

Implementing OR & XOR logic gates

Spoken Tutorial Project

<https://spoken-tutorial.org>

National Mission on Education through ICT

<http://sakshat.ac.in>

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20 July 2020



Learning Objectives

How to implement logic gates



Learning Objectives

How to implement logic gates

- **OR**



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- XOR



System Requirements



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- **Ubuntu Linux 18.04 OS**



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- **LDmicro**



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- **Switchboard module**



Pre-requisites



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- Normal Contact and Coil



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- Negated Contact and Coil



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

<https://spoken-tutorial.org>



Prerequisites - Hardware setup



OR gate



OR gate

OR gate outputs 0 only when all of its inputs are 0



XOR gate



XOR gate

Boolean equation:

$$A'B + AB' = ((\text{NOT } A) \text{ AND } B) \text{ OR } (A \text{ AND } (\text{NOT } B))$$



XOR gate

Boolean equation:

$$A'B + AB' = ((\text{NOT } A) \text{ AND } B) \text{ OR } (A \text{ AND } (\text{NOT } B))$$

- It is a combination of NOT, AND and OR gates



Summary

We learnt to implement logic gates

- **OR**
- **XOR**



Assignment

Implement 2-input XNOR logic gates

Truth Table:

| A | B | XNOR(A,B) |
|---|---|-----------|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |



About the Spoken Tutorial Project

- Watch the video available at 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



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
<https://fossee.in/>

