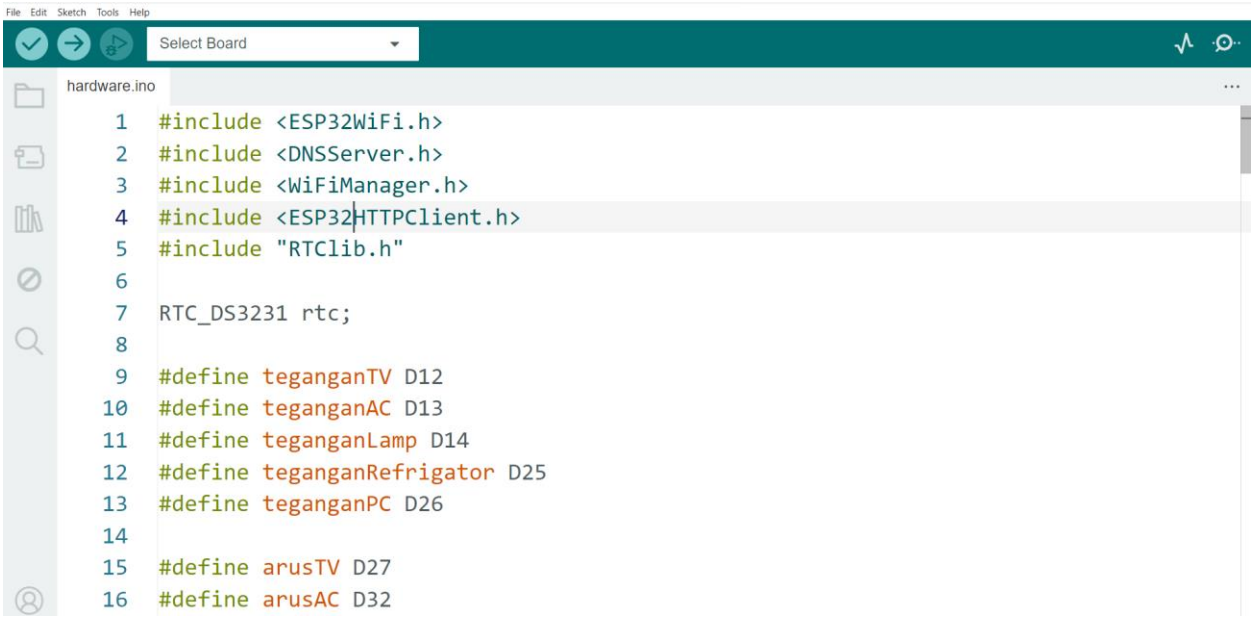


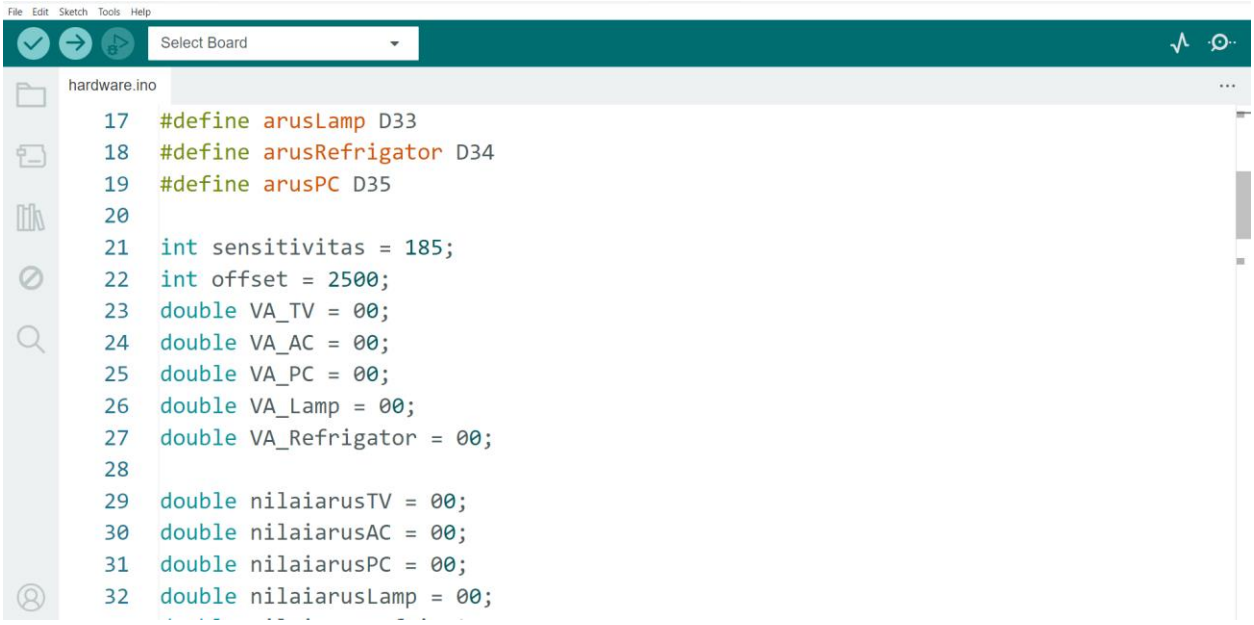
Output Data Menghasilkan Sistem Pengambil Keputusan Berbasis WEB

