ELEC1100 - Tutorial 1

Basic Components and Breadboard

Introduction to Lab#01

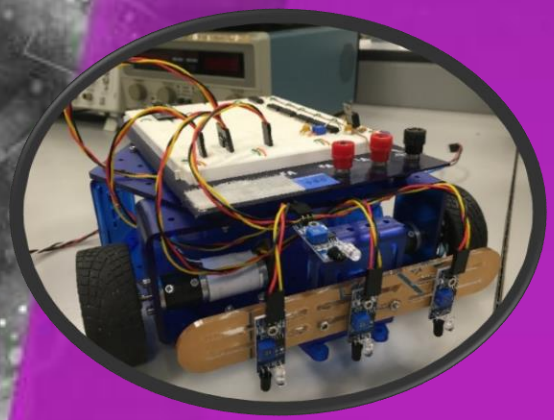
Topics

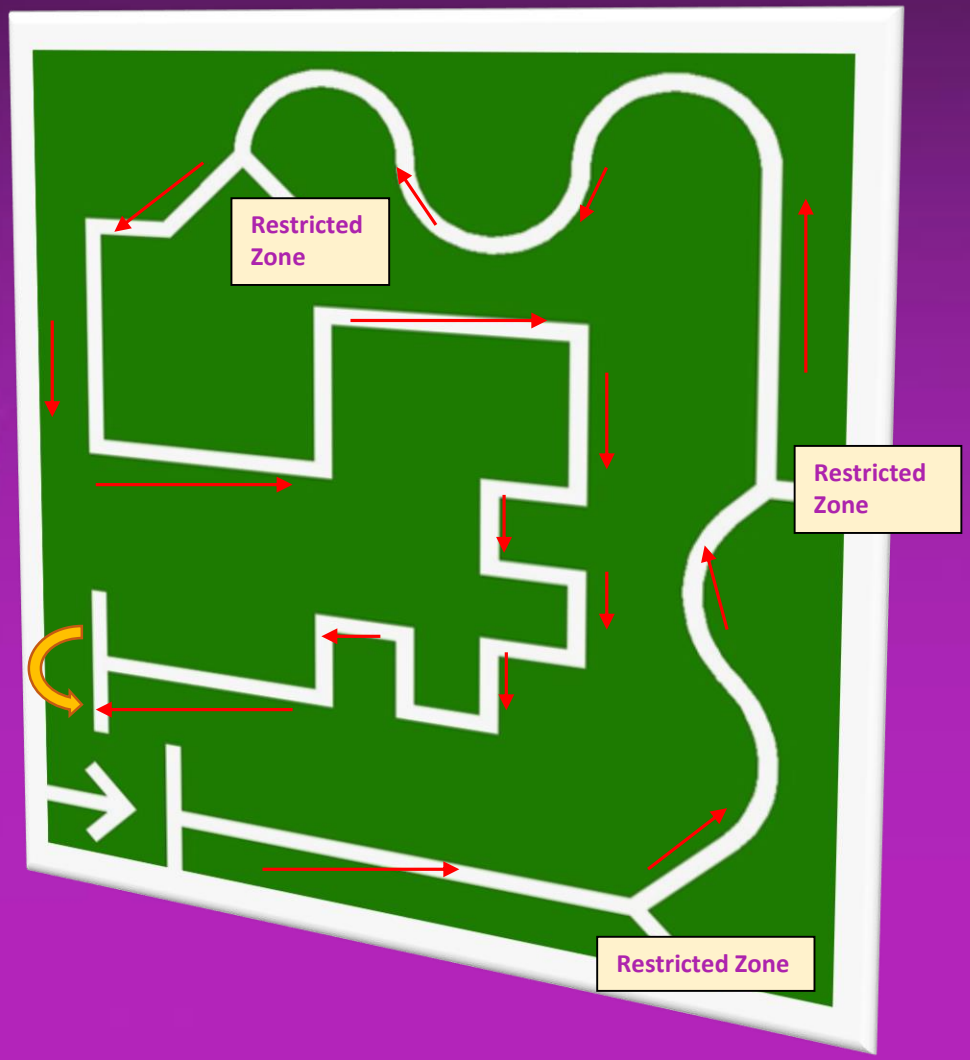
- Mixed-mode Lab & Project
- Canvas Pages & ZOOM Meeting Classes

- Basic Components
- Equipment at physical lab
- Use Tinkercad to do online Circuits building

Mixed Mode ELEC 1100

Project – at physical Lab





Mixed Mode ELEC1100 – Online

Teaching Team

Course Instructors

Give lectures, decide course grades, make decisions on the course

Instructional Assistant

T1&3
(Thu)

Teaching Associate

T2
(Tue)

