

# **Welcome**

## **Thapar Summer School 2024**

**on**

### **Machine Learning & Deep Learning**

**(Six Week Training Program)**

**10<sup>th</sup> June to 19<sup>th</sup> July 2024**

**Organized by**

**Computer Science & Engineering Department,  
Thapar Institute of Engineering and Technology,  
Patiala, Punjab.**

**[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com)**

# About Us - Coordinators



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Profile: [Click Here](#)

# Join Google Group & WhatsApp Group

**Join WhatsApp Group**



**Join Mailing Group**

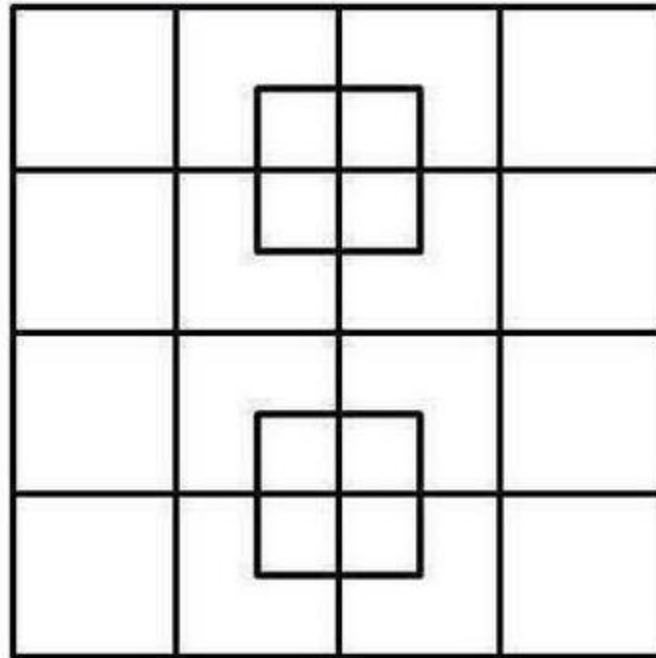


# Outline

- 1. Introduction**
- 2. Schedule**
- 3. Projects**
- 4. Research Topics**
- 5. Resource Person**
- 6. Discussion**
- 7. Q&A**

# Quiz1

**How many squares  
are in this picture?**




**92% FAIL this simple test!**

**Video - Most Important**

**Learning by Doing**

# Detail Schedule

[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com) → Content

[Home](#)[Content](#)[Resource](#)[Registration](#)[Speakers](#)[Previous Schools](#)

## Thapar Summer School on ML & DL 2024 | 10th June - 19th July 2024

### Content

**Time & Venue:** 09:00 to 13:00 | Monday to Friday | TAN Audi

**Note:** (1) Be on Time (2) Bring your Laptop (3) Bring power extensions (if possible)

**Brief Schedule:**

- **Week 1 | 10 - 14 June 2024** | Basics of Python, OOPs and Problem-Solving, Pandas, Numpy, Scipy, EDA, Linux
- **Week 2 | 17 - 21 June 2024** | Machine Learning, AutoML, Pycaret, Optimization & Statistics, Mini Projects, Intro to Kaggle
- **Week 3 | 24 - 28 June 2024** | Hands-on practice for Kaggle & Numer.ai, Intro gradio, FastAPI, Streamlit, Flask
- **Week 4 | 01 - 05 July 2024** | Deep Learning for Image Processing and Natural Language Processing (NLP)
- **Week 5 | 08 - 12 July 2024** | Generative AI - GANs, Transformers, LLMs
- **Week 6 | 15 - 19 July 2024** | Time Series, Internet of Things (IoT), Valedictory, Certificate distribution

# Time & Venue

## **Modes**

- Offline - 09:00 to 13:00 | Monday to Friday | TAN Audi

## **Thapar Summer School 2023**

- [www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com) → Previous School
- Explore Recoded Lectures, Slides, Resources