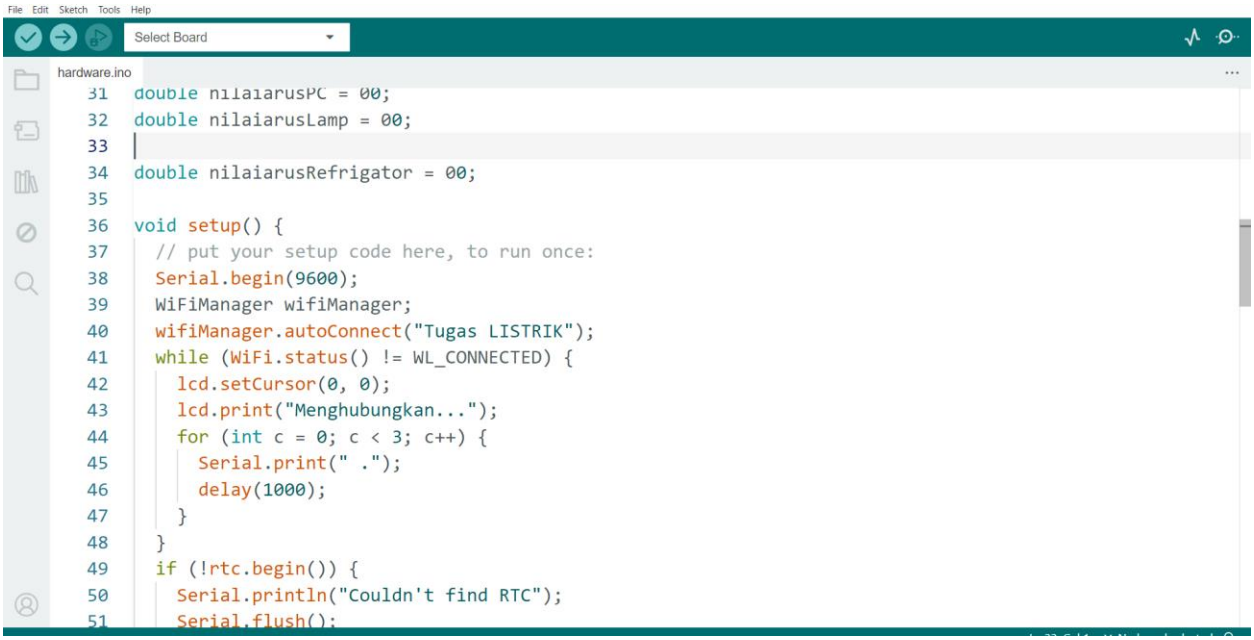
RANCANGAN RANGKAIANEMBEDDED SYSTEM



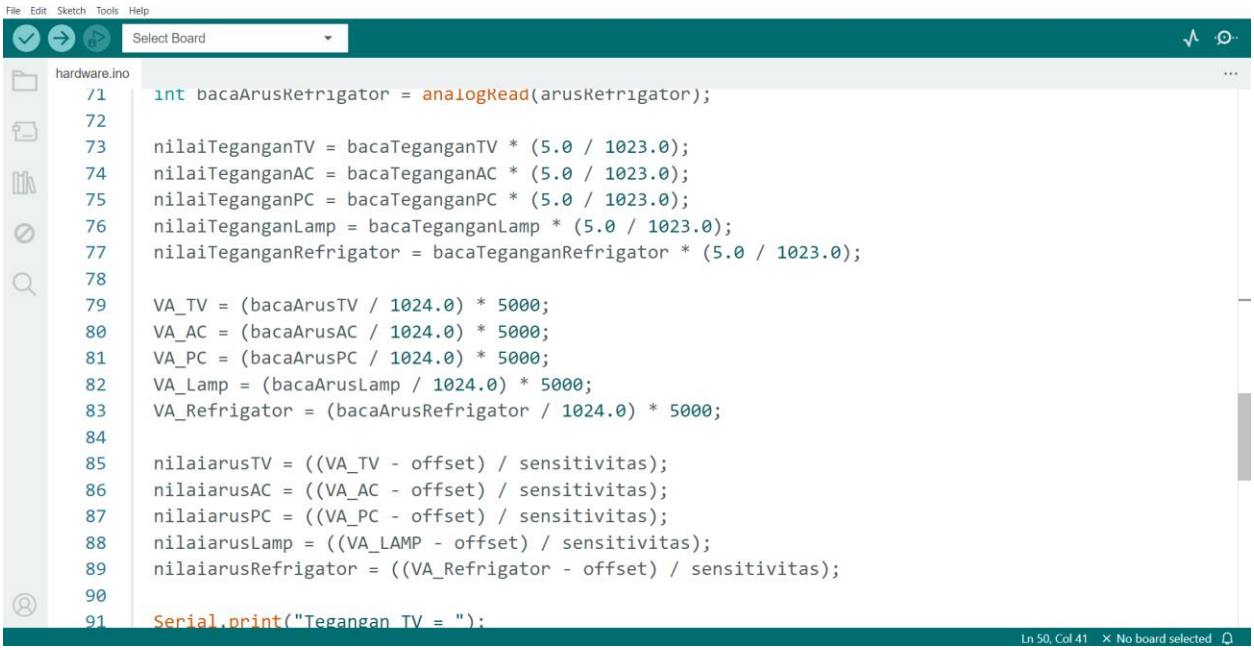
SCREENSHOOT PROGAM NODE MCU ESP 32






File Edit Sketch Tools Help
Select Board
hardware.ino
double nilaiarusPC = 00;
double nilaiarusLamp = 00;
double nilaiarusRefrigator = 00;
void setup() {
// put your setup code here, to run once:
Serial.begin(9600);
WiFiManager wifiManager;
wifiManager.autoConnect("Tugas LISTRIK");
while (WiFi.status() != WL_CONNECTED) {
lcd.setCursor(0, 0);
lcd.print("Menghubungkan...");
for (int c = 0; c < 3; c++) {
Serial.print(" .");
delay(1000);
}
}
if (!rtc.begin()) {
Serial.println("Couldn't find RTC");
Serial.flush();