Give tutorials, handle administrative matters

Technical Officer

In charge of the lab and equipment

Teaching Assistants

See your lab demo, invigilate exams & project demo

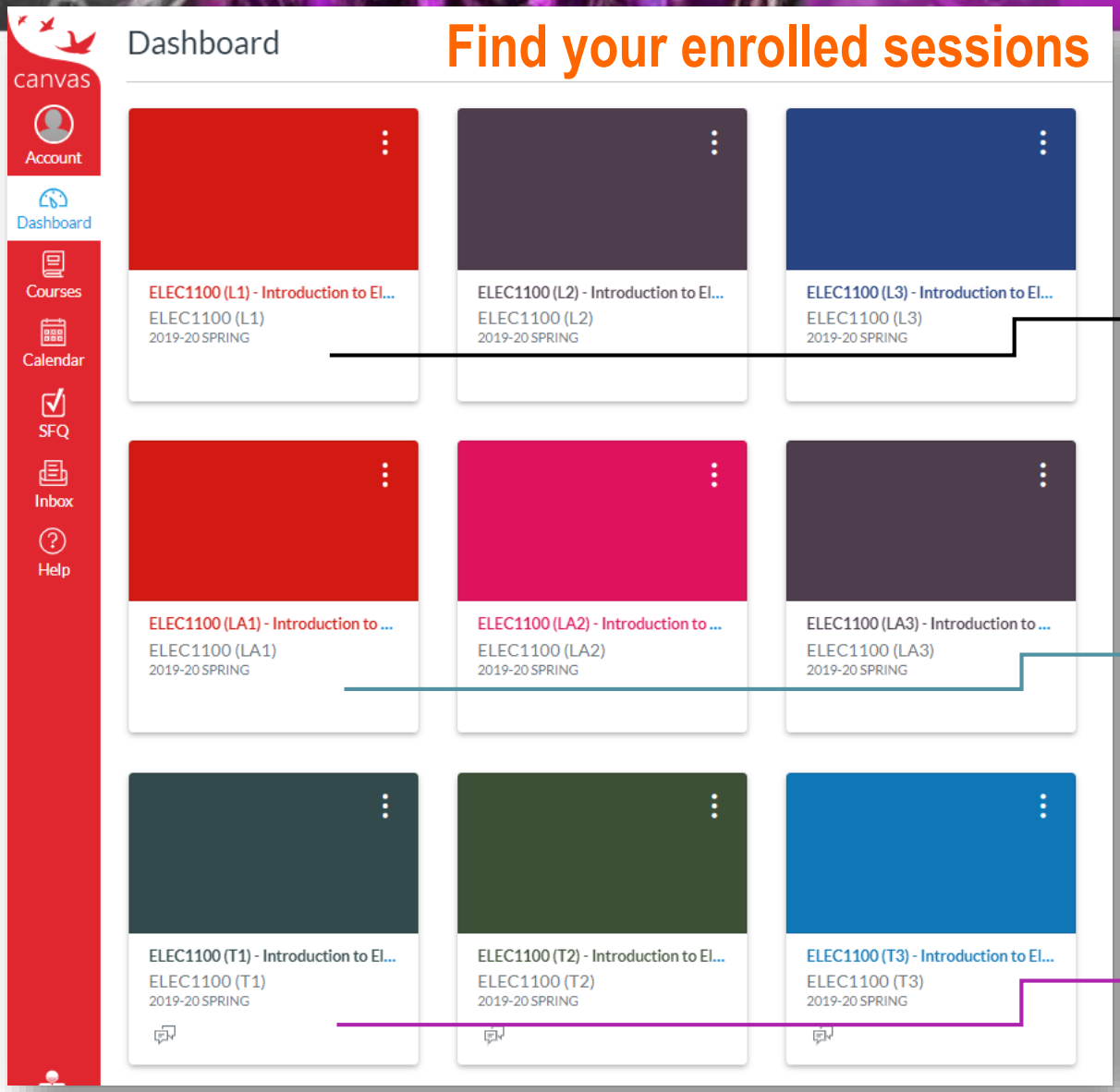
Student Helpers

Help you in your labs and project, introduce ECE to you all

Special Academic Arrangements for Spring Term

- Classes in Spring Term will be delivered using live interactive on-line mode on the scheduled timetable until further notice.
- Students successfully registered in a course should go to the course page in Canvas to join the on-line meeting at class time.

Course Website – Canvas Pages



https://canvas.ust.hk/

Lecture (L1/L2/L3)

- Lecture materials & ZOOM class
- Course syllabus / Grades /
- Announcement / Homework
- Project

Lab (LA1/LA2/LA3)

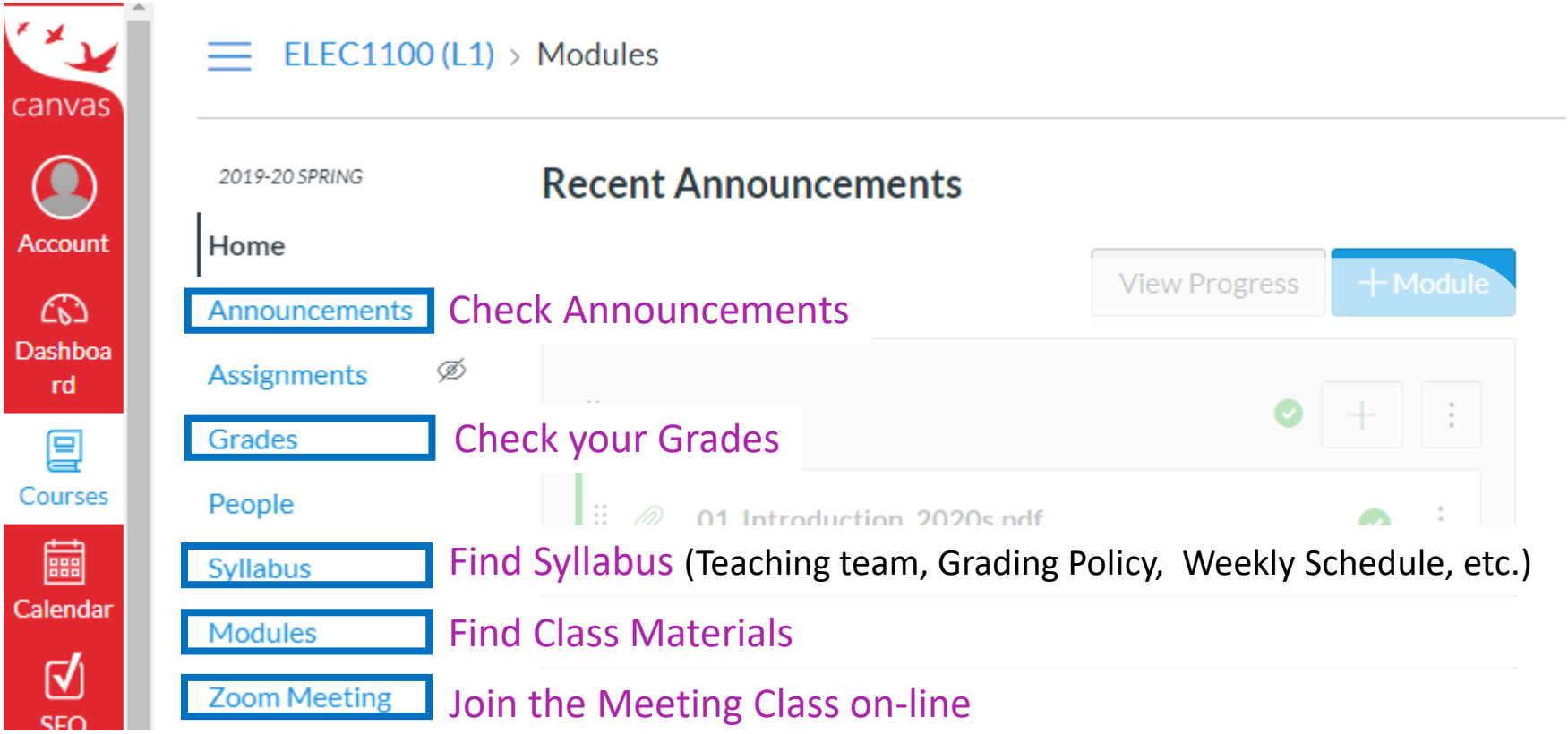
- Lab materials & ZOOM class only

Tutorial (T1/T2/T3)

