Project Development Part 2 Traffic Management



# Team Details

|  |  |
| --- | --- |
| Mentor | Mrs M.Maheshwari |
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| Problem Description | We will start to build the IOT simulation of another part for  traffic management |

Simulation Steps

STEP 1: Access Wokwi

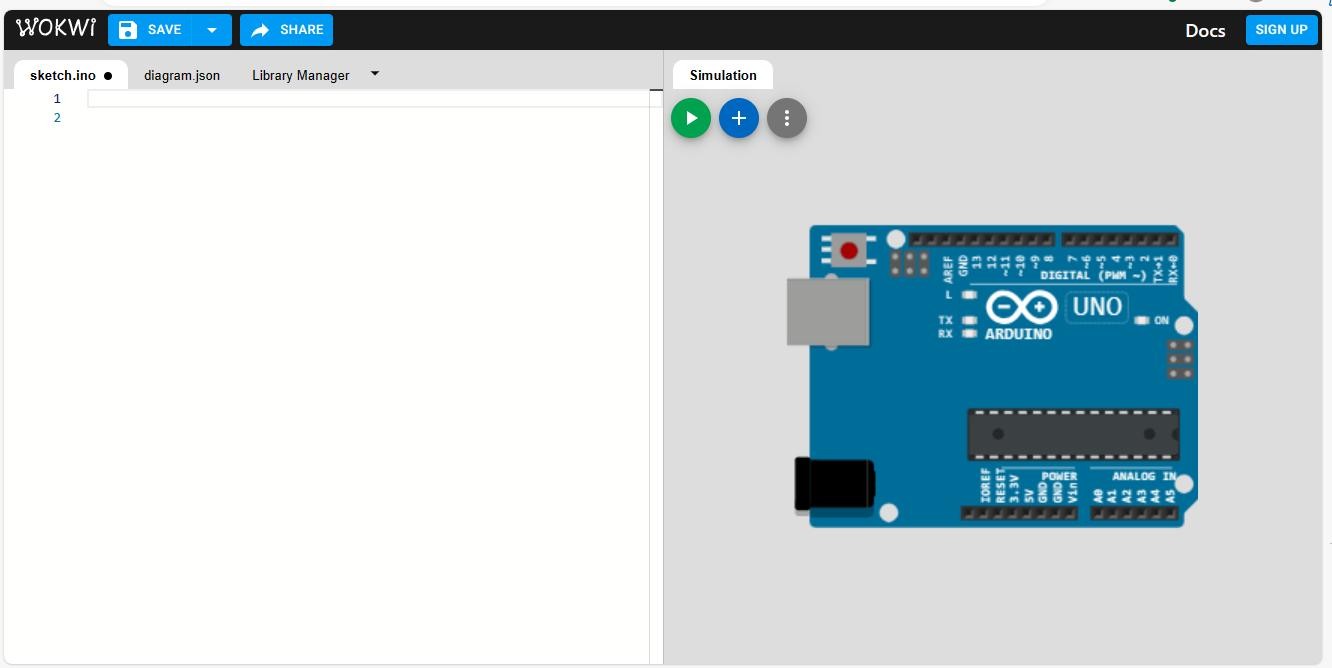
* Go to the websites([https://wokwi.com](https://wokwi.com/))

