

# Breadboard dan IC Logika

## Praktikum Rangkaian Digital

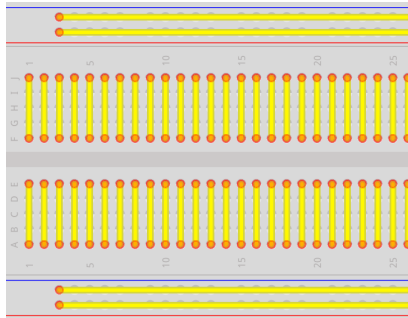
Ilmu Komputer IPB

2019

# *Breadboard*

## Koneksi internal *breadboard*

- ▶ untuk *prototyping*, tanpa harus menyolder komponen
- ▶ *power bus strip*: (atas bawah) terhubung secara horizontal
- ▶ *terminal strip*: terhubung secara vertikal



# Komponen elektronika

- ▶ LED: polar, kaki panjang positif
- ▶ resistor: non-polar
- ▶ kapasitor: non-polar dan polar
- ▶ *push button*: jika ditekan kaki kanan–kiri terhubung

LED



330Ω

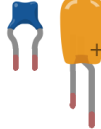


1kΩ



10MΩ

Capacitor

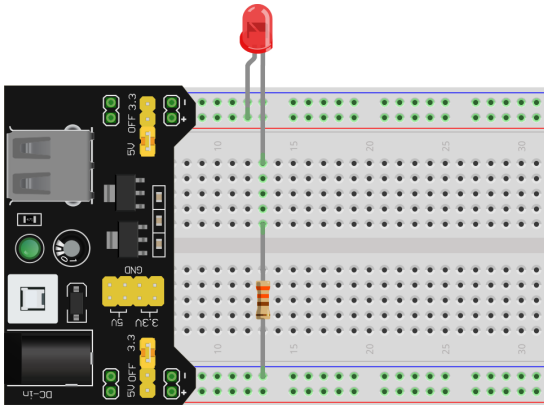


Push button

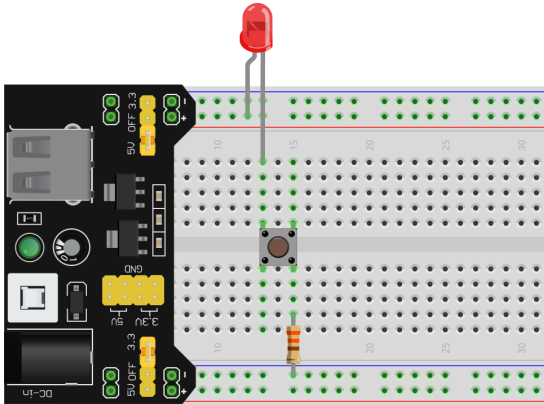


fritzing

# Rangkaian LED sederhana



# Rangkaian LED dengan saklar



# IC Logika

## Daftar IC

- ▶ 7400 NAND (2x)
- ▶ 7402 NOR (2x)
- ▶ 7408 AND
- ▶ 7432 OR
- ▶ 7486 XOR
- ▶ 555 timer

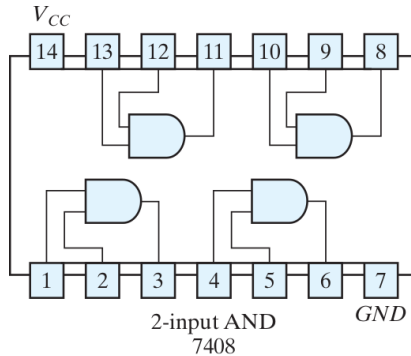


## Pin IC logika

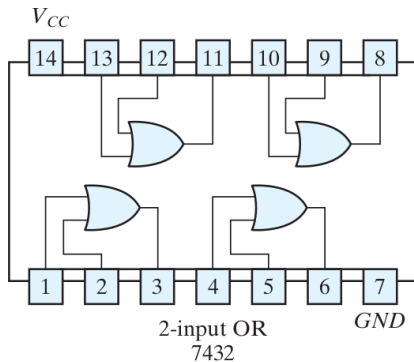
- ▶ pin 1 dimulai dari pojok kiri bawah *notch* IC

