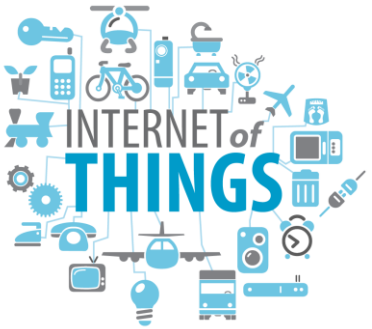
UNIVERSITY OF SCIENCE - VNUHCM
Faculty of Information Technology

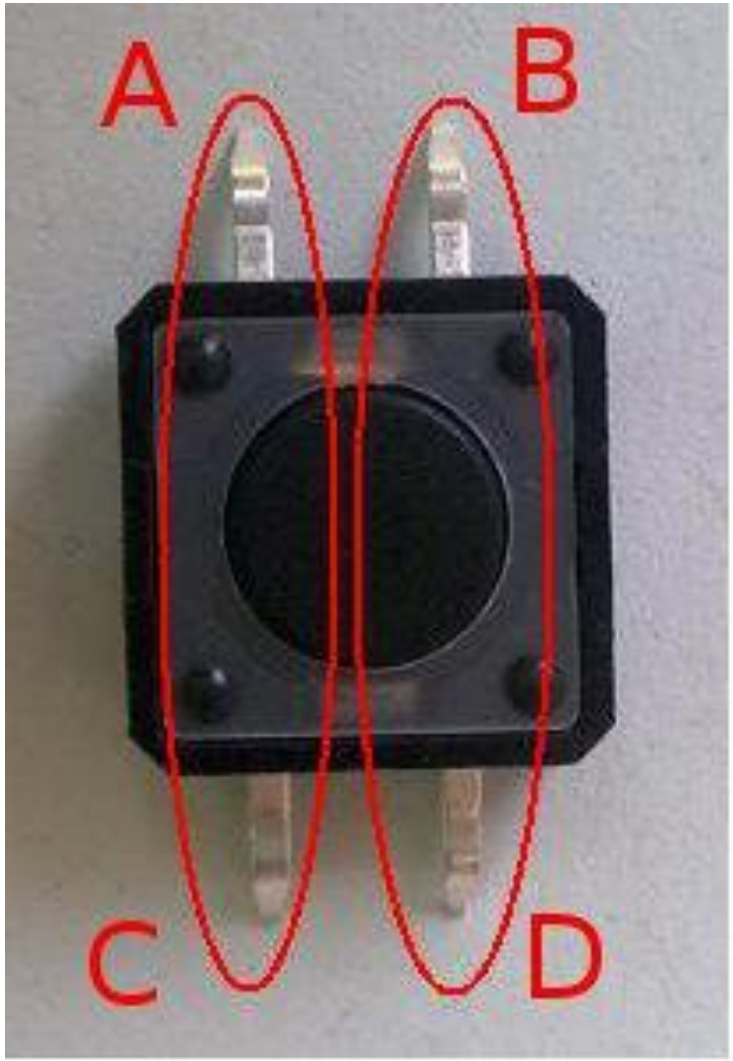
# INTERNET OF THINGS

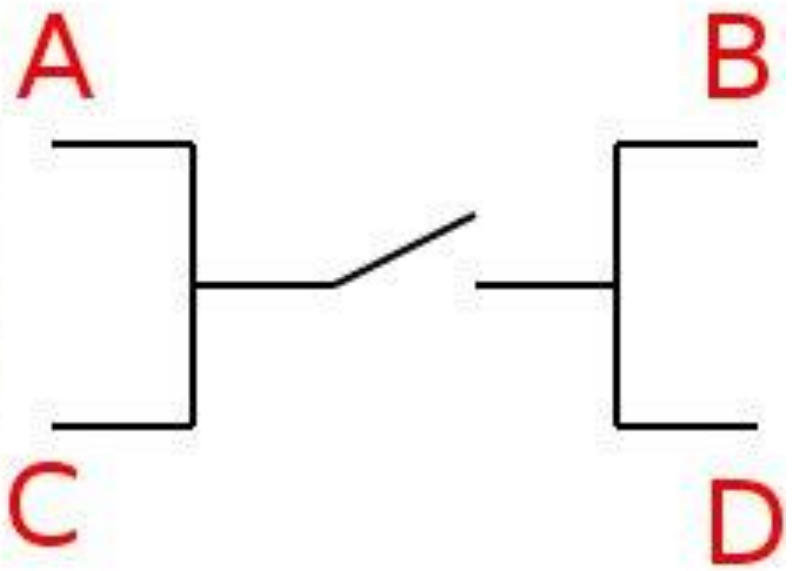
# 1.3

# BUTTON



# BUTTON


A
B
C
D


A
B
C
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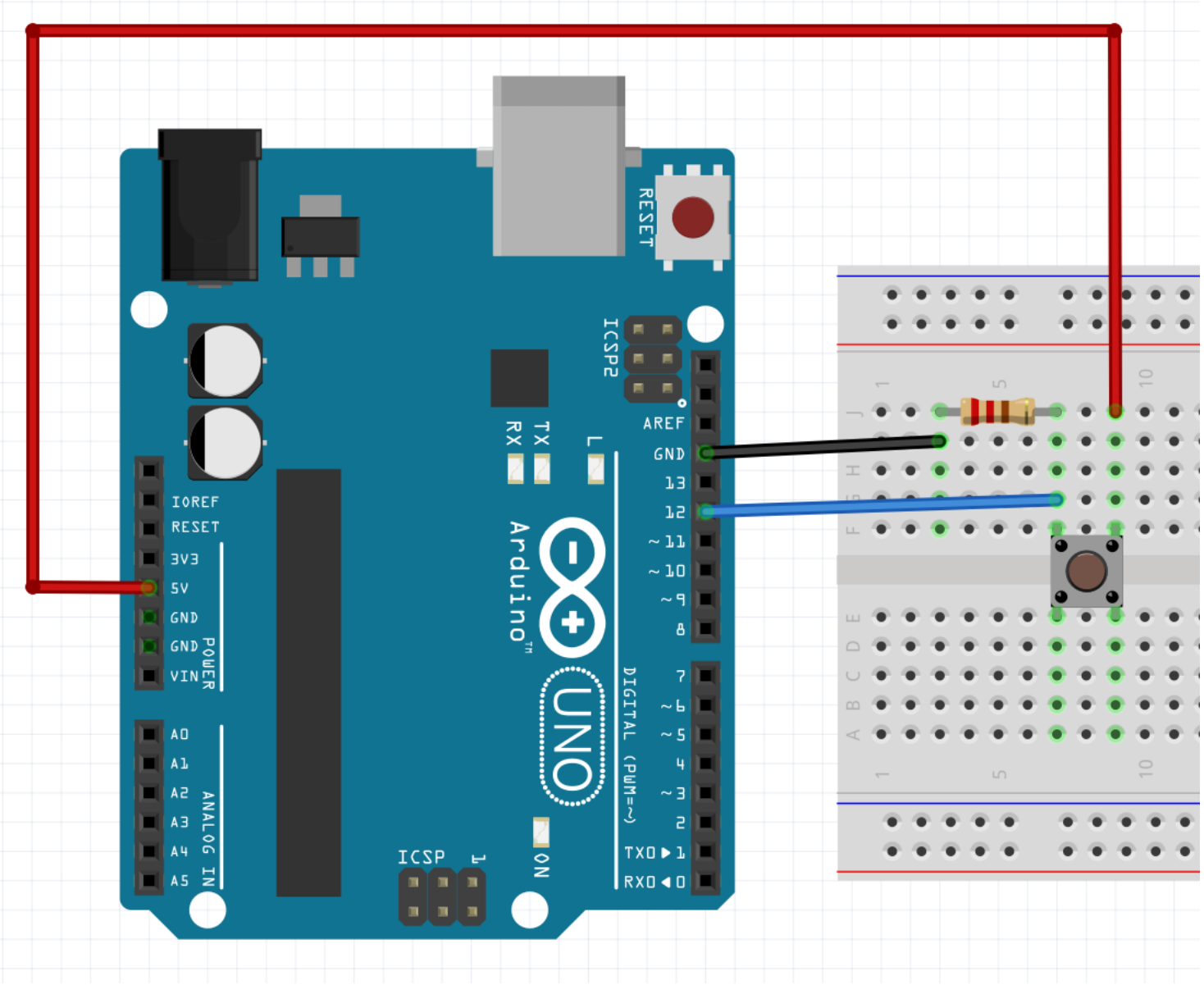


| Button Pin | Arduino Pin |
|---|---|
| A | GND |
| A | 12 |
| B | 5V |

```
int button = 12;

void setup() {
  pinMode(button, INPUT);
  Serial.begin(9600);
}

void loop() {
  int buttonState = digitalRead(button);
  if (buttonState == HIGH) {
    Serial.println("Button pressed");
  }
}
```

# Update the program to receive a single press

```
int button = 12;

void setup() {
  pinMode(button, INPUT);
  Serial.begin(9600);
}

void loop() {
  int buttonState = digitalRead(button);
  if (buttonState == HIGH) {
    while(digitalRead(button) == HIGH);
    Serial.println("Button pressed");
  }
}
```

```
int button = 12;
int lastState = LOW;

void setup() {
  pinMode(button, INPUT);
  Serial.begin(9600);
}

void loop() {
  int buttonState = digitalRead(button);
  if (buttonState != lastState) {
    if (buttonState == HIGH) {
      Serial.println("Button pressed");
    }
    lastState = buttonState;
  }

}
```

# Press and hold button for 5s

Hint: The **millis()** function return the total time in milliseconds from the Arduino board starts running

```
int button = 12;
int lastState = LOW;
int lastMillis = 0;

void setup() {
  pinMode(button, INPUT);
  Serial.begin(9600);
}

void loop() {
  int buttonState = digitalRead(button);
  if (buttonState != lastState) {
    lastMillis = millis();
    lastState = buttonState;
  }

  if (buttonState == HIGH) {
    if(millis() - lastMillis > 5000) {
      lastMillis = millis();
      Serial.println("Button long pressed");
    }
  }

}
```