

FRONT END DEVELOPMENT

Deploy Earth Engine Apps using Voilà and ngrok

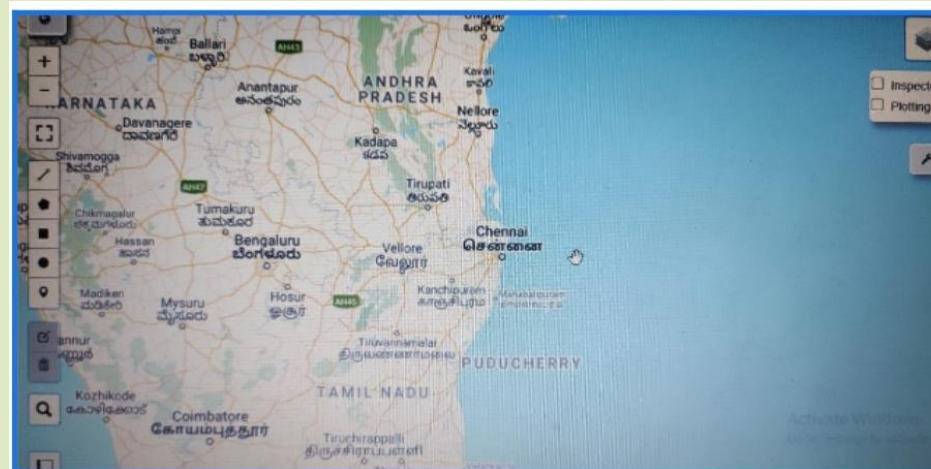
•VOILA:


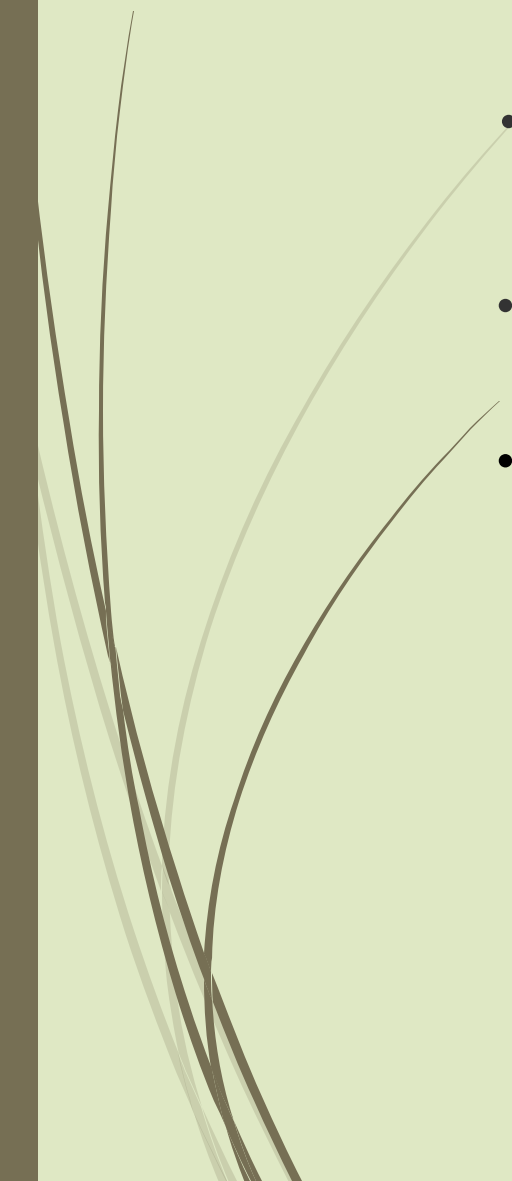
Voilà turns Jupyter notebooks into standalone web applications.

- Voila supports ***Jupyter interactive widgets***, including the roundtrips to the kernel.
- Voilà ***does not permit arbitrary code execution*** by consumers of dashboards.
- Built upon Jupyter standard protocols and file formats, voilà works with any Jupyter kernel (C++, Python, Julia), making it a ***language*** dashboarding system
- Voila is extensible. It includes a flexible ***template system*** to produce rich application layouts.

