We have made car parking controller which contains 4 floors and 10 slots on each floor. All of which are indicated by L.E.Ds.

* First of all we have use two Hexadecimal keyboards one to select floor number and other to select slot number.
* Then there Output is moved towards a 2x4 decoder to dual 3x8 decoders to select the slot number (We’ve only used first 10 outputs from 0 – 9 rest are don’t care )



* After which we give each slot an LED to indicate if its full or empty If LED is on it is full and if LED is off it indicates slot is empty and it’s output is connected to ground (gnd).



* We have used JK flip flop to store the car in/out on each floor as the flip flops can store 1 bit data and we have also used a D flip flop so that we can check the functionality of our circuit.
* Each JK flip flop output is connected to a LED in the Floor map to indicate if the slot is full or empty. So that we can see the car in/out on that specific slot.



* If all the Slots are filled we have used an AND gate with all the slots input to determine if the Floor is full and indicate it bull using a RED LED. If one of the slot is empty the RED LED will not turn On.

  
This same circuit is repeated for each floor with input variable used from (a, b, c, d) for each floor from 0 – 4.

* This process is repeated for each floor and in total circuit
* 40 JK flip flops (10 for each floor )



* 4 (2x4)mux and 4 dual (3x8) mux one for each floor



* 4 (10x1) AND gates to indicate if each floor is full.



