Python Full Stack

- [ ] ASCII Photo Converter - 30 Jan
- [ ] LMS using Django/Flask - 3 Feb
- [ ] Scrapping

- OBS Studio

21 Jan

`python -m venv LPU` → To create a virtual environment
`.\LPU\bin\activate` → To activate the environment

`deactivate` → to deactivate the environment
`rm -r LPU` - > to remove directory recursively, all the file & sub folders
`mv oldname newname` → To rename the Folder

'm' → stands for message
'venv' → virtual environment

22 Jan

Wider Range → Class
Derived → Objects

Animals → Class
Lion, Tiger → Objects

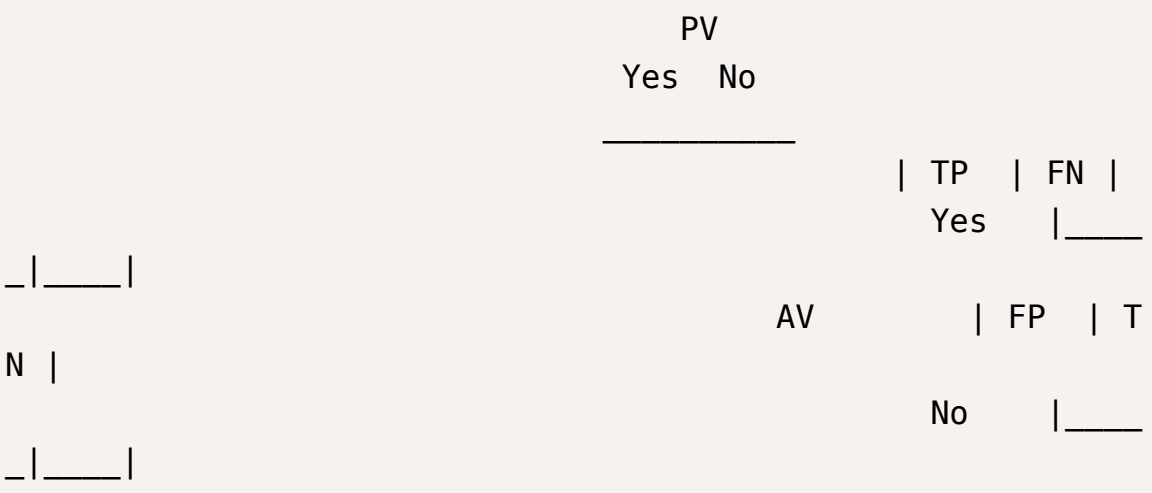
'.' → Location, LEKE AAO

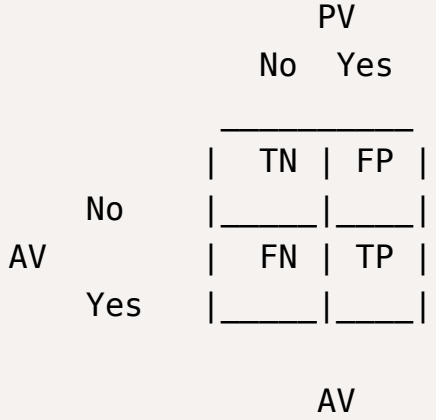
`python filename.py` → To run the file

📖 Supervised Learning → Where we have both input and output. y = mx + c. Labeled Data.
Unsupervised Learning → Where we don't have the output. Not Labeled data. The model try to find the pattern.
Reinforcement Learning → Which tries to learn from the experience. Reward based learning.

💡 Overfitting → Where the model gives alot of accuracy on the training data but fails in testing data.
Underfitting → Which fails at the training data as well as testing data.
TradeOff → Which performs well on training data as well as testing data.

Sklearn → warehouse of ML.





```
                    Yes  No
                  ___________
                 |  TP | FP  |
      Yes        |_____|_____|
PV               |  FN | TN  |
      No         |_____|_____|

                      AV
                    No  Yes
                  ___________
                 |  TN | FN  |
      No         |_____|_____|
PV               |  FP | TP  |
      Yes        |_____|_____|
```

Accuracy Score → TP+TN / TP+TN+FP+FN
Precision → TP / TP+FP //Predicted mai kitna sahi predict kia.
Recall → TP / TP+FN //Actual mai kitna sahi predict kia.
F1 Score → 2 * (Precision * Recall / Precision + Recall)

`from sklearn.metrics import classification_marix` → Classification Matrix

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23 Jan

```
from sklearn.metrics import confusion_matrixav = ['dog','do
g','dog','dog','not_dog','not_dog','not_dog','not_dog']
pv = ['dog','dog','dog','dog','not_dog','not_dog','not_do
g','not_dog']
print(confusion_matrix(pv,av))
```