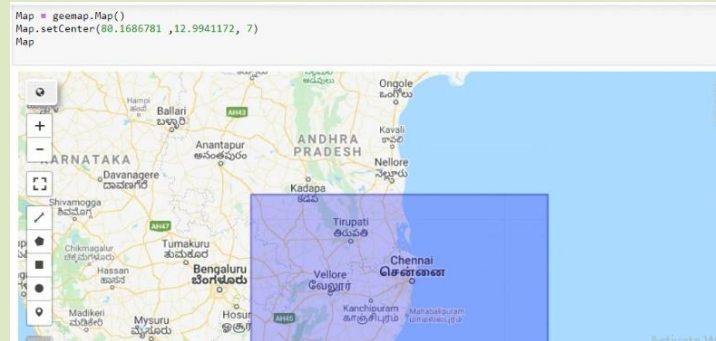
LIBRARIES

- `import os`
- `import ee`
- `import geemap`
- `import ipywidgets as widgets`

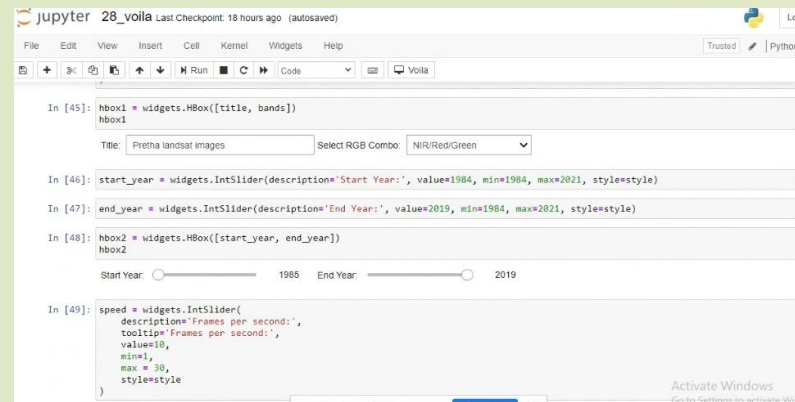


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- **Import os** – its for interacting with the OS
 - **Import ee (Earth Engine)** – For Importing and initializing each new Python session
 - **Import ipy widgets as widgets**-widgets are eventful python object .we can use widgets to build a interactive GUIs for our notebook
 - **Import Geemap** – we used Geemap for analyzing and visualizing the Google earth Engine datasets and interact with Jupyter notebooks.
 - It can automatically convert our Google earth engine Java script to python
 - It is used for Interactive interface for browser

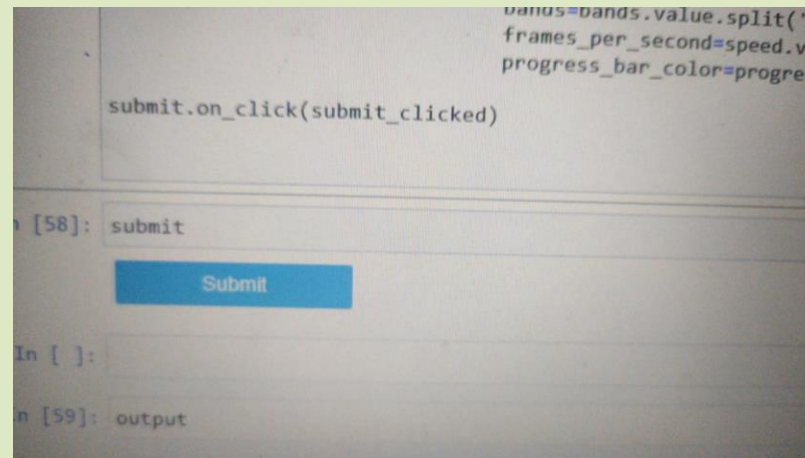
- This map is named because the area which we are getting to determine the latitude and longitude



- Finally while we zoom the dimensions of map will get the pixel value
- we then segregated RGB into red blue green area which is urban , vegetation , and water body respectively



- Start date and end date has got to be predicted we have choosen datasets from the year 1984 -2021
- we have Collected the data of how much crop cultivated in the year and finally it predicts the value.
- And Images are uploaded and checked for clarification



- Finally by clicking the submit button the desired front end will be displayed

FRONT END

Map showing locations in South India, including Hosur, Krishnagiri, Tiruvannamalai, Dharmapuri, Salem, Erode, Namakkal, Perambalur, Kumbakonam, Chidambaram, Neyveli, Cuddalore, Puducherry, Mahabalipuram, and Coimbatore.