- Tutorial materials & ZOOM class only

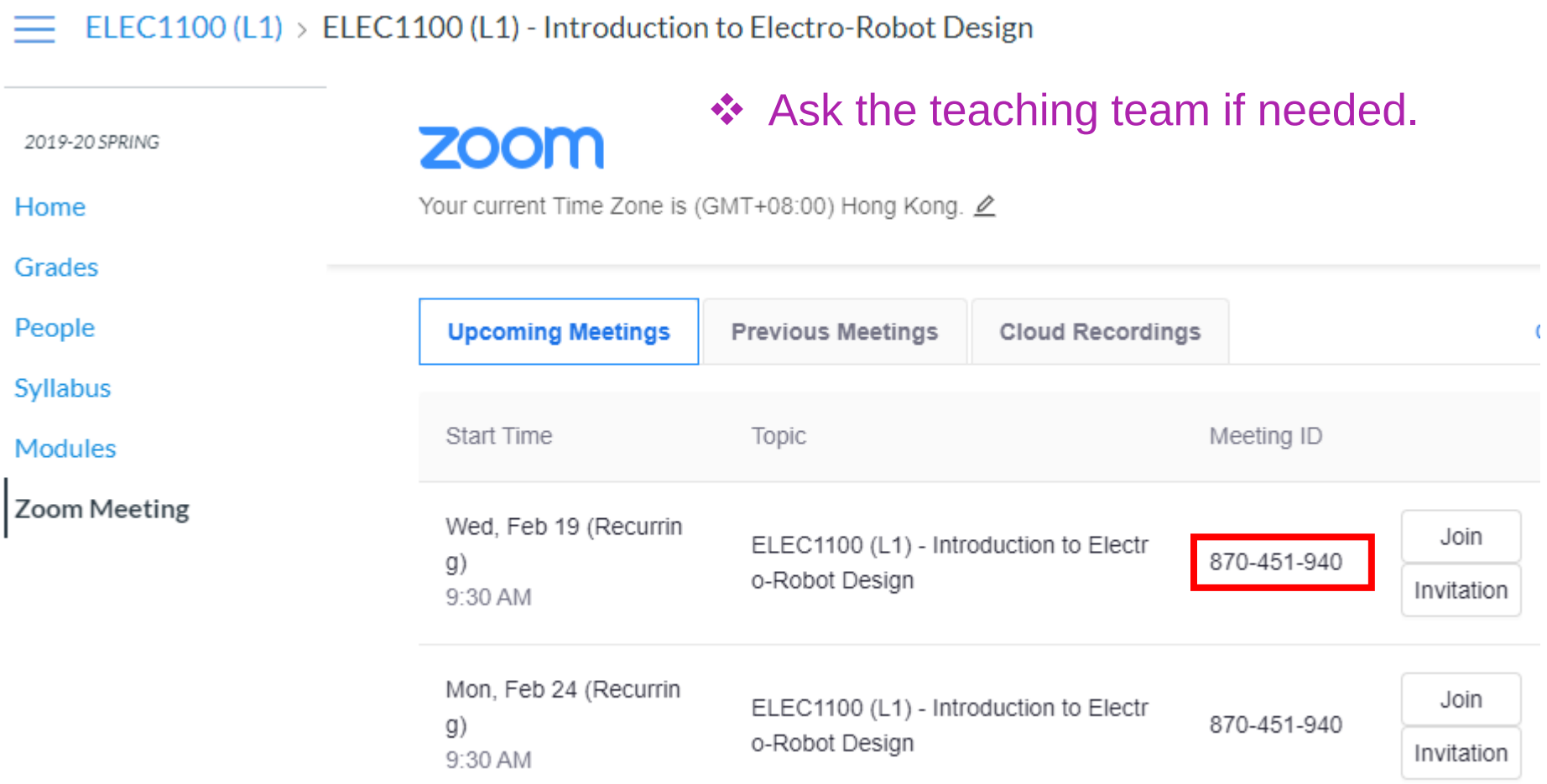
Canvas – Menu Bar

Announcements will also be sent to you via emails (your HKUST account)



Canvas – ZOOM meeting class

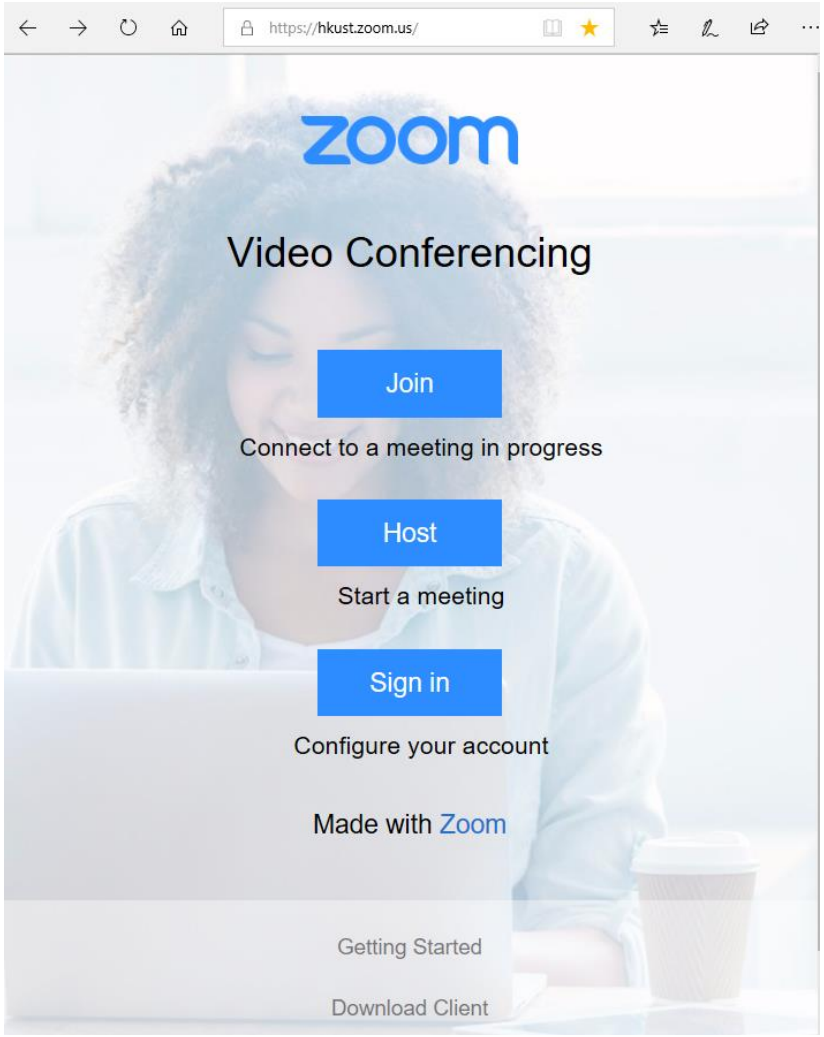
- If you are in difficulties in Canvas access, a Meeting ID can also let you join a class through https://hkust.zoom.us/ with your HKUST account.