# STEP 2: Create a Project

* Click on the new project

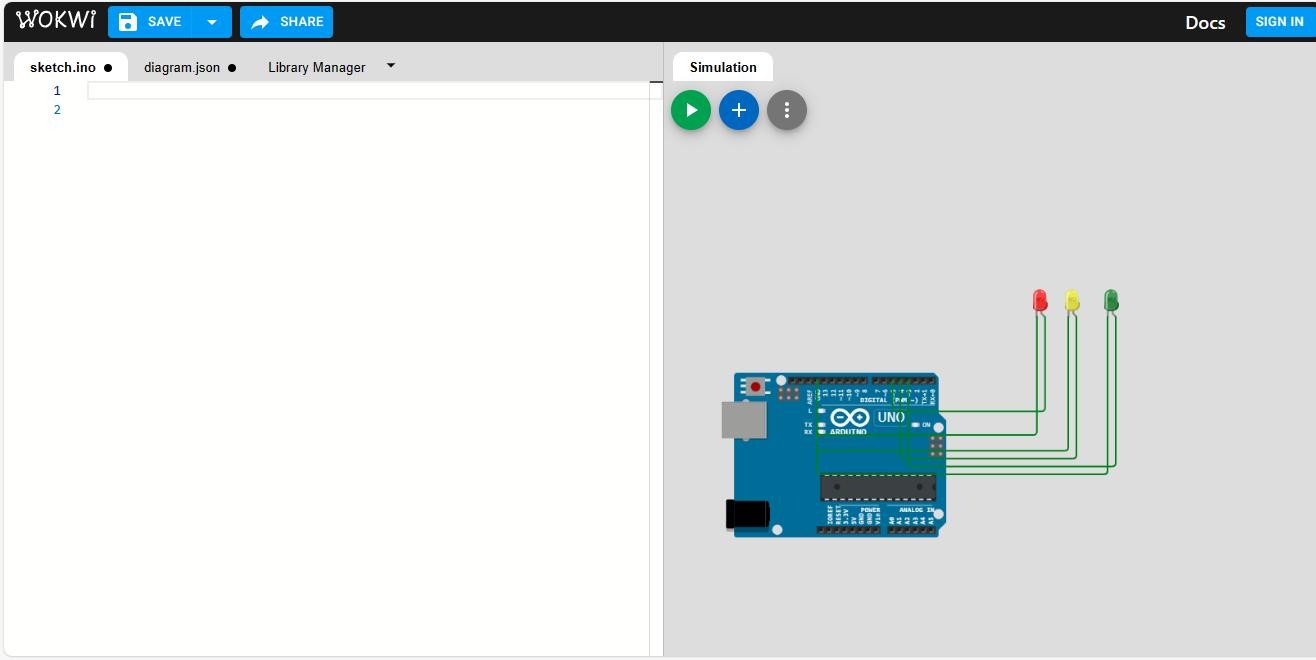
# STEP 3: Add component

* In the component panel search for a “Arduino UNO” and drag it onto the virtual breadboard



# STEP 4: Add a LED

* Find and drag an LED
* Drag the 3 LED with different kind of colours(red,yellow and green)

