# Machine Learning
# Model Deployment

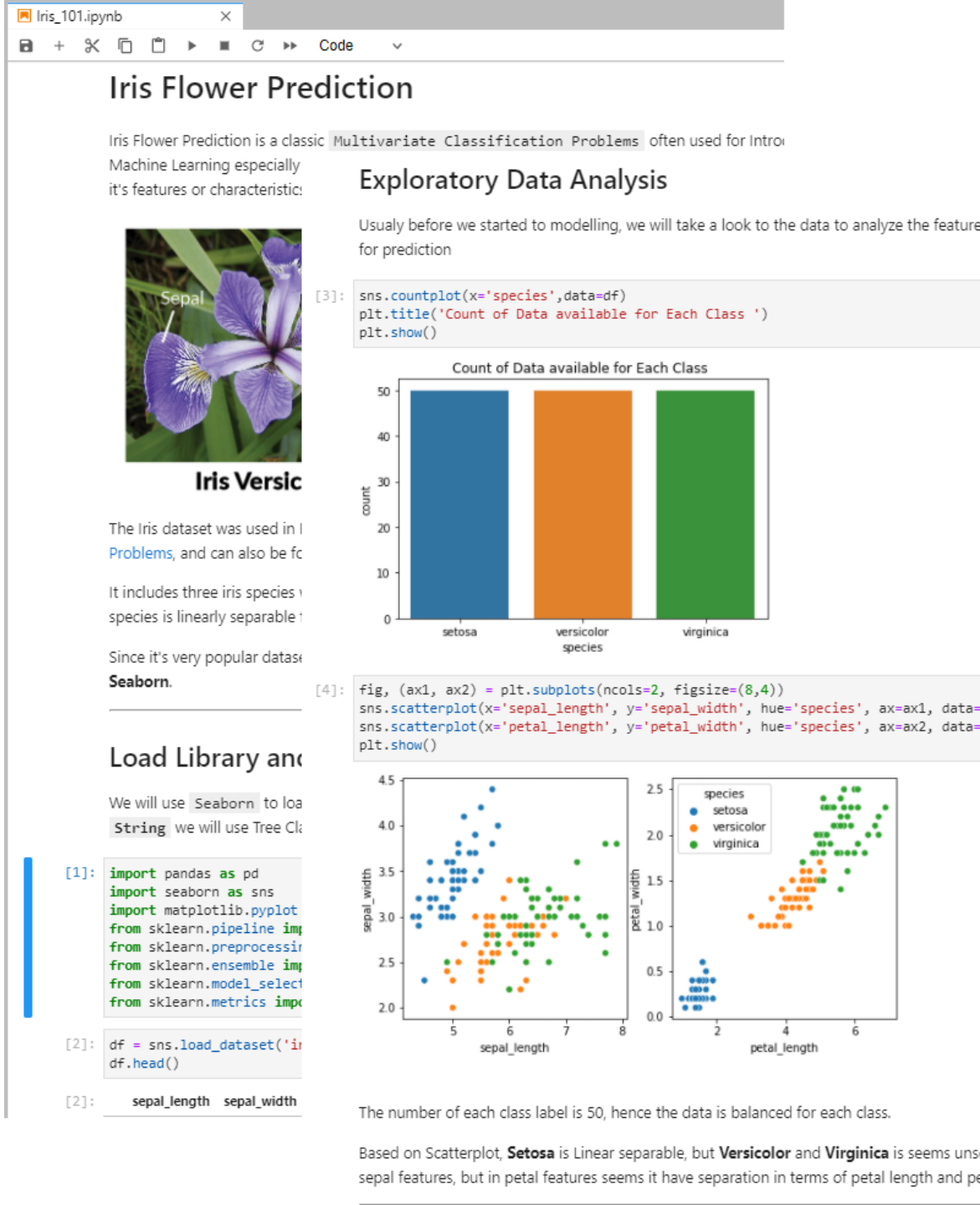
How to deliver Machine Learning from Experiment to solutions

Benedictus Aryo

# Let’s imagine this scenario

After finishing your Analysis on a dataset and finally you created **the best performance** machine learning model in Jupyter Notebook.

