CHAPTER 5

IMPLEMENTATION AND TESTING

5.1 Implementation

From the sensors that have been tried on the PIR sensor in chapter 4.

```
1. const int PIR_SENSOR_OUTPUT_PIN = 4;
2. int warm_up;
4. void setup() {
5.      pinMode(PIR_SENSOR_OUTPUT_PIN, INPUT);
6.      Serial.begin(9600);
7.      delay(20000);
10. void loop() {
```

Initalize LED as an output sensor as an input initialize serial. Read sensor value check if the sensor is HIGH. turn LED ON delay 100 milliseconds update variable state to HIGH turn LED OFF delay 200 milliseconds update variable state to LOW

```
11.     int sensor_output;
12.     sensor_output = digitalRead(PIR_SENSOR_OUTPUT_PIN);
13.     if( sensor_output == LOW )
15.             if( warm_up == 1 )
17.              Serial.print("Warming Up\n\n");
18.              warm_up = 0;
19.              delay(2000);
```

```
21.     Serial.print("No object in sight\n\n");
22.     delay(1000);
```

Define baud rate for serial communication PIR sensor O/P pin. the pin that the LED is atteched to. The pin that the sensor is atteched to. By default, no motion detected. variable to store the sensor status (value)

```
24. else
25. {
26.     Serial.print("Object detected\n\n");
27.     warm_up = 1;
28.     delay(1000);
```

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```
1. int OUT = 5;
3.  void setup()
5.  Serial.begin(9600);
6.  pinMode(OUT, INPUT);
7.  Serial.println("Test of spacing");
8.  Serial.println("");
11.  void loop()
```

Pin 5 of Arduino is connected to the output of the sensor. inicjalizaja monitor serial port setting Arduino pin 5 as output. display results on the screen in a loop for 500 MS. low state indicates detection of the object status is high, and the lack of.

```
14.  Serial.print("object: ");
15.  if(digitalRead(OUT) == 0)
```

16. { //status is high, and the lack of

17. Serial.println("YES");

19. if(digitalRead(OUT) == 1)

21. Serial.println("NOT");

23. delay(500);

5.2 Testing

In the test results the two sensors also produced a baby's bedtime recording system. From the trial for one week, produced the following data;

Illustration 5.1: Tabel recording time sleep bebies

No	Day, Date	Time				Total
			Sleep	Wake	Interval	
1	Mon, 11 Nov 2019	I	19:21	19:31	10m	13h40m
		II	20:10	05:15	9h5m	
		III	07:23	09:18	1h55m	
		IV	11:43	13:06	1h43m	
		IV	17:17	18:04	9h23m	
2	Tue, 12 Nov 2019	I	20:31	05:54	9h32m	12h21m
		II	08:24	10:01	1h23m	
		III	12:24	14:01	1h21m	
		IV				
		V				
3	Wed, 13 Nov 2019	I	19:28	05:17	9h49m	14h33m
		II	07:28	09:49	2h21m	
		III	11:46	14:09	2h23m	
		IV				
		V				
4	Thu, 14 Nov 2019	I	18:28	04:55	10h27m	14j40m
		II	08:11	09:30	1h19m	
		III	12:01	14:07	2h6m	
		IV	17:05	17:53	48m	
		V				
5	Fri, 15 Nov 2019	I	20:33	05:32	8h59m	11h48m
		II	08:37	09:51	1h14m	
		III	13.12	14:47	1h35m	
		IV				
		V				
6	Sat, 16	I	20:16	05:34	9h18m	13h48m

	Nov 2019	II	08:21	09:11	50m	
		III	11:49	13:32	2h17m	
		IV	15:51	16:47	56m	
		V				
7	Sun, 17 Nov 2019	I	20:37	05:32	8h55m	13h7m
		II	07:11	08:49	1h38m	
		III	11:38	13:32	1h54m	
		IV	16:49	17:29	40m	
		V				

From the experiment two sensors obtained funding as well. The data recording records the baby's sleep time. The recording of the baby's sleep time is calculated in the condition that the baby is already asleep, the sensor will read to sleep when the PIR sensor detects it. When the baby wakes up he will sit or stand or cause a movement. The PIR sensor will detect it and stop recording the baby's sleep time. For this Proximity sensor only actively sends buzzer sound signal when the baby is on the edge of the mattress. Anticipating the baby from the mattress.