Overview of Arduino

Spoken Tutorial Project
https://spoken-tutorial.org
National Mission on Education through ICT
http://sakshat.ac.in

Nirmala Venkat
IIT Bombay

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Learning Objectives

We will learn about

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- **Various electronic components and their connections**

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- **Content available in various tutorials under this series**

System Requirements

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- **Ubuntu Linux 14.04 OS**

Pre-requisites

- **To follow the Basic level series, you should have knowledge of electronics and circuits**

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- **To follow the Basic level series, you should have knowledge of electronics and circuits**

- **For Intermediate level, you should have knowledge of Assembly and C Programming languages**

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- **Anyone who is interested in experimenting with electronic components**

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  - college students
  - any hardware professional

Who can use Arduino?

- **Anyone who is interested in experimenting with electronic components**
- **For example:**
  - **college students**
  - **any hardware professional**
  - **individuals who are interested in hands-on creativity**

Electronic Components and Connections

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- **Breadboard and its internal connections**

Electronic Components and Connections

- **Breadboard and its internal connections**
- **LED on the breadboard**

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- **Breadboard and its internal connections**
- **LED on the breadboard**
- **PushButton**

Electronic Components and Connections

- **Breadboard and its internal connections**
- **LED on the breadboard**
- **PushButton**
- **Seven Segment Display on the breadboard**

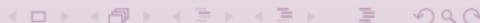# Electronic Components and Connections

Electronic Components and Connections

- **Common mistakes people make when using breadboard, LED, Pushbutton to make connections**

Introduction to Arduino

Introduction to Arduino

- **Arduino device**

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- **Arduino device**
- **Features of Arduino**

Introduction to Arduino

- **Arduino device**
- **Features of Arduino**
- **Components of Arduino board**

Introduction to Arduino

- Arduino device
- Features of Arduino
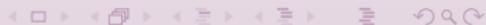- Components of Arduino board
- Microcontrollers

Introduction to Arduino

- **Arduino device**
- **Features of Arduino**
- **Components of Arduino board**
- **Microcontrollers**
- **Installation of Arduino IDE on Ubuntu Linux OS**

Arduino Components and IDE

Arduino Components and IDE

- **How to set up a physical connection between Arduino and a computer**

Arduino Components and IDE

- **How to set up a physical connection between Arduino and a computer**
- **Various pins that are available in the Arduino board**

Arduino Components and IDE

- **How to set up a physical connection between Arduino and a computer**
- **Various pins that are available in the Arduino board**
- **Arduino programming language**

First Arduino Program

- **Write a simple Arduino program**

First Arduino Program

- **Write a simple Arduino program**
- **Compile and upload the program**

First Arduino Program

- Write a simple Arduino program
- Compile and upload the program
- Write a program to blink an LED

Arduino with Tricolor LED and Pushbutton

Arduino with Tricolor LED and Pushbutton

- **Connect a tricolor LED to Arduino board**

Arduino with Tricolor LED and Pushbutton

- **Connect a tricolor LED to Arduino board**
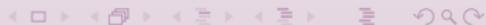- **Write a program to blink the tricolor LED**

Arduino with Tricolor LED and Pushbutton

- **Connect a tricolor LED to Arduino board**
- **Write a program to blink the tricolor LED**
- **Use Pushbutton to control the blinking**

- **Connect an LCD to Arduino board**

- **Connect an LCD to Arduino board**
- **Write a program to display a text message on the LCD**

Display counter using Arduino

Display counter using Arduino

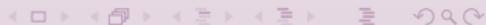- **Connect an LCD and a Pushbutton to Arduino board**

Display counter using Arduino

- **Connect an LCD and a Pushbutton to Arduino board**
- **Write a program to increase the count whenever the pushbutton is pressed**

Seven Segment Display

Seven Segment Display

- **Connect a Seven Segment Display to Arduino board**

Seven Segment Display

- **Connect a Seven Segment Display to Arduino board**
- **Write a program to display digits from 0 to 4 on the Seven Segment Display**

Summary

In this tutorial, we went through

- **Various electronic components and their connections**
- **Content available in various tutorials under this series**

About the Spoken Tutorial Project

- Watch the video available at http://spoken-tutorial.org /What_is_a_Spoken_Tutorial

- It summarises the Spoken Tutorial project

- If you do not have good bandwidth, you can download and watch it

Spoken Tutorial Workshops

The Spoken Tutorial Project Team

- **Conducts workshops using spoken tutorials**
- **Gives certificates to those who pass an online test**
- **For more details, please write to contact@spoken-tutorial.org**

Forum for specific questions

- Do you have questions in THIS Spoken Tutorial?
- Please visit http://forums.spoken-tutorial.org
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from our team will answer them

Forum for specific questions

- **The Spoken Tutorial forum is for specific questions on this tutorial**
- **Please do not post unrelated and general questions on them**
- **This will help reduce the clutter**
- **With less clutter, we can use these discussion as intructional material**

Acknowledgements

- **Spoken Tutorial Project is a part of the Talk to a Teacher project**
- **It is supported by the National Mission on Education through ICT, MHRD, Government of India**
- **More information on this Mission is available at http://spoken-tutorial.org /NMEICT-Intro**