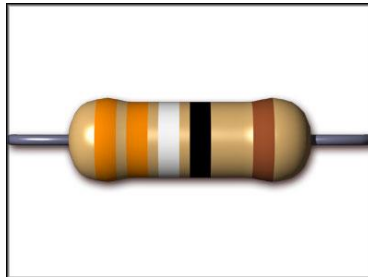


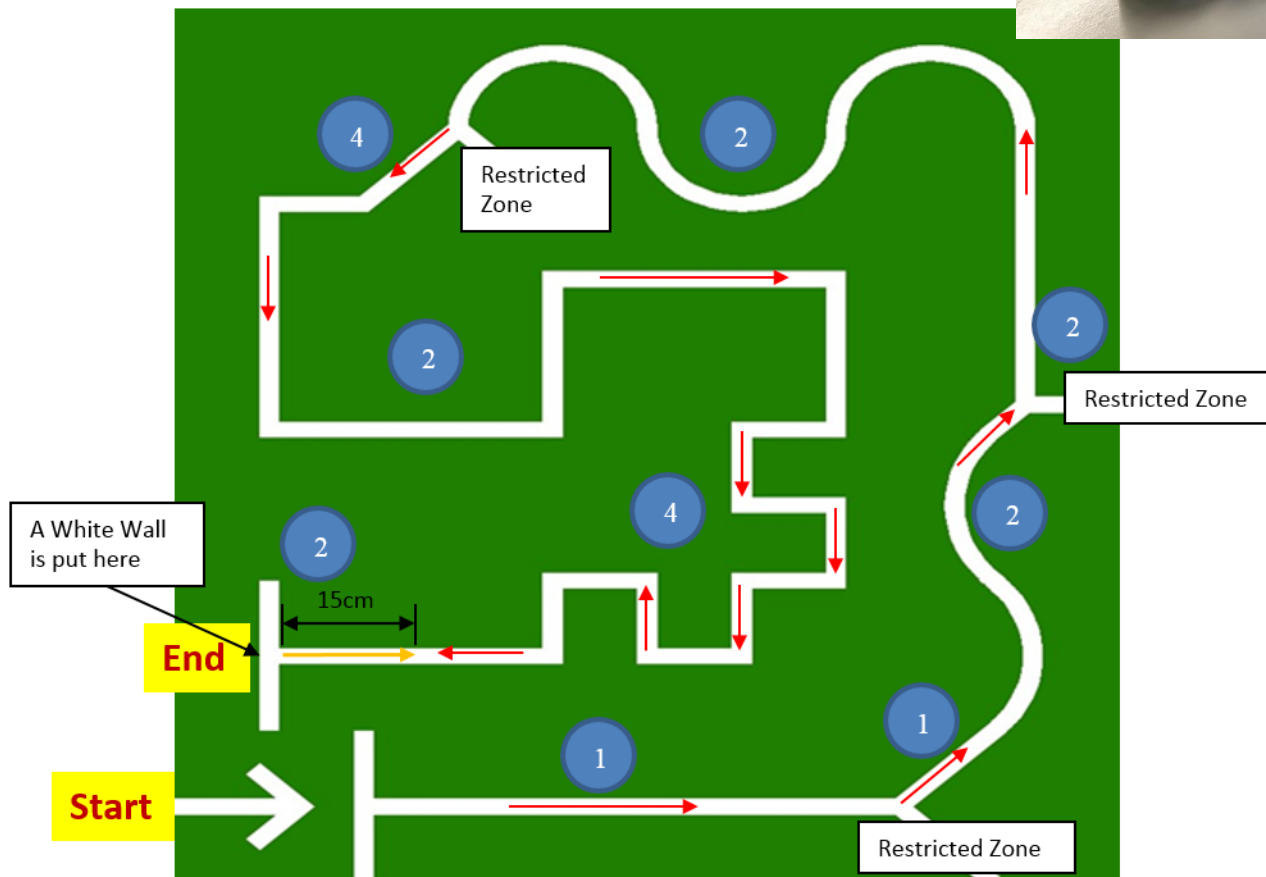
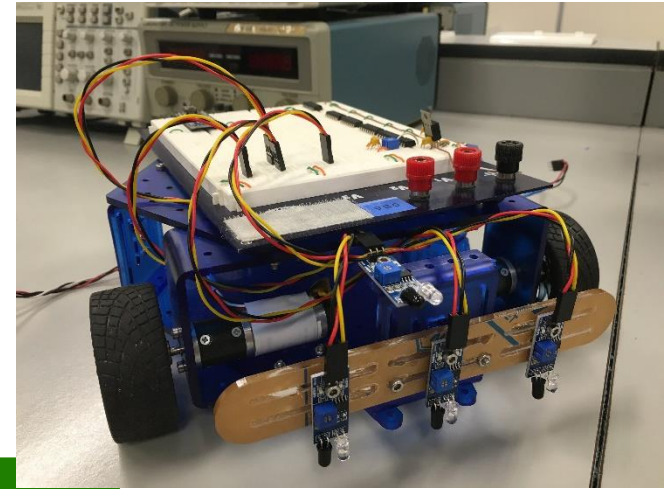
Tutorial I