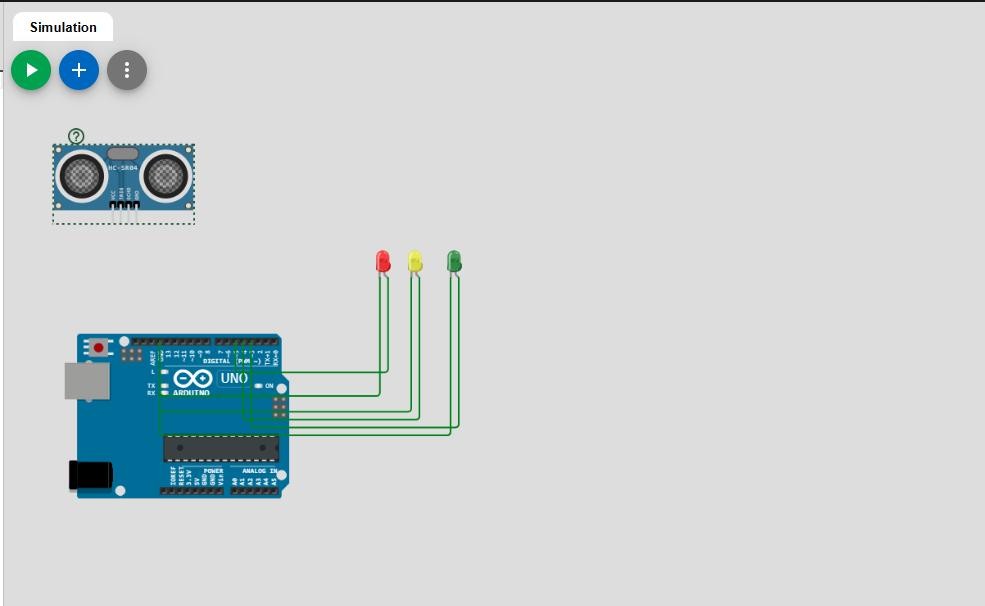


SIMULATION CONNECTION:

* LED 1 Cathode connected in the “Arduino” at GND 1.
* LED 1 Anode connected in the “Arduino” at uno 5.
* LED 2 Cathode connected in the “Arduino” at GND 1.
* LED 2 Anode connected in the “Arduino” at uno 4.
* LED 3 Cathode connected in the “Arduino” at GND 1.
* LED 3 Anode connected in the “Arduino” at uno 3.

# STEP 5: Add a Ultrasonic sensor.

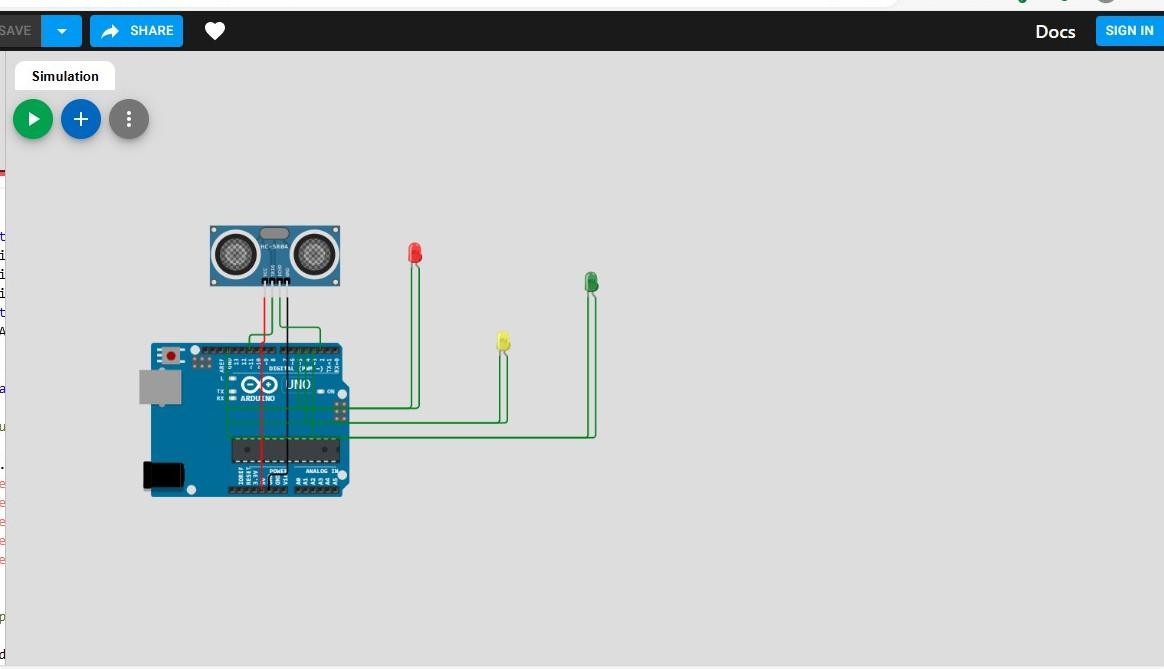
* + Find and drag a ultrasonic sensor.



Simulation steps:

* Ultrasonic 1:GND is connected to the “Arduino” at uno GND 2.
* Ultrasonic 1.Echo is connected to the “Arduino” at uno 2.
* Ultrasonic 1.TRIG is connected to the “Arduino” at Uno 11.
* Ultrasonic 1.VCC is connected to the “Arduino” at Uno 5V.

