NYU

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Physical Computing Review Questions 2: Digital In & Out F2025

1 message

Google Forms <forms-receipts-noreply@google.com> Fri, Sep 19, 2025 at 7:59 PM
To: ay3020@nyu.edu

Google Forms

Thanks for filling out Physical Computing Review Questions 2: Digital In & Out F2025

Here's what was received.

Edit response

Physical Computing Review Questions 2: Digital In & Out F2025

The following are questions you should be able to answer by the respective weeks in Introduction to Physical Computing. Try to answer all of the questions without resorting to copying external code or diagrams.

If you don't know where to start on a given question, first review the lab and material from the syllabus and then consult with your instructor in office hours.

Since some of the questions below require you to draw the circuit, you'll need to draw it and upload it.

Your email (**ay3020@nyu.edu**) was recorded when you submitted this form.

Your name? *

arjun

Which section are you in? *

- ○ Tues 09:30am to 12:00pm Yeseul Song
- ○ Tues 09:30am to 12:00pm Danny Rozin
- ○ Tues 12:20pm to 2:50pm Jeff Feddersen
- ○ Tues 12:20pm to 2:50pm Pedro Oliveira
- ○ Tues 9:30am to 12:00pm David Rios
- ○ Tues 3:20pm to 5:50pm Danny Rozin
- ◉ Tues 3:20pm to 5:50pm Tom Igoe

Explain the difference between an analog sensor and a digital sensor. Give examples of both.

a digital sensor gives a binary output (HIGH, LOW (or 0,1)). analog gives a range. usually, this is between 0-1023.

Draw and upload a circuit for connecting a pushbutton as a digital input to a microcontroller. Connect it so that the digital input pin goes HIGH when the button is pushed. (PNG or JPG only).

Submitted files

IMG_6312 - arjun.JPG

In the circuit that you drew for the last question What does the resistor (called a pulldown resistor) do? *

prevents the arduino from short-circuiting. when the switch is closed, voltage (3.3v in this case) is passed directly through the switch. this returning via ground to the arduino will cause it to short-circuit.

Write a program that reads a digital input to an Arduino and turns off an LED whenever the digital input goes LOW. *

```
int ledPin = x;
int buttonPin = y;
int buttonValue;
void setup(){
Serial.begin(9600);
pinMode (x, OUTPUT);
pinMode (y, INPUT);
buttonValue = LOW; //assume the button is not clicked when starting the program.
}
void loop(){
digitalRead(buttonPin);
if (buttonPin == LOW){
digitalWrite (ledPin, HIGH);
}else{
digitalWrite (ledPin, LOW);
}
}
```

Draw and upload the circuit that goes with the program that you wrote for the last question (PNG or JPG only). *

Submitted files

IMG_6313 - arjun.JPG

Write a program that reads a digital input and prints out a message when the input changes from HIGH to LOW. *

```
int buttonPin = y;
int buttonValue;
int previousButtonVal;
void setup(){
Serial.begin(9600);
```

```
pinMode (y, INPUT);
buttonValue = LOW; //assume the button is not clicked when starting the program.
previousButtonVal = LOW;
}
void loop(){
if (buttonValue==LOW && previousButtonVal == HIGH){
Serial.println("message");
}else{
// do nothing.
}
previousButtonVal = buttonValue;
}
```