Basic components and Breadboard



ELEC 1100

General Information



Course Instructors



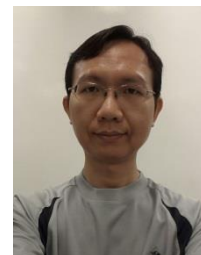
Give lectures, decide course grades, make decisions on the course

Instructional Assistant



Give tutorials, handle administrative matters,
Suggest course grades and post them

Technical Officer

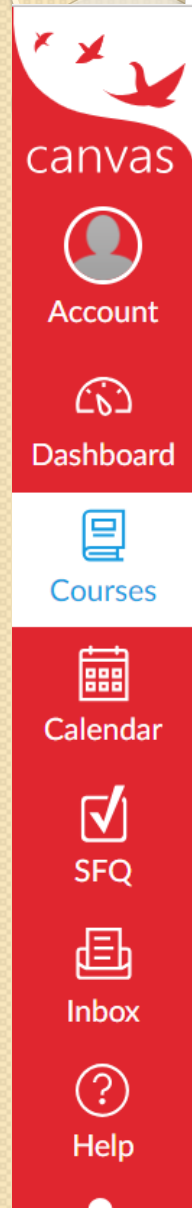


In charge of the lab and equipment

Teaching Assistants

See your lab demo, collect lab sheets,
Invigilate exams & final project demo

Course Website --- Canvas



2017-18 SUMMER

Menu Bar



ELEC1100 (L1) > Files

<https://canvas.ust.hk/>

Home

Announcements

Check Announcements

Search for files



0 items selected

Assignments

Discussions

Grades

Check your Grades

People

Pages

Files

Find Course Materials (Lecture, Tutorial, Lab, etc.)

Syllabus

Find Syllabus (Teaching team, Grading Policy, Weekly Schedule, etc.)

Outcomes

Quizzes

Modules

Conferences

Collaborations

▼ ELEC1100 (L1) - Introduction

▶ Lectures

▶ Tutorials

Name ▲

Date Created



ELEC1100_Class Time & Venue_... Yesterday



ELEC1100_Class Time & Venue_... Yesterday



ELEC1100_Weekly Schedule.PNG Yesterday



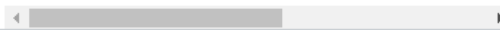
Labs Yesterday



Lectures Yesterday



Tutorials Yesterday




0% of 1 GB used

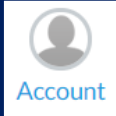
Announcements will be made through Canvas

Configure announcement setting


Able to receive announcement via emails




canvas




Account




Dashboard




Courses




Calendar




SFQ



Inbox



Help



TANG, Yimeng > Notification Preferences

Notifications

Profile
Files
Settings
ePortfolios

Notification Preferences

✓ Notify me right away ⌚ Send daily summary 📅 Send weekly summary ✗ Do not send me anything

Course Activities	Email Address eetangy@ust.hk
Due Date	✓ ⌚ 📅 ✗
Grading Policies	✓ ⌚ 📅 ✗
Course Content	✓ ⌚ 📅 ✗
Files	✓ ⌚ 📅 ✗
Announcement	✓ ⌚ 📅 ✗
Announcement Created By You	✓ ⌚ 📅 ✗
Grading <input type="checkbox"/> Include scores when alerting about grades. If your email is not an institution email this means sensitive content will be sent outside of the institution.	✓ ⌚ 📅 ✗

Midterm Arrangements

- **Written midterm**

July 11 (Wed), 10:10-11:50, at Rm6591

- **Lab midterm**

July 13 (Fri), 15:00-15:50, at Rm2134

Lab Arrangements

Two students form a group

Canvas → People → Lab Groups →

Every Thursday
+
Wednesday
(Week 2&3)

The screenshot shows the Canvas LMS interface for the course ELEC1100 (L1). The left sidebar contains navigation links: Account, Dashboard, Courses, Calendar, SFQ, Inbox, and Help. The main content area shows the 'People' section, which is circled in red. Below 'People', the 'Grades' link is also circled in red. The 'Lab Groups' link is circled in red. Below 'Lab Groups', the 'Unassigned Students (23)' list is highlighted with an orange box. An orange arrow points from this list to the 'Lab Group 1' section, which shows a message: 'There are currently no students in this group. Add a student to get started.'

canvas

Account

Dashboard

Courses

Calendar

SFQ

Inbox

Help

ELEC1100 (L1) > People > Groups

2017-18 SUMMER

Home

Announcements

Assignments

Discussions

Grades

People

Pages

Files

Syllabus

Outcomes

Quizzes

Modules

Conferences

Everyone

Lab Groups

Self sign-up is enabled for these groups. (?)

Groups are limited to 2 members.

+ Group Set

+ Group

Unassigned Students (23)

Search users

AU, Calvin

BABATUNDE, Olu...

BARCLAY, Juliann...

BRUYNESTEYN, A...

CHAN, Ka Hing

CHEUNG, Wai Shun

CHOW, Hei Chit T...

ESBIRK, Magnus

Groups (12)

Lab Group 1

0 / 2 students

There are currently no students in this group. Add a student to get started.

Lab Group 2

0 / 2 students

Lab Group 3

0 / 2 students

Lab Group 4

0 / 2 students

Lab Arrangements

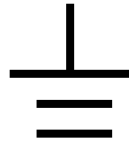
- Preparation (before the lab)
 - Read over the lab manual and try pre-lab questions
 - Print out summary sheet by **YOURSELF**
- Lab tasks
 - Ask TAs for **signature** if necessary

Remark: Finish **at least 4 labs** in order to do project demo

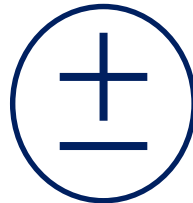
Basic Components



Power



Ground



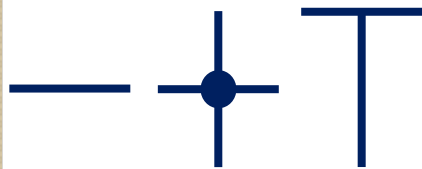
Voltage
Source



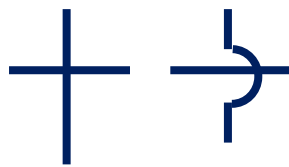
Resistor



Capacitor

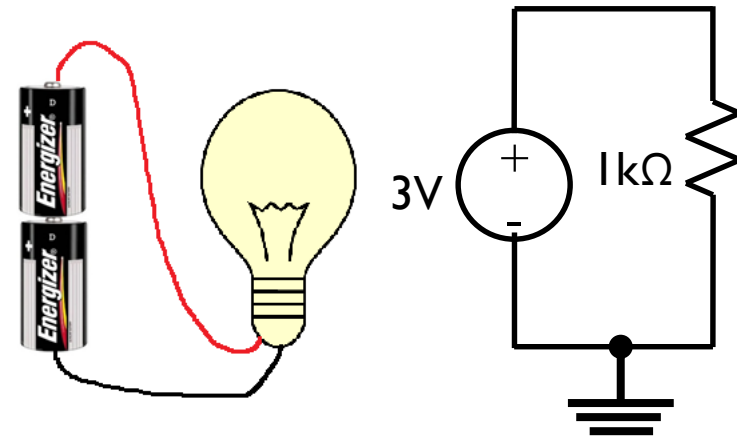


Connection

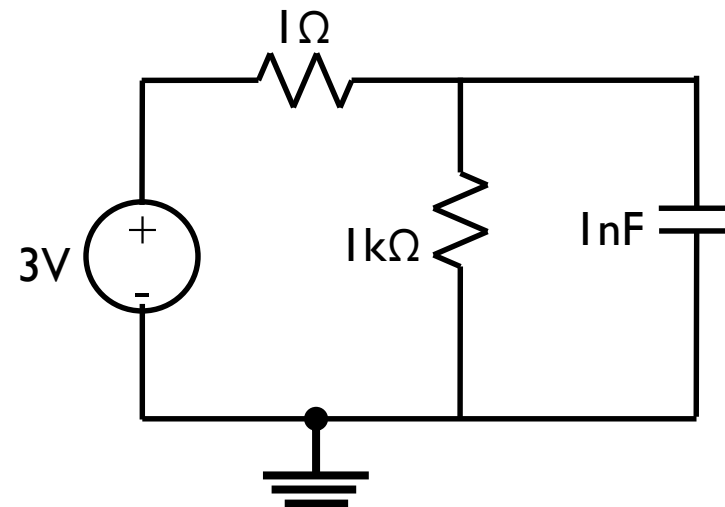


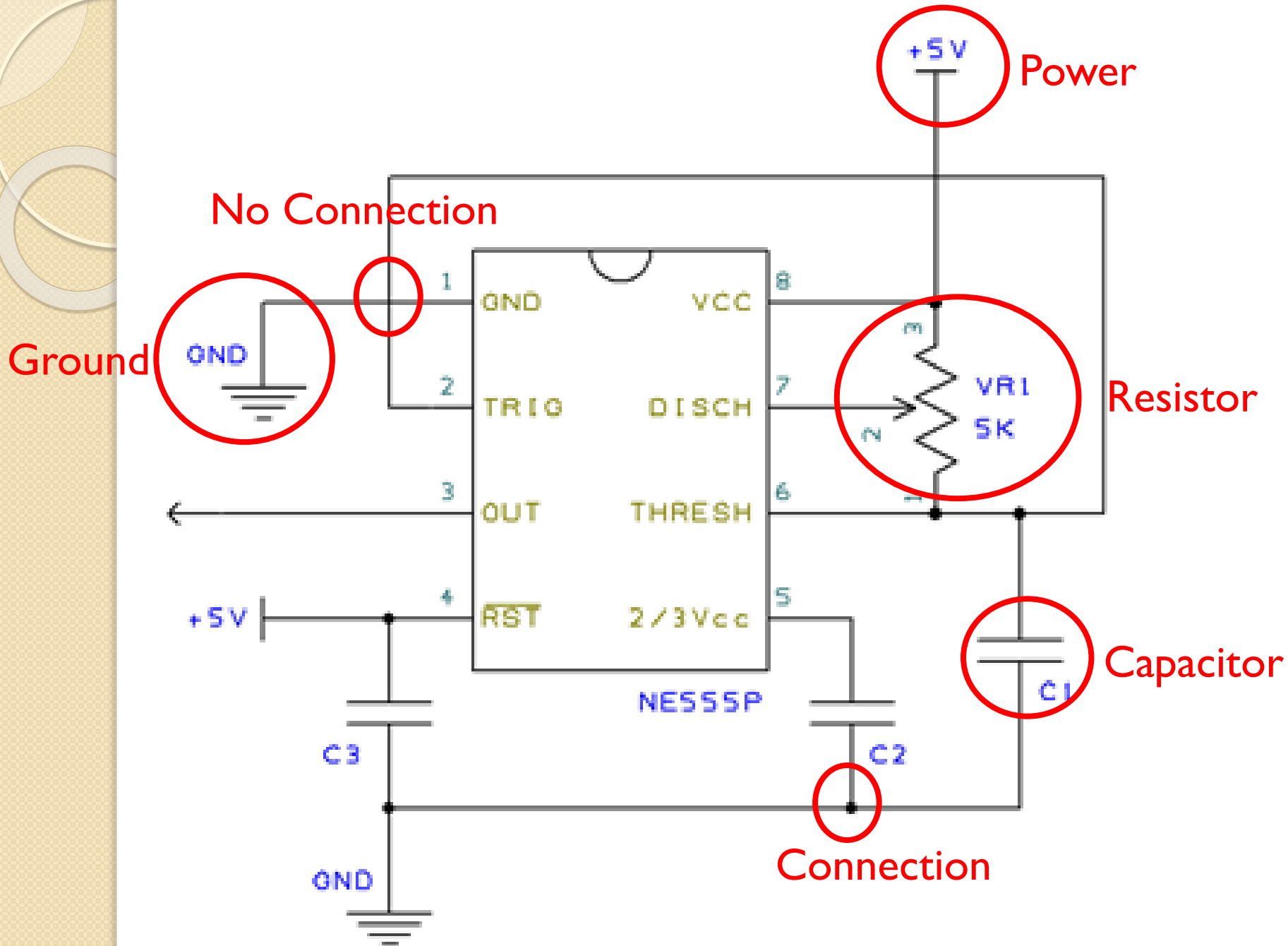
No
Connection

Example 1



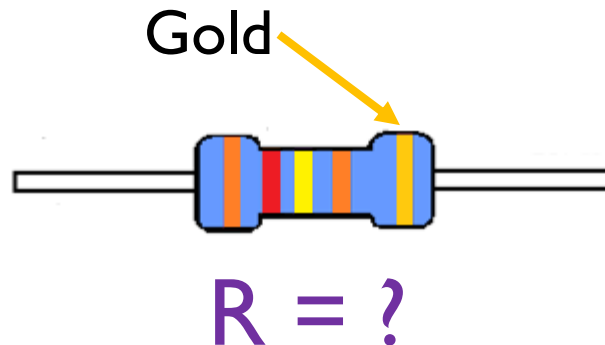
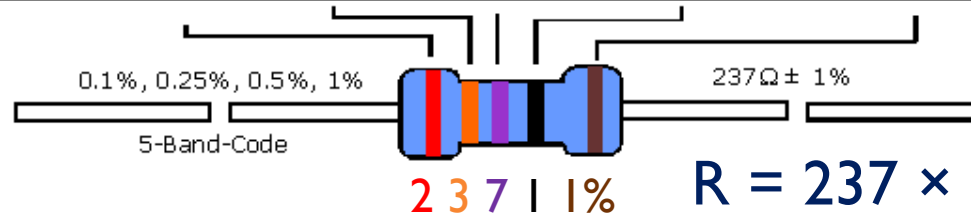
Example 2





Resistor 5-band Color Code

COLOR	1st BAND	2nd BAND	3rd BAND	MULTIPLIER	TOLERANCE
Black	0	0	0	1Ω	
Brown	1	1	1	10Ω	± 1% (F)
Red	2	2	2	100Ω	± 2% (G)
Orange	3	3	3	1KΩ	
Yellow	4	4	4	10KΩ	
Green	5	5	5	100KΩ	±0.5% (D)
Blue	6	6	6	1MΩ	±0.25% (C)
Violet	7	7	7	10MΩ	±0.10% (B)
Grey	8	8	8		±0.05%
White	9	9	9		
Gold				0.1	± 5% (J)
Silver				0.01	± 10% (K)

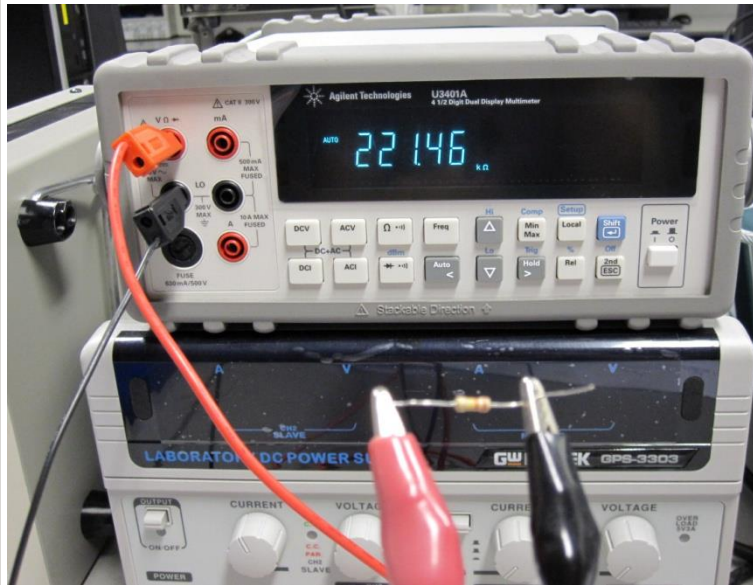


$$R = 324 \times 1k = 324k\Omega \pm 5\%$$

Digital Multimeter

- You may also use a digital multimeter to measure resistor values

This type is used in our Lab

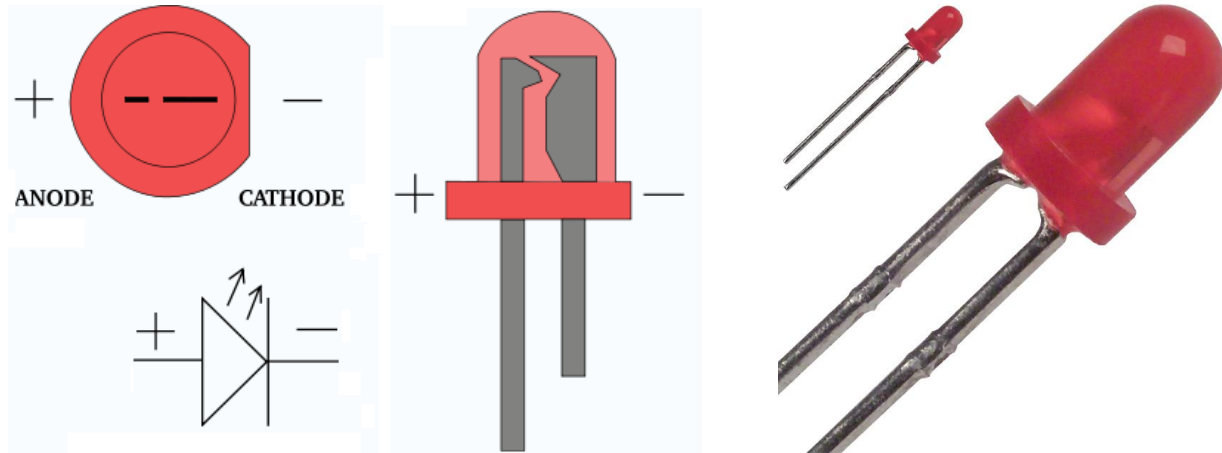


This is portable one

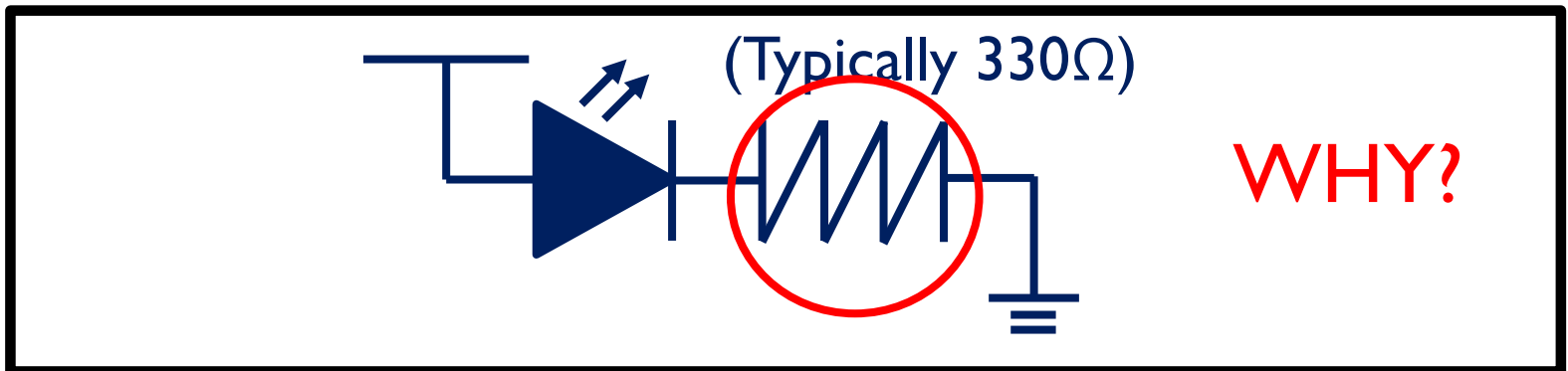


Light-Emitting Diode (LED)

- An LED is a semi-conductor light source



- How to make it work? Draw figure below:



Equipment in our Lab Room

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

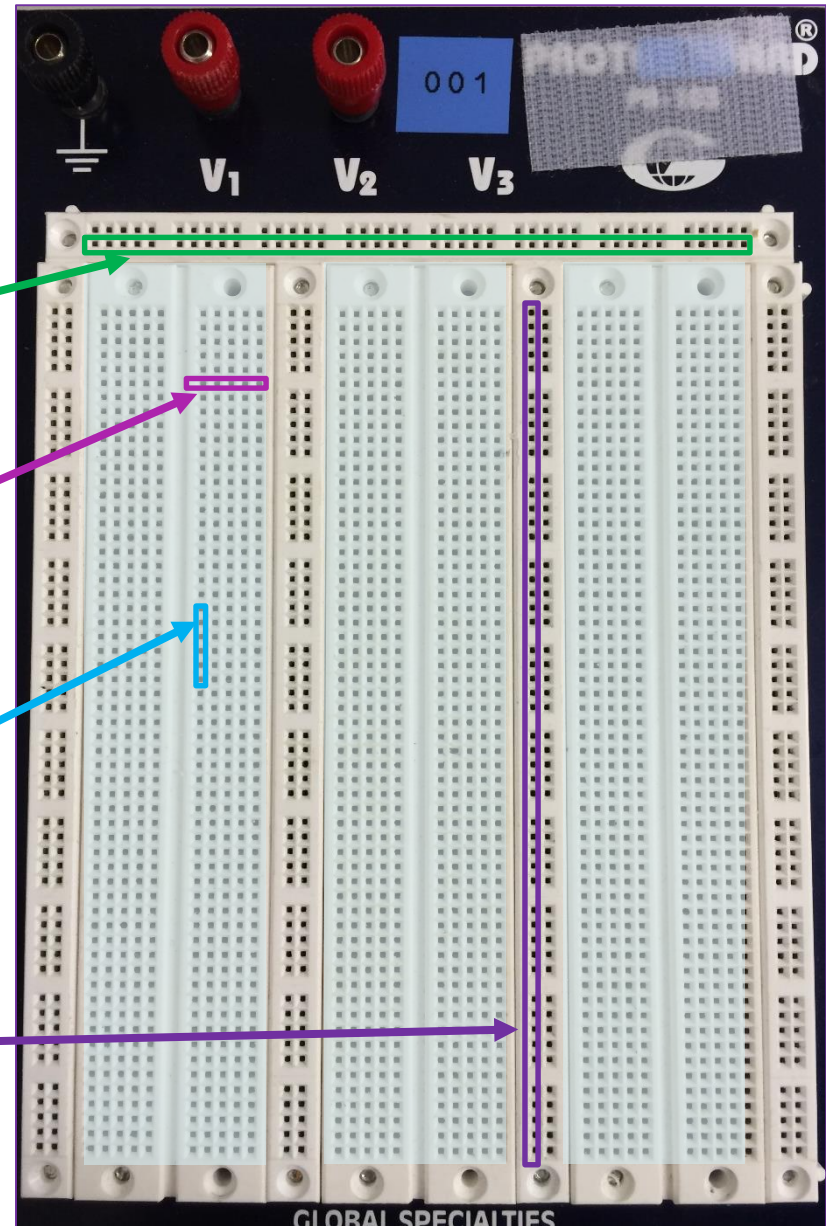
Breadboard

Row holes internally connected together

Row holes (5 holes) internally connected together

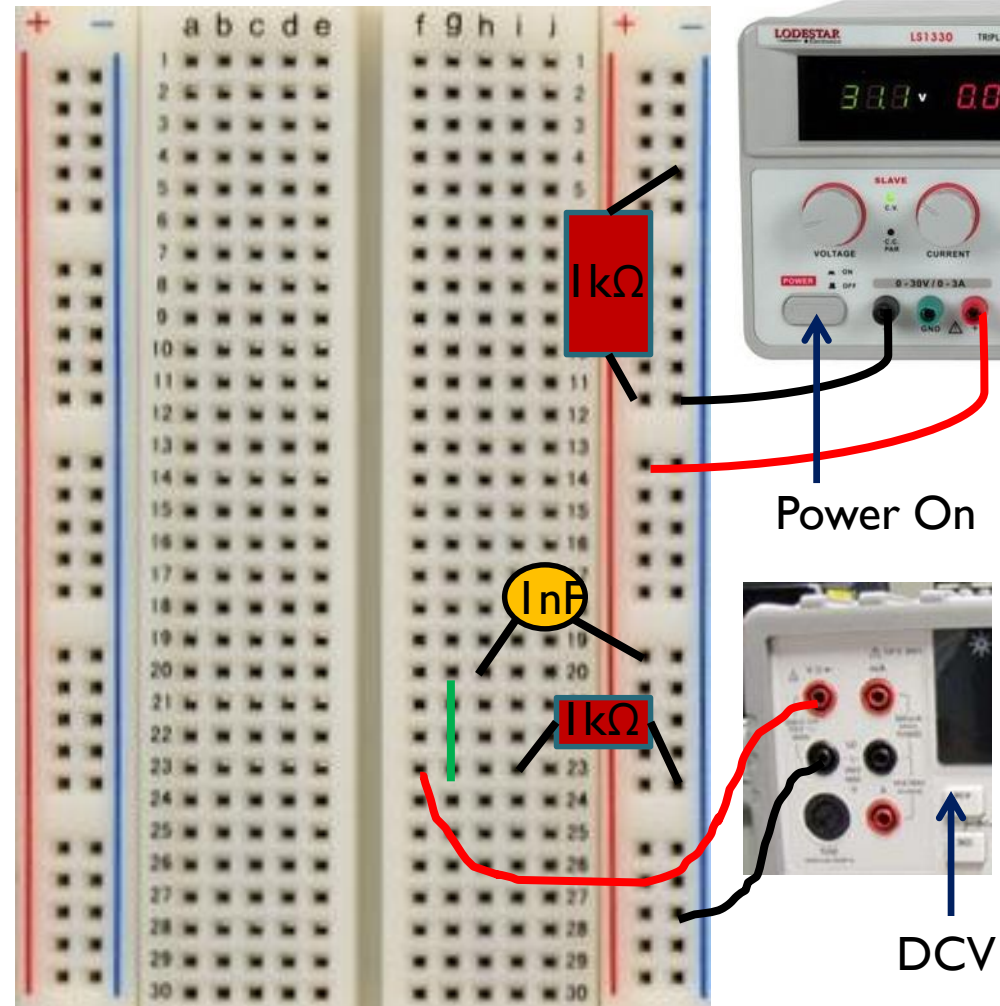
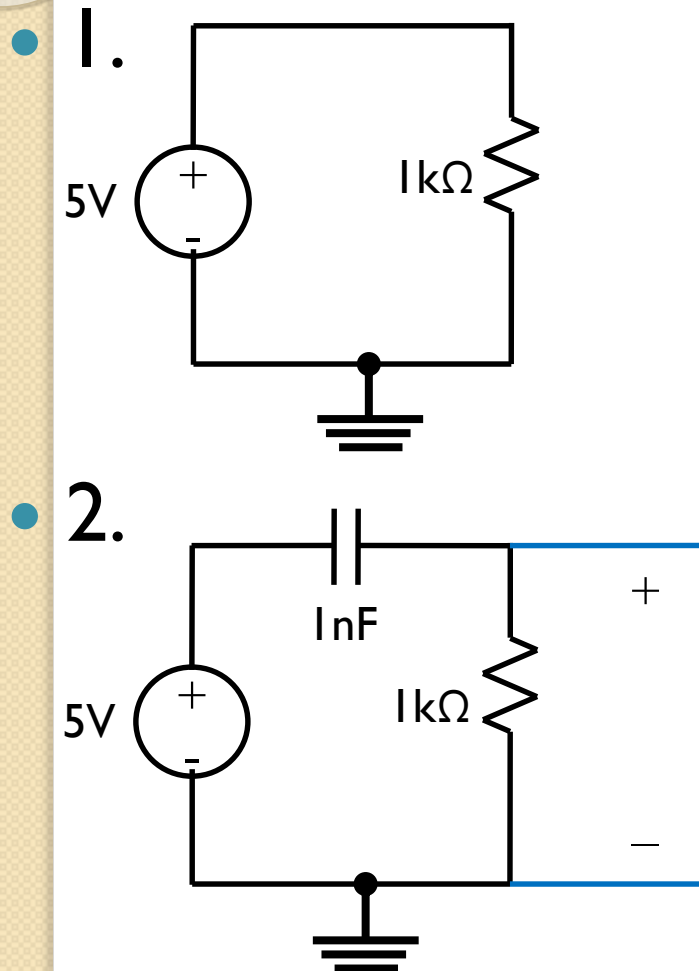
Column holes **NOT** connected

Column holes internally connected together



Breadboard Exercise

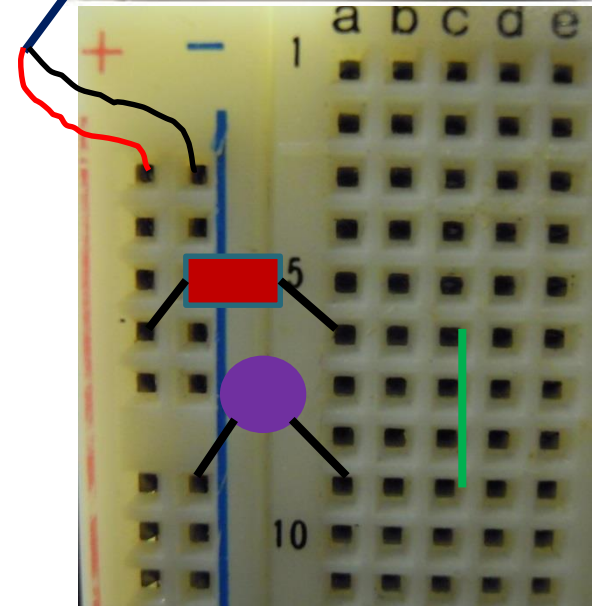
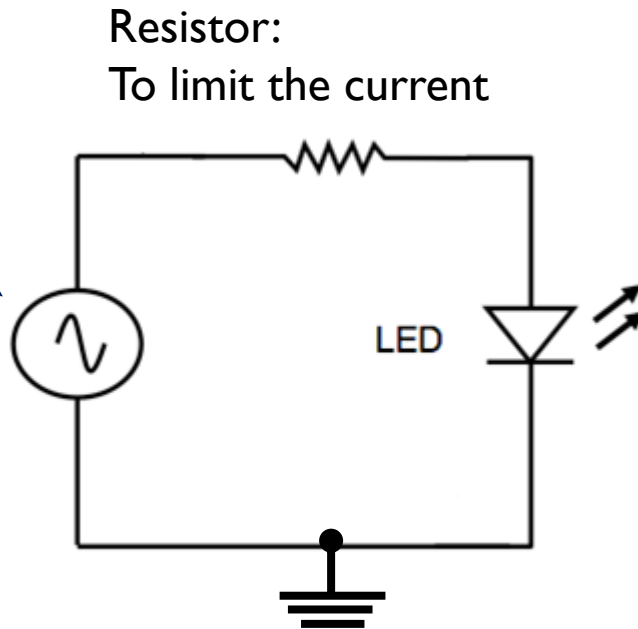
- How will you connect the circuits below?



Lab#0 I Experiment 5

3.

AC Voltage
Source



General Warnings:

DO NOT turn on the power supply until the circuit is complete.
DO NOT reverse the power and ground!