ULTRASONIC CONNECTIO TO THE “ARDUINO”



# STEP 6: CODE

#include <WiFi.h> #include <ThingSpeak.h> #include <stdio.h> const int echoPin=2; int ledPin1=3;

int ledPin2=4; int ledPin3=5;

const int trigPin=11; bool ledActivated=false;

unsigned long ledActivationTime=0; unsigned long myChannelNumber = 2126746;

const char \* myWriteAPIKey = "LZNGZ5F5XFUQXLO7";

void setup()

{

**Serial**.begin(9600); pinMode(echoPin,INPUT); pinMode(trigPin,OUTPUT); pinMode(ledPin1,OUTPUT); pinMode(ledPin2,OUTPUT); pinMode(ledPin3,OUTPUT);

}

void loop()

{

if(!ledActivated)

{

digitalWrite(trigPin,LOW); delayMicroseconds(2); digitalWrite(trigPin,HIGH); delayMicroseconds(10); digitalWrite(trigPin,LOW);

unsigned long duration=pulseIn(echoPin,HIGH); unsigned long distance=duration/58;

**Serial**.print("Distance:"); **Serial**.print(distance); **Serial**.println("cm");

if(distance<50)

{

digitalWrite(ledPin3,HIGH); **Serial**.println("Heavily Crowded"); ledActivated=true; ledActivationTime=millis();

}

else if(distance<100)

{

digitalWrite(ledPin2,HIGH); **Serial**.println("Moderately Crowded"); ledActivated=true; ledActivationTime=millis();

}

else

{

digitalWrite(ledPin1,HIGH); **Serial**.println("Less Crowded"); ledActivated=true; ledActivationTime=millis();

}

}

else

{

if(millis()-ledActivationTime>=2000)

{

digitalWrite(ledPin1,LOW); digitalWrite(ledPin2,LOW); digitalWrite(ledPin3,LOW); ledActivated=false;

}

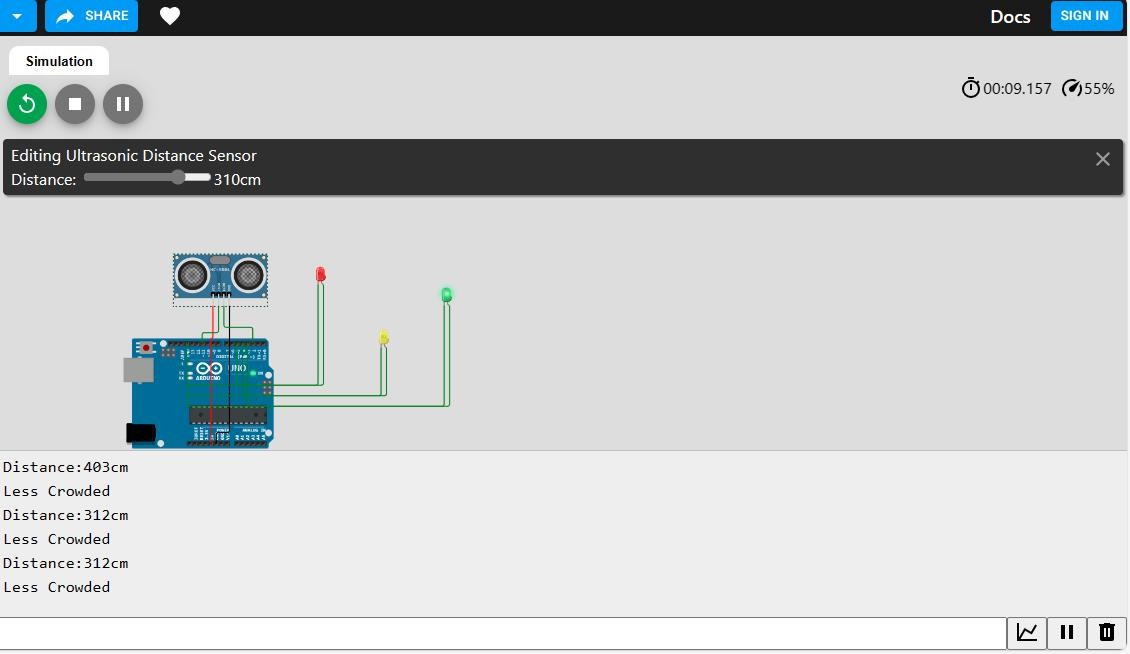
}

delay(1000);

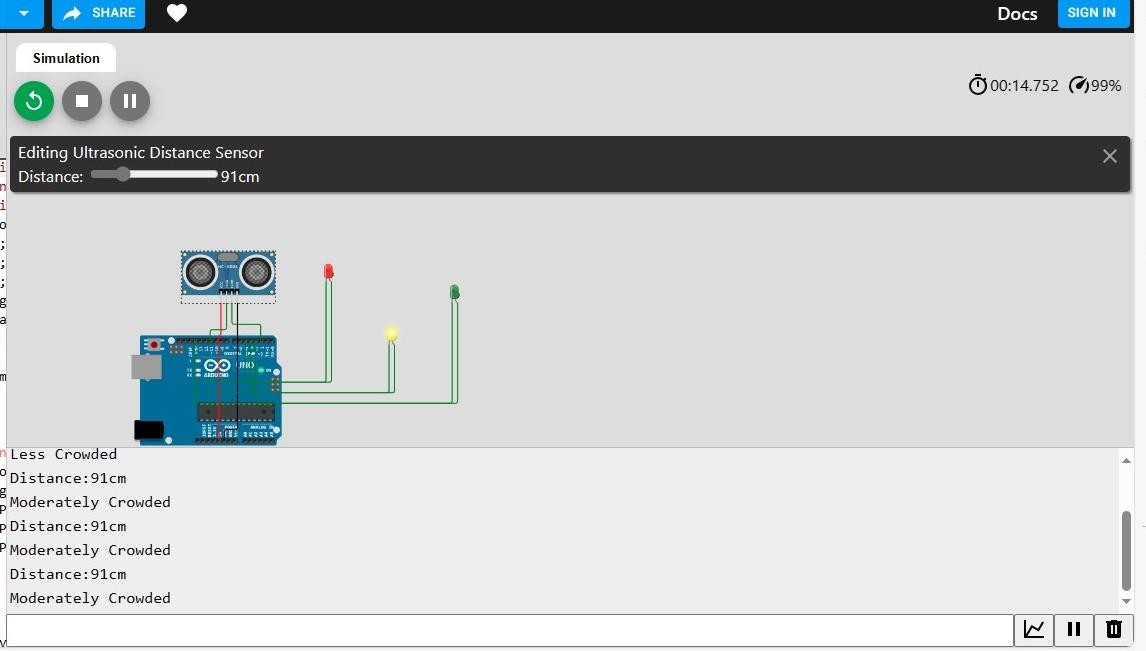
}

# STEP 7: Simulation

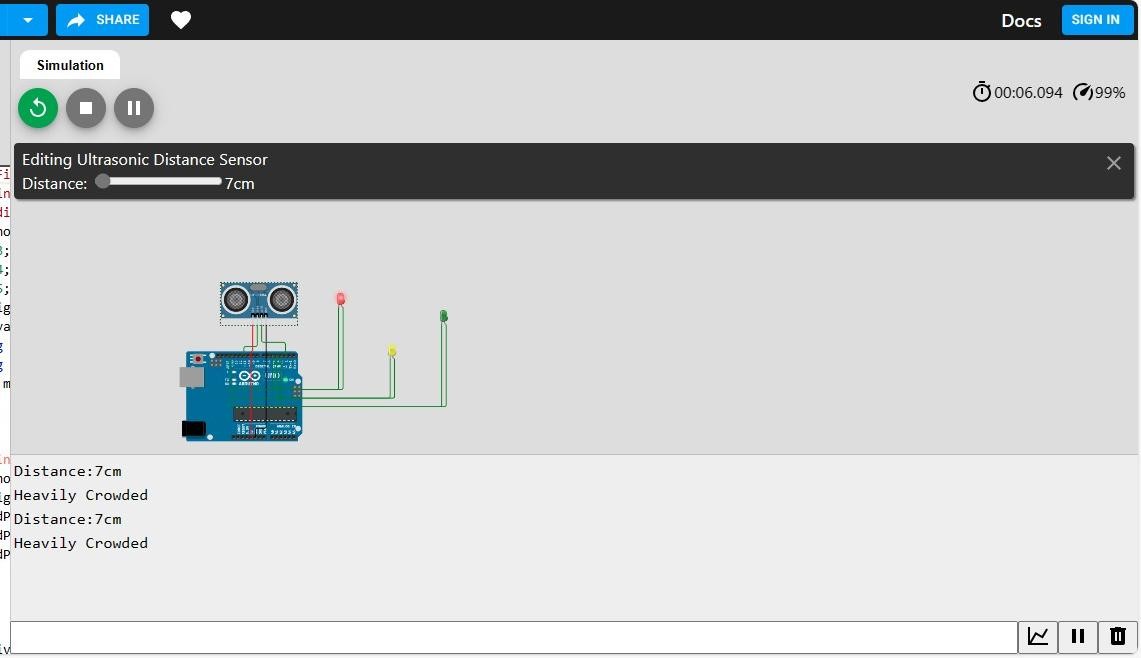
* Click on the simulate button to start the simulation.
* The LED should start to blinking the according to the ultrasonic sensor distance.
* The green light will be blink when the ultrasonic distanc sensor has high volume then it will display that the less crowed .



* The Yellow light will be blink when the ultrasonic distanc sensor has medium volume then it will display that the moderately crowed .



* The Green light will be blink when the ultrasonic distanc sensor has less volume then it will display that the heavy crowed .



WEB APPLICATIO FOR TRAFFIC MANAGEMENT CODE:

<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta http-equiv="X-UA-Compatible" content="IE=edge">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>WEB APPLICATION </title>

<style> @import

url('https://fonts.googleapis.com/css2?family=Nunito:wg ht@400;700&display=swap');

\* {

margin: 0;

padding: 0;

box-sizing: border-box;

}

body {

color: #000;

