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Network Detector

[1]A. Sekar, [2]R.Geethanjhali, [3]K. Varssini, [4]M. Vishnu Lal
[1,] Assistant Professor, [2]Student, [3]Student, [4]Student
[1,2,3,4,]Knowledge Institute of Technology Salem, Tamil Nadu, India

Abstract
Students use smart phones to search the Internet for answers during exams and of using it to send pictures of tests to friends scheduled to take the same class later in a day. Usage of internet in the classroom includes supervision issue since students often get lasted in social media such as chatting during class times. The above mentioned problem can be overcome by internet detecting device which detects the internet usage in the examination centre and class room and intimate it to the respective supervisor or faculty immediately by giving an alarm sound.

Index terms - Automation, Embedded Technology, Internet Usage , Examination Safety, Class-time Safety.

I. INTRODUCTION

Fig. 1 Internet

Students use smart phones to search the Internet for answers during exams and of using it to send pictures of tests to friends scheduled to take the same class later in a day. Usage of internet in the classroom includes supervision issue since students often get lasted in social media such as chatting during class times.

The above mentioned problem can be overcome by internet detecting device which detects the internet usage in the examination centre and class room and intimate it to the respective supervisor or faculty immediately by giving an alarm sound [4].

II. APPLICATION

- Educational sector

- ✓ Examination hall
- ✓ Lecture hour
- ✓ Seminar hall

Fig. 2.1 In Educational sector

- Government sector

  - ✓ Monitoring of government exam
  - ✓ Conference

Fig. 2.2. In Government sector

III. Benefits of Network Detector

- In educational field, when the student use the mobile phones while the lecture begins this detector can indicate by an alarming sound to the particular lecturer. Not only during the lecture but also while the examination time, by which the forged can be reduced[9].

Fig. 3. Benefits of Network Detector

IV. HARDWARE REQUIREMENTS

1. Detector
2. Movable laser light
3. Battery
4. Cooling fan
5. Alarm
6. Danger light

4.1.Detector

The detector that detects ultra-weak radio waves in an entirely new way. Their new box of tricks converts radio waves into light signals, which can then be transmitted and analyzed using standard optical tools. “Our work introduces an entirely new approach to all-optical, ultralow-noise detection of classical electronic signals,” they say.

The new approach is simple in principle. Their device consists of a thin membrane of silicon nitride coated with a mirror-like layer of aluminum. This Nanomembrane is suspended above an electrode forming a capacitor which is it part of a standard LC-circuit that picks up radio waves at its resonant frequency.

When this happens, the resonating circuit causes the Nanomembrane to vibrate.

Fig. 4.1. Detector

The trick that Bagci and co have pulled off is to bounce a laser beam off the Nanomembrane causing an optical phase shift that they then measure using standard optical techniques.

The result is that the Nanomembrane converts the faint radio waves it picks up into optical signals.

This approach has significant advantages over traditional radio receivers. The big problem with current methods for detecting faint radio waves is that noise generated by heat can swamp the signal. The only way to get around this is by cooling the detection equipment, a process that significantly increases the complexity, size and cost of the job.

The big advantage of converting the radio signals into a resonant mechanical vibration is that the random effect of heat becomes negligible. That's the beauty of resonant systems. So the reflected light picks out the radio signal with little of the noise that swamps conventional radio receivers.

The numbers are impressive. The new device has a room temperature sensitivity of 5 Pico volts per (Hz)^1/2 at a frequency of 1 Mhz. In other words, it does the same job at room temperature that physicists could only dream of doing at the temperature of liquid helium.

And this is only a proof of principle device. It has the potential to get even better with a little optimization

That's likely to have a significant impact in a number of areas that rely on cooled amplifiers to pick up faint radio signals. For example, nuclear magnetic resonance imaging relies on the detection of faint radio signals generated by protons processing in a magnetic field. And radio astronomers rely on cooled amplifiers to pick up the faintest radio signals in the cosmos. "The usually required cryogenically cooled pre-amplifiers might be replaced by our transducer[2]".

4.2. **Movable laser light**

A **laser lighting display** or **laser light show** involves the use of laser light to entertain an audience. A laser light show may consist only of projected laser beams set to music, or may accompany another form of entertainment, typically musical performances.

