DEPARTMENT OF ACADEMIC AFFAIRS
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NAAC GRADE A+ ACCREDITED UNIVERSITY

EXPERIMENT – 2.3

NAME: **UID:**
SEMESTER: **CLASS/GROUP:**
D.O.P: **SUBJECT CODE – 21ELH-101**

Aim: To design simple DC motor control circuit.

Apparatus: ARDUINO UNO, DC motor, L293D, connecting wires.potentiometer.

Circuit Diagram:

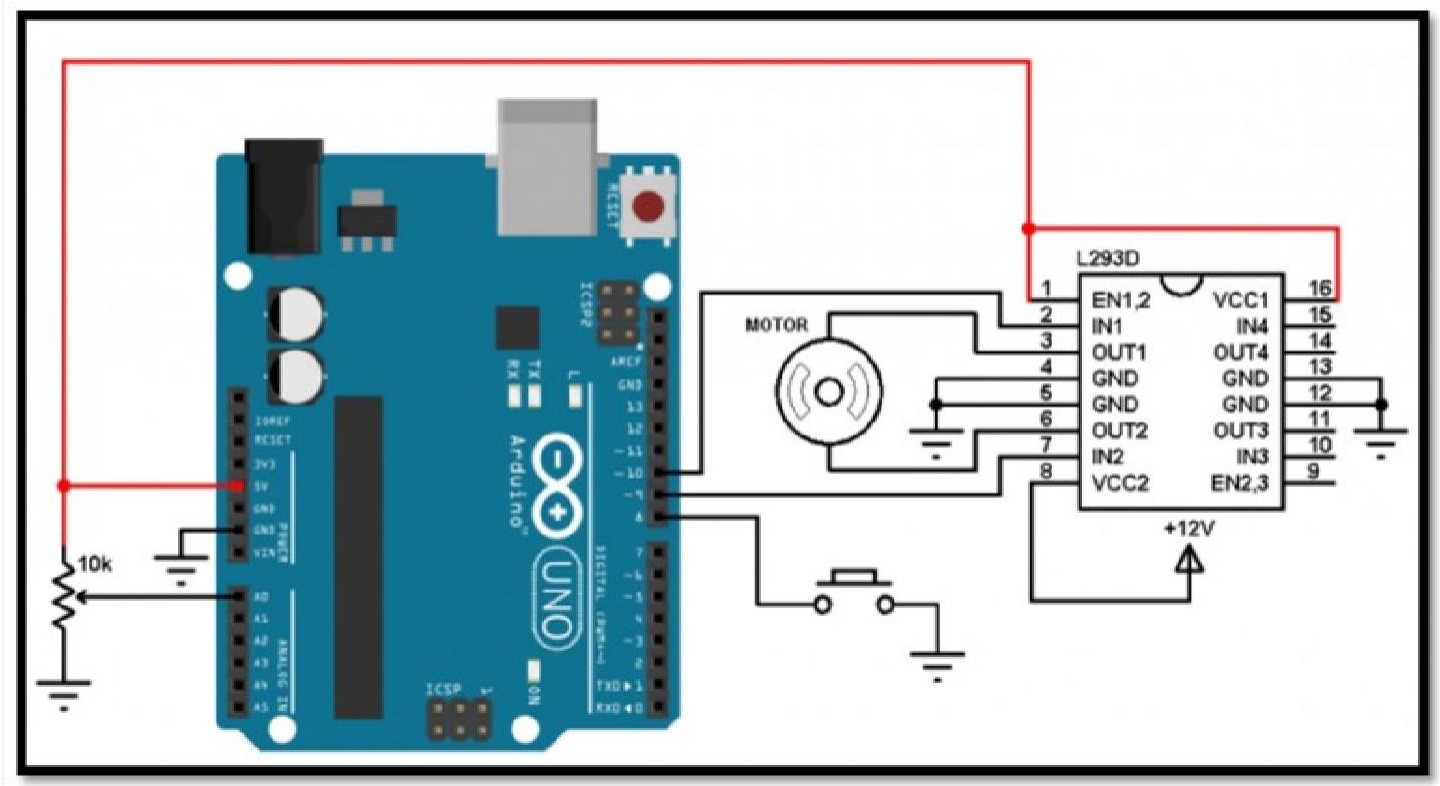
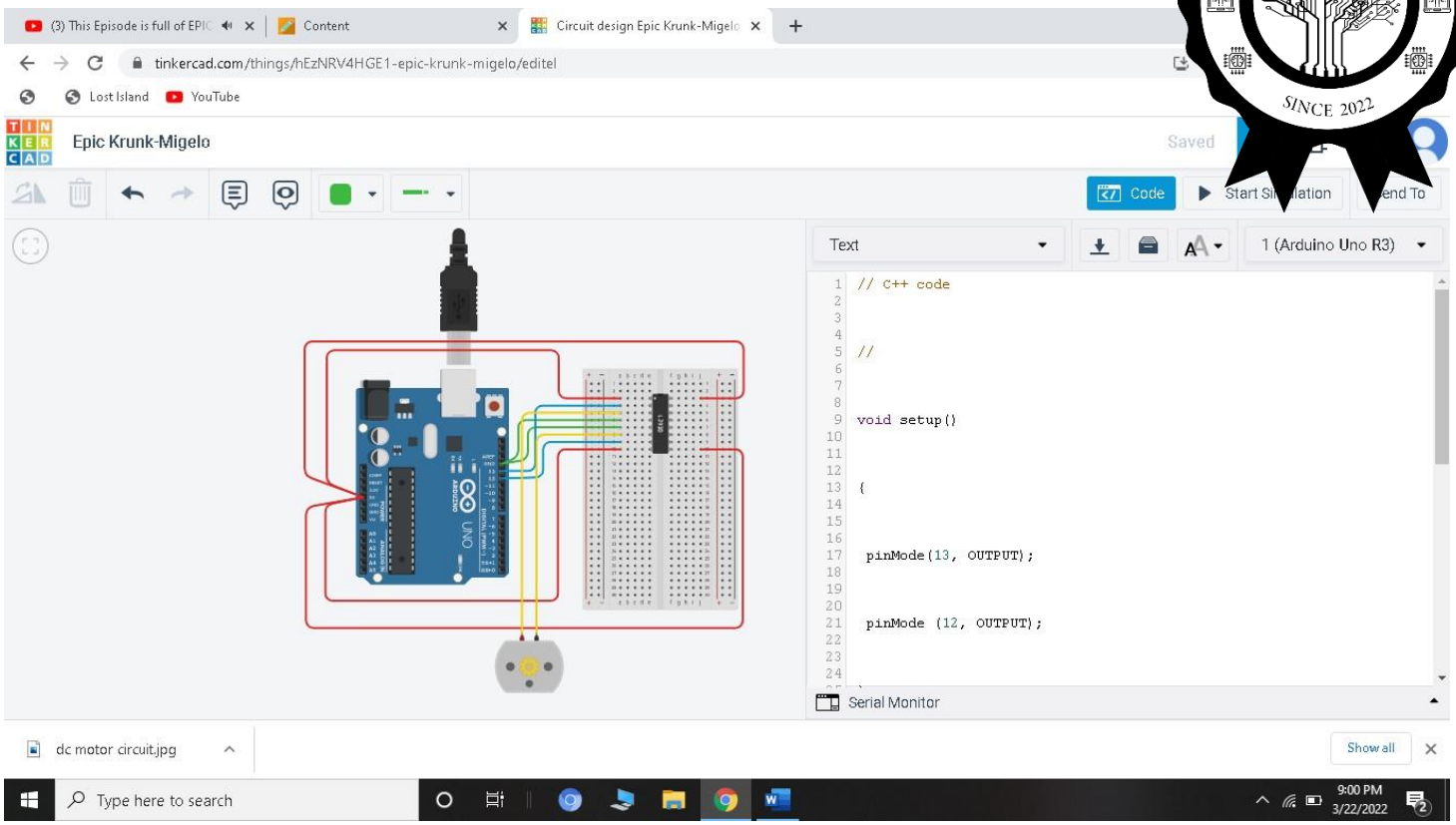


