INTERNAL GUIDE SIGN:

GUJARAT TECHNOLOGICAL UNIVERSITY

Centre for Industrial Design (Open Design School)

DESIGN ENGINEERING

CONTINUOUS ASSESSMENT CARD

COLLEGE NAME: LD College of Engineering COLLEGE CODE: 028	
SUBJECT NAME: Design Engineering	
SUBJECT CODE: 3130008	SEMESTER: 3rd
BRANCH: Electronics and Communication	ACADEMIC YEAR: 2021-2022

TEAM NAME:	TEAM ID: 334824
PROJECT TITLE/DOMAIN: Smart Fire Safety Alarm System	

SR. NO.	TEAM MEMBER'S NAME	ENROLLMENT NO.
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INTERNAL GUIDE NAME: Prof. U.V. Unagar

INTERNAL GUIDE SIGN:

MONTHLY ASSESSMENT – II (Ideation and Product Development Phase)
(DATE :___/___/___)

1. **Explain briefly Ideation thought process and efforts of your team to reach ideas for listed problems.**

- The Major disaster which can be controlled by human is fire and the biggest problem of fire is it can easily travel through electric cables and if is not reported soon or any delay in action can cause major damege to life as well as devices especially electric devices.
- So, our team come to conclusion that if fire is detected as soon as possible and power supply is cutoff automatically and can report at soonest so that we can save damages.
- We write down whatever every segment of people do(Activities we had identified at empathy stage (expanding list of user activities)).
  We make the list, as long as possible- for example teachers: teach,
  take attendance, prepare class notes, prepare presentations, grade students, evaluate answer sheets and prepare question papers.
  Similarly; Shoppers, window shop, compare prices, visit stores, return defective goods, claim warranty etc. The activities include:- alerating people and warn them ,Sending SMS to control room,cutting off power supply.
- We note down the objects, technologies or solutions which
  may be possible outcomes to our idea/challenge. The prop need not be related as it's always randomness that helps in
  finding new ideas.

2. **Enlist any five effective ideas to address the probable listed problems with reason.**

- 1. Accessible Equipment
  Make sure all of your fire protection equipment (ie fire extinguishers, control

panels, etc.) are easily accessible. Also don't block the fire sprinklers or fire alarms with anything, such as dust, debris or paint. You don't want to hinder the functionality of your equipment.

2. Proper Disposal

Discard of any hazardous waste in a metal container that has a lid. Hazardous waste can include anything from oils to chemicals. Even flammable and combustible materials should be properly disposed of in order to prevent fire hazards.

3. Regular Maintenance

Schedule regular maintenance services for all of your fire protection equipment to make sure everything is up to code. It's also smart to make sure any machines in your building are properly maintained in order to prevent overheating or sparks created from friction.

4. Safe Storage

If you have chemicals, flammable materials or other hazardous substances in your building, you will want to make sure they are stored in a safe place. Make sure they are in a dry, secure closet or room that has adequate ventilation. It's also a good idea to keep fire protection equipment for flammable substances near the storage area just in case.

5. Clean Environment

There are many reasons that you should keep your building neat and tidy. One of the main reasons is because when there's a lot of clutter, especially flammable materials such as paper, boxes, etc., then a fire can spread faster.

3. **Explain the most effective possible solution proposed for the problem.**

- The most effective possible solution proposed for the problem was to develop a type of circuit that can cut off the main power supply automatically as soon as fire is detected and to warn the near by people and authorities too. It can also be used effectively in banks and other works place where electric device play the important role.

4. **Explain the features, functions and working principles/technology/pattern of your proposed solution.**

>The main features of the solution is that it stops fire to proceed through electric cables therefore it does not damage the electronic devices and stops sparks through wires as power supply is cutoff.

> Function of the circuit is simple as soon as IR sensor on installed site gets the fire sensation it gets activated and cuts off main power supply off automatically to area and starts ringing fire alarms by which people can be warned.

> IR sensor, Relay module, Multisim are some of the technologies used in this solution.
IR sensor detects the fire and sends the high input to relay module it that cuts off power supply through it and activate the fire alarms.

5. **Enlist major advantages and disadvantages (at least three) of the proposed solution.**

- The main advantage of this product is that it cut down the power supply of the place which save the chances of short circuit and can save all electric device.
- Second advantage is that it is low manufacture cost and very less maintenance cost.
- The other advantage of the product is that it can alert you as soon as possible.
- The main disadvantage of it is that it can detect false fire.
- Circuit failure is also the disadvantage as it is an electric device it should be updated time to time.

6. **Briefly mention refinement on PDC based on User/Stakeholder's feedback on your concept.**

> As per the feedback received from users/stakeholders, students' teams need to modify their design and further action plan. In case the whole thing needs to be relooked it has to be iterated with new prospective.
Retain what users like, reject what they don't want & redesign what can be improved to meet the user challenges. Run the Reject/redesign/retain on the functions first and then if required on individual features to find how well they are powering the functions of your product/service. The reasons for rejection are:
- It can also lead to false alarm.
- Less Range of sensor.