

## LAMPIRAN

### Program Arduino

```
#include <TimerOne.h>
#include <LiquidCrystal_I2C.h>

LiquidCrystal_I2C lcd(0x27,
16, 2);

#define sensorbpm A1

Int
timeout, counter, tanda, detik, co
unterbpm;

#define buzz 13

#define sensorMPX A0

#define start 10

#define valve 11

#define motor 12

float
darah1, darah2, selisih, sistol, d
istol, MAP;

int tandas;

void setup() {

// put your setup code here,
to run once:

lcd.begin();

pinMode(motor, OUTPUT);

pinMode(valve, OUTPUT);

pinMode(start, INPUT_PULLUP);

Timer1.initialize(1000000);

Timer1.attachInterrupt( isr );

pinMode(buzz, OUTPUT);

void isr() {

detik++;}

void bpm(){

float dataadc1 ;

long sum = 0;

int i;

for (i = 0; i < 30; i++){

sum += analogRead(sensorbpm);}

dataadc1 = sum / 30;

if(dataadc1>100 && tanda==1){

counter=counter+1;

timeout=0;

digitalWrite(buzz,HIGH);}

if(dataadc1<100){

timeout=timeout+1;

digitalWrite(buzz,LOW);}

if(timeout>1){tanda=1;}

if(timeout<1){tanda=0;}

lcd.setCursor(0,0);

lcd.print("Bpm=");lcd.print(co
unterbp);

if(detik==20){counterbpm=count
er*3;detik=0;counter=0;}

lcd.setCursor(10,0);

lcd.print(counter);}

void rumus(){

MAP=(sistol-15.192)/1.1597;

distol=(1.0337*MAP)-18.909;

lcd.setCursor(0,1);

lcd.print("Nibp:");

lcd.print(sistol,1);

lcd.print("/");

lcd.print(distol,1);
```

```

tandas=0;
digitalWrite(motor, LOW);
digitalWrite(valve, LOW);
delay(1000);
if( sistol>100 && sistol<111){
lcd.setCursor(9,0);
lcd.print("Rileks");}
if(sistol>110 && sistol<121){
lcd.setCursor(9,0);
lcd.print("Tenang");}
if( sistol>120 && sistol<131){
lcd.setCursor(9,0);
lcd.print("Cemas");}
if(sistol>130){
lcd.setCursor(9,0);
lcd.print("Tegang");}}
void tekanan(){
sistol=0;
while(1){
int dataadc1 ;
long sum = 0;//deklarasi
variabel sum
int i;
for (i = 0; i < 30; i++){
sum += analogRead(sensorMPX);}
dataadc1 = sum / 30;
float
tegangan=(((dataadc1*5)/1024.);
float kpa=(tegangan/5-
0.04)/0.018;
float mmhg=kpa*7.5;
darah1=mmhg;
selisih=darah2-darah1;
darah2=darah1;
if(sistol==0){
lcd.setCursor(0,1);
lcd.print("PRES:");
lcd.print(mmhg); }
if(selisih<-0.18 && tandas==1
&& mmhg<150){
sistol=darah1;rumus();}
if(digitalRead(start)==LOW){de
lay(200);
lcd.clear();detik=0;break;}
if(mmhg>200){tandas=1;
digitalWrite(motor, LOW);
digitalWrite(valve, HIGH);}
if(mmhg<60 && sistol==0){
digitalWrite(motor, HIGH);
digitalWrite(valve, HIGH);}
delay(100);}}
void loop() {
// put your main code here, to
run repeatedly:
bpm();
if(digitalRead(start)==LOW){de
lay(500);tekanan();}
digitalWrite(motor, LOW);
digitalWrite(valve, LOW);
lcd.setCursor(0,1);
lcd.print(detik);
delay(20);lcd.clear();}

```