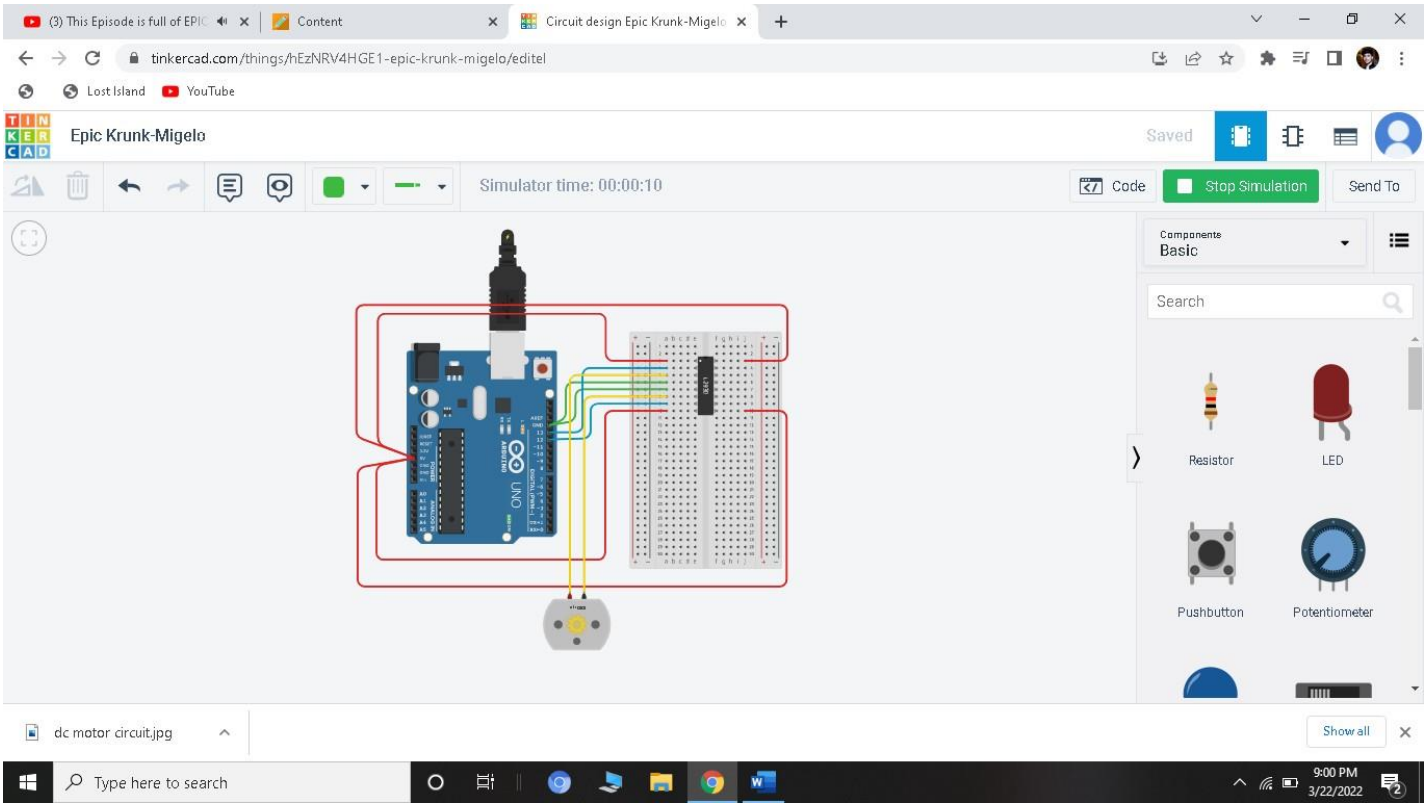
Fig.1
DC Motor Circuit

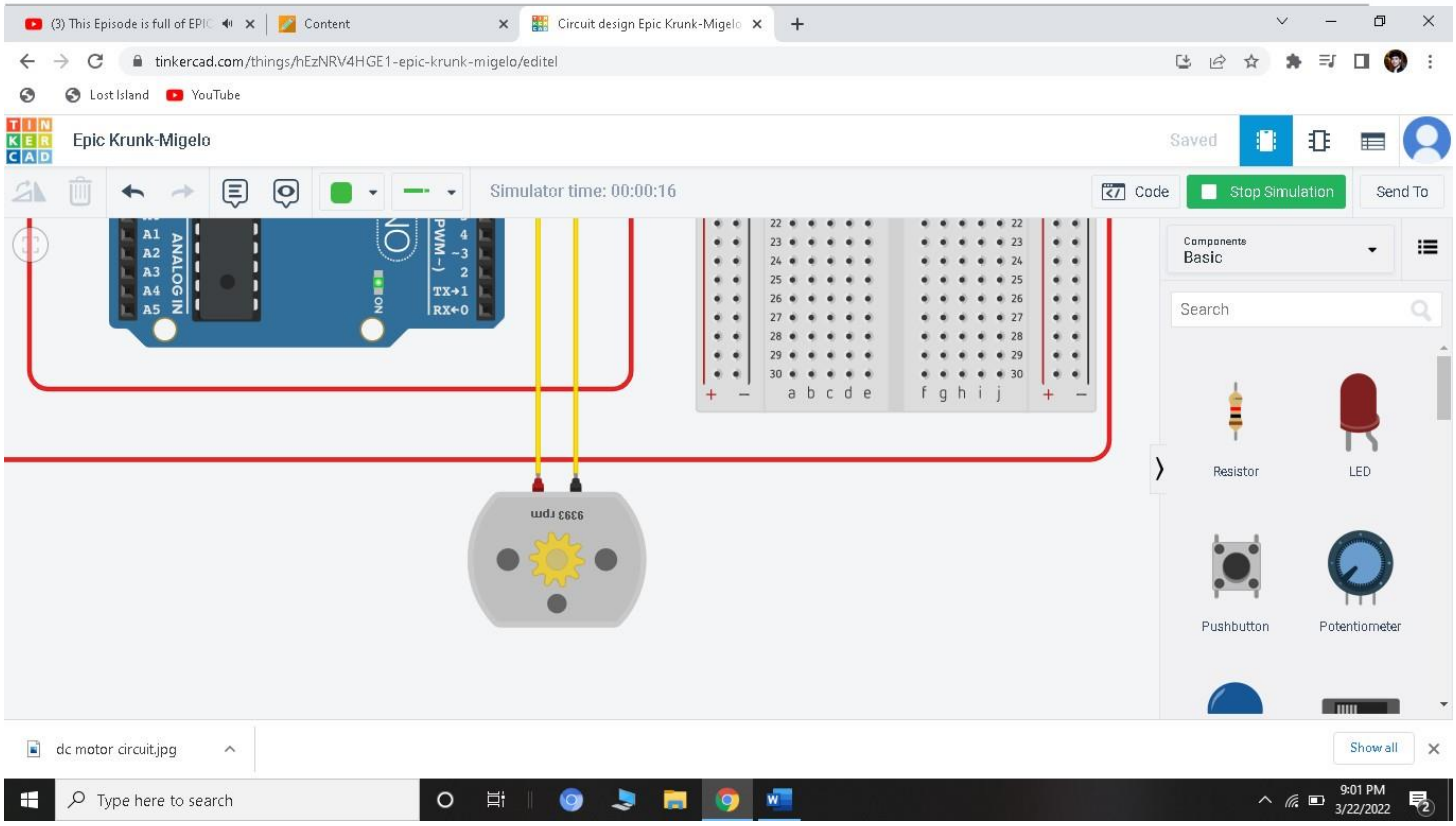
Program:

```
#define button  8

#define pot   0

#define pwm1        9

#define pwm2  10

boolean motor_dir = 0;int motor_speed;

void setup() {

pinMode(button, INPUT_PULLUP);pinMode(pwm1, OUTPUT); pinMode(pwm2,  OUTPUT);
}

void loop() {

motor_speed = analogRead(pot) / 4;if(motor_dir)
analogWrite(pwm1, motor_speed);else
analogWrite(pwm2, motor_speed);

if(!digitalRead(button)){  // If direction button is pressed while(!digitalRead(button));
        // Wait until direction button releasedmotor_dir = !motor_dir;             // Toggle direction
variable if(motor_dir)
digitalWrite(pwm2, 0);else digitalWrite(pwm1, 0);
}
}
```

