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# DSD PROJECT

## (1) The Idea

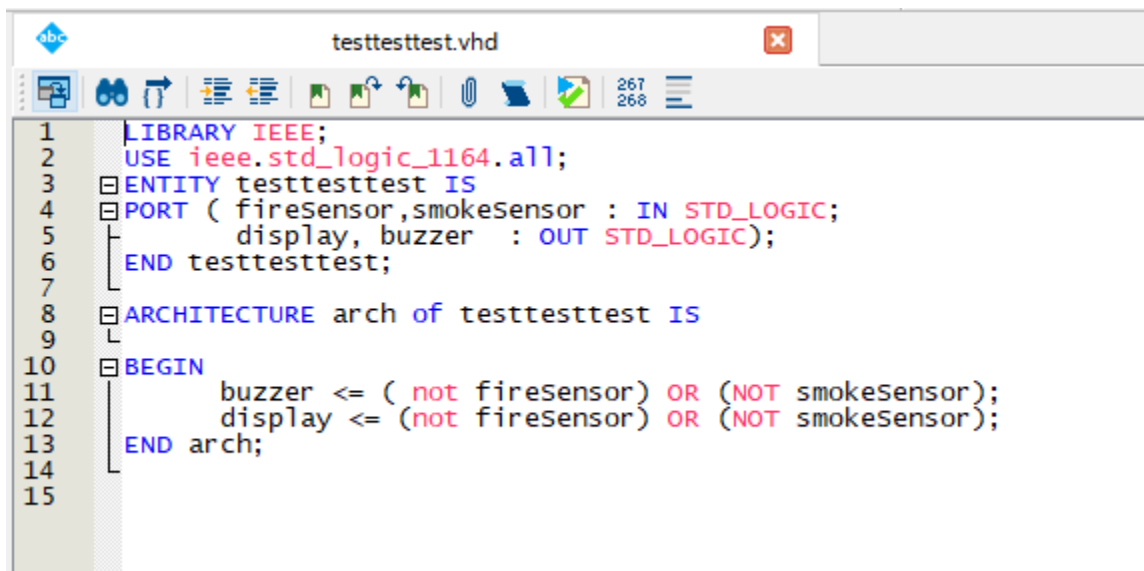
Our system is Fire or gas detection system which works by Triggering the fire or smoke sensor so that the buzzer give high sound and lamp lights up when smoke or natural gas or fire is detected.

## (2) The set of sensors and parts used in our system:-

2 inputs: - 1 flame sensor, 1 smoke sensor.

2 outputs: - 1 led and 1 Buzzer.

## (3)(a) The implementation VHDL CODE:

A screenshot of a VHDL code editor window titled 'testtesttest.vhd'. The editor has a toolbar with various icons for file operations and editing. The code is as follows:

```
1  LIBRARY IEEE;
2  USE ieee.std_logic_1164.all;
3  ENTITY testtesttest IS
4  PORT ( fireSensor, smokeSensor : IN STD_LOGIC;
5         display, buzzer : OUT STD_LOGIC);
6  END testtesttest;
7
8  ARCHITECTURE arch of testtesttest IS
9  BEGIN
10     buzzer <= ( not fireSensor) OR (NOT smokeSensor);
11     display <= (not fireSensor) OR (NOT smokeSensor);
12 END arch;
```

### (3)(b) The implementation of Pin Planner:-

Pin Planner - C:\intelFPGA\_lite\testtest - testtest

File Edit View Processing Tools Window Help

Report Report not available

Groups Report

Tasks

- Early Pin Planner
  - Early Pin Plan
  - Run I/O Assig
  - Export Pin As
  - Pin Finder...
- Highlight Pins
  - I/O Banks
  - VREF Groups
  - Edges
- Clock Pins
  - Clock

Top View - Wire Bond  
MAX 10 - 10M50DAF484C7G

Pin Legend

Symbol Pin Type

- User I/O
- User assign...
- Filter assign...
- Unbonded ...
- Reserved pin
- Other confi...
- DEV\_OE
- DEV\_CLR
- DIFF\_n
- DIFF\_p
- DQ
- DQS
- DQSb
- CLK\_n
- CLK\_p
- Other PLL
- Other dual ...
- TDI
- TCK
- TMS
- TDO
- VREF
- VCCP/VCCR...
- VCCA
- VCCINT
- VCCIO