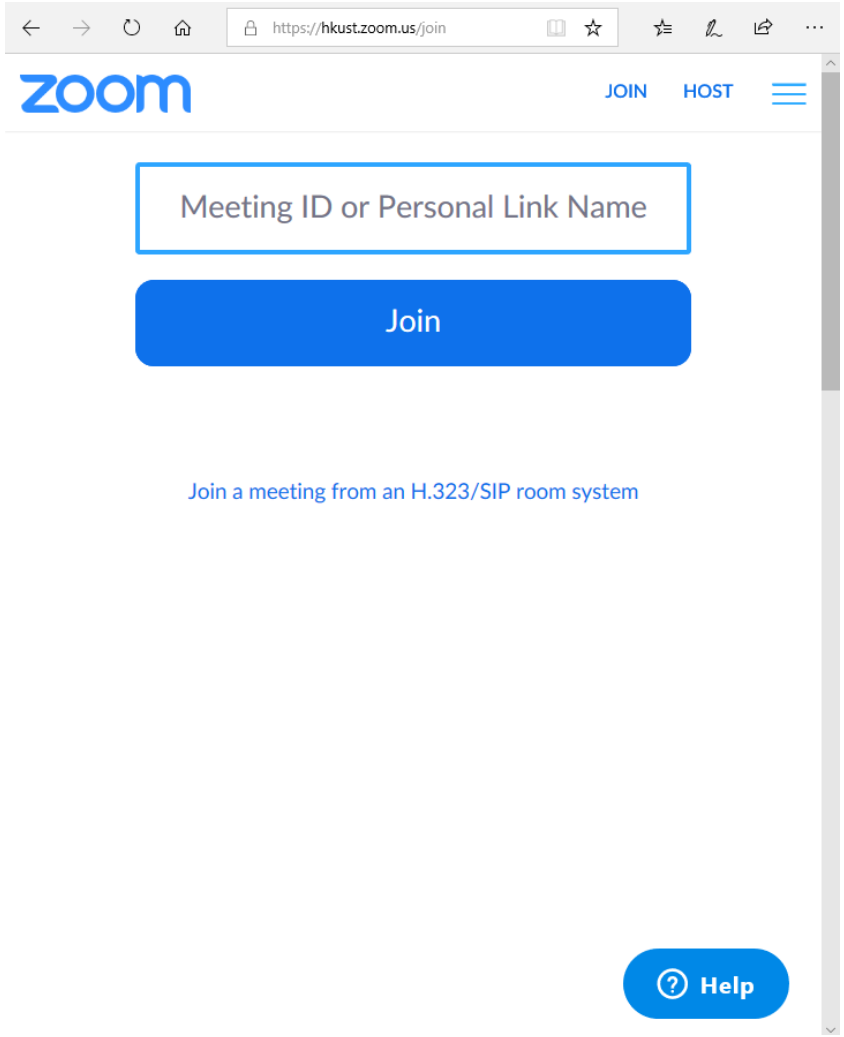


- Ask the teaching team if needed.

ZOOM meeting ID

https://hkust.zoom.us/

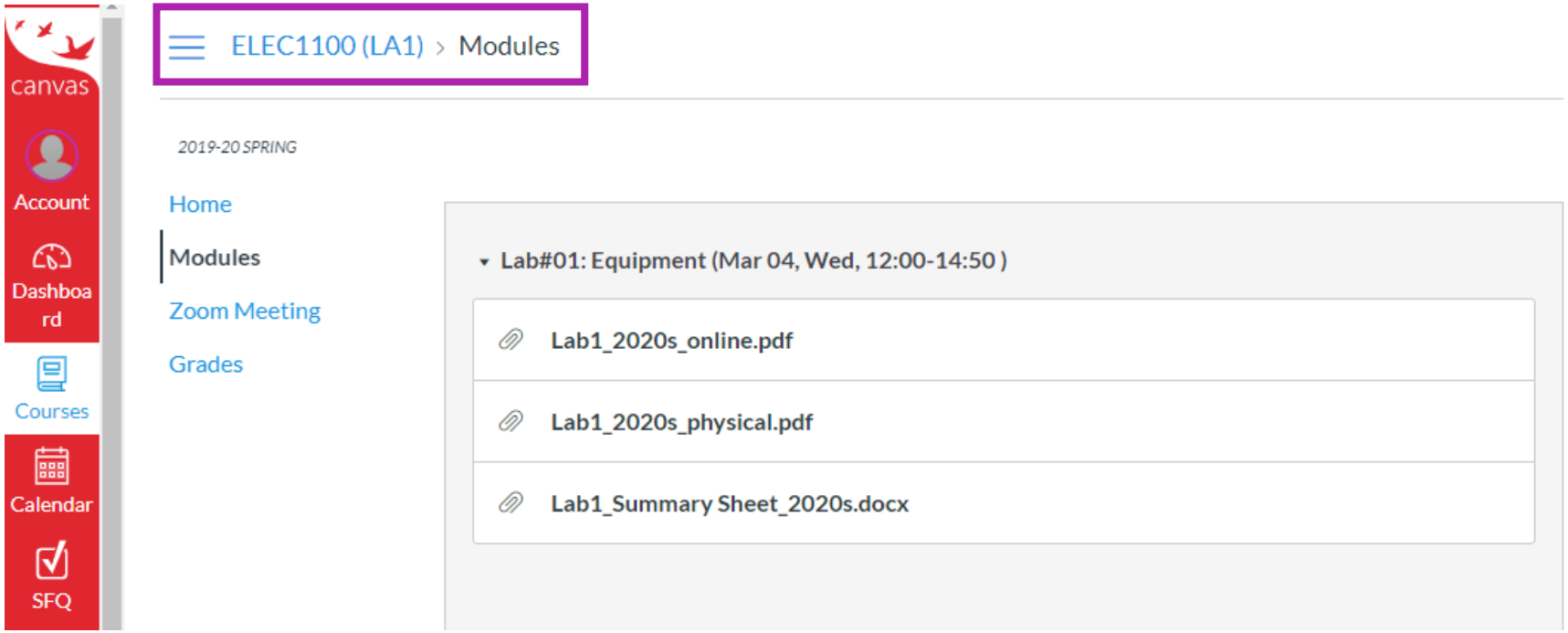




Online Lab Class

Preparation

- Read over the lab manual, follow the steps to sign in **Tinkercad** https://www.tinkercad.com/



Lab Grading Policy

Lab Results

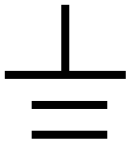
- Show demo to your TA at online lab class to have an attendance record
- INDIVIDUALLY submit your completed Summary Sheet on Canvas, before the Deadline.
- Failure to do so may result in a zero mark.

Submission Deadline:

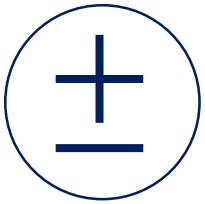
LA1 (Wed, 14:50) LA2 (Thu, 11:50) LA3 (Mon, 16:20)