font-family: 'Nunito', sans-serif;

}

.testimonial { height: 100%; display: flex;

flex-direction: column; justify-content: center; align-items: center; padding-bottom: 5rem;

}

h1 {

margin: 20px 0;

}

.line { height: 2px;

width: 6rem;

background-color: #e26c4f;

margin-bottom: calc(3rem + 2vmin);

}

.arrow-wrapper { position: relative; width: 70%;

border-radius: 2rem;

box-shadow: rgba(99, 99, 99, 0.2) 0px 2px 8px 0px; overflow: hidden;

place-items: center;

}

.review-wrap { display: flex;

flex-direction: column; justify-content: center; align-items: center;

padding-top: calc(2rem + 1vmin); width: 100%;

}

#imgBox {

border-radius: 50%;

width: calc(10rem + 4vmin); height: calc(10rem + 4vmin); position: relative;

box-shadow: 5px -3px #e26c4f; background-size: cover;

margin-bottom: calc(0.7rem + 0.5vmin);

}

#name {

margin-bottom: calc(0.7rem + 0.5vmin); font-size: calc(1rem + 0.5vmin);

letter-spacing: calc(0.1rem + 0.1vmin); font-weight: bold;

}

#profession {

font-size: calc(0.8rem + 0.3vmin);

margin-bottom: calc(0.7rem + 0.5vmin); color: #e26c4f;

}

#description {

font-size: calc(0.8rem + 0.3vmin); width: 70%;

max-width: 40rem; text-align: center;

margin-bottom: calc(2.4rem + 1vmin); color: rgb(92, 92, 92);

line-height: 2rem;

}

.arrow {

width: calc(1.4rem + 0.6vmin); height: calc(1.4rem + 0.6vmin); border: solid #e26c4f;

border-width: 0 calc(0.5rem + 0.2vmin) calc(0.5rem

+ 0.2vmin) 0; cursor: pointer;

transition: transform 0.3s;

}

.arrow:hover { transition: 0.3s; transform: scale(1.15);

}

.left-arrow-wrap { position: absolute; top: 50%;

left: 5%;

transform: rotate(135deg);

}

.right-arrow-wrap { position: absolute; top: 50%;

right: 5%;

transform: rotate(-45deg);

}

@media screen and (max-width: 900px) {

.testimonial { width: 100%;

}

}

</style>

</head>

<body>

<div class="testimonial">

<h1>TRAFFIC MANAGEMENT USING IOT</h1>

<div class="line"></div>

<!-- arrow wrapper contains the review and the arrows

-->

<div class="arrow-wrapper">

<!-- review section -->

<div id="reviewWrap" class="review-wrap">

<div id="imgBox"></div>

<div id="name"></div>

<div id="profession"></div>

<div id="description"></div>

</div>

<!-- left arrow -->

<div class="left-arrow-wrap">

<div class="arrow"></div>

</div>

<!-- right arrow -->

<div class="right-arrow-wrap">

<div class="arrow"></div>

</div>

</div>

</div>

<script>

const reviewWrap = document.getElementById("reviewWrap");

const leftArrow = document.querySelector(".left- arrow-wrap .arrow");

const rightArrow = document.querySelector(".right- arrow-wrap .arrow");

const imgBox = document.getElementById("imgBox");

const name = document.getElementById("name");

const profession = document.getElementById("profession");

const description = document.getElementById("description");

let people = [{ photo:

'url("https://th.bing.com/th/id/OIP.tBrw\_mxy9n2uhuUj1f 9hzwHaF8?pid=ImgDet&rs=1.jpg")',

name: "Traffic management", profession: "Monitor traffic flow",

description: "Traffic management using iot devices to mointor the traffic flow and congestion:"

},

{

photo: "url('https://ae01.alicdn.com/kf/HTB1F4S5RXXXXXaC XpXXq6xXFXXXR/High-quality-New-design-single- light-300mm-red-color-LED-traffic-signal-light.jpg')",

name: "RED SIGNAL",

profession: "BASED ON ULTRASONIC SENSOR",

description: "The ultrasonic sensor has a low distance radiation then the red light will be blink.Then there is HEAVY CROWED"

},

{

photo: "url('https://th.bing.com/th/id/OIP.FmKR6MebmOgh0m WDcQCbqwHaKH?pid=ImgDet&rs=1.jpg')",

name: "YELLOW SIGNAL",

profession: "BASED ON ULTRASONIC SENSOR",

description: "The ultrasonic sensor has A MEDIUM distance radiation then the green light will be blink.Then there is MODERATE CROWED"

},

{

photo: "url('https://th.bing.com/th/id/R.8cf589bfa8b98fdc6f82d4 48d040e37e?rik=Ex5W1RM1pf07Eg&riu=http%3a%2f

%2fwww.kbrhorse.net%2fsigpics%2fmarb\_6540f.jpg&e hk=RVOnFsrGfoLz2j7rJNmVEsHuZ7lir%2b7JQI0yI7G JOU0%3d&risl=&pid=ImgRaw&r=0.jpg')",

name: "GREEN LIGHT",

profession: "BASED ON ULTRASONIC SENSOR",

description: "The ultrasonic sensor has a High distance radiation then the green light will be blink.Then there is LESS CROWED"

}

];

