

# **DESIGNING OF (32\*1) MUX USING (8\*1) MUX**

## ***A MINIOR PROJECT REPORT***

*Submitted in Partial Fulfilment of the Requirements for the Degree of*

**Electronics and Communication Engineering**

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**VIGNAN'S**

Foundation for Science, Technology & Research

(Deemed to be University)

-Estd. u/s 3 of UGC Act 1956

(ACCREDITED BY **NAAC** WITH 'A' GRADE)

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**November 2019**

## **CERTIFICATE**

This is to certify that the minor project entitled “**DESIGNING OF (32\*1) MUX USING (8\*1) MUX**” that is being submitted by **RIYAN, MALLESH** and **KAVYA** bearing **Regd. No. 181FA05161, 181FA05223 and 181FA05077** in partial fulfilment for the award of **II** year I semester B.Tech degree in Electronics and Communication Engineering to Vignan’s Foundation for Science Technology and Research, is a record of work carried out by him/her under the guidance of **Mr.AZEEM ABDUL** of ECE Department.

Signature of the faculty guide

**Mr.AZEEM ABDUL**

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Signature of Head of the Department

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**Assoc. Professor**

## **ABSTRACT**

In this project we are going to design a  $(32 \times 1)$  MUX using  $(8 \times 1)$  MUX, in order to construct a  $(32 \times 1)$  MUX using  $(8 \times 1)$  MUX we required four  $(8 \times 1)$  MUX in addition to that we also required a  $(4 \times 1)$  MUX which is used to produce the output by taking the four outputs of  $(8 \times 1)$  MUX as inputs. Depending up on the selection line the desired input is obtained as the output.

## TABLE OF CONTENTS

<b>S.no</b>	<b>CONTENTS</b>	<b>Pg. no</b>
<b>1</b>	<b>INTRODUCTION</b> <b>2.1)MUX</b> <b>2.2)CLASSIFICATION OF MUX</b> <b>2.3)ENABLE</b>	<b>05</b>
<b>2</b>	<b>COMPONENTS</b>	<b>06</b>
<b>3</b>	<b>PIN DIAGRAMS</b>	<b>07</b>
<b>4</b>	<b>BLOCK DIAGRAM</b>	<b>08</b>
<b>5</b>	<b>TRUTH TABLE</b>	<b>09</b>
<b>6</b>	<b>HARDWARE IMPLEMENTATION</b>	<b>10</b>
<b>7</b>	<b>APPLICATIONS</b>	<b>11</b>
<b>8</b>	<b>RESULT &amp; CONCLUSION</b>	<b>12</b>
<b>9</b>	<b>PREFERENCES</b>	<b>13</b>

# 1. INTRODUCTION

## MULTIPLEXER:-

- Multiplexer means many into one. A multiplexer is a circuit used to select and route any one of the several input signals to a signal output.
- A multiplexer of  $(2^n)$  inputs has  $n$  select lines, which are used to select one input line to send to the output.
- A multiplexer is also called a “data selector”.
- The multiplexer used for digital applications, also called digital multiplexer
- Multiplexer is a circuit with many input but only one output by applying control signals, we can steer any input to the output.

## TYPES OF MULTIPLEXER:-

Few types of multiplexer are 2-to-1, 4-to-1, 8-to-1, 16-to-1, 32-to-1 multiplexer.

- i) 2-to-1 MUX: - It is defined as circuit which consists of two inputs and one output with one selective line
- ii) 4-to-1 MUX: - It is defined as circuit which consists of four inputs and one output with two selective lines.
- iii) 8-to-1 MUX:- It is defined as circuit which consists of eight inputs and one output with three selective line.
- iv) 16-to-1 MUX:- It is defined as circuit which consists of sixteen inputs and one output with four selective lines.
- v) 32-to-1 MUX:- It is defined as circuit which consists of 32 inputs and one output with five selective line.

## ENABLE:-

An input signal which decides whether the input has to operate or not .

Enable pin is of two types

- 1) Active High Enable:  $E=1$  -----> output is one.
- 2) Active Low Enable:  $E=0$  -----> output is one

## **2. COMPONENTS**

- IC 74151
- IC 74153
- Bread Board
- Connecting wires
- LED
- 9V DC battery source

### 3. PIN DIAGRAMS

#### IC 74151:

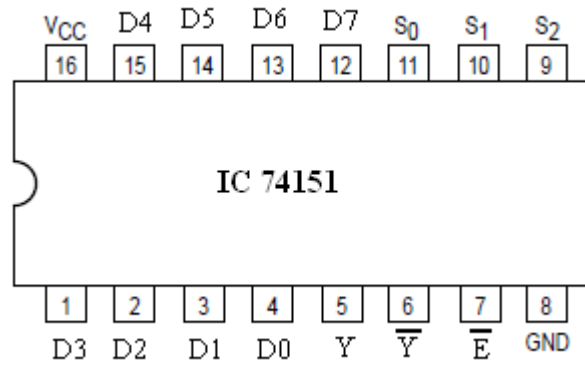


Fig 3.1: Pin Diagram of IC 74151

#### IC 74153:

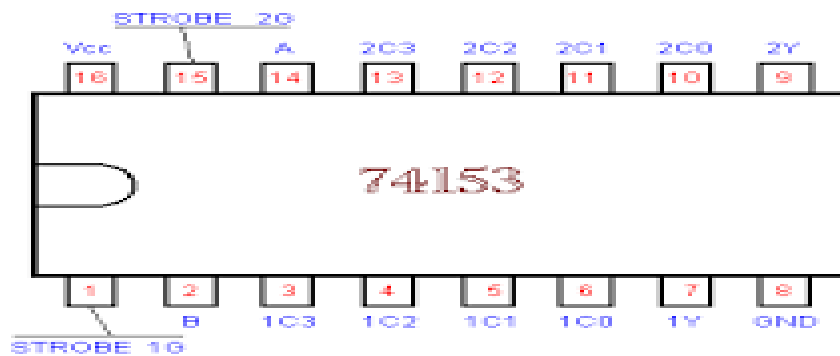
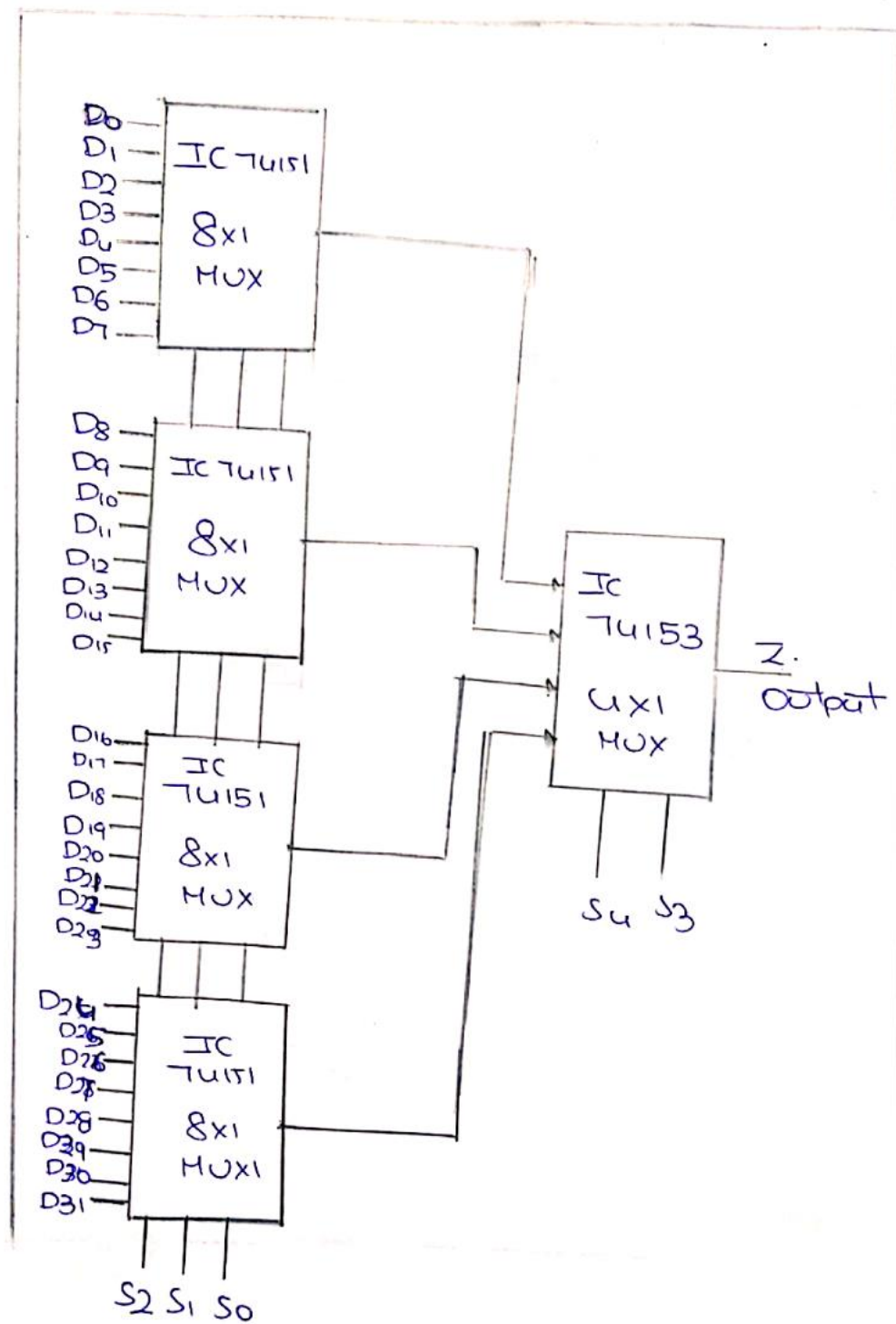


Fig. 32. - Brochage du circuit intégré 74153.

Fig 3.2: Pin Diagram of IC 74153

#### 4. BLOCK DIAGRAM

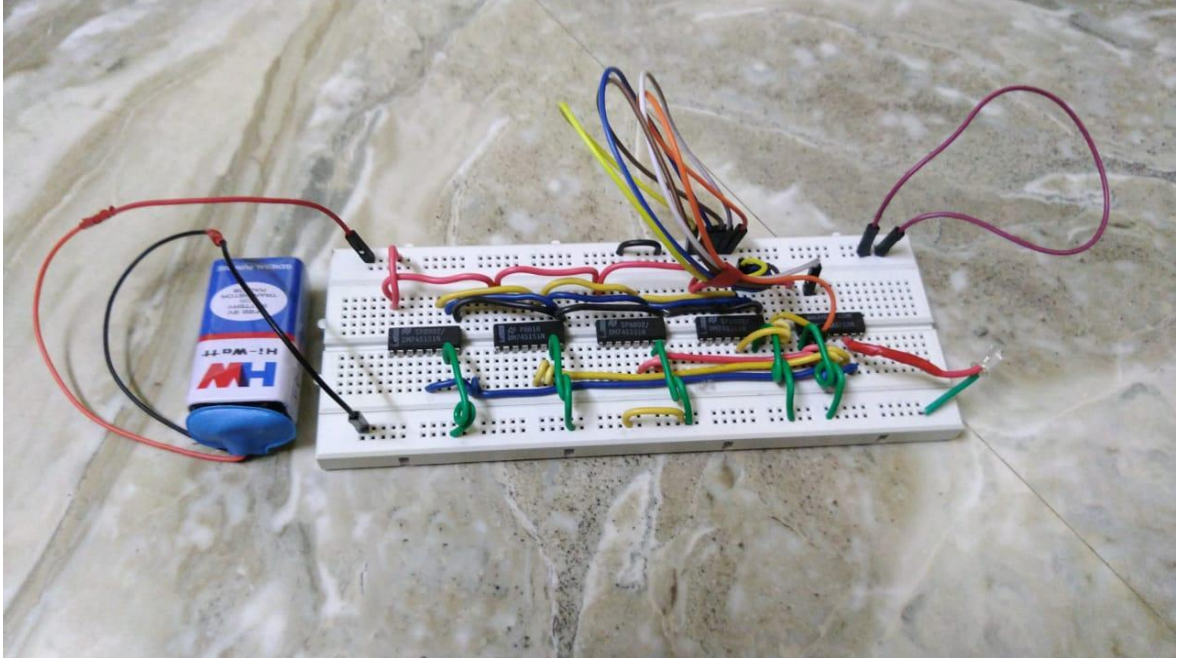




## 5. TRUTH TABLE

S4	S3	S2	S1	S0	Y
0	0	0	0	0	D1
0	0	0	0	1	D2
0	0	0	1	0	D3
0	0	0	1	1	D4
0	0	1	0	0	D5
0	0	1	0	1	D6
0	0	1	1	0	D7
0	0	1	1	1	D8
0	1	0	0	0	D9
0	1	0	0	1	D10
0	1	0	1	0	D11
0	1	0	1	1	D12
0	1	1	0	0	D13
0	1	1	0	1	D14
0	1	1	1	0	D15
0	1	1	1	1	D16
1	0	0	0	0	D17
1	0	0	0	1	D18
1	0	0	1	0	D19
1	0	0	1	1	D20
1	0	1	0	0	D21
1	0	1	0	1	D22
1	0	1	1	0	D23
1	0	1	1	1	D24
1	1	0	0	0	D25
1	1	0	0	1	D26
1	1	0	1	0	D27
1	1	0	1	1	D28
1	1	1	0	0	D29
1	1	1	0	1	D30
1	1	1	0	1	D31
1	1	1	1	1	D32

## 6. HARDWARE IMPLEMENTATION



## 7. APPLICATIONS

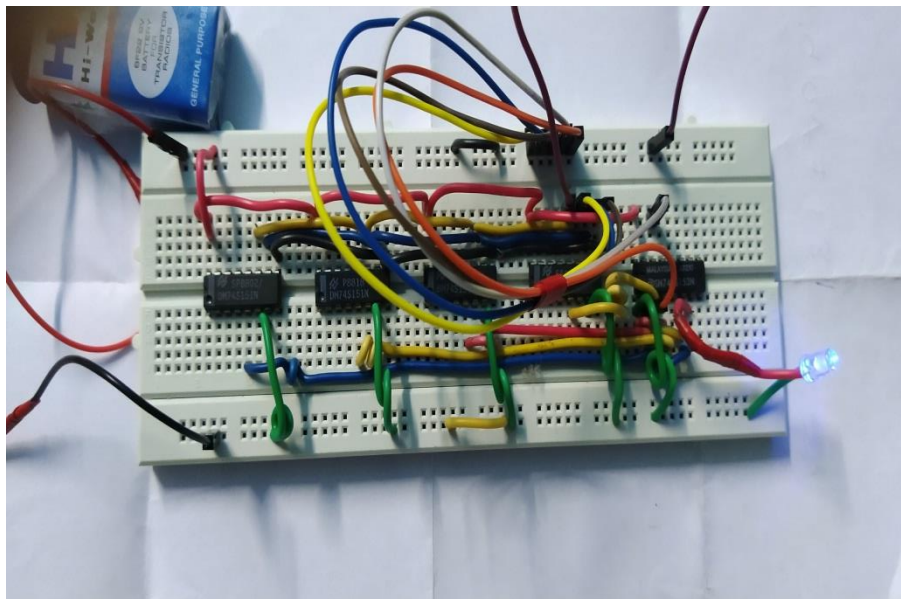
Multiplexers are used in various fields where multiple data need to be transmitted using a single line.

Following are some of the applications of multiplexers.

\***Communication System**-Communication system is a set of system that enable communication like transmission system relay and tributary system can be increased considerably using multiplexers.

\***Computer memory**-Multiplexers are used to implement huge amount of memory into the computer, at the same time reduces number of copper lines required to connect the memory to other parts of the computer circuit.

## 8. RESULT AND CONCLUSION



When we supply the battery,

Depending upon the selection lines, the desired input will be activated.

When the input is given logic high (1) the LED glows with the output logic high.

When the input is given logic low (0) the LED does not glow, giving the output logic low.

## REFERENCES

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