

# PWM Instruction

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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# Learning Objectives



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- **PWM (Pulse Width Modulation) instruction**



# System Requirements



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- **Ubuntu Linux 18.04 OS**



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- **OpenPLC Mainboard**
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- **USBasp programmer**
- **Heater module**



# Pre-requisites



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- **Heater module**



# Pre-requisites

- Heater module
- Working of MOV instruction



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- Heater module
- Working of MOV instruction

If not, please refer to the relevant tutorials in this series from

<https://spoken-tutorial.org>



# Prerequisites-Hardware setup



# PWM instruction



# PWM instruction

- Can set the duty cycle of the PWM peripheral built into certain microcontrollers



# PWM instruction

- Can set the duty cycle of the PWM peripheral built into certain microcontrollers
- Duty cycle must be a number between 0 and 100



# PWM instruction



# PWM instruction

- PWM frequency specified might not be exactly achievable



# PWM instruction

- PWM frequency specified might not be exactly achievable
- It depends on microcontroller's clock frequency



# Summary

- **PWM (Pulse Width Modulation) instruction**



# Assignment

**Control the brightness of the red LED of Traffic Light module**

## **Hints:**

- 1 Replace fan of Heater module with red LED of Traffic light module**
- 2 Connect PD7 pin to +5V pin of the red LED of the Traffic Light module**



# About the Spoken Tutorial Project

- Watch the video available at [https://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](https://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



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India**



# THANK YOU!

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

