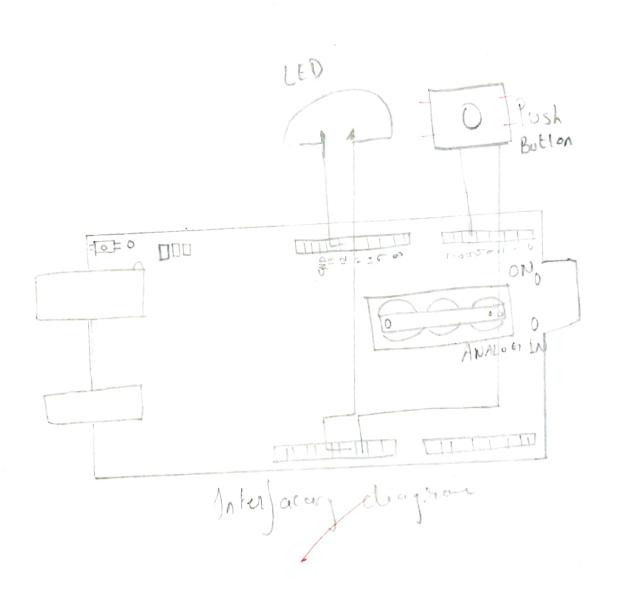


Interjacing diagram

A sim: - Interfacing LED with Ardiano Uno * Component used: - Ardiuno Uno, LED & Wires Software used: - Wokwi Interfacing code: -Void setup() printer pinMode (13, output); // set LED Pin as output void loop () digitalwrite (13, HEGH); 11 Two on (HIGH) LED delay (500); digital Write (13, LOW); 11 Jun off (rom) rED delay (500);

* Result:

We have successfully interfaced the LED with Archieves Uno and it is showing output successfully.



A sim Interfacing LED with pushbutton with Ardiano Uno * Component used: Audiuno Uno, LED, Pushbubban & wires A Software used: Wo Kuci A Interfacing code: const int lutton Pin=4; //Pin connected to push button const int buttoled Pin =12; It Pin connected to LED int buttonstate; Il Give pushbutton a value Void setap() pinMode (led Pin, OUTPUT); //set LED pin as output PinMode (button Pin, INPUI); //set pubbutton pin as input Lutton State digital Read (butter Pin); 1/Read input from pin 4 void bob y (button State = = Low) digitalstate (led Pin, HIGH); 119wn on LED delay (500); digital Write (led Pin, LOW); del ay (500); else { digital Write (led Pin, low); 11 Dwn off LED

Result. We have successfully interfaced (ED) with pushbutton with striction Uns and it is showing output successfully.

.

Exposiment-3 A sim: Ant-vyacing seven-segement display with Ardiuno Uno. Component used: Sudiano Uno, sever-segencat display and across Software used: Wokwi Antoyacing code: 9 11 Pin connected to Deven regements inta = 13. int b = 12; int c = 11. 6 intd = 10; 6 int e = 9; inff = 8; 4 int g = 7; void setupl) 6 6 pin Mode (a, output); Il set the seun segament as output 5 pinMode (b, outfut); 5 pinMode (c, OUTPUT); 6 pinMode (d, OUTPUT); G₁₁ pinMode (e, OUTPUT); 6 pin Mode (F, OUTPUT); The same of pinMode(g, OUTPUT); No. of London 1 Post Void Loop () 1190 display 0 6 digital White (a, o); digital Write (6,0), 4 dijitellinite (C10) digitelletite (0,0) 6 dipital vite (e) digital Vente (F,0) digitalWhite (961); 9-

