```
// C++ code

#define CTRL1     3
#define IN1_1     2
#define IN1_2     4
#define CTRL2     6
#define IN2_1     5
#define IN2_2     7
#define TRA1      9
#define TRA2      10

#define POT       A0
#define LEFT      8
#define RIGHT     11
#define INV       12
#define BRAKE     13

class Btn {

  private:
    int pin;
    bool state;
    bool clicked;
    bool not_clicked;

  public:

  Btn(int pinNum){
    pin = pinNum;
    state = false;
    clicked = false;
    pinMode(pinNum, INPUT);
  };

  void checkPress(){
    bool buttonState = digitalRead(pin);
    if (buttonState == HIGH) {
        if (!clicked) {
            state = !state;
        }
        clicked = true;
    } else {
        clicked = false;
    }
  };
```

```
  bool getState(){
    return state;
  };
};
int Btn::num_btn = 0;

void setup()
{
  Serial.begin(9600);
  pinMode(CTRL1, OUTPUT);
  pinMode(IN1_1, OUTPUT);
  pinMode(IN1_2, OUTPUT);
  pinMode(CTRL2, OUTPUT);
  pinMode(IN2_1, OUTPUT);
  pinMode(IN2_2, OUTPUT);
  pinMode(TRA1, OUTPUT);
  pinMode(TRA2, OUTPUT);
  pinMode(POT, INPUT);
  pinMode(LEFT, INPUT);
  pinMode(RIGHT, INPUT);
  pinMode(BRAKE, INPUT);
  analogWrite(CTRL1,0);
  digitalWrite(IN1_1,0);
  digitalWrite(IN1_2,0);
  analogWrite(CTRL2,0);
  digitalWrite(IN2_1,0);
  digitalWrite(IN2_2,0);
}

Btn btn_inv(INV);

void motor_11(int pot){
  analogWrite(CTRL1,pot);
  digitalWrite(IN1_1,1);
  digitalWrite(IN1_2,0);
  analogWrite(CTRL2,pot);
  digitalWrite(IN2_1,1);
  digitalWrite(IN2_2,0);
}
void motor_ctrl(int pot_state, bool inv_state, bool left_state, bool right_state, bool
brake_state){
  bool in1_1State = brake_state|(!inv_state & left_state)|(right_state  ^ left_state);
  bool in1_2State = brake_state|(inv_state  & left_state)|(left_state  & !right_state);
  bool in2_1State = in1_1State;
  bool in2_2State = brake_state|(inv_state   & right_state)|(!left_state &
```

```
right_state);
  bool tra1State = brake_state|(left_state & right_state);
  bool tra2State = tra1State;
  analogWrite(CTRL1,pot_state/4);
  digitalWrite(IN1_1,in1_1State);
  digitalWrite(IN1_2,in1_2State);
  analogWrite(CTRL2,pot_state/4);
  digitalWrite(IN2_1,in2_1State);
  digitalWrite(IN2_2,in2_2State);
  digitalWrite(TRA1,tra1State);
  digitalWrite(TRA2,tra2State);
  Serial.println(">>>>>>>>>>>>>>>>>>>>>>>>>>>");
  Serial.println("pot_state:");
  Serial.println(pot_state);
  Serial.println("in1_1State:");
  Serial.println(in1_1State);
  Serial.println("in1_2State");
  Serial.println(in1_2State);
  Serial.println("in2_1State");
  Serial.println(in2_1State);
  Serial.println("in2_2State");
  Serial.println(in2_2State);
  Serial.println("tra1State");
  Serial.println(tra1State);
  Serial.println("tra2State");
  Serial.println(tra2State);
}

void loop()
{
  // readings
  btn_inv.checkPress();
  bool inv_state = btn_inv.getState();
  Serial.println( btn_inv.getState());
  bool left_state = digitalRead(LEFT);
  bool right_state = digitalRead(RIGHT);
  bool brake_state = digitalRead(BRAKE);
  int pot_state = analogRead(POT);
  motor_ctrl(pot_state,inv_state,left_state,right_state,brake_state);
}
```