**APPENDIX**

**CODE OF ARDUINO**

#include <SPI.h>

#include <Wire.h> // Library for I2C communication

#include <LiquidCrystal\_I2C.h> // Library for LCD

#include<SoftwareSerial.h>

LiquidCrystal\_I2C lcd = LiquidCrystal\_I2C(0x27, 16, 2);

SoftwareSerial GSM1(5, 6);

const int pingPin = 7;

const int echoPin = 8;

const int lm35\_pin = A3;

int sensor = 2;

int state = LOW;

int val = 0;

int ac = 3;

void setup() {

Serial.begin(9600);

GSM1.begin(9600);

delay(1000);

pinMode(sensor, INPUT);

pinMode(ac, OUTPUT);

digitalWrite(ac, LOW);

lcd.init();

lcd.backlight();

lcd.setCursor(0, 0);

lcd.print(" BAKSOL ");

lcd.setCursor(0, 1);

lcd.print("Child Safety");

}

void loop() {

// put your main code here, to run repeatedly:

val = digitalRead(sensor);

// Serial.println(val);

long duration, inches, cm;

pinMode(pingPin, OUTPUT);

digitalWrite(pingPin, LOW);

delayMicroseconds(2);

digitalWrite(pingPin, HIGH);

delayMicroseconds(10);

digitalWrite(pingPin, LOW);

pinMode(echoPin, INPUT);

duration = pulseIn(echoPin, HIGH);

inches = microsecondsToInches(duration);

cm = microsecondsToCentimeters(duration);

int temp\_adc\_val = analogRead(lm35\_pin);

float temp\_val = (temp\_adc\_val \* 4.88);

float temp\_valg = (temp\_val / 10);

if (temp\_valg >= 30 && val == 1) {

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Car Temp is HIGH");

lcd.setCursor(0, 1); (counting starts at 0!).

lcd.print(temp\_valg);

delay(1000);

GSM1.println("AT+CMGF=1");

delay(1000);

GSM1.println("AT+CMGS=\"+918106423635\"");

delay(1000);

GSM1.println("Car Temp High, Human in");// The SMS text you want to send

delay(100);

GSM1.println((char)26);// ASCII code of CTRL+Z

delay(1000);

}

if (cm <= 75) {

if (val == 1) {

digitalWrite(ac, HIGH);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Human Detected");

delay(3000);

}

else

digitalWrite(ac, LOW);

delay(1000);

}

else

{

if (val == 1) {

digitalWrite(ac, HIGH);

delay(500);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("CarLift,human in");

delay(1000);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Car Temp is ");

lcd.setCursor(0, 1);

lcd.print(temp\_valg);

delay(1000);

GSM1.println("AT+CMGF=1");

delay(1000);

GSM1.println("AT+CSMP=17,167,0,0");

delay(1000);

GSM1.println("AT+CMGS=\"+918106423635\"");

delay(1000);

GSM1.println("Human present,Car lifted");

delay(100);

GSM1.println((char)26);// ASCII code of CTRL+Z

delay(1000);

}

else {

digitalWrite(ac, LOW);

delay(500);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("CarLift,no human");

delay(1000);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Temperature is ");

lcd.setCursor(0, 1);

lcd.print(temp\_valg);

delay(1000);

GSM1.println("AT+CMGF=1");

delay(1000);

GSM1.println("AT+CMGS=\"+918106423635\"");

delay(1000);

GSM1.println("Car lifted");// The SMS text you want to send

delay(100);

GSM1.println((char)26);// ASCII code of CTRL+Z

delay(1000);

}

}

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Distance");

lcd.setCursor(0, 1);

lcd.print(cm);

delay(1000);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Temperature is ");

lcd.setCursor(0, 1);

lcd.print(temp\_valg);

delay(1000);

}

long microsecondsToInches(long microseconds) {

return microseconds / 74 / 2;

}

long microsecondsToCentimeters(long microseconds) {

return microseconds / 29 / 2;

}