Touch Switch Using IC CD 4011

A Project Submitted In The Partial Fulfilment Of

Bachelor Of Engineering Present By

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CERTIFICATE

This is to certify that the project report, submitted along with Touch switch Using IC CD 4011 has been carried out by **Mr. Darshil Mavadiya Enrollment No: 22BEC508** of Nirma University has Satisfactorily completed the term work in the subject of **Digital logic Design** prescribed by Nirma University.

Date: **Sign of Faculty**

HEAD OF DEPARTMENT

Certificate

This is to certify that the project report, submitted along with Touch switch Using IC CD 4011 has been carried out by **Miss: Krishna Pandya Enrollment No: 22BEC511** of Nirma University has Satisfactorily completed the term work in the subject of **Digital logic Design** prescribed by Nirma University.

Date: **Sign of Faculty**

HEAD OF DEPARTMENT

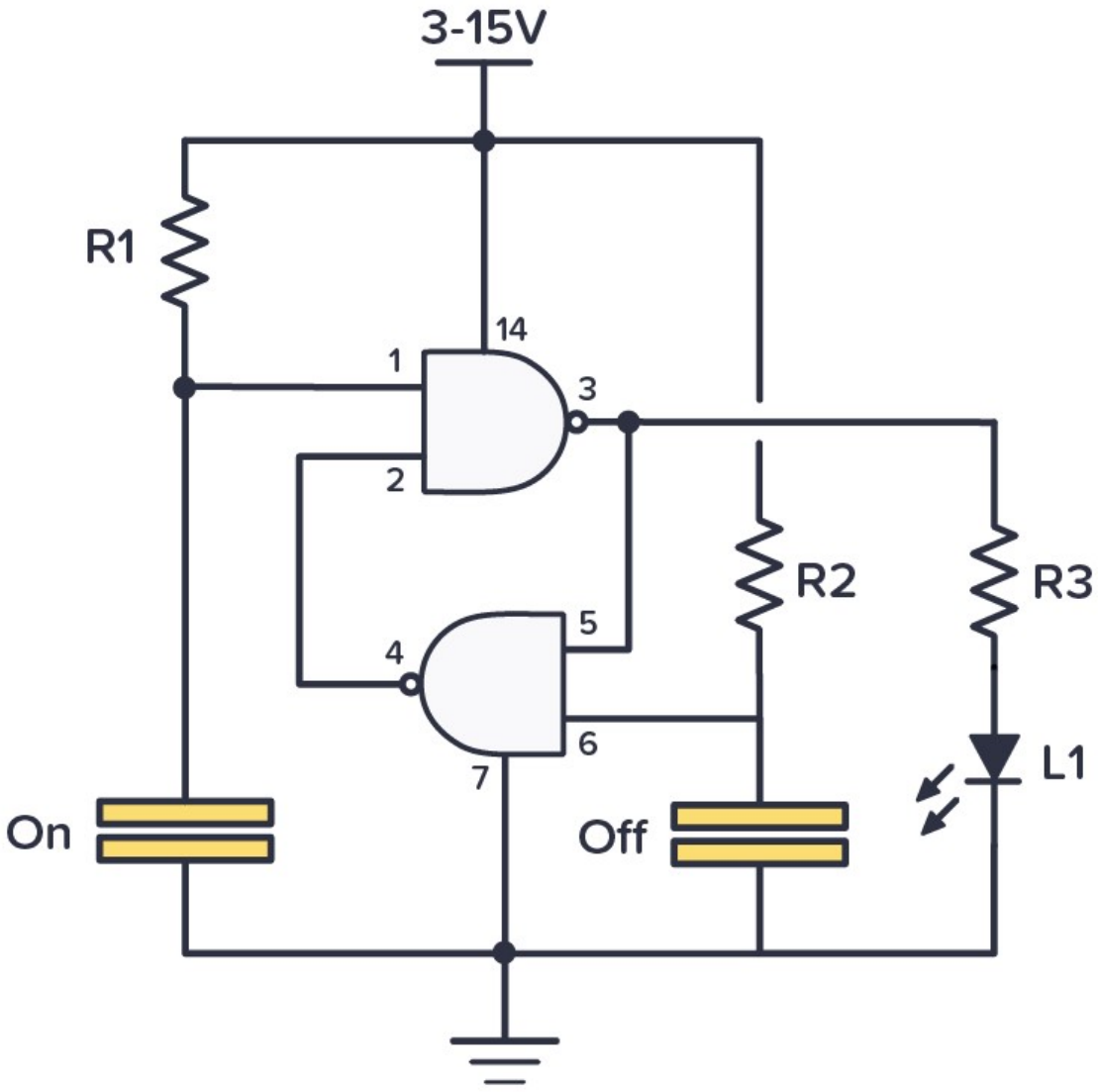
TITLE: TOUCH SWITCH USING IC CD 4011

Content:

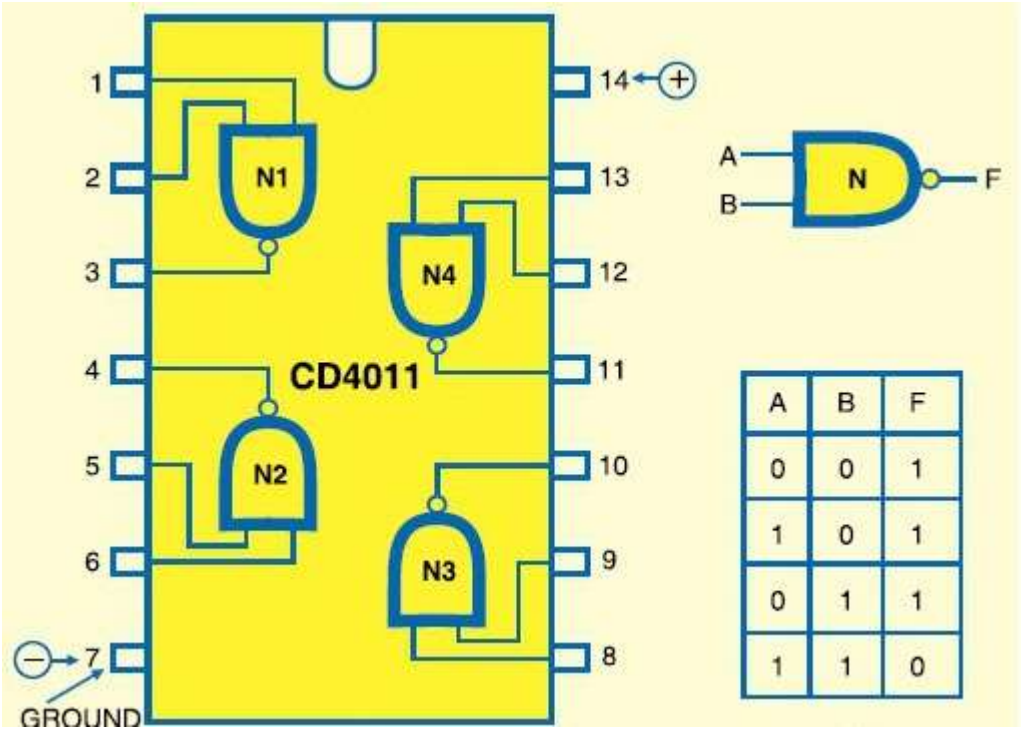
1)Component:

- IC CD 4011
- RESISTORS 10 M
- RESISTOR 100 Ohm
- LED
- Jumper Wire

2)Circuit Diagram:

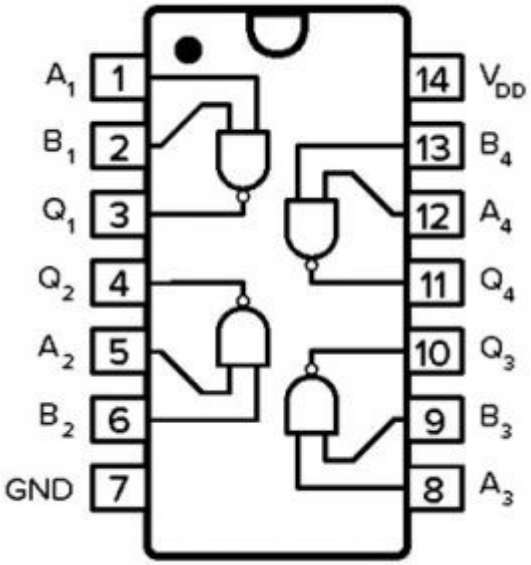


3)CD4011:



- Pin1 (INPUT A): This pin is the input A of the 1st NAND gate
- Pin2 (INPUT B): This pin is the input B of the 1st NAND gate
- Pin3 (OUTPUT J): This is an o/p J pin of the 1st NAND gate
- Pin4 (OUTPUT K): This is an o/p K pin of the second NAND gate
- Pin5 (INPUT C): This is the Input C pin of the second NAND gate
- Pin6 (INPUT D): This is the Input D pin of the second NAND gate

- Pin7 (GND): This is GND pin

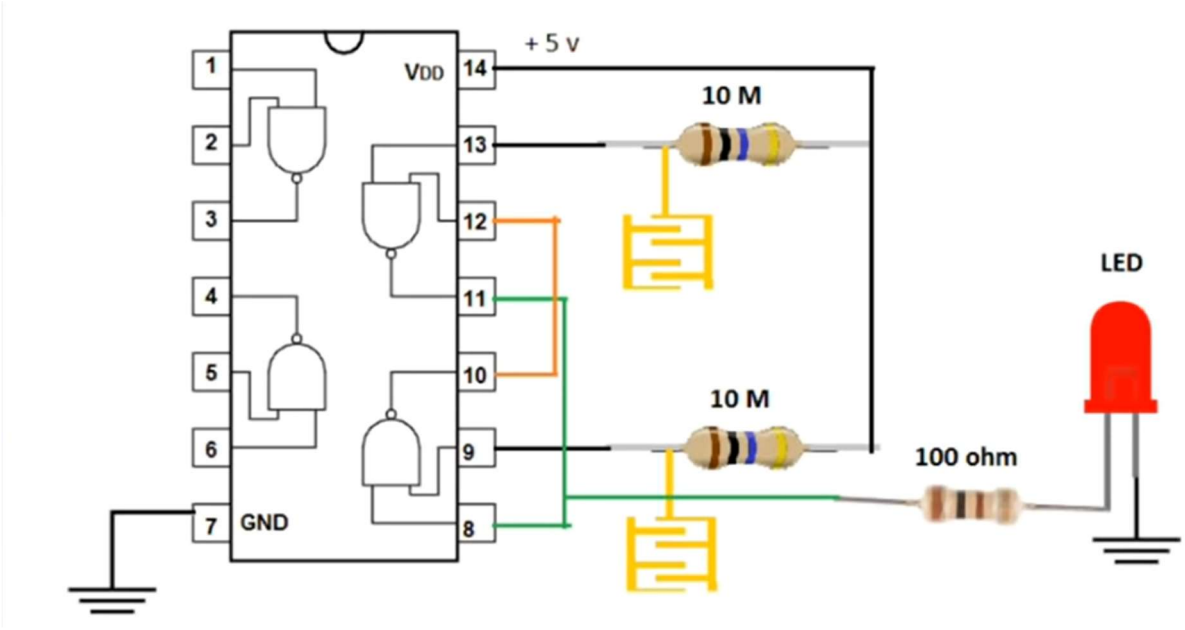


- Pin8 (INPUT E): This is an Input E pin of the third NAND gate
- Pin9 (INPUT F): This is an Input F pin of the third NAND gate
- Pin10 (OUTPUT L): This pin is an Output L pin of the third NAND gate
- Pin11 (OUTPUT M): This is an Output pin M of the fourth NAND gate
- Pin12 (INPUT G): This is an Input pin G of the fourth NAND gate
- Pin13 (INPUT H): This is an Input H pin of the fourth NAND gate
- Pin14 (VCC/VDD): This pin connects with a 5V power supply

4)Working of Touch switch using 4011

- CD4011 IC is a quadrable two-input NAND gate IC that includes four NAND gates within a single chip. The logic used by this gate is CMOS where designing of all the inputs and outputs can be done based on the voltage level of CMOS logic.
- This IC is used to perform NAND logic otherwise you can utilize a combination of 4 logic gates to achieve AND/OR operation also. CD4011 NAND gate ICs offer the system designer through direct execution of the NAND gate function & supplement the existing CMOS, gate family.
- A simple touch switch circuit using CD4011 is given here. The IC CD4011 is wires as a flip flop here. The 9, 13 pins of the IC works as the set and reset contacts respectively.CMOS ICs like 4011 require requires a very low current for controlling its gates. Since the pins 9 and 13 are connected to the positive via resistors R1 and R2, the logic gates of the ICs will be in high state.
- When we touch through the points A, B the gates of the IC will be closed and the output becomes low. This switches ON the transistor Q1 and the relay gets activated. When we touch through the points C, D the gates again becomes high and switches the transistor OFF. This makes the relay OFF. Thus by touching through the contact points A,B and C,D the appliance connected through the relay can be switched On and OFF.

- **5)Block Diagram:**



6)Conclusion: