

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | |
|  | CSLR61 : EMBEDDED SYSTEMS  **LAB-4** | | | | | |  |
|  |  | | | | |  | |
|  | | |  |  | | | |
|  | | | Roll no. : 106119100Name : Rajneesh PandeySection : CSE-B |  | | | |
|  | |  | | |  | | |

1. Write a program to increase the intensity of external LED. At the same rate, increase the sound intensity of speaker.

Libraries to be Used: pwmout

#include "mbed.h"

PwmOut led(p5);

PwmOut spker(p6);

int main()

{

    led = 0.0;

    spker = led;

    while (true)

    {

        led = led + 0.1;

        spker = led;

        printf("LED is now %.2f\n", led.read());

        printf("SPEAKER is now %.2f\n", spker.read());

        wait(1);

    }

}

Output :

Graphical user interface, text, application

Description automatically generated

2. Design an alarm system, which makes double beep sound for every 5s using a speaker.

Libraries To Be Used: pwmout, analogin

#include "mbed.h"

PwmOut speaker(p21);

Ticker tck;

void beepTwice()

{

    speaker = 0.0;

    speaker = 1.0;

    printf("Beep");

    wait(0.2);

    speaker = 0.0;

    wait(0.2);

    speaker = 1.0;

    printf("Beep\n");

    wait(0.2);

    speaker = 0.0;

}

int main()

{

    beepTwice();

    tck.attach(&beepTwice, 5);

}

Output :

Graphical user interface, application

Description automatically generated

3. Have a switch, 2 LEDs and a speaker interfaced with mbed board. Upon switching on, the intensity of the sound should be increasing and upon switching off, should make the intensity of the sound decreasing. Proportionally increase or decrease the intensity of two LEDs.

#include "mbed.h"

PwmOut led1(p5);

PwmOut led2(p6);

PwmOut spker(p21);

InterruptIn swt(p7);

void on()

{

    while (true)

    {

        spker = spker + 0.1;

        led1 = spker;

        led2 = spker;

        printf("Speaker is now %.2f\n", spker.read());

        printf("Led1 is now %.2f\n", led1.read());

        printf("Led2 is now %.2f\n", led2.read());

        wait(2);

    }

}

void off()

{

    while (true)

    {

        spker = spker - 0.1;

        led1 = spker;

        led2 = spker;

        printf("Speaker is now %.2f\n", spker.read());

        printf("Led1 is now %.2f\n", led1.read());

        printf("Led2 is now %.2f\n", led2.read());

        wait(2);

    }

}

int main()

{

    spker = 0.5;

    swt.rise(&on);

    swt.fall(&off);

}

Graphical user interface, application

Description automatically generated

4. Make Ambulance sound