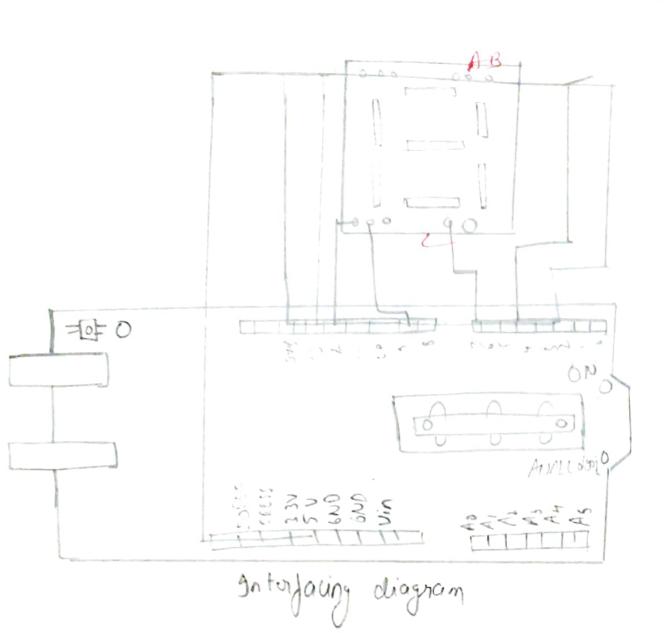
```
delay (1000);
                              11 Do display 1
digitalWrite (a, i);
digital Write (b, o);
distribility (40);
digital little (d 11);
digital Write (e, i) i
digite(White (j, i);
digital write (g, V;
 delay (1000);
                              11 90 display 2
digitalWorte (a, o);
 digitalWorite (b, e);
 digital Write ((,1);
 digitallitite (d.o);
 digitalluriti (e,0);
 digital Write (j. 1);
 digital Write ( g10);
 delay (1000);
                               11 Do display 3
 digital Write (a.o);
 digital Write (b,0);
 Ligital Ulite ((10);
 digital Write (did);
 digital Write (e,1),
 digital Will (1.1),
  digital White (gro);
  delay (1000);
                             11 To display 4
 digitalwhite (a,1);
 digitalWrite (60);
 digitallitic (c/0);
 dixitalletile (d,1)
  dijitelwhite (e,j);
  digital White (10);
   divitellerite gro);
   delay (1000);
```

3

V

3

3



ļ

```
11 To deplay 5
digital write (a.o),
dijitelwrite (b, 1);
 dizitalhkiti (c.o);
 digitel Write (dio);
 digitellituite (e,1);
  digital White (die);
  digital Write (j.0);
 delay (1000);
                               11 20 duplay 6
 digital Write (a.o);
 digital White (b, D;
 digital Wate ((10);
 digital Write (d. );
 digital Write (c,0);
 digital Write (3,0);
 digital Write (3.0);
 delay (1000);
                               1190 display 7
  digitalwrite (a.0);
   digital Write (bio);
   digital which (c,0);
   digital Write (d, 1);
   dizitallimite (c,1);
   digital White 13, 1);
    digital Write (3,1);
    delay (moo);
    digitalWhite (a, o);
                              // Do diplay 8
     digital Write (b,0);
     digital write (1,0);
     digital White (d, .);
     digital Unite (e, o),
     digital Write ( Jost;
     digital Write (3.0);
    delay (1000);
```

```
digital Write (a.o);
                            11 To duplay >
dijitalwhite (b 10);
 digital write (c, a);
 dijilalwhite(d,1);
 dijital write (en);
 dijild white ( 1,0);
 digitallitie ( j.o);
 delay (1000);
```

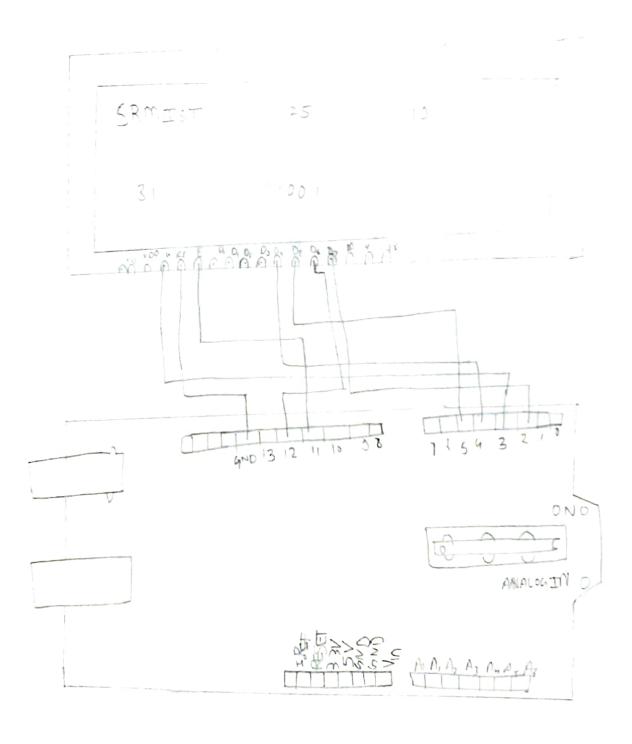
*Result:

3

and the same

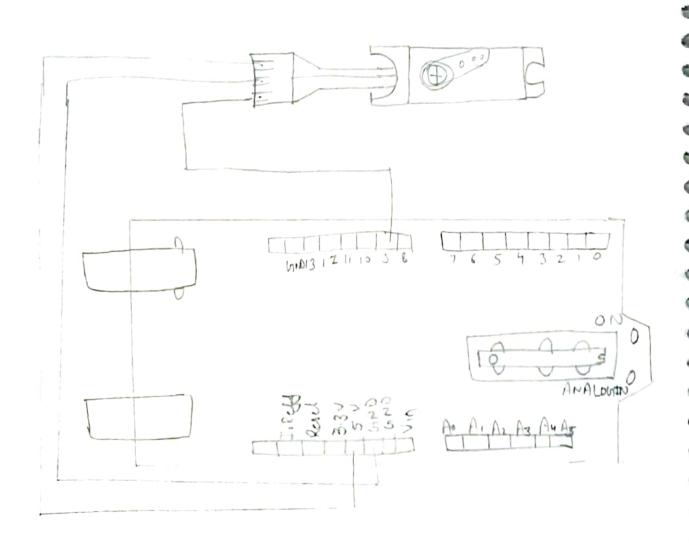
Samuel .