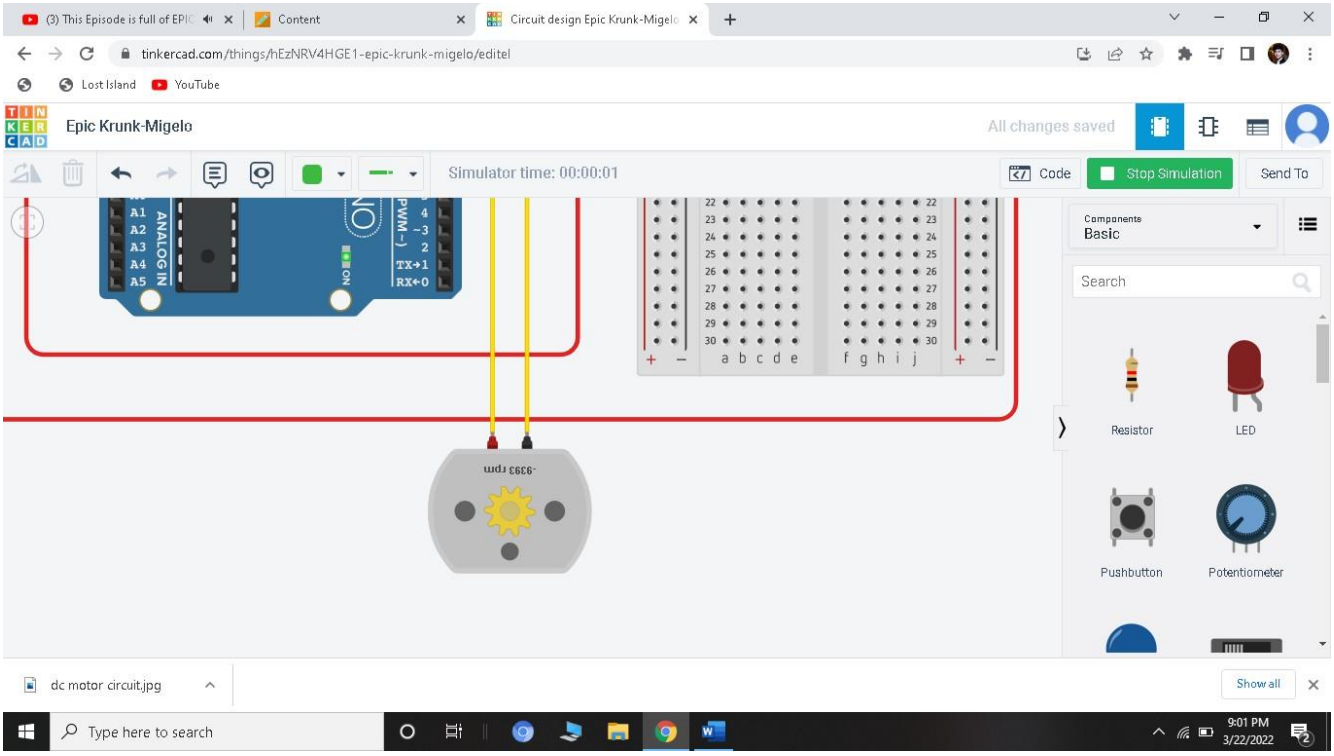
Tinker Cad Result:







When 13 is High; 12 is Low



When 12 is High; 13 is Low

Result:

Designing of simple DC motor control circuit using Arduino is verified after uploading the program.

Evaluation Grid:

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Worksheet completion including writinglearning objectives/Outcomes. (To be submitted at the end of the day).		10
2.	Post Lab Quiz Result.		5
3.	Student Engagement in Simulation/Demonstration/Performanceand Controls/Pre-Lab Questions.		5
	Signature of Faculty (with Date):	Total Marks Obtained:	