Pretha landsat images

Select RGB Combo: NIR/Red/Green

Start Year: 1984 End Year: 2019

Frames per second: 10 ☐ Upload to imgur.com

Font size: 30 Font color: white Progress bar color: blue

Submit

Activate Windows

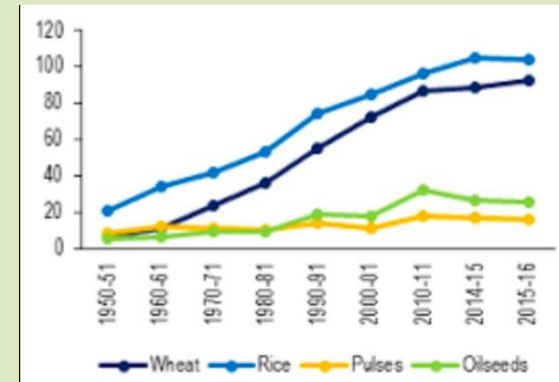
CHANGING CROPPING PATTERNS IN INDIA

- Cropping pattern is a dynamic concept because it changes over space and time. It can be defined as the proportion of area under various crops at a point of time. Sometimes a number of crops are cultivated in combinations and rotations over a period.



- In India, the cropping pattern is determined by rainfall, climate, temperature, soil type, technology and socio-economic conditions of the farmers.
- These changes in the cropping pattern mainly occurred due to increase in the prices of crops. After independence a lot of changes had been recorded in the cropping pattern in India.

- Green Revolution also led to changes in the cropping patterns. Rice was introduced to Punjab, Haryana and Uttar Pradesh.
- Cultivation of food crops has become very remunerative and productive due to the introduction of new technologies in Indian agriculture.

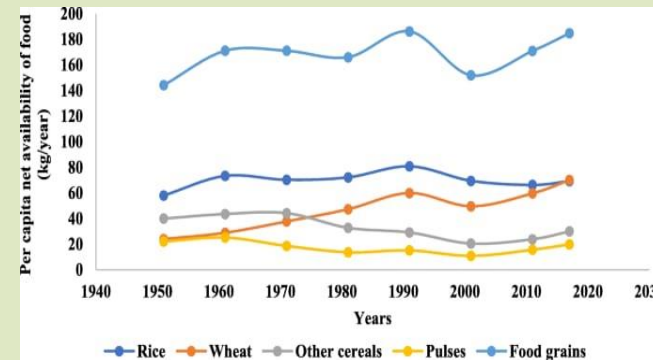


- Farmers are more intensively moving towards cultivation of cash/commercial crops such as oilseeds, fruits, vegetables, spices, etc. from the traditional non-cash/non-commercial crops such as cereals and pulses.
- Farmers have changed their crop patterns in order to reap the benefits of economic expansion as well.

- Climate change has affected the Indian monsoon due to which cropping patterns are also changing. Population explosion and urbanisation has led to land conversion, boosting intensive farming and has brought changes in cropping patterns.
- At the beginning of the present century, nearly 83 percent of the total cultivable land of India was put under food crops and the remaining 17 percent was put under non-food crops.



- But in 1944-45, there was a change in the cropping pattern in India and area under food crops came down to 80 percent and the area under non--food crops slightly increased to 20 percent.



- Among all the food crops, the largest increase in area since 1950-51 has already been recorded by wheat cultivation which shows an increase of 132 percent by 1987-88.
- But in the case of both rice and pulses, the increase in area has been restricted to only 23 percent; Coarse cereals have recorded only marginal increase of 11 percent by 1987-88.