

# Simulation and Compilation

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

Harsha Priyanka

IIT Bombay

10 January 2020



# Learning Objectives



# Learning Objectives

- **Simulate a ladder diagram**



# Learning Objectives

- **Simulate a ladder diagram**
- **Compile a ladder diagram in LDmicro**



# System Requirements



# System Requirements

- **Ubuntu Linux 18.04 operating system**



# System Requirements

- **Ubuntu Linux 18.04 operating system**
- **LDmicro**



# Pre-requisites



# Pre-requisites

- How to create a ladder diagram in LDmicro



# Pre-requisites

- How to create a ladder diagram in LDmicro
- If not, please refer to the relevant tutorials in this series from <https://spoken-tutorial.org>



# LDmicro - Simulator



# LDmicro - Simulator

- **LDmicro has an in-built simulator**



# LDmicro - Simulator

- **LDmicro has an in-built simulator**
- **It helps to verify ladder diagram before experimenting on the actual hardware**



# LDmicro - Simulator

- **LDmicro has an in-built simulator**
- **It helps to verify ladder diagram before experimenting on the actual hardware**
- **It reduces the hardware damage due to improper code**



# Code Files - sample.ld



# Code Files - sample.ld

- The file **sample.ld** used in this tutorial is available in the **Code Files** link of this tutorial page



# Code Files - sample.ld

- The file **sample.ld** used in this tutorial is available in the **Code Files** link of this tutorial page
- Please download and use them while practising



# Cycle time



# Cycle time

It is the time taken from

- reading the input states



# Cycle time

It is the time taken from

- reading the input states
- **executing the program**



# Cycle time

It is the time taken from

- reading the input states
- executing the program
- updating the outputs



# Pre-Compilation Checklist



# Pre-Compilation Checklist

- Selection of proper Microcontroller



# Pre-Compilation Checklist

- **Selection of proper Microcontroller**
- **Setting Microcontroller parameters**



# Pre-Compilation Checklist

- Selection of proper Microcontroller
- Setting Microcontroller parameters
- Assigning ports to I/O instructions



# Summary

- **Simulate a ladder diagram**
- **Compile a ladder diagram in LDmicro**



# Assignment

- 1 Change the cycle time to 3 secs and 10 secs
- 2 Observe the changes while simulating



# About the Spoken Tutorial Project

- Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](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](mailto:contact@spoken-tutorial.org)



# Forum questions

- Questions in THIS Spoken Tutorial?
- Visit <https://forums.spoken-tutorial.org/>
- Choose the minute and second where you have the question
- Explain your question briefly
- The Spoken Tutorial project will ensure an answer

You will have to register to ask questions



# Forum for specific questions

- Questions not related to the Spoken Tutorial?
- Do you have general / technical questions on the Software?
- Please visit the FOSSEE Forum  
<https://forums.fossee.in/>
- Choose the Software and post your question



# Acknowledgements

**Spoken Tutorial project is supported by**

- **National Mission on Education through ICT (NMEICT)**
- **Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching**

**Initiatives of MHRD, Government of India**



# THANK YOU!

For more Information, visit our website  
<http://fossee.in/>