We have successfully interfaced the seven segement display with Ardiverous and it showing successfully from 0 to J.



Adim Interfacing liquid vigstal display with ardiano Uno. * Components used: Ardiuno Uno, LCD (16 x 2) and wire A Software Used: Wokini A Interfacing code: # include < liquid Cyptal·h> int x5=12, m=11, d4=5, d5=4, d6=3, d7=2; liquid Oystal ud (815, en, d4, d5, d6, d7); Void setup () (cd . begin (16, 2); void loop() (); lcd . println("SRMIST"); delay (1000); (cd. println (25, DEC); delay (1000); (cd println (25, HEX); delay (1000); (12); (cd . printle (25, oct); delay (1000); (cd. printla (25, BIN); delay (1000); S Result:

We have successfully istorfound the liquid mystal display with Ardieno who and it is showing the desired output.



```
Experiment - 4
> A sim: Interfacing some motor with Ardiano Uno.
   A Components used Ardiano Uno, seruo, motor and mines.
  A Software used wakun
→ A Introfacing code
     # include (Solvo.h)
      Servo my Servo; Il create souvo object le control seuco
     1/ 12 some objects con be oracled on most boards
      int pos; 1190 store some position
      void setup ()
3
      mysomo attach (D); It attaches serus on fing to the serus object
      void bop ()
       } for (pos=0, pos < = 180; pos +=1) 11 gas from 0 to 150 degen
               my some write (pos),
               delay (15); IT wait 15 ms for some to reach position
           Jor (pos=160; pos = >=0; pos -=1) 1/goes from 100 to 0 diglew
               2 my somo. write (pos);
                 delay (15);
     A Risult:
         We traw sumsfully is terfaced some motor with Ardiens the ard it is showing
        the disired movement from 0 to 150 degree and 180 to 0 degrees.
```

```
Aim: Interjoung ultresonic sensor with Andiuno Uno.
Lomponents Used Ardino Uno, Utrasonic, mire.
Software Used working
# Antogating code:

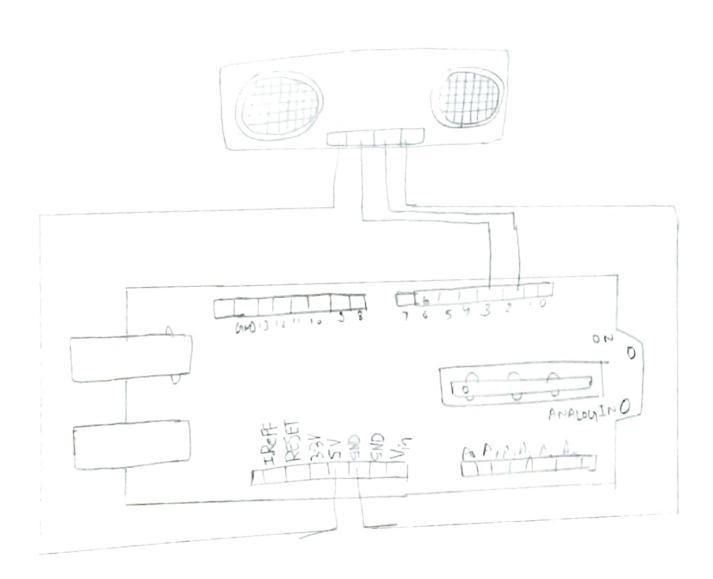
# define echo Pin 2

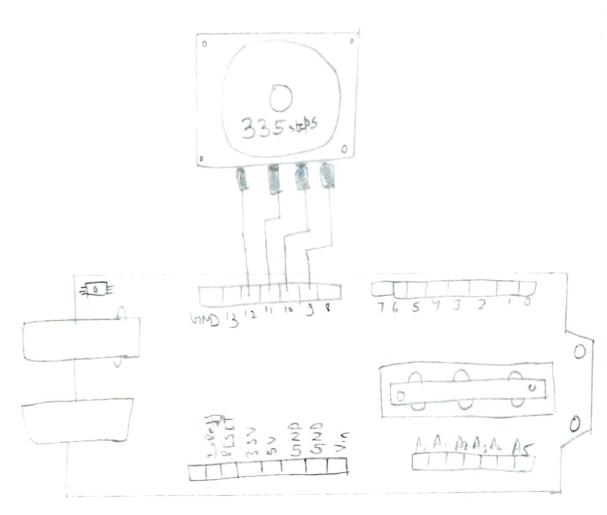
# define briag Pin 3

float duration;

float distance;

Void setup()
        void setupl)
             Soual begin (9600);
9
              Pin made ( brig Pin, OUTPUT);
C ...
              Pin mode (echo Pin, INPUT);
9
          Void loop()
degital White ( thing Pin, Low);
dulay Microscods (2);
9
                 digital Write ( buy Ping HI 61H);
delay Mirros word (10);
 digital Write (bug Pin, Low);
               duration = pulse In (echo Pin, HIGH);
                distance = (duration * 0.034312);
                Servial print ("Distance : ");
                social print (distance);
  social print in ( "(m");
  delay (1000);
```



