

LAMPIRAN

Lampiran 1. Kondisi awal *test bench*



Lampiran 2 kondisi saat ini *test bench*



Lampiran 3. Tampilan Program



Lampiran 4. Sketsa program

Sketsa Program

```

import controlP5.*; //import ControlP5 library
import processing.serial.*;

Serial port;

ControlP5 cp5; //create ControlP5 object
PFont font;
PFont font1;
PFont font2;
PFont font3;

PImage gambar;
PImage gambar1;
PImage bg;

String a = "~100!";
String b = "~200!";
String c = "~300!";
String d = "~400!";
String e = "~500!";
String f = "~600!";
String g = "~700!";
String h = "~800!";
String i = "~900!";
String j = "~1000!";
String o = "~0!";

void setup() {

    gambar = loadImage("LOGO.png");

    size(1200, 640);

```

```

printArray(Serial.list());
port = new Serial(this, "COM3", 9600);

cp5 = new ControlP5(this);
font = createFont("calibri light bold", 35 );
font1 = createFont("berlin sans fb demi", 80);
font2 = createFont("berlin sans fb demi", 5);
font3 = createFont("calibri light bold", 40);

cp5.addButton("x100")
    .setPosition(25, 100)
    .setSize(200, 100)
    .setFont(font)
    .setColorActive(color(255, 255, 130))
    .setColorBackground(color(255, 255, 130))
    .setColorForeground(color(255, 200, 0))
    .setColorLabel(color(0, 0, 0))

;

cp5.addButton("x200")
    .setPosition(260, 100)
    .setSize(200, 100)
    .setFont(font)
    .setColorActive(color(255, 255, 100))
    .setColorBackground(color(255, 255, 100))
    .setColorForeground(color(255, 200, 0))
    .setColorLabel(color(0, 0, 0))

;

cp5.addButton("x300")
    .setPosition(495, 100)
    .setSize(200, 100)
    .setFont(font)
    .setColorActive(color(255, 255, 50))
    .setColorBackground(color(255, 255, 50))
    .setColorForeground(color(255, 200, 0))
    .setColorLabel(color(0, 0, 0))

;

cp5.addButton("x400")
    .setPosition(730, 100)
    .setSize(200, 100)
    .setFont(font)
    .setColorActive(color(255, 255, 0))
    .setColorBackground(color(255, 255, 0))
    .setColorForeground(color(255, 200, 0))
    .setColorLabel(color(0, 0, 0))

;

cp5.addButton("x500")
    .setPosition(965, 100)

```

```

.setSize(200, 100)
.setFont(font)
.setColorActive(color(230, 255, 0))
.setColorBackground(color(250, 230, 0))
.setColorForeground(color(255, 200, 0))
.setColorLabel(color(0, 0, 0))

;

cp5.addButton("x600")
.setPosition(25, 250)
.setSize(200, 100)
.setFont(font)
.setColorActive(color(210, 255, 0))
.setColorBackground(color(210, 230, 0))
.setColorForeground(color(255, 200, 0))
.setColorLabel(color(0, 0, 0))

;

cp5.addButton("x700")
.setPosition(260, 250)
.setSize(200, 100)
.setFont(font)
.setColorActive(color(180, 255, 0))
.setColorBackground(color(180, 230, 0))
.setColorForeground(color(255, 200, 0))
.setColorLabel(color(0, 0, 0))

;

cp5.addButton("x800")
.setPosition(495, 250)
.setSize(200, 100)
.setFont(font)
.setColorActive(color(160, 255, 0))
.setColorBackground(color(160, 230, 0))
.setColorForeground(color(255, 200, 0))
.setColorLabel(color(0, 0, 0))

;

cp5.addButton("x900")
.setPosition(730, 250)
.setSize(200, 100)
.setFont(font)
.setColorActive(color(140, 255, 0))
.setColorBackground(color(140, 230, 0))
.setColorForeground(color(255, 200, 0))
.setColorLabel(color(0, 0, 0))

;

cp5.addButton("x1000")
.setPosition(965, 250)
.setSize(200, 100)

```

```

        .setFont(font)
        .setColorActive(color(120, 255, 0))
        .setColorBackground(color(120, 230, 0))
        .setColorForeground(color(255, 200, 0))
        .setColorLabel(color(0, 0, 0))

        ;

cp5.addButton("stop")
    .setPosition(380, 380)
    .setSize(425, 100)
    .setFont(font)
    .setColorActive(color(255, 0, 0))
    .setColorBackground(color(255, 0, 0))
    .setColorForeground(color(155, 0, 0))

    ;
}

void draw() {

    fill(240, 80, 0);
    textFont(font1);
    text("TEST BENCH CONTROL", 200, 80); // ("text", x coordinate,
y coordinat)

    fill(0, 600, 0);
    textFont(font2);
    text("by IRFAN HUSNI IZZUDDIN & DANI SETIAWAN", 1, 10);

    fill(0, 150, 255);
    rect(0, 510, 1200, 300);

    image(gambar, 20, 520);

    fill(0, 0, 0);
    textFont(font3);
    text("Jurusan Pendidikan Teknik Otomotif", 270, 550);

    fill(0, 0, 0);
    textFont(font3);
    text("Fakultas Teknik", 450, 590);

    fill(0, 0, 0);
    textFont(font3);
    text("Universitas Negeri Yogyakarta", 320, 630);
}

void x100() {
    port.write(a);
}

void x200() {
    port.write(b);
}

