

One of our main goals is to send to our users Alerts if there is any risk in their area.

First, we must mention that we are using location Data of our users to detect their area.

As an example we developed a model to predict any possible fire

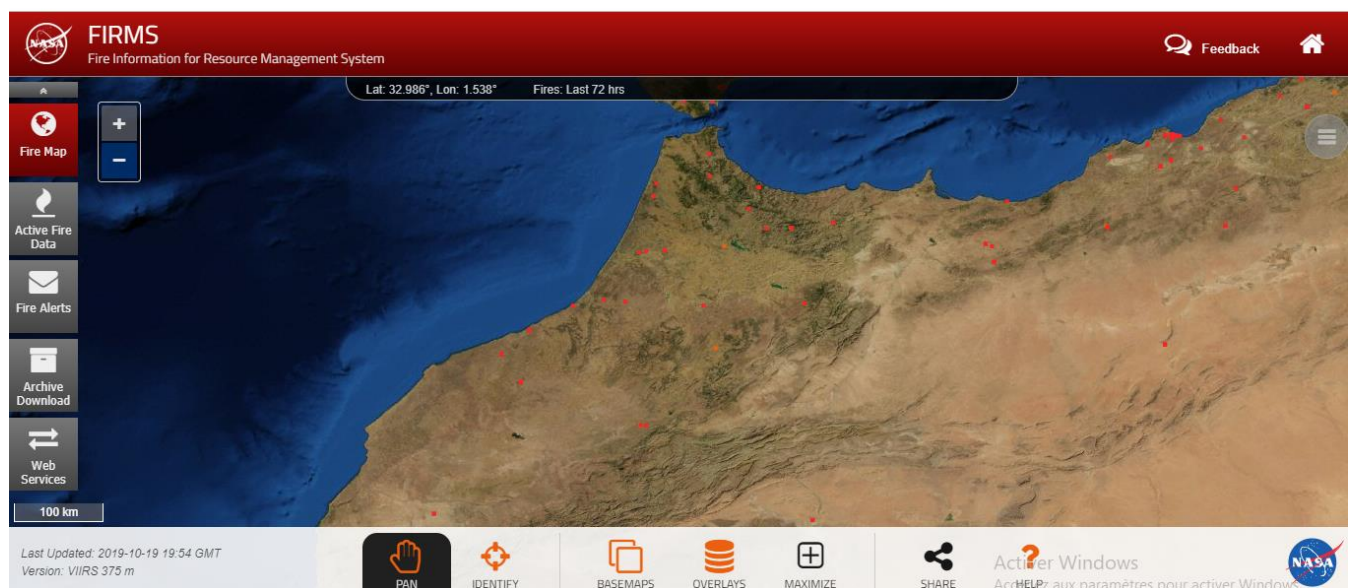
FIRE ALERTE:

Approach:

solution 1:

NASA DATA: Fire Information for Resource Management System "Fire map"

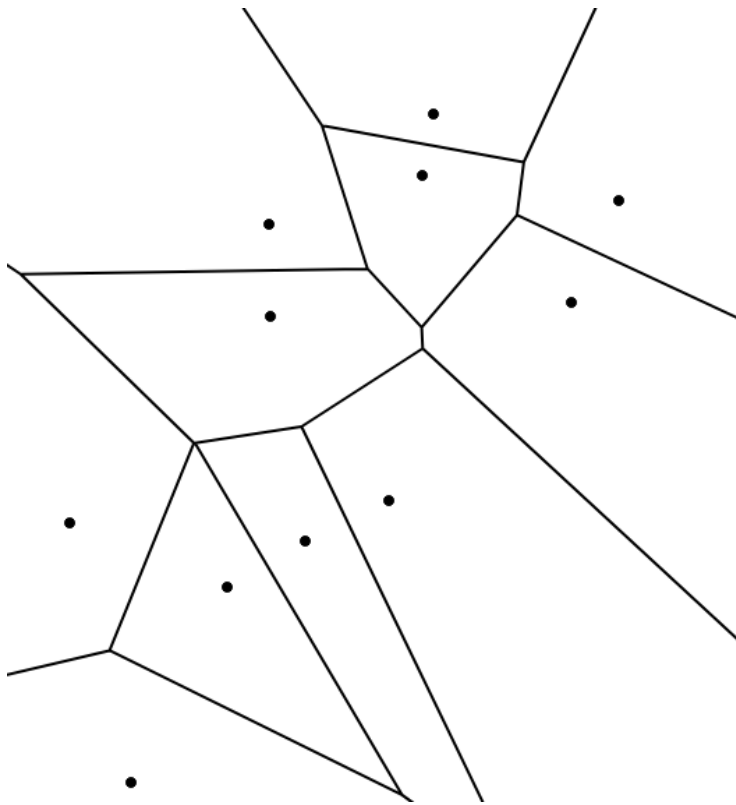
we are using **Nasa's fire map** to find location of fire



we illustrate some points of fire (we didn't illustrate all points just to make the example easy to understand): .