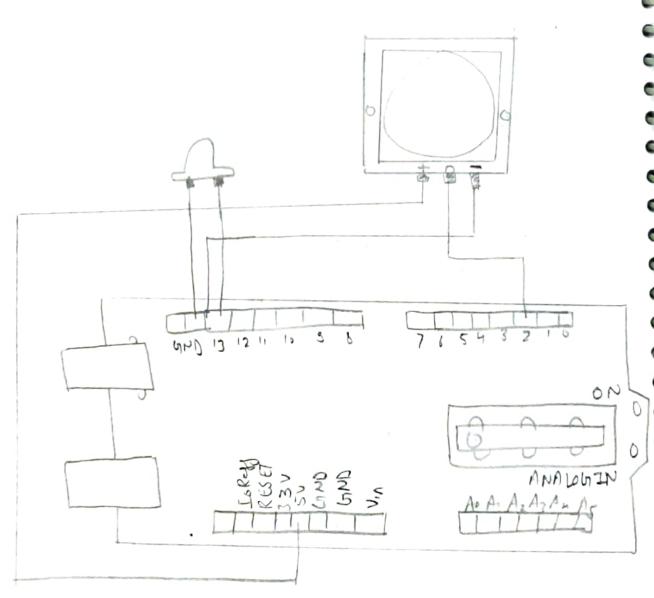


Counter lockmise

Aim: Intryacing lipolar stepper motor with Aridium Uno-* Components Used Arduino Uno, Bipolar, stepper motor and wises. A Software Used: Working A Interfacing code: # include <stepper.h> const int steps Per Revolution = 200; 11 change this to fit the number of steps per revolution for your motor. stepper mystepper (steps Per Revolution, 8, 1, 10, 11); void setupe) Il initialize steppes library on pin 8 through my Stepper. set Speed (60); //set the speed at 60 rpm Serial begin (3600); Minitialize social port. void bop() Il step one revolution is one direction Social println ("clock ause"); my stepper step (400); delay (500); Motes one revolution in another direction Social printh ("Counter clock wire"); my step (-400) delay (500).

Aridium Uno and it is showing the desired output

Atim: Interfacing PIR motion senson, with Ardiuno Uno. & Components Used Anduino Uno, PIR motion sensor and wises. \$ Software Mod! Wokuui A Intryacing code: int ledPin = 13; 4 Pin for LED int input Pin = 2; llimput Pin for PIR int pinstate low 11 we start assuming no motion detecteds int val=0; Il for reading pin status void setup() ? pin Mode (led Pin, OUTPUT); Ildeclared LED as output pin Mode (LelPin, INPUT); I declared sensor as input Social Degin (9600); void loop() { val = digital Reach (intput Pin); Il nead input value y (val == HIGH) // check if input is high digital Write (ledPin, HIMH); Il Kan LED on ÿ (Pinstate = = Low) // we have just bound on social. println ("Motion detacted"); Il we only worit to print on output change pinstate : HI WH



Motion cheeded!

```
digital Unite (ledlin, low);

y (pm state = HIGM)

Social. print in ("motion unded!");

pinstate = Low;

}
```

* Result:

We have successfully interfaced PIR motion server with Ardiner Uno and it

Aim: Pwm or Pulse width modulation using Aviduso Uno.

* Components Useds: Andrewoo Uno, LED and wises

A Software wed wokui

Antogacing code: void setup ()

Void loop ()

analog Write (9,64); delay (1000); andequiti (3,127); delay (1000); analog Write (9,191); delay (1000); analog Write (3,255); delay (1000); analog Write (310); delay (100 0);

A Result we have successfully inferfaced LED with Ardium Uno to show PWM and it is giving desired nesult.

