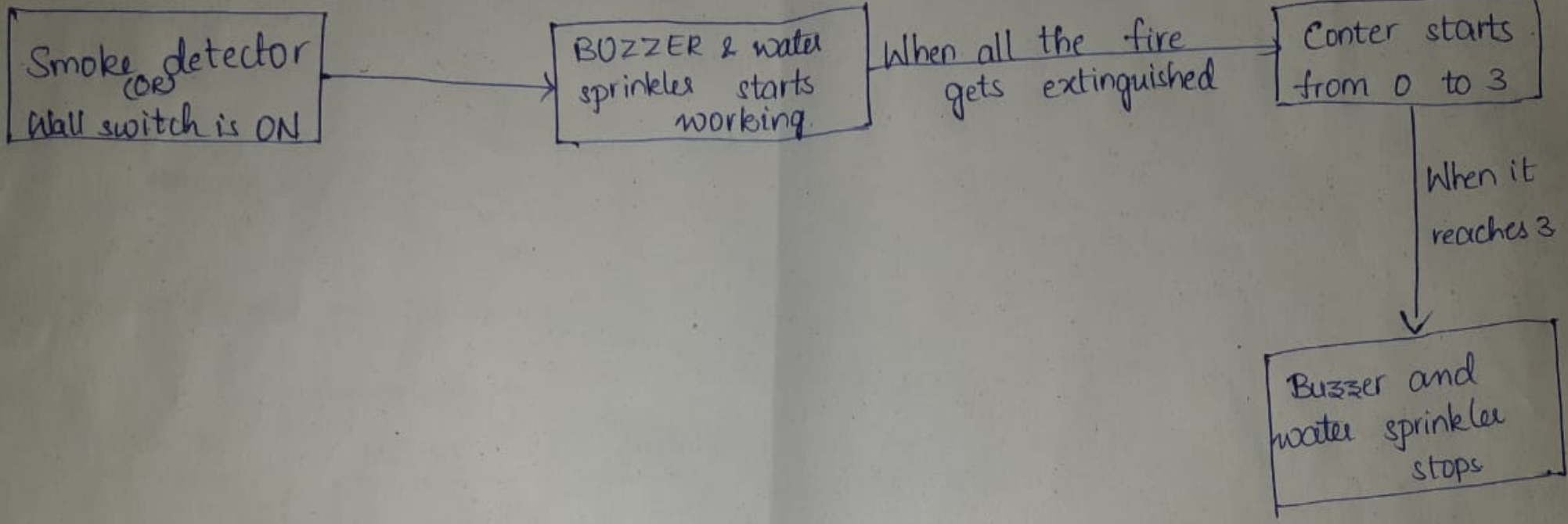
# FIRE ALARM AND WATER SPRINKLER SYSTEM

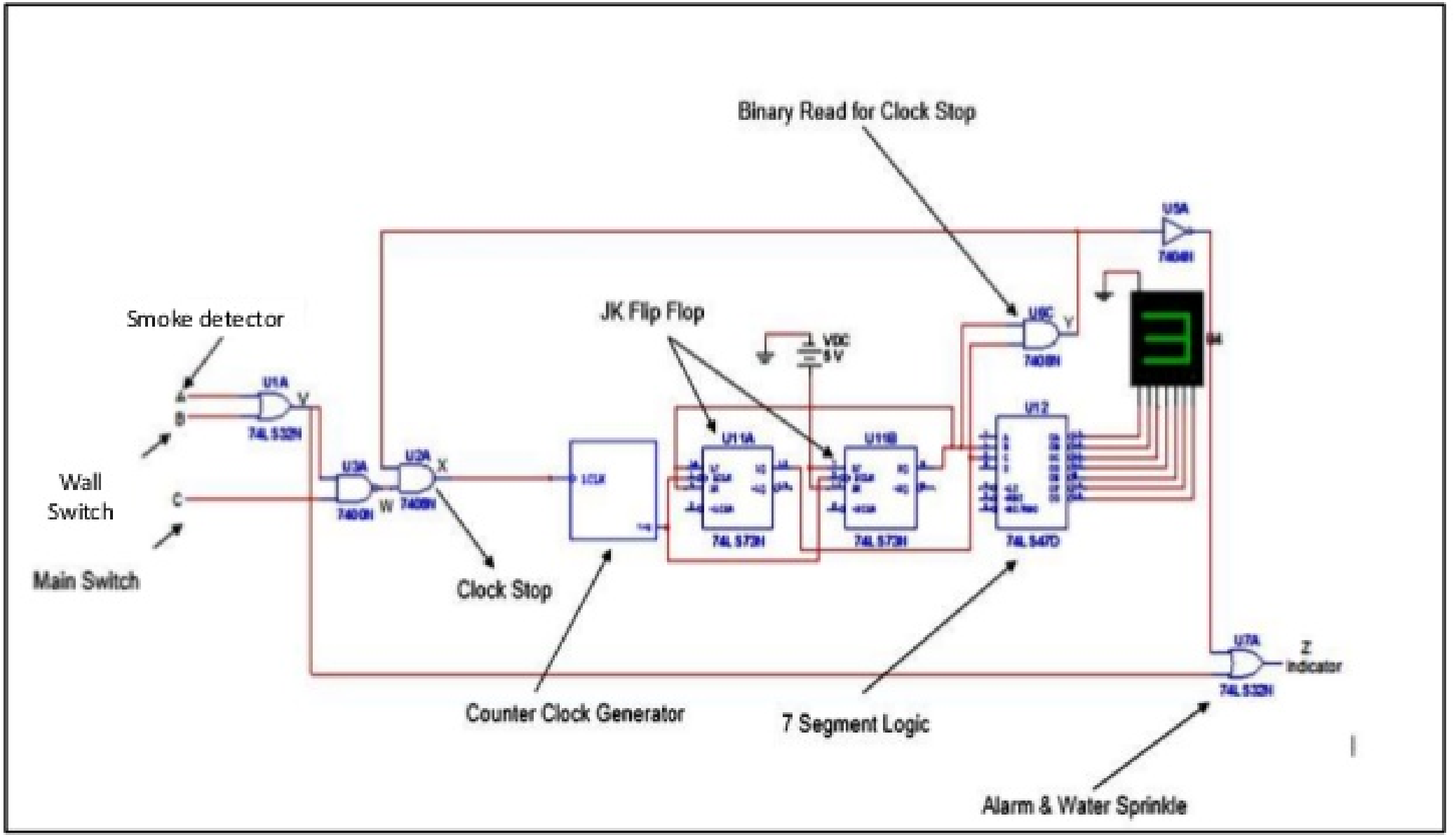
# INTRODUCTION

A Fire alarm system is a working result of number of systems functioning together . It detects and warns people through visual audio appliances , when smoke is presented.

- The first step toward halting a fire is to properly identify the incident, raise the occupant alarm, and then notify emergency response professionals.
- This is often the function of the fire detection and alarm system.
- First they provide a means to identify a developing fire through either manual or automatic methods and second,
- Summon organized assistances to initiate or assistin fire control activities.
- Most basic type is to be only initiated manually .But this expand to initiate a signal.


Smoke detector
(OR)
Wall switch is ON
BUZZER & water sprinkler starts working
When all the fire gets extinguished
Conter starts from 0 to 3
When it reaches 3
Buzzer and water sprinkler stops

# System Design



# Fire Detection & Alarm Procedure

- Fire detection systems are designed to discover fires  when time will still be available for the safe evacuation of occupants.
- To be useful, detectors must be coupled with alarms.
- Alarm systems provide notice to at least the building occupants and usually transmit a signal to a staffed monitoring station .
- The more quickly you want to be notified of the fire, the more costly the system you must install.
- The slowest system to detect a fire is a heat detector, which is also the least expensive.