Basic Components

Power



Ground

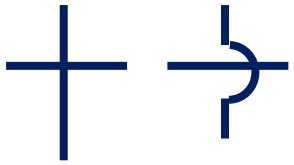


Voltage Source

Resistor

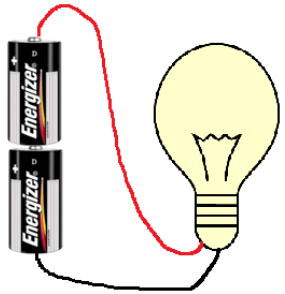
Capacitor

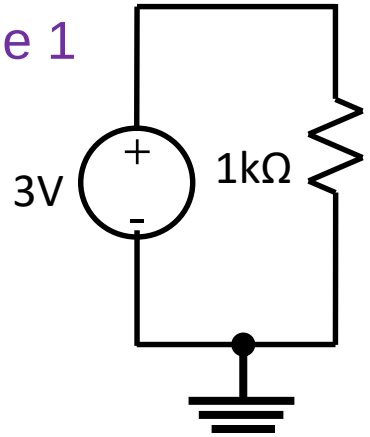
Connection



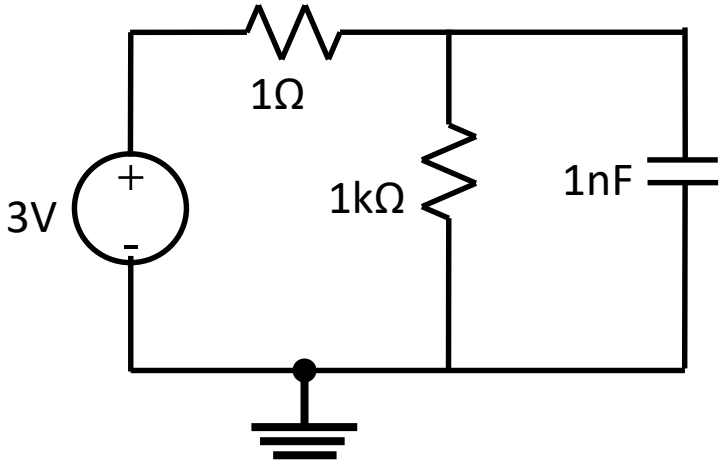
No Connection

Example 1

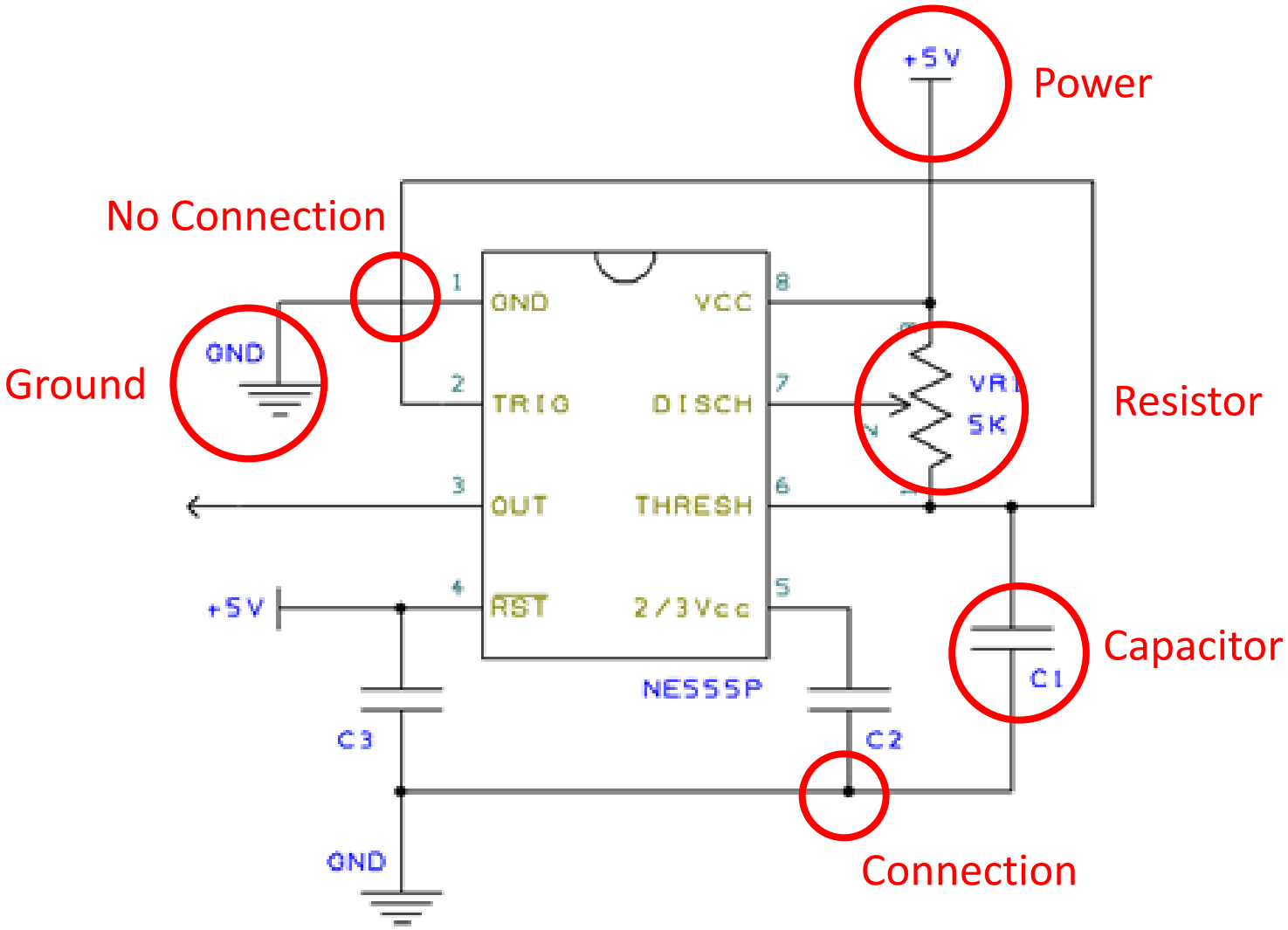




Example 2

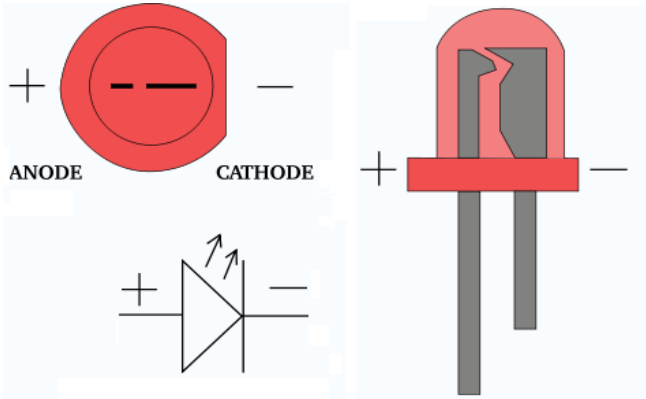


Circuit Diagram Example

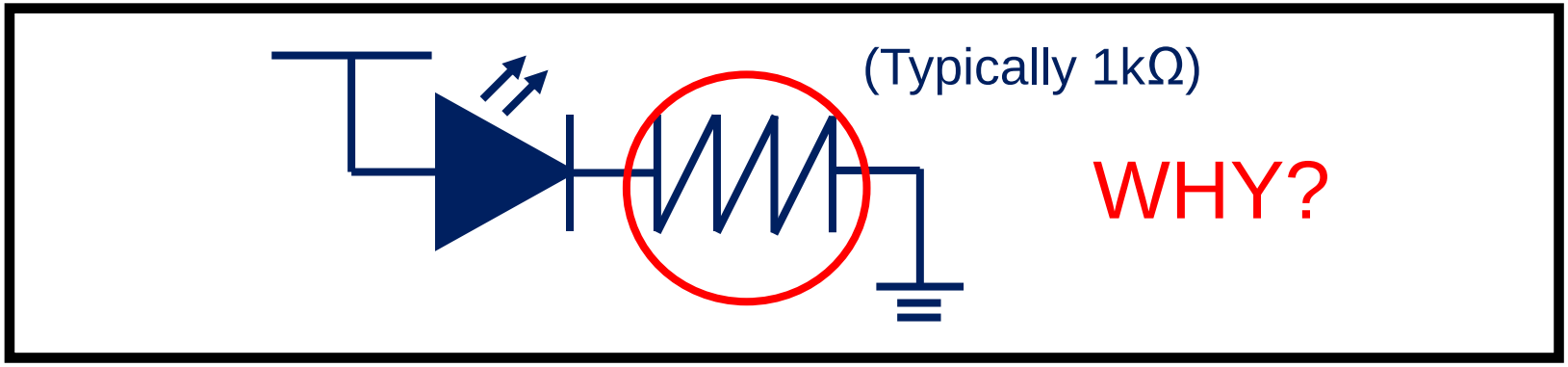


Light-Emitting Diode (LED)

- An LED is a semi-conductor light source



- How to make it work? Draw figure below:



Equipment at Physical Lab

Can you name them?