Laser light is useful in entertainment because the coherent nature of laser light allows a narrow beam to be produced, which allows the use of optical scanning to draw patterns or images on walls, ceilings or other surfaces including theatrical smoke and fog without refocusing for the differences in distance, as is common with video projection. This inherently more focused beam is also extremely visible, and is often used as an effect. Sometimes the beams are "bounced" to different positions with mirrors to create laser sculptures[7].

Fig. 4.2. Laser

4.3. BATTERY

An electric **battery** is a device consisting of one or more electrochemical cells with external connections provided to power electrical devices such as flashlights, smartphones, and cars. When a battery is supplying electric power, its positive terminal is the cathode and its negative terminal is the anode. The terminal marked negative is the source of electrons that when connected to an external circuit will flow and deliver energy to an external device. When a battery is connected to an external circuit, electrolytes are able to move as ions within, allowing the chemical reactions to be completed at the separate terminals and so deliver energy to the external circuit. It is the movement of those ions within the battery which allows current to flow out of the battery to perform work. Historically the term "battery" specifically referred to a device composed of multiple cells, however the usage has evolved additionally to include devices composed of a single cell[3].

Fig. 4.3 Battery

4.4. Cooling fan

A **computer fan** is any fan inside, or attached to, a computer case used for active cooling, and may refer to fans that draw cooler air into the case from the outside, expel warm air from inside, or move air across a heat sink to cool a particular component. Generally these are found in axial and sometimes centrifugal forms. The former is sometimes called a "electric" fan, after the Rotor Vertical line, while the latter may be called a "biscuit blower" in some product literature[6].

Fig. 4.4 Cooling Fan

4.5. Alarm

An **alarm device** or system of alarm devices gives an audible, visual or other form of alarm signal about a problem or condition. Alarm devices are often outfitted with a siren. In our product the alarm which is used to indicate that the students use the mobile phone during the lecture[1].

Fig. 4.5 Alarm

4.6. Danger light

This is called fluorescence, and has many practical **uses**. Black **lights** are required to observe fluorescence, since other types of ultraviolet lamps emit visible **light** which drowns out the dim fluorescent glow. Black **light** is commonly used to authenticate oil paintings, antiques and banknotes[5].

Fig. 4.6 Danger light

V. Architecture of network detector

The particular radio wave which falls on the mirror the mirror, frequency while the student use the mobile phones can be detected by the detector and which stimulates the alarm to ring on which further stimulates the danger light to indicate that the candidate use the mobile phone.

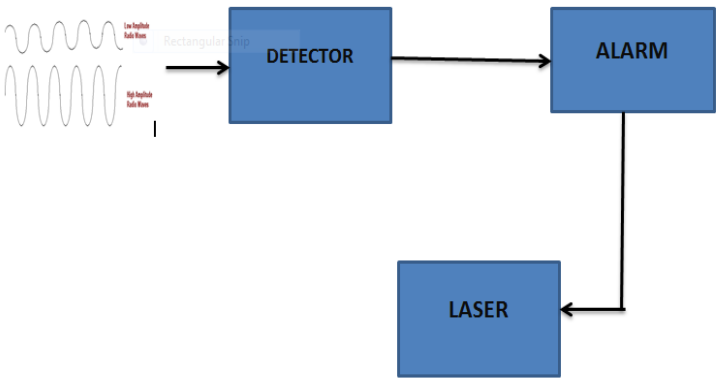

Fig. 5 Architecture of network detector

VI. Needs

- To prevent the usage of mobile phones in lecture hours
- To prevent the usage of phones in government exams
- To prevent the leakage of important information in government meeting
- To avoid the malpractice during the examination.

VII. Implementation

The radio wave which makes to fall on the mirror, the mirror was coated by silver nitrate and above the silver nitrate aluminium was coated after the radio wave is converted into optical light signal, then it is detected by optical tools. If the usage is detected it further intimated to the alarm it stimulates it to ring on. Then the laser limit will emit and it indicates the particular user who used the mobile phone during the class hour[8].

VIII. Conclusion

Our project is mainly designed to reduce the malpractice and to prevent the usage of mobile phones in lecture hour and to prevent the usage of phones in government exams and to prevent the leakage of important information in government meeting.

XI. Reference

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