IOT Progress Test 02

Bài 1.

1. void setup() {
2. pinMode(13,OUTPUT);
3. pinMode(12,OUTPUT);
4. pinMode(11,OUTPUT);
5. }
6. void loop() {
7. digitalWrite(13, HIGH); // turn the LED on (HIGH is the voltage level)
8. delay(500); // wait for a second
9. digitalWrite(13, LOW); // turn the LED off by making the voltage LOW
10. delay(0);
11. digitalWrite(12, HIGH); // turn the LED on (HIGH is the voltage level)
12. delay(500); // wait for a second
13. digitalWrite(12, LOW); // turn the LED off by making the voltage LOW
14. delay(0);
15. digitalWrite(11, HIGH); // turn the LED on (HIGH is the voltage level)
16. delay(500); // wait for a second
17. digitalWrite(11, LOW); // turn the LED off by making the voltage LOW
18. delay(10);
19. }

Bài 2.

1. // pins for the LEDs:
2. const int redPin = 3;
3. const int greenPin = 5;
4. const int bluePin = 6;
5. int green = 0;
6. int blue = 0;
7. int red = 0;
8. void setup() {
9. // initialize serial:
10. Serial.begin(9600);
11. // make the pins outputs:
12. pinMode(redPin, OUTPUT);
13. pinMode(greenPin, OUTPUT);
14. pinMode(bluePin, OUTPUT);
15. Serial.println("Enter A character r,g or b to increase red, green or blue respectively!");
16. }
17. void loop() {
18. // if there's any serial available, read it:
19. while (Serial.available() > 0) {
20. Serial.flush();
21. int x = Serial.read();
22. delay(100);
23. Serial.print("You sent me: \'");
24. Serial.write(x);
25. Serial.print("\' ASCII Value: ");
26. Serial.println(x);
27. if (x == 114) {
28. red += 255 / 10;
29. red = red % 255;
30. analogWrite(redPin, red);
31. analogWrite(greenPin, green);
32. analogWrite(bluePin, blue);
33. }
34. if (x == 103) {
35. green += 255 / 10;
36. green = green % 255;
37. analogWrite(redPin, red);
38. analogWrite(greenPin, green);
39. analogWrite(bluePin, blue);
40. }
41. if (x == 98) {
42. blue += 255 / 10;
43. blue = blue % 255;
44. analogWrite(redPin, red);
45. analogWrite(greenPin, green);
46. analogWrite(bluePin, blue);
47. }
48. delay(100);
49. if (Serial.read() == '\n') {
50. Serial.print("The color in HEX is: ");
51. Serial.print(red, HEX);
52. Serial.print(green, HEX);
53. Serial.println(blue, HEX);
54. }
55. }
56. }

Bài 3.

1. // constants won't change. Used here to set a pin number:
2. const int ledPin = LED\_BUILTIN;// the number of the LED pin
3. // Variables will change:
4. int ledState = LOW; // ledState used to set the LED
5. // Generally, you should use "unsigned long" for variables that hold time
6. // The value will quickly become too large for an int to store
7. unsigned long previousMillis = 0; // will store last time LED was updated
8. // constants won't change:
9. const long interval = 1000; // interval at which to blink (milliseconds)
10. const int segmentPins[8] = {6, 10, 9, 3, 4, 5, 7, 8}; //quản lý việc hiển thị LED 7 đoạn DP,G-A (dấu chấm)
11. int buttonPin = 2; // khai báo chân digital kết nối đến button
12. const byte numberal[10] = { // Chúng ta sẽ dùng kiểu mảng để khai báo 9 trạng thái của led (0-9) bằng mã nhị phân
13. B11111100, // Quy ước 1 sáng 0 tắt =&gt; các vị trí F-A sẽ sáng, G tắt, DP tắt. Led hiển thị số 0
14. B01100000, // tương tự với mã này ta sẽ được số 1
15. B11011010, // 2
16. B11110010, // 3
17. B01100110, // 4
18. B10110110, // 5
19. B10111110, // 6
20. B11100000, // 7
21. B11111110, // 8
22. B11100110, // 9
23. };
24. int i = 0;
25. void tang() {
26. //Chỉ đếm từ 0 --&gt; 9
27. i = ++i % 10; //Xem thêm tại http://arduino.vn/reference/Increment-Decrement
28. Sodawrite(i); //Xuất ra đèn Module LED 7 đoạn
29. }
30. void Sodawrite(int number) {
31. number = constrain(number, 0, 9);
32. Serial.println(number); //Xuất giá trị hiện tại
33. boolean isBitSet;
34. for (int segment = 0; segment < 8; segment++) { // Có 1 byte 8bit nên chạy từ bit 0 -- 7
35. isBitSet = bitRead(numberal[number], segment);
36. isBitSet = !isBitSet; // Do chúng ta sử dụng LED 7 đoạn chung cực dương nên phải có dòng này.
37. digitalWrite(segmentPins[segment], isBitSet);
38. }
39. }
40. void setup() {
41. for (int vitri = 0; vitri < 8; vitri++) {
42. pinMode(segmentPins[vitri], OUTPUT);
43. digitalWrite(segmentPins[vitri], HIGH);
44. }
45. pinMode(buttonPin, INPUT); // PinMode để nhận tín hiệu đầu vào từ Button
46. attachInterrupt(0, tang, RISING); // Thêm một Interrupt tại chân digital 2
47. // Tham khảo thêm tại http://arduino.vn/reference/attachinterrupt
48. Serial.begin(9600); // Bật Serial ở mức baudrate 9600
49. Sodawrite(0); //Đầu tiên là xuất số 0
50. // set the digital pin as output:
51. pinMode(ledPin, OUTPUT);
52. }
53. void loop() {
54. // here is where you'd put code that needs to be running all the time.
55. // check to see if it's time to blink the LED; that is, if the difference
56. // between the current time and last time you blinked the LED is bigger than
57. // the interval at which you want to blink the LED.
58. unsigned long currentMillis = millis();
59. if (currentMillis - previousMillis >= interval) {
60. // save the last time you blinked the LED
61. previousMillis = currentMillis;
62. // if the LED is off turn it on and vice-versa:
63. if (ledState == LOW) {
64. ledState = HIGH;
65. } else {
66. ledState = LOW;
67. }
68. // set the LED with the ledState of the variable:
69. digitalWrite(ledPin, ledState);
70. }
71. }