// set the first person imgBox.style.backgroundImage = people[0].photo; name.innerText = people[0].name;

profession.innerText = people[0].profession; description.innerText = people[0].description; let currentPerson = 0;

//Select the side where you want to slide function slide(side, personNumber) {

let reviewWrapWidth = reviewWrap.offsetWidth + "px";

let descriptionHeight = description.offsetHeight + "px";

//(+ or -)

let side1symbol = side === "left" ? "" : "-"; let side2symbol = side === "left" ? "-" : "";

setTimeout(() => { imgBox.style.backgroundImage =

people[personNumber].photo;

}, 0);

setTimeout(() => {

description.style.height = descriptionHeight;

}, 100);

setTimeout(() => {

name.innerText = people[personNumber].name;

}, 200);

setTimeout(() => { profession.innerText =

people[personNumber].profession;

}, 300);

setTimeout(() => {

description.innerText = people[personNumber].description;

}, 400);

}

function setNextCardLeft() { if (currentPerson === 3) { currentPerson = 0; slide("left", currentPerson);

} else { currentPerson++;

}

slide("left", currentPerson);

}

function setNextCardRight() { if (currentPerson === 0) { currentPerson = 3; slide("right", currentPerson);

} else { currentPerson--;

}

slide("right", currentPerson);

}

leftArrow.addEventListener("click", setNextCardLeft);

rightArrow.addEventListener("click", setNextCardRight);

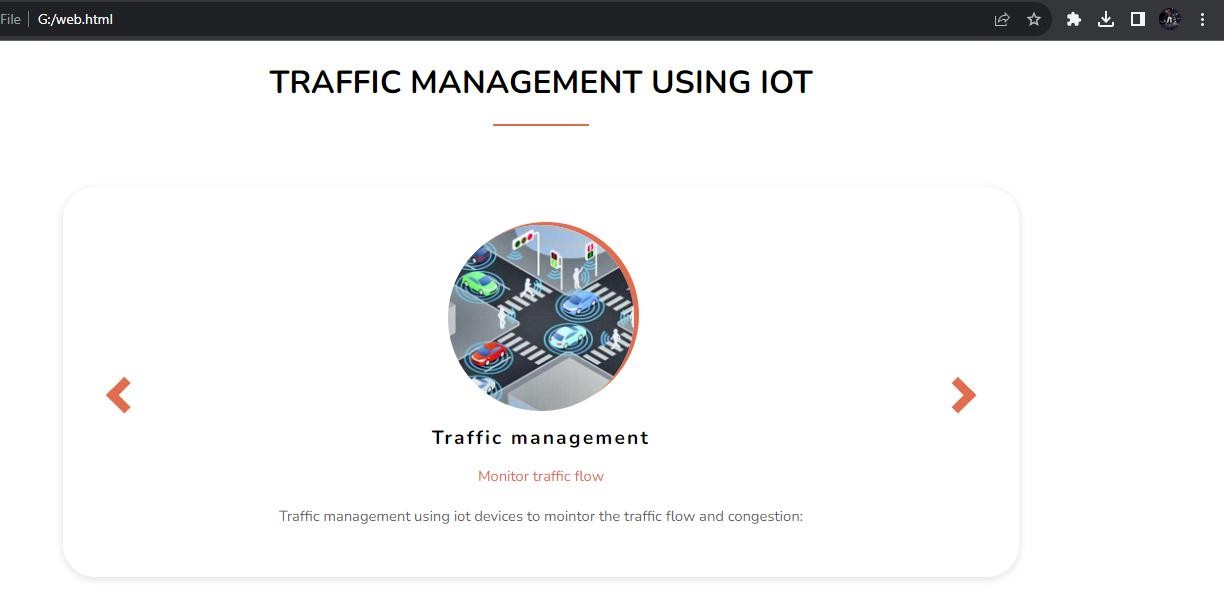
</script>

</body>

</html>

OUTPUT:

* THE HOME PAGE OF APPLICATION



* THE NEXT PAGES OF APPLICATION