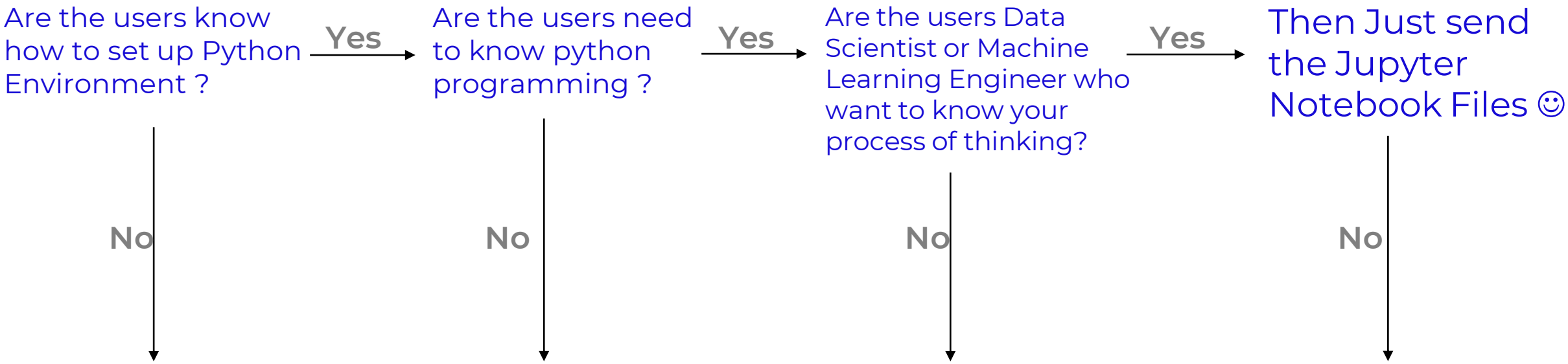
How can people **make use** of your result ?



Can we just send them the Jupyter notebook files and **let them run it** ?

They should have Anaconda or Jupyter Notebook / Lab installed right ?

# Depends on..




Then we need to make something else

# Questions to help us consider

What are the machine learning solution purposes?

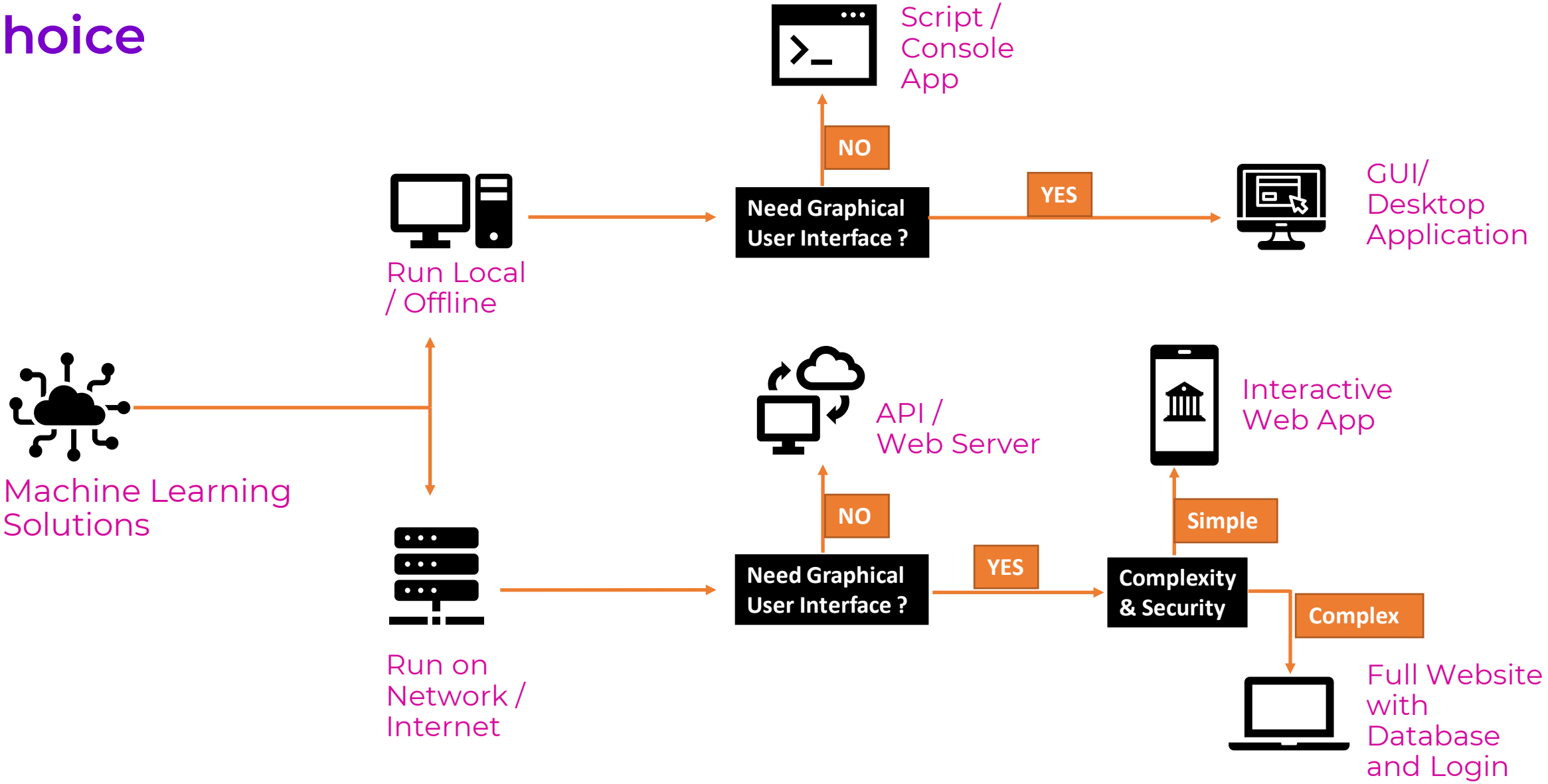
Who are the users?

What is their level of knowledge?

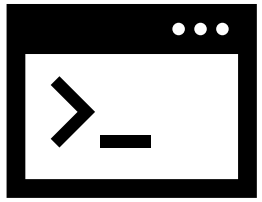
Where the solution will be run ?

What is the requirement ?

# Then We can make a choice



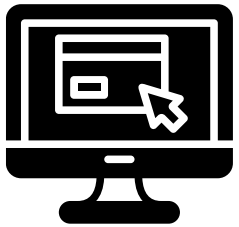
Run on Local / Offline App



# Python Script

Model Deployment using Console Script is the most easiest and common method to serve the functionality of the program.

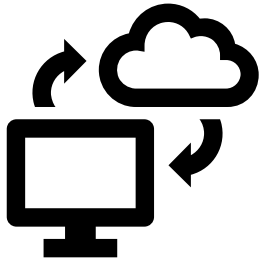
Script usualy purposed to do **automation** or **scheduling** which doesn't need UI Interface.



# Desktop GUI using DearPyGUI

Model Deployment using Desktop GUI using python can become an options if we want to make a Desktop GUI Application so that user can **interact** with the application interface such as slider and button.

Run on Network / Internet

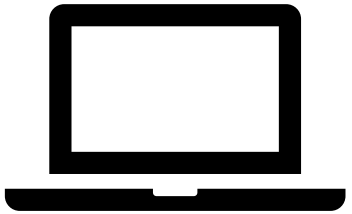


## Web API using Flask

In some cases we may need more powerfull hardware to do computation so by providing Web Service/API, existing user application like android app can just send REST Request for machine learning prediction

## Interactive Web App using Streamlit

If we want to serve the Prediction application in the server as a web application so that it will be accessible through the network/internet and also user can freely access and interact to the machine learning interface directly, we can make Interactive web application.



## Full Website with Database & Login

If we want to make our web app can store data in database format and also make access restriction to only some user that allowed to use the machine learning app, we can create Full Website that allow us to utilize **database** and **manage user access**.