- Based upon your fire safety objectives.You need to choose the detectors.

- Smoke detector, which has become widely used in extremely sensitive applications, is the air aspirating system.
- The detector constantly draws an air sample into the detection chamber, via the pipe network.
- The sample is analyzed for the existence of smoke, and then returned to atmosphere.
- If smoke becomes present in the sample, it is detected and an alarm signal is transmitted to the main fire alarm control panel.
- And then alarm starts and stops when fire is not detected.

# Applications

- This can be used in all the places where frequent fire accidents occur.
- This doesn’t need human interference as it is all done automatically.
- By using this we can reduce the massive loss caused due to fire accidents.
- This system doesn’t cause water wastage also.

# Results

- Detecting smoke and turning on buzzer.
- When smoke is detected or the wall switch is ON the buzzer rings .
- Water sprinckler starts .
- Turning OFF the buzzer.
- The buzzer stops ringing after 3 counts from 0.
- And then water sprinckler also stops functioning.

# TAKE AWAY

- Making of 2-bit binary counter using j-k flip flops which is asynchronus.
- Using 555-timer as a clock which takes 2 seconds per cycle.
- Working of electric motor.

# Conclusions

- This system is affordable and also can be easily  fixed anywhere.
- It is also easy to operate.
- Problem in the system can also be easily detected and corrected if any.