Forest Fire Prevention

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About

This project of mine shall predict the probability of a forest fire taking place that basically depends on three factors given the Temperature, the Oxygen levels, and the Humidity of the concerned area. It gets the form data about these three from the website and sends it to a python program where the data is given to a machine learning model and the machine learning model gives an output that is reflected back onto a webpage.

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Abstract

Every year forest fires destroy a huge area of forest cover, leaving large-scale destruction of flora and fauna in its wake. Forest fires play a major role in driving thousands of species of wildlife to extinction year. Artificial intelligence helps us predict the future and using it in this domain can successfully help us predict forest fires and save wildlife. Any fire essentially depends upon 3 factors which are oxygen, temperature, and humidity. This project aims at predicting the possibility of a forest fire taking place, given the oxygen, humidity, and temperature content of a given place. A concept website that can be created to take inputs from the user and predicts the forest fire probability in real-time, is also shown

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Problem

Forest or Wildlife fires are uncontrolled fires in areas of combustible vegetation. Depending on the scale of the fire it can be classified as bush fire, forest fire, etc. They pose a huge risk to wildlife and it becomes pertinent that we come up with a solution to counter it . Now the main challenge that comes up here is to detect or predict a wildfire before it actually happens because once a forest fire gets started it becomes very difficult to put them out before they cause large-scale irreversible damage. Machine learning is learning from data to be able to predict the future. Hence, we are going to model some parameters crucial for any forest fire to take place and predict the possibility of a forest fire taking place based on that.

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Description

So we basically give the three values to the website; as shown in the interface images in the upcoming slide,10,38, and 45 respectively, and click on predict probability. We are given the probability 0.03 with the message that quotes YOUR FOREST IS SAFE. It is true because we kept the oxygen cont low, the temperature cool, and the humidity moderate as well. Since a forest fire shall need high temperature, high oxygen levels, and low humidity to take place.