4	0
0	4

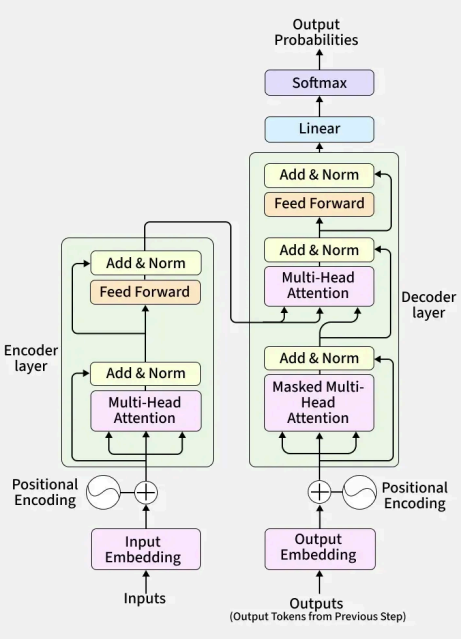
```
av = ['dog','dog','dog','dog','dog','not_dog','dog','not_do
g','not_dog','not_dog']
pv = ['dog','dog','dog','dog','dog','dog','not_dog','not_do
g','not_dog','not_dog']
print(confusion_matrix(pv,av))
```

5	1
1	3

"Transformers in Python" **primarily refers to the use of the powerful Hugging Face `transformers` library, which provides access to thousands of state-of-the-art pre-trained AI models for various tasks**

> 💡 **"Transformers in Python"** primarily refers to the use of the powerful Hugging Face `transformers` library, which provides access to thousands of state-of-the-art pre-trained AI models for various tasks

Add Norm → Minimizing Errors



ANN	Tabular Data
CNN	Image Data
RNN	Sequential Data

ISTM	No Memory

DTPd4AF → Delhi mai ek TT ne pakda 4 log Afghanistan ke.

D	Defination	Linear Regression, etc.
Tp	Type of Problem	Supervised, UnSupervised, Clustering, etc.
Td	Type of Data	Labeled, UnLabeled.
4A	Aim, Approach, Algorithm, Application	
F	Feedback	

What is the type of problem for Reinforcement Learning?
What is the type of data for Reinforcement Learning?

Pipeline → Machine Learning Pipeline is a systematic workflow designed to automate the process of building, training, and deploying ML models.

Django

Django is software you can use to develop web applications quickly and efficiently

```
pip install django
```

```
django-admin startproject project .
```

```
python manage.py runserver
```

wsgi.py	**Web Server Gateway Interface.** *An entry-point for WSGI-compatible web servers to serve your project. See How to deploy with WSGI for more details.*
asgi.py	**(Asynchronous Server Gateway Interface)**. *An entry-point for ASGI-compatible web servers to serve your project. See How to deploy with ASGI for more details.*
urls.py	*The URL declarations for this Django project; a "table of contents" of your Django-powered site. You can read more about URLs in URL dispatcher.*
settings.py	*Settings/configuration for this Django project. Django settings will tell you all about how settings work.*
__init__.py	*An empty file that tells Python that this directory should be considered a Python package. If you're a Python beginner, read more about packages in the official Python docs.*

mysite/	*A directory that is the actual Python package for your project. Its name is the Python package name you'll need to use to import anything inside it (e.g.* `mysite.urls` *).*
manage.py	*A command-line utility that lets you interact with this Django project in various ways. You can read all the details about* `manage.py` *in django-admin and manage.py.*

24 Jan

Inheritance

- Single
- Multiple
- Multi Level
- Hierarchical
- Hybrid

2nd Project → LMS, using Django/Flask.

27 Jan

Transformer

Attention, MHA is the engine of Transformer. Combination of Encoder & Decoder.

One Encoder consists of Feed Forward and MHA

One Decoder consists of Feed Forward, MHA and mMHA.

First step is **Tokenization :-** Mainly word based Tokenization, means Character Based.

Second step is to give **Position** to each word, to identify uniquely.

Third Step is **Embedding,** converting string to number. And this serves as the input.

Word has feelings.

Query Key Value(QKV) :-

Activation Function :- To Normalize, Silu, Elu

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29 Jan

Encoding

One Hot Encoding → It serves on 0 & 1. There is no semantic.

Word Embedding → It gives semantic Prob. But the issue is it gives Static Semantic, which may cause problem when the table is inversed or rotated. Mainly the semantic is based on ***Average Meaning***
Suppose K & R,D,A

K	R	D	A
Prob	0.4	1.0	0.56

Dynamic Semantic → The sentences are broadly divided into 2 Categories; Taste & Tech

Sentence	Taste	Tech
Apple is Health	1	0
Apple is Taste	1	0
Apple keeps the Dr. away	1	0
Apple is a good company	0	1
Apple make iPad	0	1