```

```

void x300() {
    port.write(c);
}

void x400() {
    port.write(d);
}

void x500() {
    port.write(e);
}

void x600() {
    port.write(f);
}

void x700() {
    port.write(g);
}

void x800() {
    port.write(h);
}

void x900() {
    port.write(i);
}

void x1000() {
    port.write(j);
}

void stop() {
    port.write(o);
}

void serialEvent(Serial p) {
    try {
        //get message till line break (ASCII > 13)
        String message = p.readStringUntil(13);
        //just if there is data
        if (message != null) {
            println("message received: "+trim(message));
        }
    }
    catch (Exception e) {
    }
}

```

Lampiran 5. Kartu Bimbingan



KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
 UNIVERSITAS NEGERI YOGYAKARTA
 FAKULTAS TEKNIK
 Alamat : Kampus Karangmalang, Yogyakarta, 55281
 Telp. (0274) 586168 psw. 276,289,292 (0274) 586734 Fax. (0274) 586734
 Website : <http://ft.uny.ac.id> email: ft@uny.ac.id ; teknik@uny.ac.id

FORMULIR BIMBINGAN PENYUSUNAN PROPOSAL TA

Nama Mahasiswa : Irfan Husni Izzuddin
 Dosen Pendamping : Dr. Zainal Arifin, M.T.
 NIM : 16509134007
 Program Studi : Teknik Otomotif DIII
 Judul TA : Komputerisasi Pengendalian Test Bench

NO.	HARI/ TANGGAL BIMBINGAN	MATERI BIMBINGAN	HASIL / SARAN BIMBINGAN	PARAF DOSEN PENDAMPING
1.	Senin/1 Juli 2019	Penyusunan laporan	Perbaikan Mei 9 dan format	[Signature]
2.	Rabu/3 Juli 2019	Perbaikan Revisi 1	Revisi Bab IV, ABK, dan	[Signature]
3.	Jum'at/5 Juli 2019	Perbaikan Revisi "	Pendalaman bab 1 dan 2	[Signature]
4.	Senin/8 Juli 2019	Perbaikan Revisi "	Tanda baca dan kepatutan	[Signature]
5.	Selam/9 Juli 2019	Perbaikan Revisi "	Kejelasan	[Signature]
6.	Rabu/10 Juli 2019	Perbaikan Revisi "	Kejelasan	[Signature]
7.	Kamis/11 Juli 2019	Perbaikan Revisi "	Kejelasan	[Signature]
8.	Jum'at/12 Juli 2019	Perbaikan Revisi "	Kejelasan	[Signature]

Mengetahui,
 Ketua Program Studi

Drs. Moch. Solikin, M.Kes.
 NIP. 19680404 199303 1 003

Yogyakarta, 12 Juli 2019.
 Mahasiswa,

Irfan Husni Izzuddin
 NIM. 16509134007

Lampiran 6. Bukti Hasil Revisi



KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI

UNIVERSITAS NEGERI YOGYAKARTA

FAKULTAS TEKNIK

Alamat : Kampus Karangmalang, Yogyakarta, 55281

Telp. (0274) 586168 psw. 276,289,292 (0274) 586734 Fax. (0274) 586734

Website : <http://ft.uny.ac.id> email: ft@uny.ac.id; teknik@uny.ac.id

BUKTI SELESAI REVISI PROYEK AKHIR D3

Nama Mahasiswa : Irfan Husni Izzuddin
No. Mahasiswa : 16509134007
Program Studi : Teknik Otomotif
Judul Proyek Akhir : KOMPUTERISASI PENGENDALIAN TEST BENCH
Dosen Pembimbing : Dr. Ir. Zainal Arifin, M.T.

Dengan ini saya menyatakan mahasiswa tersebut telah selesai revisi.

No	Nama	Jabatan	Paraf	Tanggal
1	Dr. Ir. Zainal Arifin, M.T.	Ketua Penguji		22.07.2019
2	Drs. Moch. Solikin, M.Kes.	Sekretaris Penguji		22.07.2019
3	Ir. Bambang Sulistyono, S.Pd., M.Eng.	Penguji Utama		24/7/2019

Keterangan :

1. Arsip Jurusan
2. Kartu wajib dilampirkan dalam laporan proyek akhir