Pin	Fungsi
14	Vcc
7	<i>ground</i>
1,2,3	<i>gate 1</i>
4,5,6	<i>gate 2</i>
8,9,10	<i>gate 3</i>
11,12,13	<i>gate 4</i>

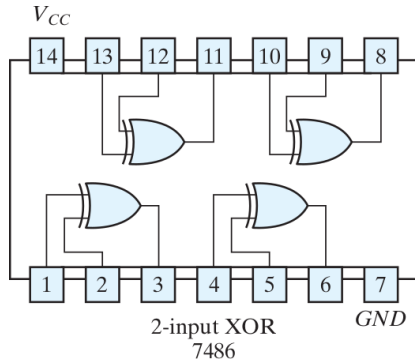
# 7408 AND



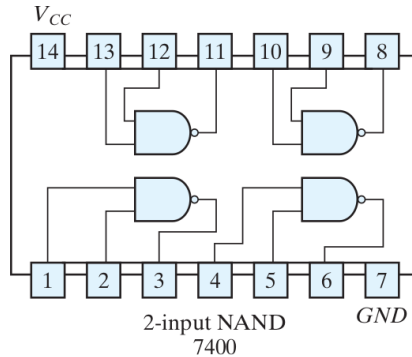
## 7432 OR



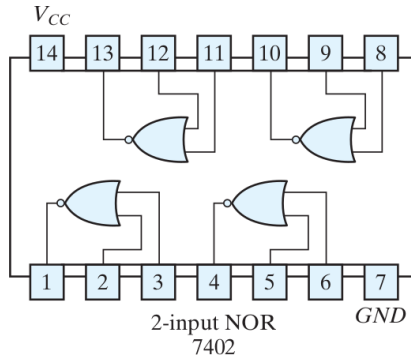
# 7486 XOR



# 7400 NAND

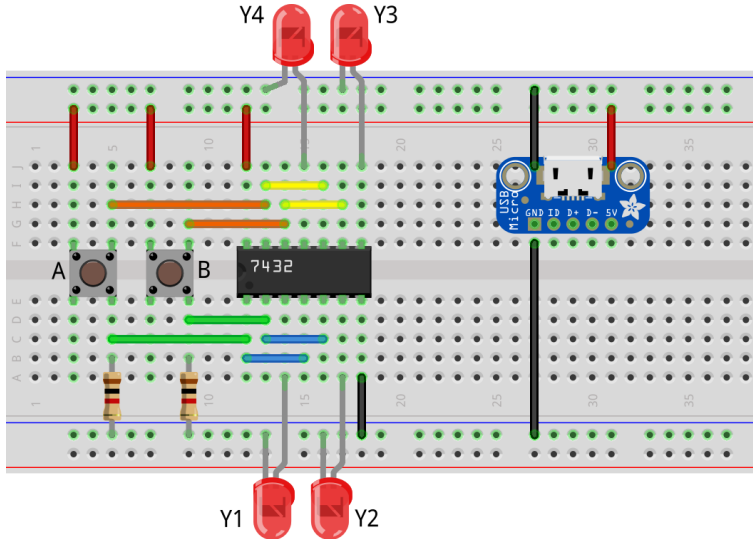


# 7402 NOR



## Pengujian IC 7432

# Rangkaian *breadboard*





## Catatan

- ▶ hati-hati saat memasang/melepas IC agar pin tidak bengkok
- ▶ saklar harus dihubungkan ke *ground* melalui *pull-down resistor* untuk menghindari *floating input*
- ▶ level tegangan *input* yang valid:
  - ▶ LOW: 0.0–0.8 V
  - ▶ HIGH: 2.0–5.0 V

# Tugas

- ▶ buat rangkaian pada *breadboard* untuk menguji IC 7432
- ▶ kumpulkan foto/*screenshot* hasil pengujian ke LMS