Fig. 1: DC Power Supply

Fig. 2: Digital Multimeter

Fig. 3: Signal Generator

Fig. 4: Digital Storage Oscilloscope

Fig. 5: Breadboard

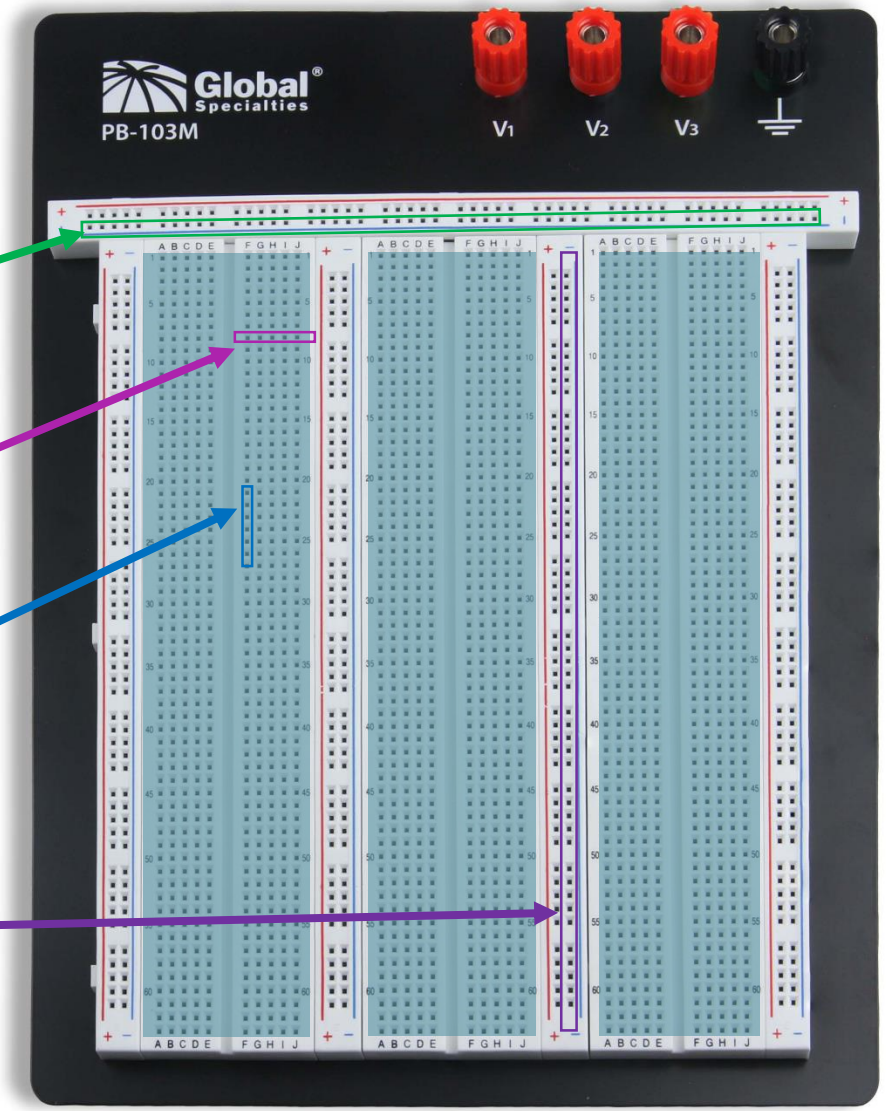
Breadboard

Row holes internally connected together

Row holes (5 holes) internally connected together

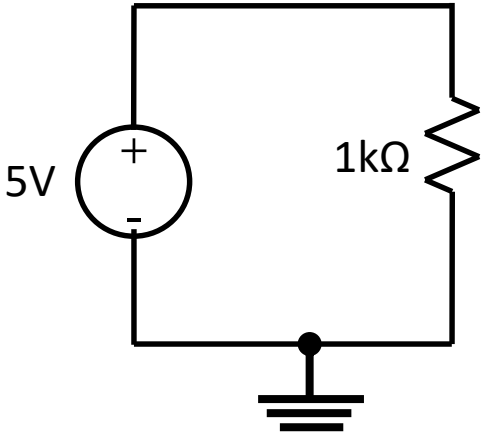
Column holes NOT connected

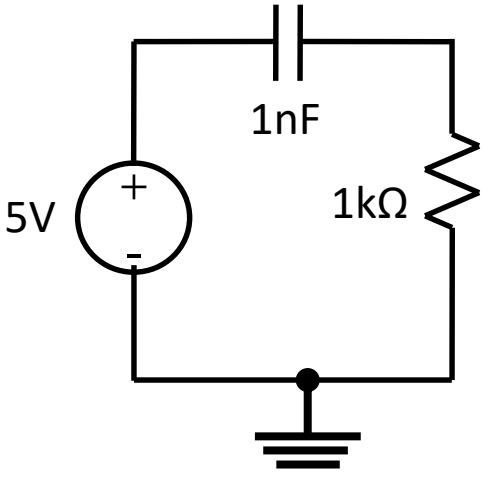
Column holes internally connected together

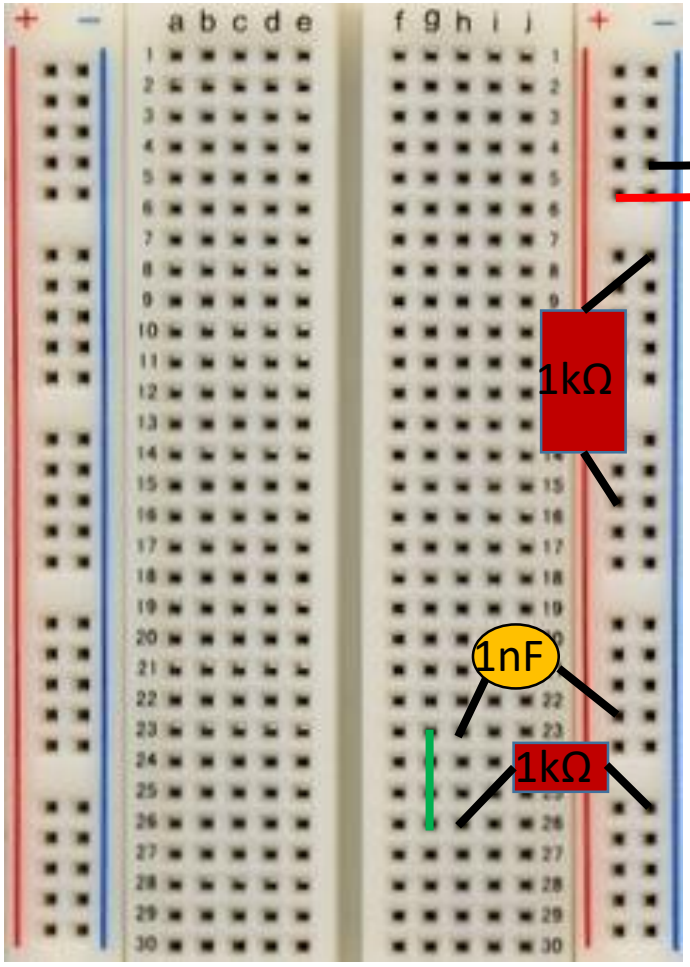


Breadboard Exercise

How will you connect the circuits below?