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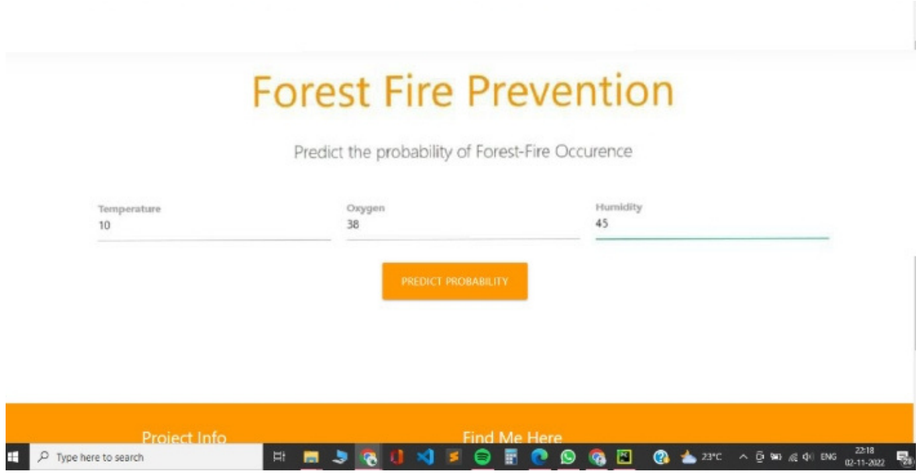
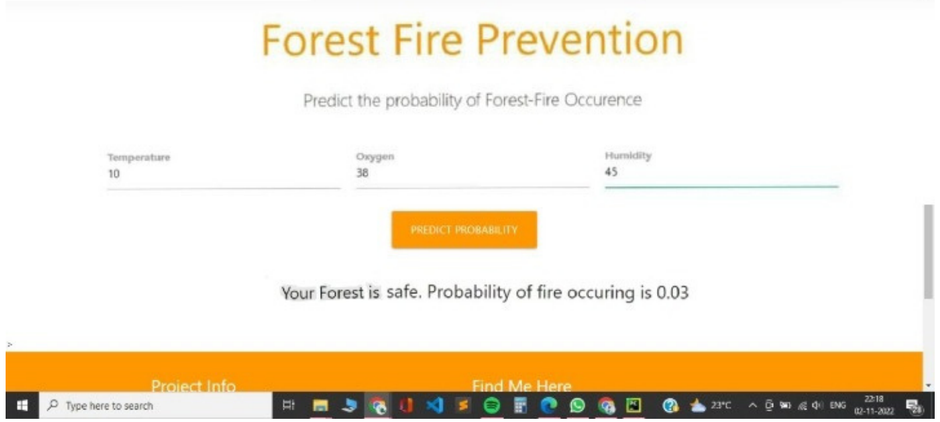
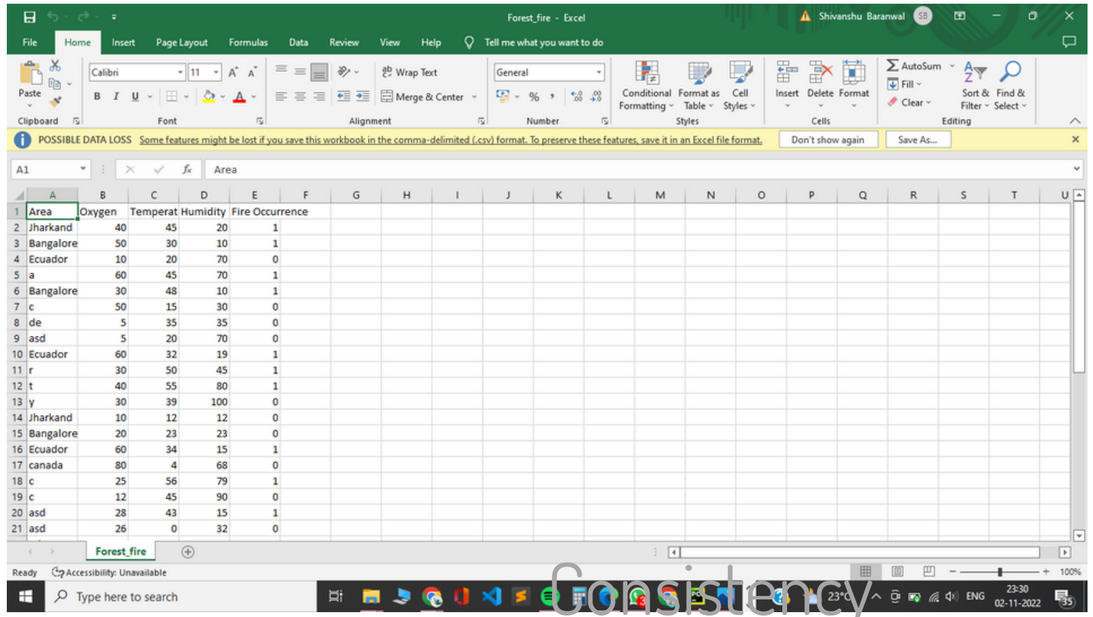
Interface





Data Set



	A	B	C	D	E
1	Area	Oxygen	Temperat	Humidity	Fire Occurrence
2	Jharkand	40	45	20	1
3	Bangalore	50	30	10	1
4	Ecuador	10	20	70	0
5	a	60	45	70	1
6	Bangalore	30	48	10	1
7	c	50	15	30	0
8	de	5	35	35	0
9	asd	5	20	70	0
10	Ecuador	60	32	19	1
11	r	30	50	45	1
12	t	40	55	80	1
13	y	30	39	100	0
14	Jharkand	10	12	12	0
15	Bangalore	20	23	23	0
16	Ecuador	60	34	15	1
17	canada	80	4	68	0
18	c	25	56	79	1
19	c	12	45	90	0
20	asd	28	43	15	1
21	asd	26	0	32	0

Consistency

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Tech Weapons in Armoury

- HTML
- CSS
- JAVA Script
- Python
- FLASK (A microweb framework that integrates web applications with any python program)

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Thank You!

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