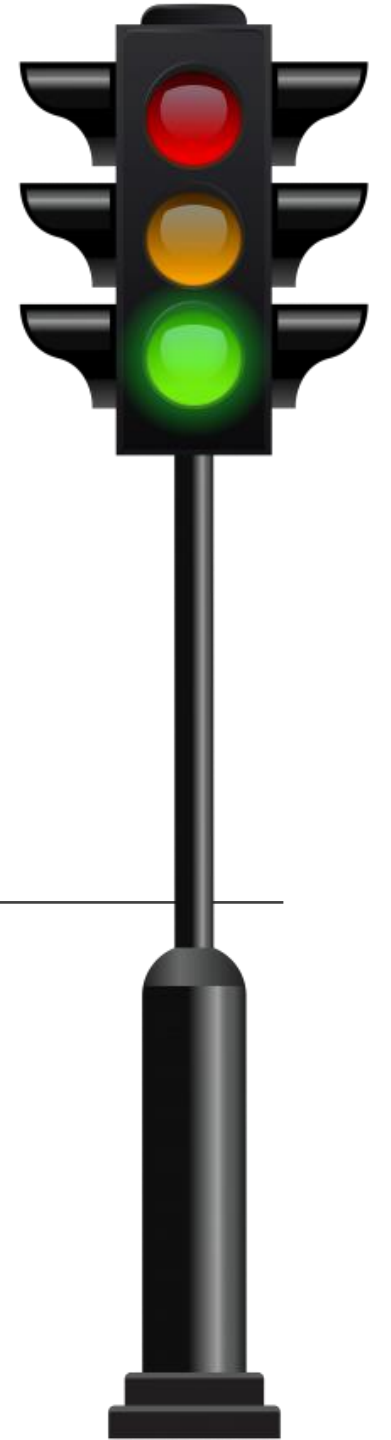


# Traffic Light System

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# Content

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# System description

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Traffic light system is a software system that runs the normal flow of traffic lights with an addition of pedestrian button that enables pedestrians to have the priority of crossing the road

# System design – States table

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- Normal flow of traffic lights
- Notice that the transition requires 5 seconds

Index	Previous	Current	Next(5s)	PedCurrent
0	X	Green	Yellow	Red
1	Green	Yellow	Red	Yellow
2	X	Red	Yellow	Green
3	Red	Yellow	Green	Yellow

# System design – States table

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- Notice that the transition occurs instantly
- Yellow' refers only to the state where next cars led is Red

Index	Current	Next
0	Red	Red
1	Green	Yellow'
2	Yellow	Yellow'

# Software implementation

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After analyzing the two tables I came to a software implementation as following:

- 1- Create a system that runs the normal flow of traffic light with the required delay
- 2- Make the “When button pressed” as special case where it changes the flow of the states instantly

# Advantages

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By having this design, we acquired these advantages:

- 1- Code is simple and easy to understand
- 2- States could be modified or added very easily
- 3- The whole system runs on interrupts that does not occur very often, so the CPU is not busy