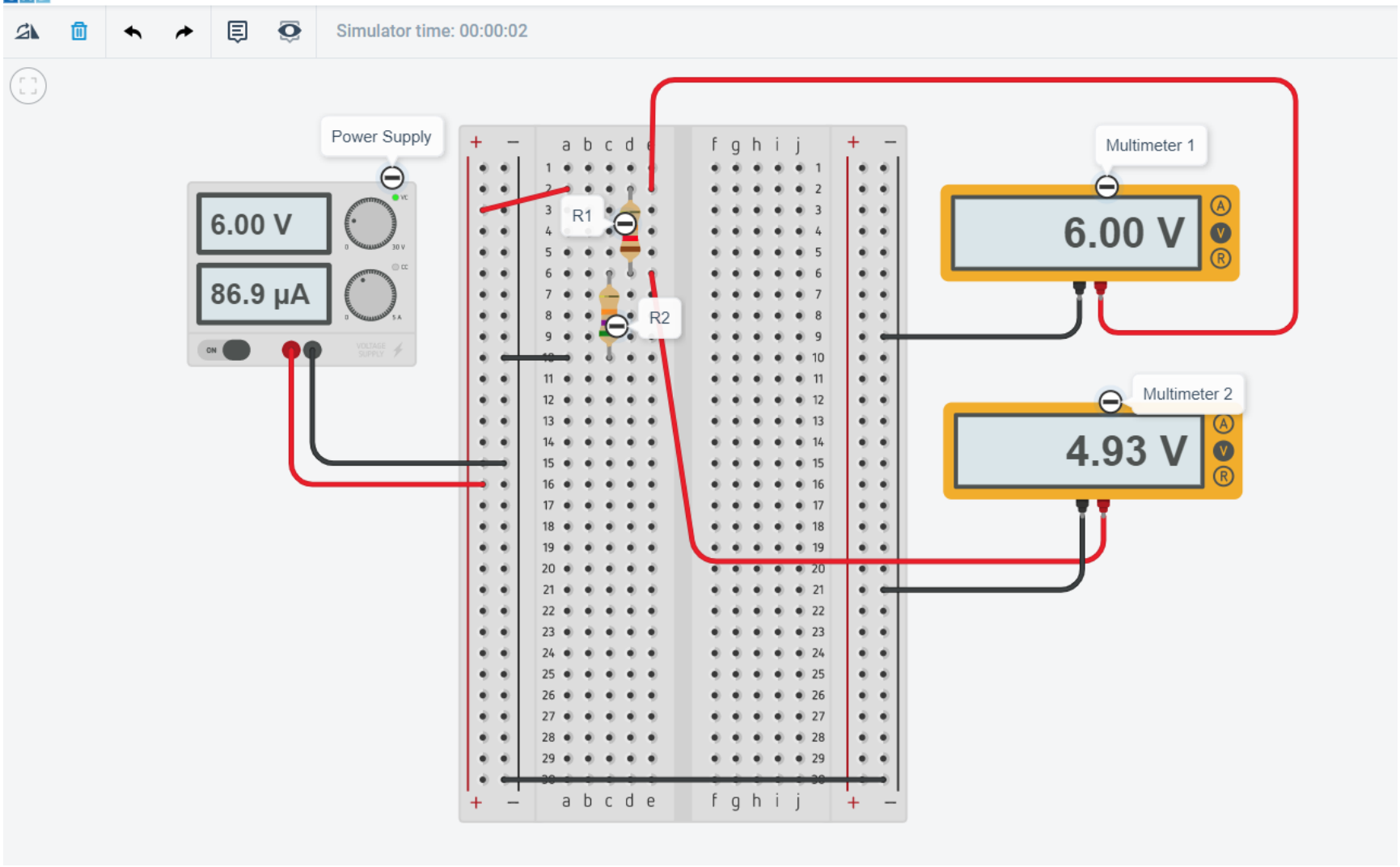




Power On

Circuit Building in Tinkercad [1]

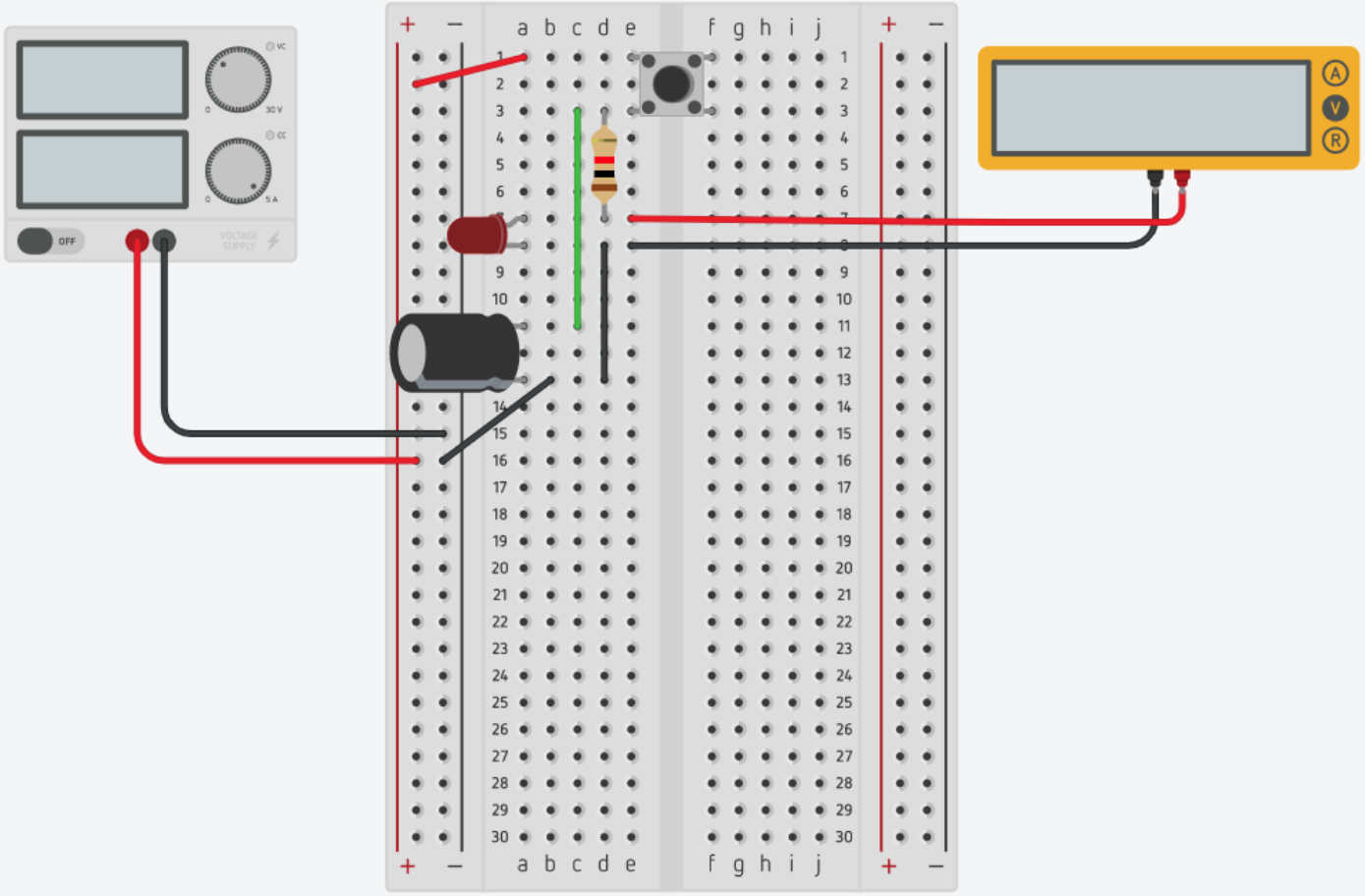
Lab#01 Simulation 2



Circuit Building in Tinkercad [2]

