CS2310: Digital Logic Design Lab
Experiment 5

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Problem Statement

There are 16 different airplanes that can land in an airport. Upon landing a plane can park in either Hanger A or in Hanger B. Different airports categorize these planes into the following categories:-
a. Planes that can park in Hanger A
b. Planes that can park in Hanger B
Design an optimal circuit that can be installed on the plane to inform the pilot which Hanger to park the plane in. This circuit must work for 2 such airports. Use a 7 segment display to display the input Plane No and a 2:1 Mux to select an airport. Only NAND gates must be used in the circuit.

1) Kolkata Airport
Hanger A – 6,7,8,9,14,15,0,1
Hanger B – 2,3,4,5,10,11,12,13
Chennai Airport
Hanger A – 0,1,2,3,9,11,8,10
Hanger B – 4,5,6,7,12,13,14,15

2) Hyderabad Airport
Hanger A – 4,5,10,11,12,13,2,3
Hanger B – 0,1,6,7,8,9,14,15
Delhi Airport
Hanger A – 1,5,7,9,13,15,3,11
Hanger B – 0,2,4,6,8,10,12,14