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SCIENCE EXHIBITION 2023

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CLASS- IX

THEME- SCIENCE AND TECHNOLOGY FOR SOCIETY

SUB-THEME- COMPUTATIONAL THINKING

TOPIC- RAILWAY PLATFORM ACCIDENT PREVENTOR

GUIDED BY- M/S POONAM PATEL MA'AM, PGT, PHYSICS

INTRODUCTION

This model is made to reduce the accidents which occurs because of the gaps between the platforms and the trains.

And when peoples use the railway tracks to jump to the platform on the other side. People cross the railway tracks and suddenly a train comes and hit them.

MATERIALS USED TO MAKE THE MODEL:

ARDUINO-UNO

ULTRASONIC SENSOR

SERVO MOTOR

JUMPER WIRES

PROCEDURE:

First, we have to insert the codes in the Arduino-UNO using C++ programming language.

Then, we have to connect the Arduino-Uno to ultrasonic sensor using the jumper wires:

ARDUINO-UNO ➡ **ULTRASONIC SENSOR**

VIN	VCC
GND	GND
PIN NO. 9	TRIG
PIN NO. 8	ECHO

Then, we have to connect the Arduino-Uno to Servo Motor

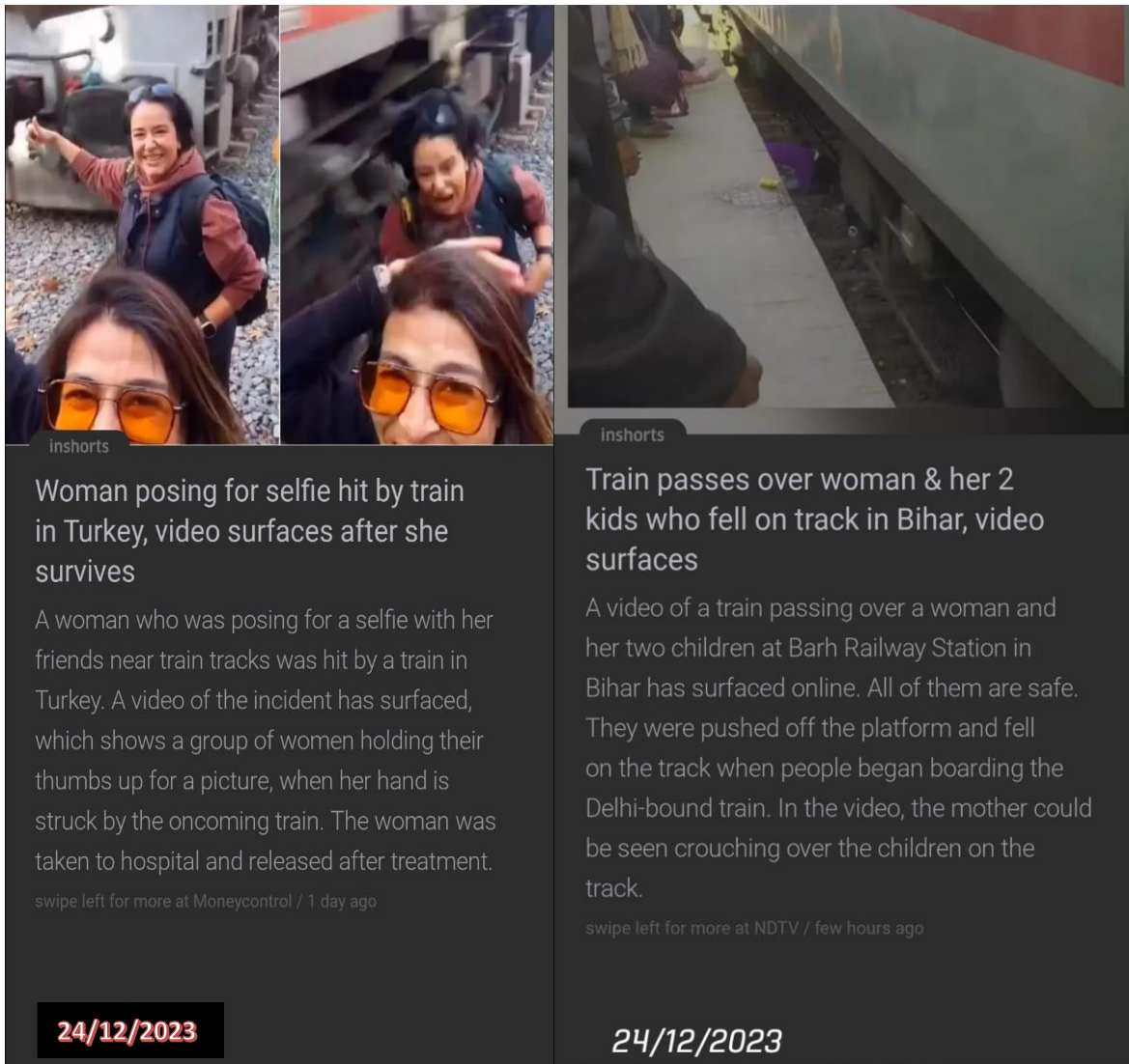**ARDUINO-UNO** ➡ **SERVO MOTOR**

GND	BROWN WIRE(-ve)
5V	RED WIRE(+ve)
PIN NO. 7	ORANGE WIRE(SIGNAL)

Now, our connection is ready.

DIAGRAM OF OUR MODEL
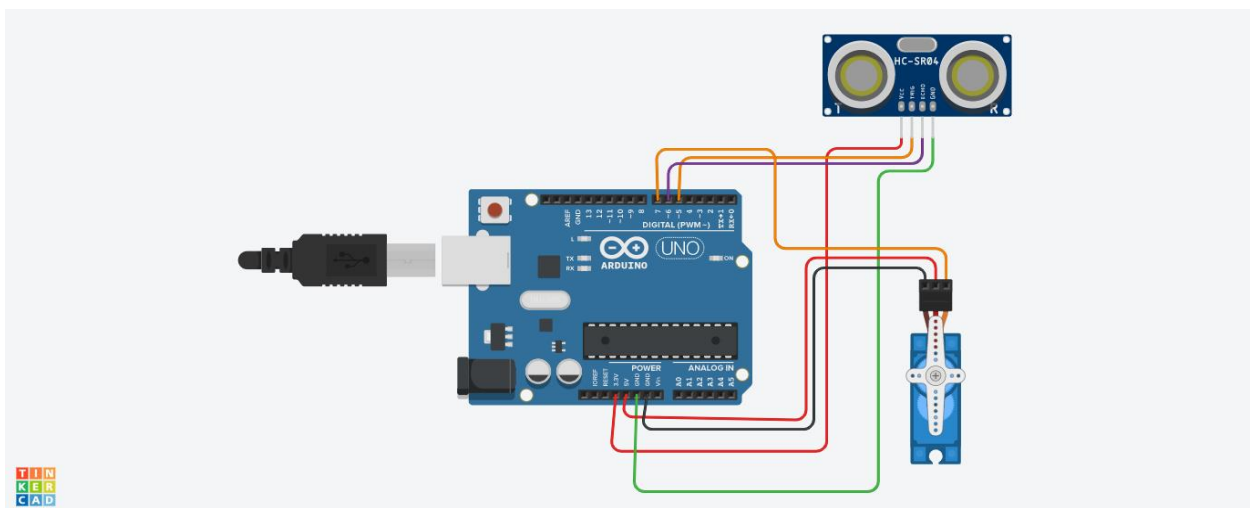
SOME INCIDENTS RELATED TO THIS ACCIDENTS

inshorts

Woman posing for selfie hit by train in Turkey, video surfaces after she survives

A woman who was posing for a selfie with her friends near train tracks was hit by a train in Turkey. A video of the incident has surfaced, which shows a group of women holding their thumbs up for a picture, when her hand is struck by the oncoming train. The woman was taken to hospital and released after treatment.

swipe left for more at Moneycontrol / 1 day ago

24/12/2023

inshorts

Train passes over woman & her 2 kids who fell on track in Bihar, video surfaces

A video of a train passing over a woman and her two children at Barh Railway Station in Bihar has surfaced online. All of them are safe. They were pushed off the platform and fell on the track when people began boarding the Delhi-bound train. In the video, the mother could be seen crouching over the children on the track.

swipe left for more at NDTV / few hours ago

24/12/2023

From 2012 to 2023

67,116train passengers died in last decade without accident

As many as 67,116 train passengers died in the last decade without any train accidents in the country. More than 2,580 passengers died by getting stuck between the train and the

platform. On an average, more than 250 passengers die every year by coming between the train and the platform.

At the same time, the death after falling from a moving train is more than this. During this period, 39,015 passengers lost their lives due to falling from trains. Thus, every day 10 railway passengers are dying after falling from a moving train.

GRAPH OF THE PEOPLES DIED IN THE LAST DECADE
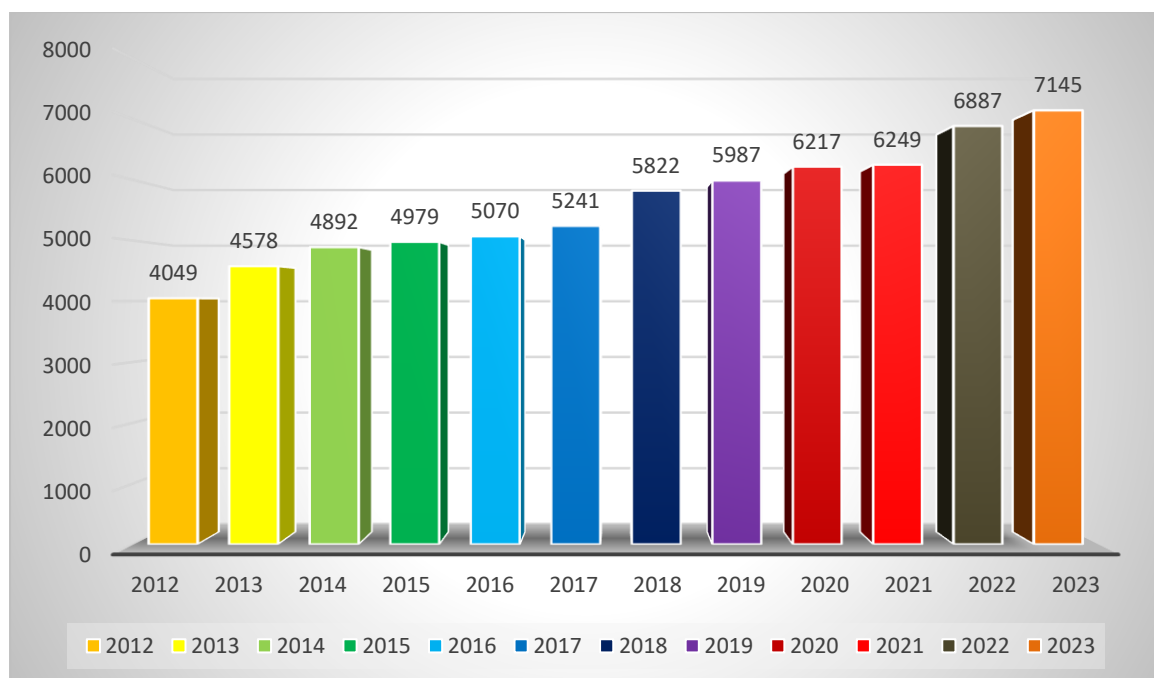
STORY OF ANDHRA STUDENT STUCK BETWEEN PLATFORM AND THE TRAIN

Visakhapatnam: A 20-year-old student who went through a harrowing experience after getting stuck between a coach and the platform while deboarding a train at Duvvada railway station on Wednesday took her last breath at a hospital in Gajuwaka in city on Thursday, 19 DEC 2022.

From the graph given above, we came to know that with an average of 5,383, people are dying every year form the last one decade. And yes, many people are losing their lives because of the wrong construction of railway platforms because the gap had not been completely maintained. But if government had given the correct importance on this during the construction, then, it should not increase in this rate every year.

It is very important to reduce this death rate. Otherwise, after some years the death rate will be more than 7000 people per year.

So, to reduce this type of railway accident, our model is based.

We have to help the government to reduce this type of accidents in our country by giving our full priority on lower price rates.

PROCESS OF WORKING OF OUR MODEL

STEP 1: Train reaches the platform.

STEP 2: Sensor senses the train.

STEP 3: Sensor sends the signal to the Arduino-UNO.

STEP 4: The motor gets operated by the Arduino-UNO.

STEP 5: Motor starts to rotate and the gate opens.

STEP 6: The gate will close after the train will leave the platform.

COST OF OUR PROJECT

Now if we look, then, to make a gate in the platform of 500 meters long and the breadth of the gate of 2 meters then, it's cost will be approximately 10-12 lakhs rupees.

PROJECT MADE BY GOVERNMENT FOR THESE TYPE OF ACCIDENTS

The project made by the government for reducing these types of accidents is the **Safety Grill Project**. In this project, government wants to increase the heights of the surfaces of the platforms. And government also wants to increase the breadth of the platform surface towards the railway track. So that the gap will be covered between the train and the platform. But it will a cost lot of money to make this. When this project will be in work, we can't use the platforms and it will take a longer period of time also.

COST OF GOVERNMENT'S PROJECT

If we will calculate the price of the project of the government on a 500 meters long platform and a breadth of 4 meters, then, it will cost approximately 84-85 lakhs rupees.

So, from the prices of both the projects we can see that our project is very cheap as compared to the project by the government. So, in the price of the government's project, we can make 5 projects made by us. And by saving the money, we can use it in various sectors like education, health for the growth of our countries economy.