we applied **voronoi diagram** to find the nearest users of each fire:



we used this **algorithm** to analyse each voronoi cell so that we can find regions where fire can expand and present a risk:

C_i : Causes that may contribute to the spread of fires

X_i : max or min value of C_i

$0 \leq i \leq n$

this algorithm compute the estimation of risk percentage.

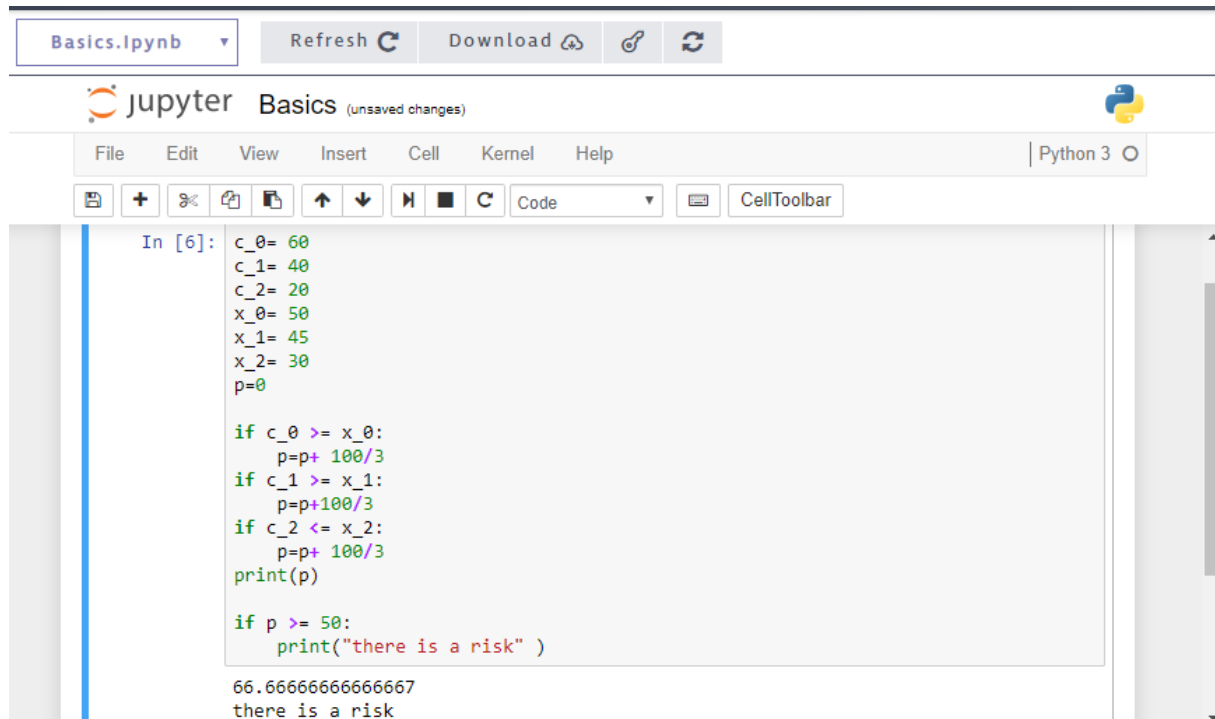
```
script.py AppleStore.csv
1 p=0
2 for 0 <= i <= m:
3     if c_i >= x_i:
4         p=p+100/n
5
6 for m < i <= n:
7     if c_i <= x_i:
8         p=p+100/n
9
10 print("p")
11 if p > 50:
12     print( "there is a" p "% risk of fire in your region")
13
```

example:

C_0 = the wind speed X_0= max value of wind speed

C_1= Temperature X_1= max value of temperature

C_2= humidity X_2= min value of humidity



The screenshot shows a Jupyter Notebook window titled 'Basics.ipynb'. The interface includes a top bar with 'Refresh', 'Download', and other icons. Below the top bar is a menu bar with 'File', 'Edit', 'View', 'Insert', 'Cell', 'Kernel', and 'Help'. A toolbar with various icons is located below the menu bar. The main area contains a code cell labeled 'In [6]:'. The code in the cell is as follows:

```
In [6]: c_0= 60
c_1= 40
c_2= 20
x_0= 50
x_1= 45
x_2= 30
p=0

if c_0 >= x_0:
    p=p+ 100/3
if c_1 >= x_1:
    p=p+100/3
if c_2 <= x_2:
    p=p+ 100/3
print(p)

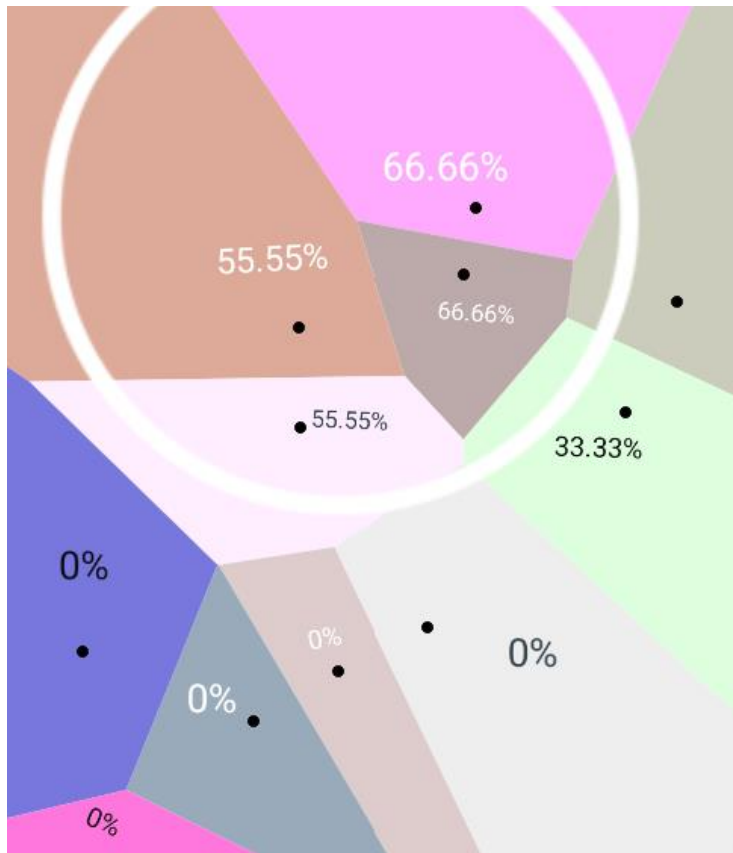
if p >= 50:
    print("there is a risk" )
```

The output of the code cell is displayed below the code:

```
66.66666666666667
there is a risk
```

This code tell us that there is a 66.66% chance that fire can expand and present a risk in this area.


Finally, we will have this new voronoi diagram and the Fire Alert msg will be sent to people in the red, pink, yellow and grey area:



Solution 2:

Nasa DATA: **Fire Information for Resource Management System "fire alerts.**

"In the seconde solution, we will subscribe our users using there e-mail addresses (after their permission) so that they will automaticly recieve fire alerts from NASA'S FIRMS .

 EARTHDATA

Find a DAAC -

Feedback

?

FIRMS

Fire Map

Active Fire Data

Fire Alerts

Archive Download

Web Services

- Subscribe to receive email alerts notifying you of fires in your area-of-interest.
- Alerts can be sent in near real-time or as daily or weekly summaries.
- CSV file attachments are optional for near real-time or as daily or weekly summaries*
- KML attachments are optional for near real-time alerts*

* Please note if the number of fires in the alert exceeds 90,000 (csv) or 11,000 (kml) a link to download file will be provided instead of an attachment.

This service is free of charge.

Enter your email address to create a new subscription or manage your existing subscription

Proceed

Activer Windows

Where do we want to go?

Our goal is to develop models that can predict most of the risks that pose hazards to our users, using data from **NASA OBSERVATORY EARTH**. For example Floods, typhoons ...



Natural Event



Hagibis Floods Japan

The typhoon's rapid intensification was followed by far-reaching damage in Honshu.



Hagibis Heads Toward Japan

A broad region could experience destructive winds as the typhoon approaches land.

Published Oct 11, 2019

Image of the Day Atmosphere Land Water
Severe Storms Human Presence

