

Screenshots of Arduino Codes:

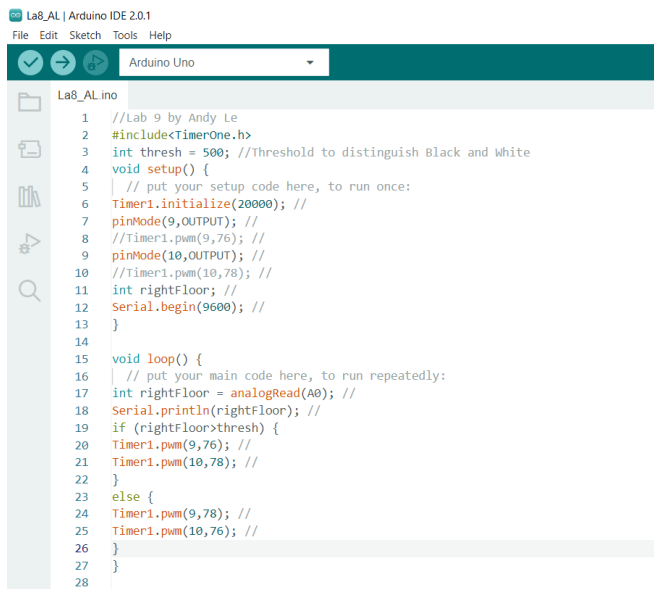
Lab 7:



The screenshot shows the Arduino IDE 2.0.1 interface. The top menu bar includes File, Edit, Sketch, Tools, and Help. Below the menu bar is a toolbar with icons for saving, running, and uploading. The main editor area displays the code for 'La7_AL_Updated.ino'. The code is as follows:

```
1 //Lab 8 by Andy Le
2 #include<TimerOne.h>
3 void setup() {
4   // put your setup code here, to run once:
5   Timer1.initialize(20000); //
6   pinMode(9,OUTPUT); //
7   Timer1.pwm(9,76); //
8   pinMode(10,OUTPUT); //
9   Timer1.pwm(10,78); //
10 }
11
12 void loop() {
13   // put your main code here, to run repeatedly:
14 }
15
16
```

Lab 8:



The screenshot shows the Arduino IDE 2.0.1 interface. The top menu bar includes File, Edit, Sketch, Tools, and Help. Below the menu bar is a toolbar with icons for saving, running, and uploading. The main editor area displays the code for 'La8_AL.ino'. The code is as follows:

```
1 //Lab 9 by Andy Le
2 #include<TimerOne.h>
3 int thresh = 500; //Threshold to distinguish Black and White
4 void setup() {
5   // put your setup code here, to run once:
6   Timer1.initialize(20000); //
7   pinMode(9,OUTPUT); //
8   //Timer1.pwm(9,76); //
9   pinMode(10,OUTPUT); //
10  //Timer1.pwm(10,78); //
11  int rightFloor; //
12  Serial.begin(9600); //
13 }
14
15 void loop() {
16   // put your main code here, to run repeatedly:
17   int rightFloor = analogRead(A0); //
18   Serial.println(rightFloor); //
19   if (rightFloor>thresh) {
20     Timer1.pwm(9,76); //
21     Timer1.pwm(10,78); //
22   }
23   else {
24     Timer1.pwm(9,78); //
25     Timer1.pwm(10,76); //
26   }
27 }
28
```

Lab 10:

```
La10_AutonomousVehicle_AL | Arduino IDE 2.0.1
File Edit Sketch Tools Help

La10_AutonomousVehicle_AL.ino
1 //Lab 10 by Andy Le
2 #include<TimerOne.h>
3 int thresh = 500; //Threshold to distinguish Black and White
4 void setup() {
5   // put your setup code here, to run once:
6   Timer1.initialize(20000); //
7   pinMode(9,OUTPUT); //
8   //Timer1.pwm(9,76); //
9   pinMode(10,OUTPUT); //
10  //Timer1.pwm(10,78); //
11  Serial.begin(9600); //
12 }
13
14 void loop() {
15   // put your main code here, to run repeatedly:
16   int rightFloor = analogRead(A0); //
17   int leftFloor = analogRead(A1); //
18   Serial.println(rightFloor); //
19   if (rightFloor<thresh && leftFloor<thresh) {
20     Timer1.pwm(9,87); //
21     Timer1.pwm(10,67); //
22   }
23   else if(leftFloor>thresh && rightFloor<thresh) {
24     //Timer1.pwm(9,76); //
25     //Timer1.pwm(10,78); //
26     Timer1.pwm(9,87); //
27     Timer1.pwm(10,78); //
28     delay(1000); //
29   }
30   }
31   else if(rightFloor>thresh && leftFloor<thresh) {
32     Timer1.pwm(9,76); //
33     Timer1.pwm(10,67); //
34     delay(1000); //
35   }
36   }
37   else {
38     Timer1.pwm(9,67); //
39     Timer1.pwm(10,87); //
40     delay(1000); //
41     Timer1.pwm(9,76); //
42     Timer1.pwm(10,67); //
43     delay(2000); //
44   }
45   }
46 }
```