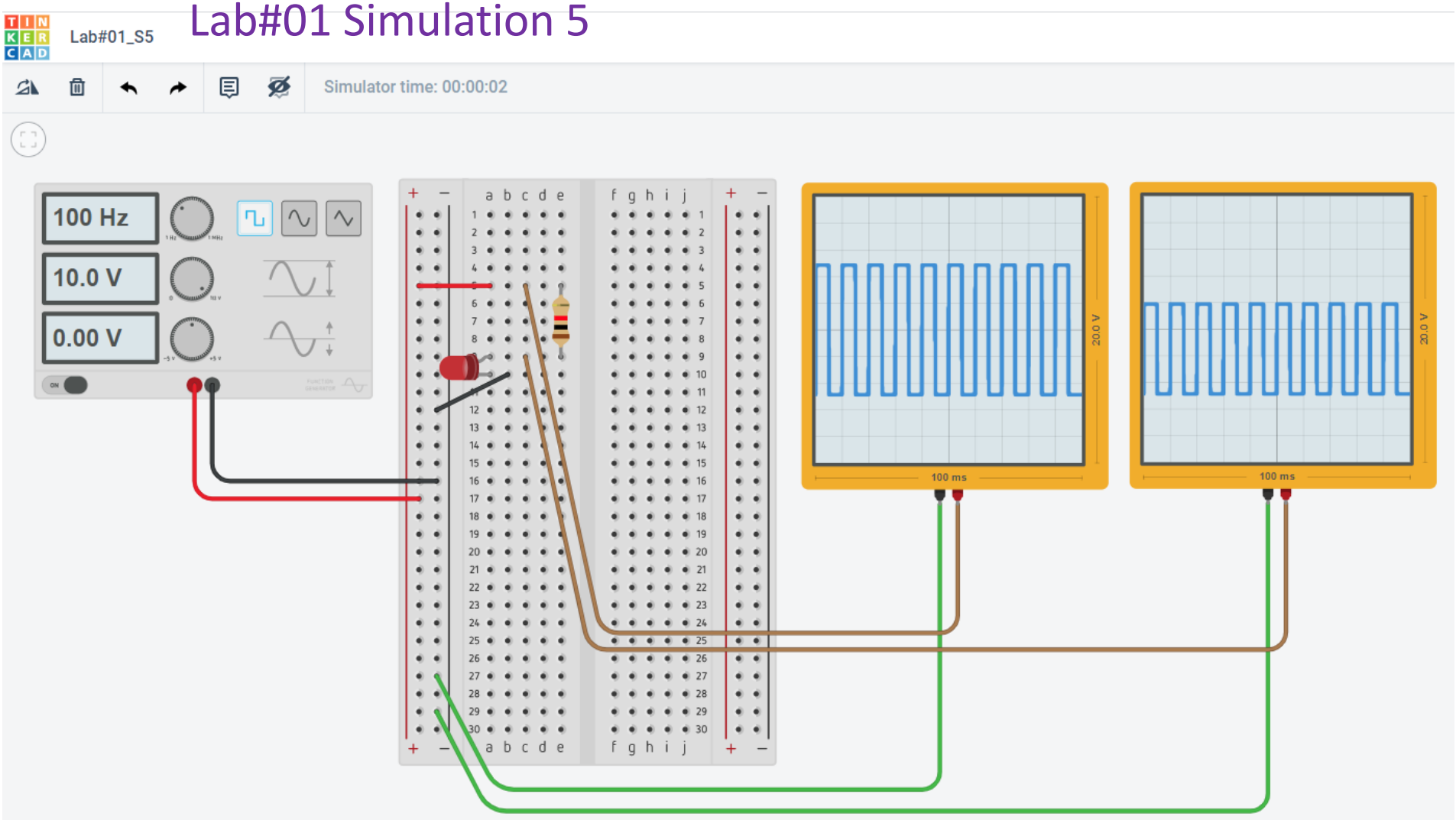
Lab#01_S3

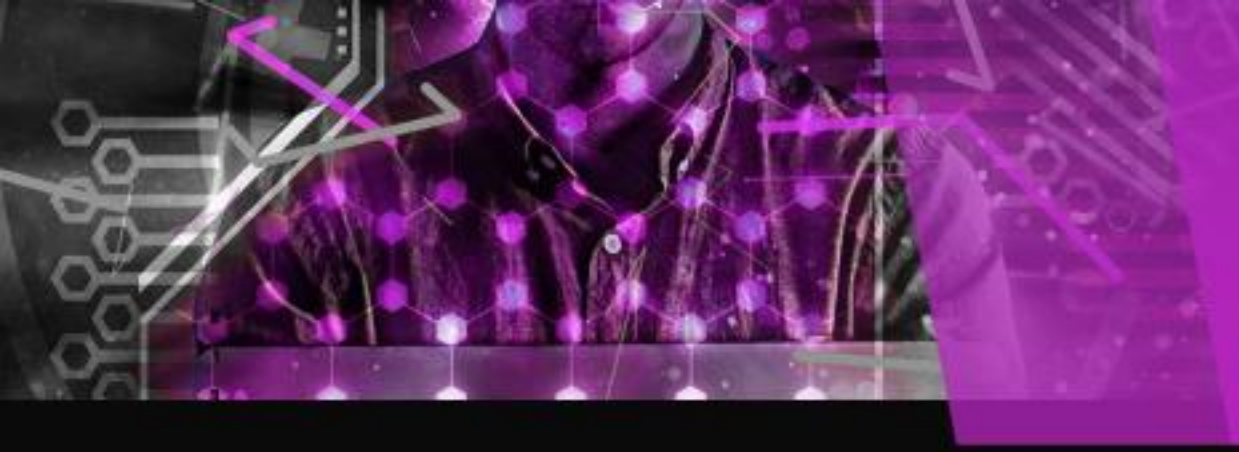
Lab#01 Simulation 3



Circuit Building in Tinkercad [3]

Lab#01 Simulation 5





Summary

Lab Reminder

- Sign-up in Tinkercad https://www.tinkercad.com/
- Join your enrolled lab meeting class (LA1/LA2/LA3) on time
- Read carefully about the instructions in lab manual
- Show demo to your TA during the on-line lab class
- Upload your completed lab sheets before the deadline