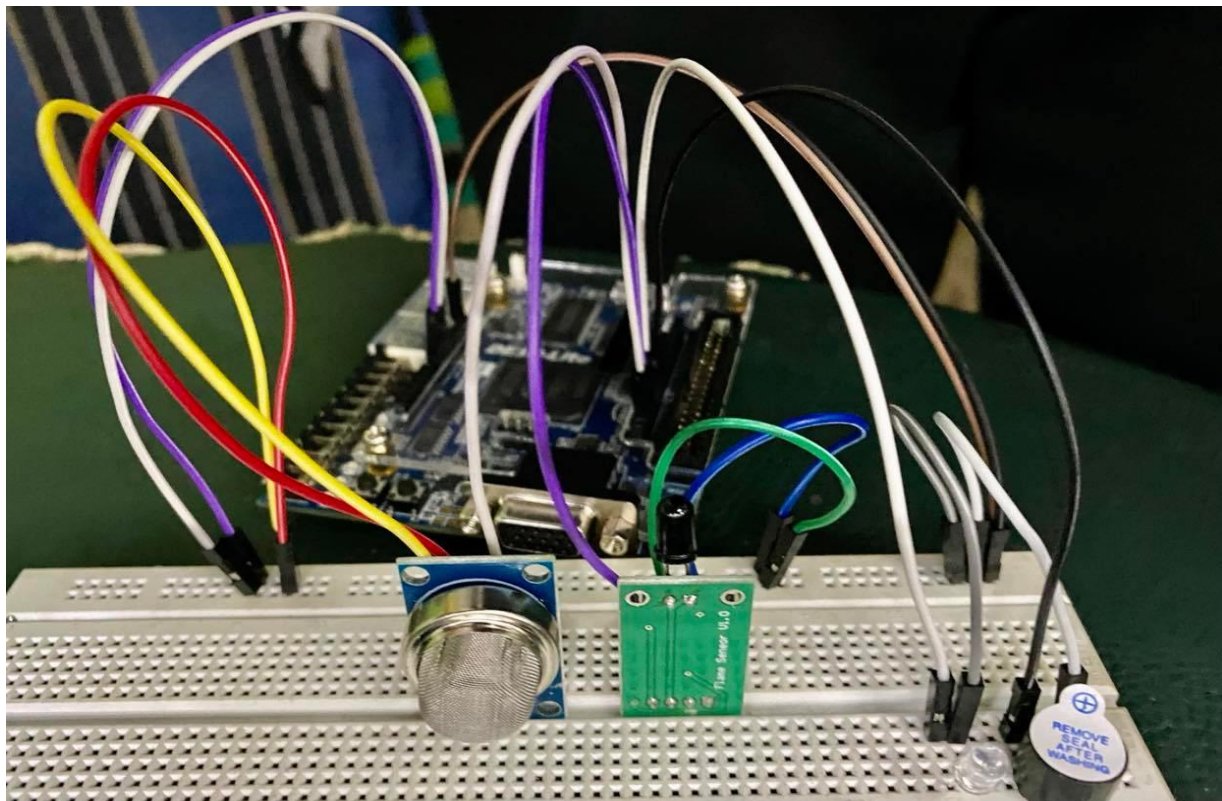
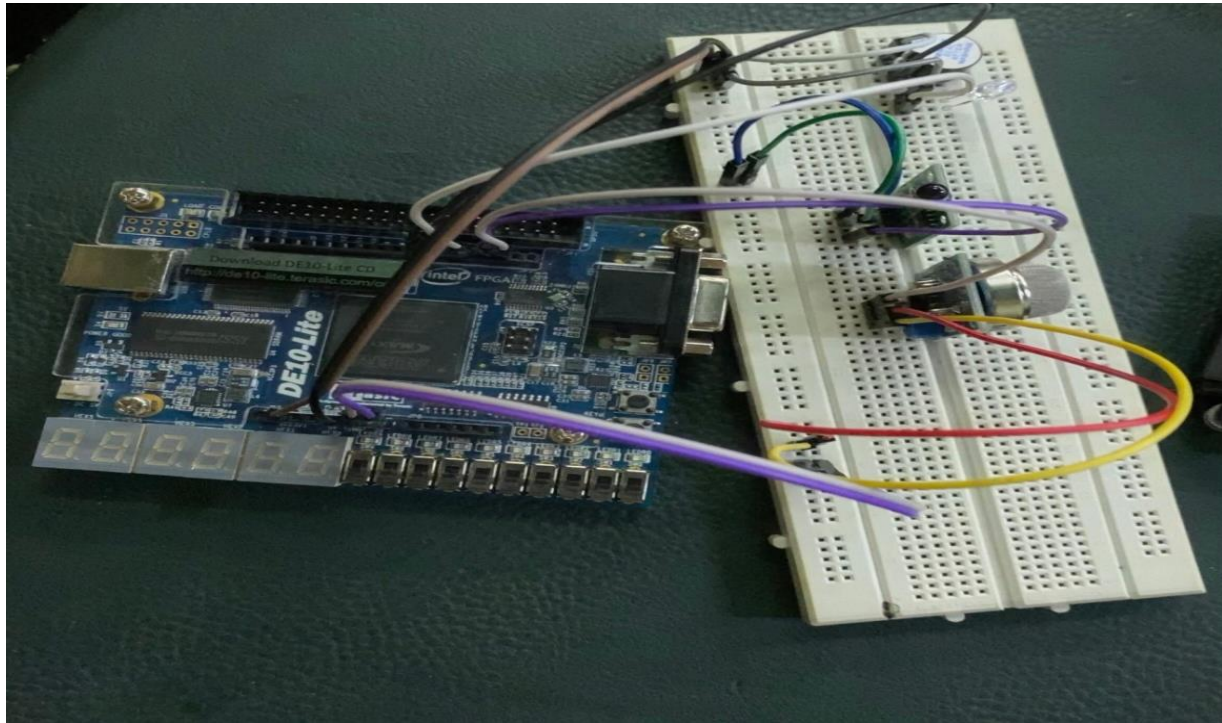
Filter: Pins: all

Node Name	Direction	Location	I/O Bank	VREF Group	Iter Location	I/O Standard	Reserved	Current Strength	Slew Rate	Differential Pair	IO Preservation
buzzer	Output	PIN_AA12	4	B4_NO	PIN_AA12	2.5 V		12mA...ault	2 (default)		
display	Output	PIN_AB9	3	B3_NO	PIN_AB9	2.5 V		12mA...ault	2 (default)		
fireSensor	Input	PIN_AB8	3	B3_NO	PIN_AB8	2.5 V		12mA...ault			
smokeSensor	Input	PIN_AB7	3	B3_NO	PIN_AB7	2.5 V		12mA...ault			
<<new node>>											

0% 00:00:00

7:46 PM 1/4/2022

(3)(c) The implementation of circuit:-



#### 4) The results:-

- Flame sensor work in a sense to any input flame beside it to give output high sound of buzzer, also lighting up of led to show that there is fire in place.
- Smoke sensor work in a sense to any input smoke beside it to give output high sound of buzzer, also lighting up of led to show that there is smoke in place.