Seven Segment Decoder

Let the 7 segments be A,B,C,D,E,F,G

**FOR A:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** | 1 |  | 1 | 1 |
| **A’B** |  | 1 | 1 | 1 |
| **AB** |  |  |  |  |
| **AB’** | 1 | 1 |  |  |

A=B’C’D’+A’BD+AB’C’+A’C

**FOR B:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** | 1 | 1 | 1 | 1 |
| **A’B** | 1 |  | 1 |  |
| **AB** |  |  |  |  |
| **AB’** | 1 | 1 |  |  |

B=B’C’+A’B’+AC’D’+A’CD

**FOR C:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** | 1 | 1 | 1 |  |
| **A’B** | 1 | 1 | 1 | 1 |
| **AB** |  |  |  |  |
| **AB’** | 1 | 1 |  |  |

C=B’C’+AB+ACD

**FOR D:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** | 1 |  | 1 | 1 |
| **A’B** | 1 |  |  | 1 |
| **AB** |  |  |  |  |
| **AB’** | 1 | 1 |  |  |

D=B’C’D’+AB’C’+A’B’C+A’CD’+A’BC’D

**FOR E:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** | 1 |  |  | 1 |
| **A’B** | 1 |  |  | 1 |
| **AB** |  |  |  |  |
| **AB’** | 1 |  |  |  |

E=B’C’D’+A’CD’

**FOR F:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** | 1 |  |  |  |
| **A’B** | 1 | 1 |  | 1 |
| **AB** |  |  |  |  |
| **AB’** | 1 | 1 |  |  |

F=A’C’D’+AB’C’+A’BD’+A’BC’

**FOR G:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **C’D’** | **C’D** | **CD** | **CD’** |
| **A’B’** |  |  | 1 | 1 |
| **A’B** | 1 | 1 |  | 1 |
| **AB** |  |  |  |  |
| **AB’** | 1 | 1 |  |  |

B=A’BC’+AB’C’+A’B’C+A’BD’

## LOGIC WORKS IMPLEMENTATION:

