REPORT

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**Section: A**

**Components:**

* SPDT pushbutton
* 4 bit register
* AND gate
* NOT gate
* OR gate
* NAND gate
* XOR gate
* 4-1 Mux
* 4bit Full-Adder
* 3X8 decoder
* LED display
* Binary Switch
* Binary Probe

**Inputs:**

* Floor Selection
* Operation Selection( Car in & Car out)
* Clear

**Outputs:**

* Cars On Each Floor
* Empty
* Full
* Gate Lock
* Space Available

**Working:**

When Car in is selected “0001” is added to the current values of the register through Adder-Subtractor circuit. Whereas, when Car out is selected ‘0001’ is subtracted from the current values of the register through Adder-Subtractor circuit. Logic 1 is provided to default (upper signal) of the floor selection (pushbuttons). The lower value(lower signal) of pushbutton is provided by a specially designed function implemented by using Multiplexer which gives logic 0 every time except the case when user wants to retrieve a car from floor and there is no car present there, also when user wants to insert a car and floor(register ) is completely filled. The output of these pushbutton is provided to clock of each register. So, whenever user presses push button under suitable circumstance (mentioned above) clock of chosen register changes from 1 to 0 and then 0 to 1 as pushbutton moves down and upward respectively. As register is positive edge trigger, so when clock changes from 0 to 1 the values at input of register are stored in it and values are changed.