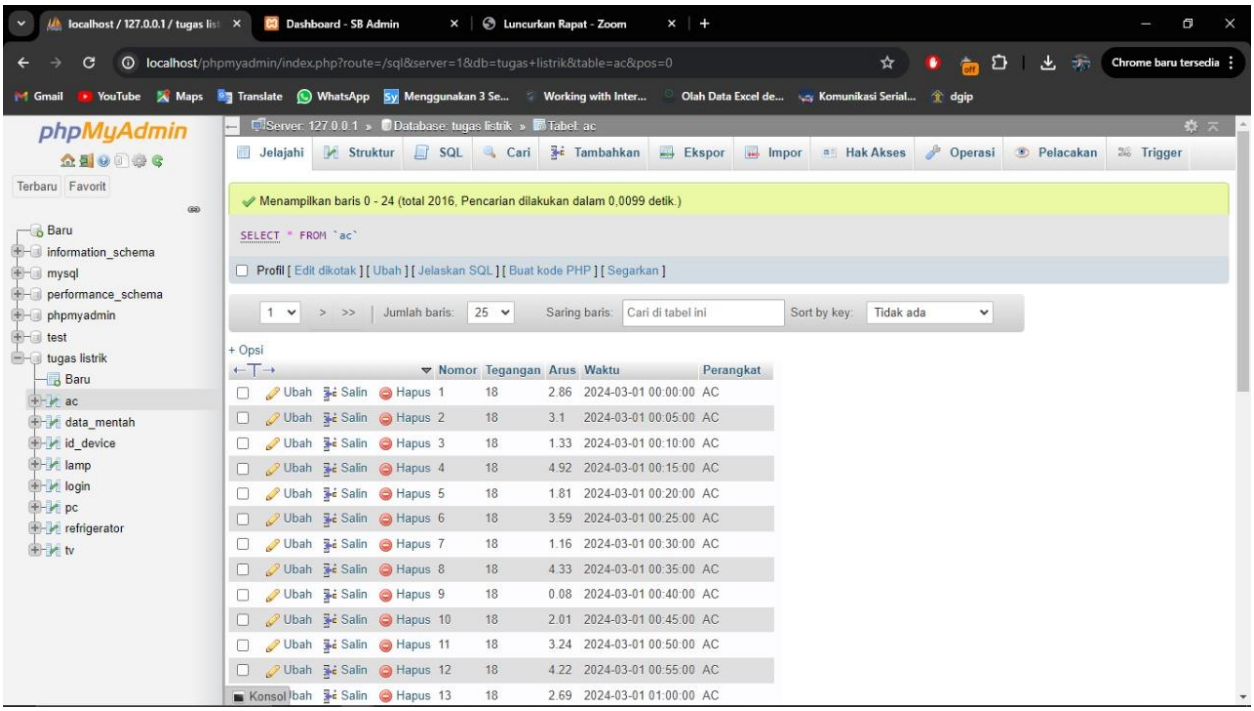

File Edit Sketch Tools Help
Select Board
hardware.ino
while (1) delay(10);
}
// rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));
// rtc.adjust(DateTime(2014, 1, 21, 3, 0, 0));
}
void loop() {
// put your main code here, to run repeatedly:
DateTime now = rtc.now();
int bacaTeganganTV = analogRead(teganganTV);
int bacaTeganganAC = analogRead(teganganAC);
int bacaTeganganPC = analogRead(teganganPC);
int bacaTeganganLamp = analogRead(teganganLamp);
int bacaTeganganRefrigator = analogRead(teganganRefrigator);
int bacaArusTV = analogRead(arusTV);
int bacaArusAC = analogRead(arusAC);
int bacaArusPC = analogRead(arusPC);
int bacaArusLamp = analogRead(arusLamp);
int bacaArusRefrigator = analogRead(arusRefrigator);
Ln 33, Col 1
No board selected




```
112 }
113 void kirimdata() {
114   String sendDataTegangan = String(tanggal) + ',' + String(nilaiTeganganTV) + ',' + String(nilaiTegangan
115   String sendDataArus = String(nilaiarusTV) + ',' + String(nilaiarusAC) + ',' + String(nilaiarusPC) + ',
116   String sendData = sendDataTegangan + sendDataArus;
117   std::unique_ptr<BearSSL::WiFiClientSecure> client(new BearSSL::WiFiClientSecure);
118   client->setInsecure();
119   https.begin(*client, sendData);
120   int httpResponseCode = https.GET();
121   String payload = https.getString();
122   Serial.println(payload);
123   https.end();
124 }
125
```

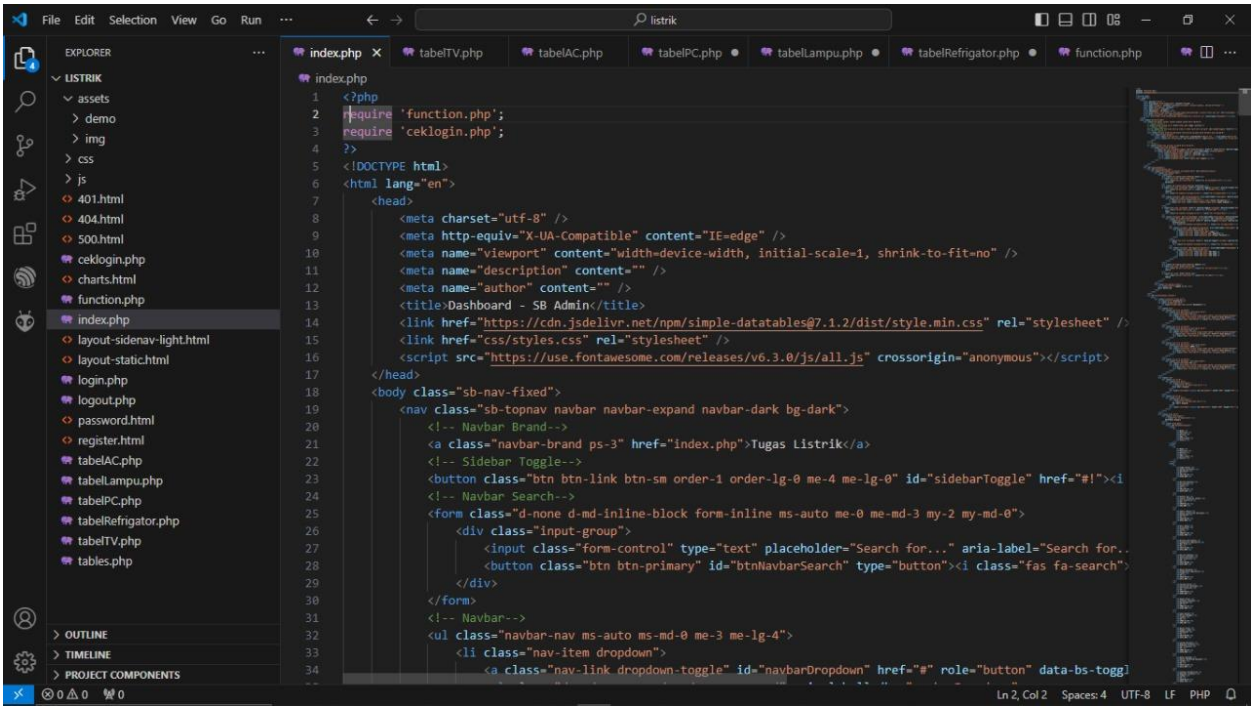
2.Output data dari mikrokontroller (berupa data Tegangan dan Arus pada setiap perangkat dengan delay yang telah ditentukan) dijadikan input untuk membuat model machine learning untuk memperkirakan sisa tagihan listrik pada bulan tersebut dan mengidentifikasi kontribusi perangkat terhadap biaya.

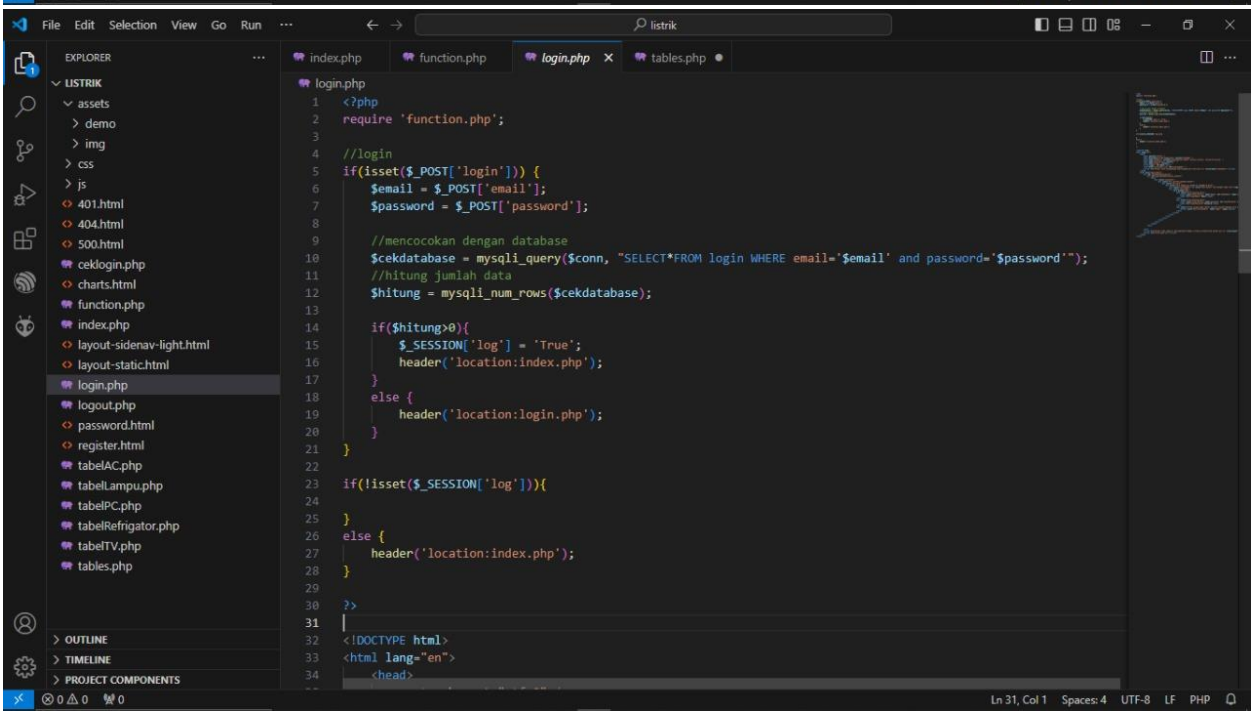
RANCANGAN SISTEM DATABASE PENAMPUNGAN DATA TEGANGAN PERANGKAT LISTRIK

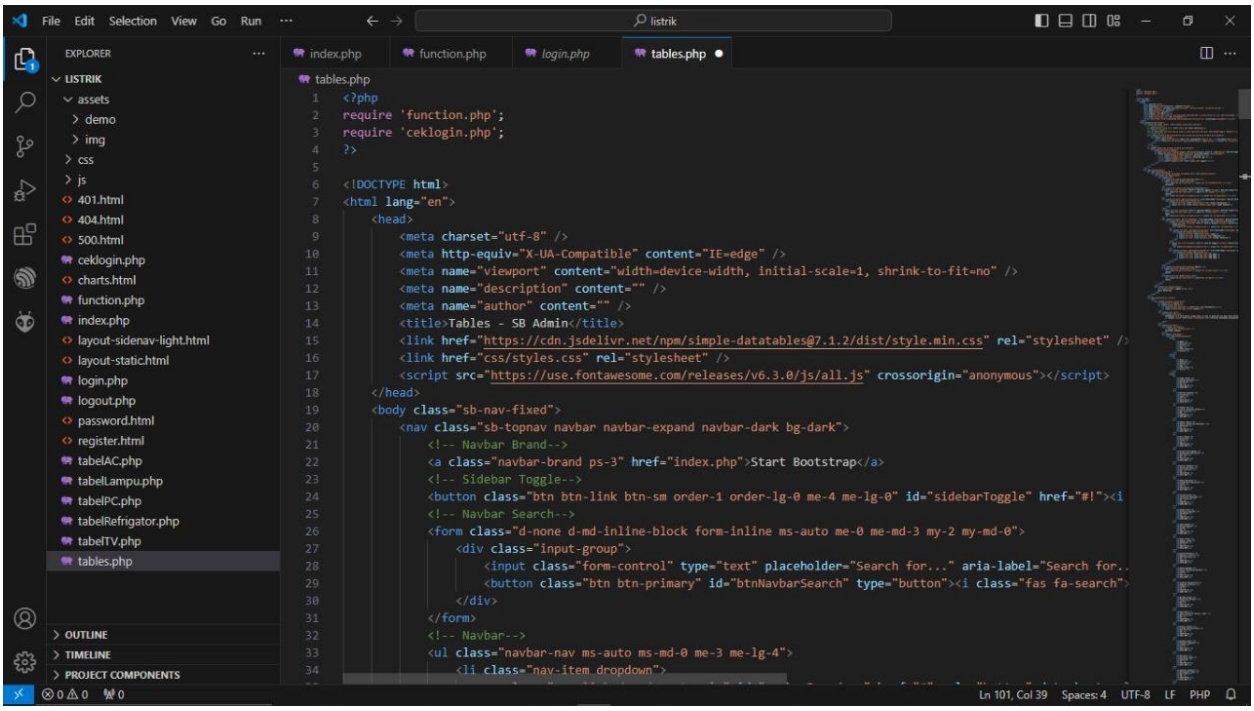


3.Pemodelan machine learning berdasarkan data historis dan menilai kinerjanya menggunakan metrik yang relevan dan diintegrasikan pada aplikasi web.

RANCANGAN DESAIN WEB

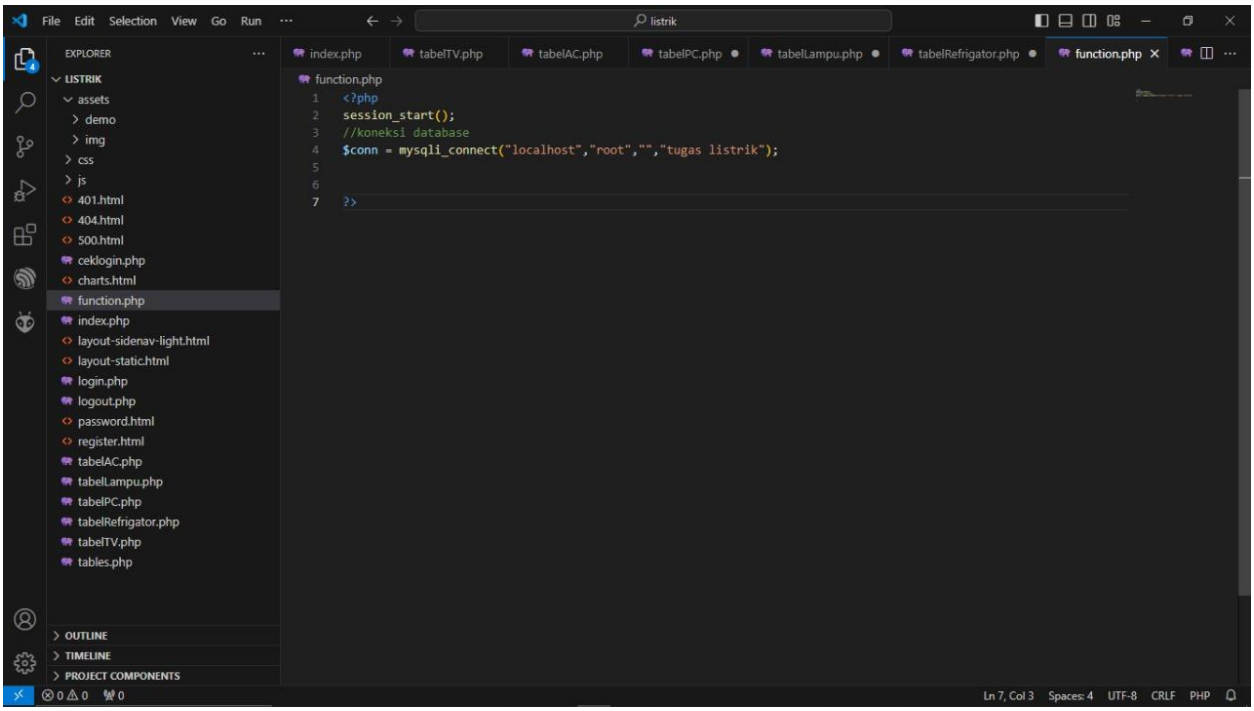





File Edit Selection View Go Run
listrik
EXPLORER
LISTRIK
assets
demo
img
css
js
401.html
404.html
500.html
ceklogin.php
charts.html
function.php
index.php
layout-sidenav-light.html
layout-static.html
login.php
logout.php
password.html
register.html
tabelAC.php
tabelLampu.php
tabelPC.php
tabelRefrigator.php
tabelTV.php
tables.php
OUTLINE
TIMELINE
PROJECT COMPONENTS
index.php
function.php
login.php
tables.php
tables.php
<?php
require 'function.php';
require 'ceklogin.php';
?>
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8" />
<meta http-equiv="X-UA-Compatible" content="IE=edge" />
<meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no" />
<meta name="description" content="" />
<meta name="author" content="" />
<title>Tables - SB Admin</title>
<link href="https://cdn.jsdelivr.net/npm/simple-datatables@7.1.2/dist/style.min.css" rel="stylesheet" />
<link href="css/styles.css" rel="stylesheet" />
<script src="https://use.fontawesome.com/releases/v6.3.0/js/all.js" crossorigin="anonymous"></script>
</head>
<body class="sb-nav-fixed">
<nav class="sb-topnav navbar navbar-expand navbar-dark bg-dark">
<!-- Navbar Brand-->
Start Bootstrap
<!-- Sidebar Toggle-->
<button class="btn btn-link btn-sm order-1 order-lg-0 me-4 me-lg-0" id="sidebarToggle" href="#!"><i
<!-- Navbar Search-->
<form class="d-none d-md-inline-block form-inline ms-auto me-0 me-md-3 my-2 my-md-0">

<input class="form-control" type="text" placeholder="Search for..." aria-label="Search for..
<button class="btn btn-primary" id="btnNavbarSearch" type="button"><i class="fas fa-search">

</form>
<!-- Navbar-->
<ul class="navbar-nav ms-auto ms-md-0 me-3 me-lg-4">
<li class="nav-item dropdown">
Ln 101, Col 39 Spaces: 4 UTF-8 LF PHP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tabelPC.php
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tabelTV.php
tables.php
OUTLINE
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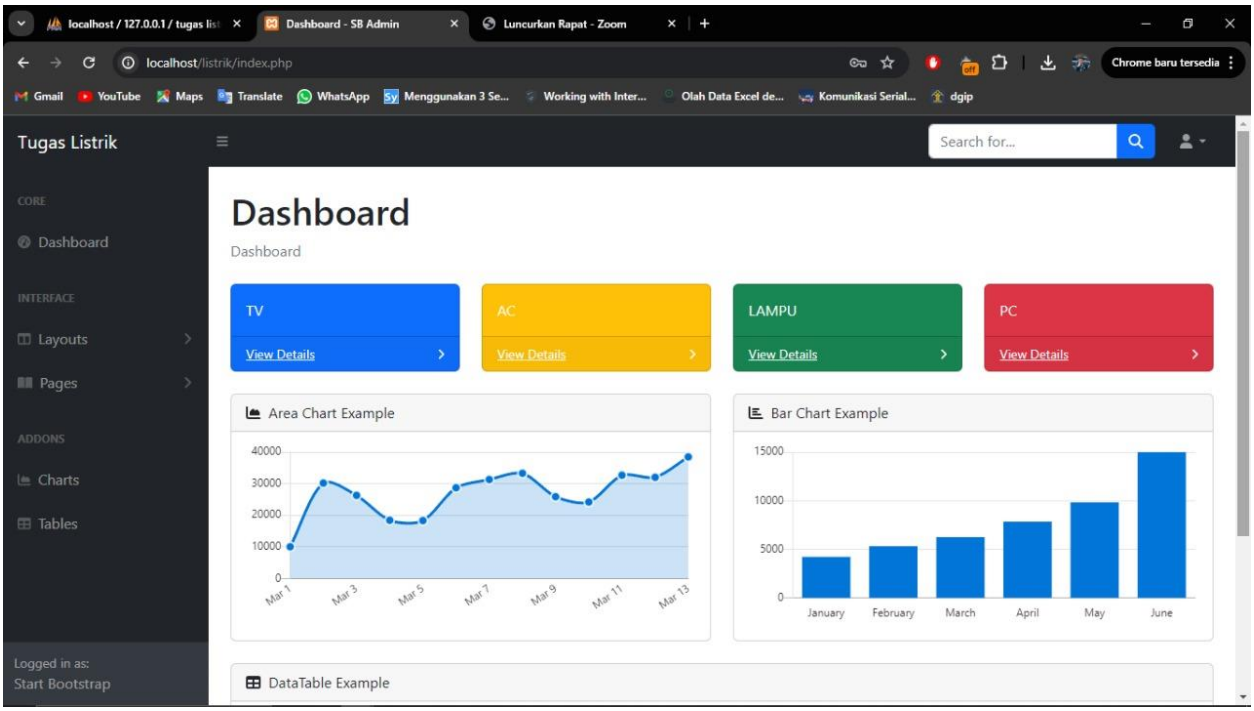
PROJECT COMPONENTS
index.php
tabelTV.php
tabelAC.php
tabelPC.php
tabelLampu.php
tabelRefrigator.php
function.php
function.php
<?php
session_start();
//koneksi database
$conn = mysqli_connect("localhost","root","","tugas listrik");
?>
Ln 7, Col 3 Spaces: 4 UTF-8 CRLF PHP

4.Output dari pengembangan web adalah pengguna dapat melihat perkiraan tagihan listrik dan peringkat perangkat berdasarkan kontribusinya.

TAMPILAN DASHBOARD WEB



5.Kerangka aplikasi web dapat menggunakan jenis apa pun, namun Python harus digunakan untuk bagian pengembangan AI.