# Sub Set Problem 1

# Sub Set Problem 1

## Problem Statement

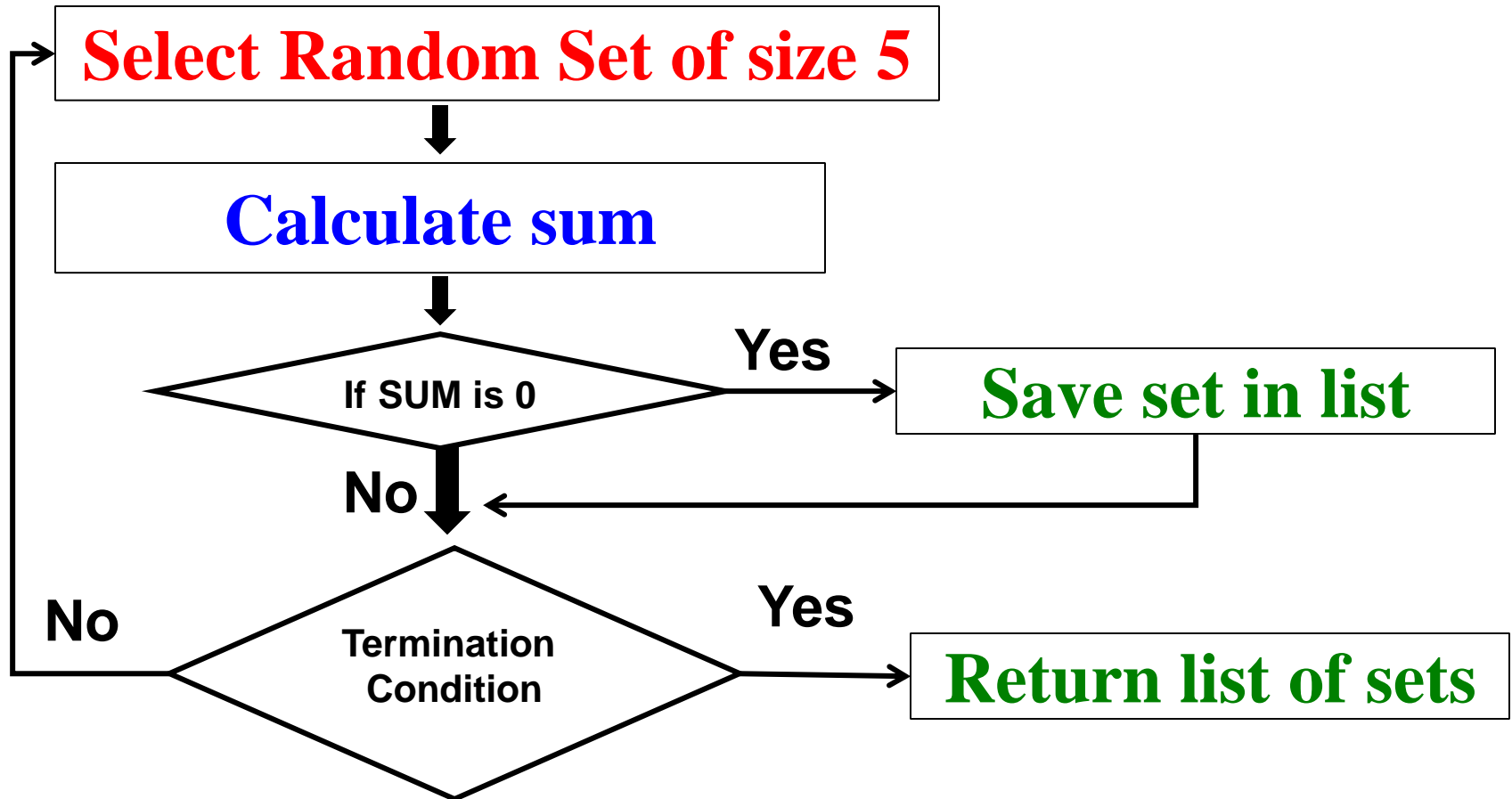
Find all the subset from a set of numbers whose sum is zero.

**Constraint: Subset size must be 5.**

$A = \{-12, -3, -6, 7, 2, -2, 6, 3, 9, -7, -5, -8, 1, 11, -9, -4, 5, -11, 12, -8\}$

# Sub Set Problem 1

## Random Approach



# Sub Set Problem 2

## Problem Statement

Find all the subset from a set of numbers whose sum is zero.

**Constraint:** Subset size must be 3 to 6 only.

$A = \{-12, -3, -6, 7, 2, -2, 6, 3, 9, -7, -5, -8, 1, 11, -9, -4, 5, -11, 12, -8\}$

# **Application of**

## **Sub Set Problem ???**

# **Application of Sub Set Problem ???**

**Finding Combo Offer** by online portal  
e.g. – Flipcart, Amazon, Snapdeal, etc.

# Project

## ComboFinder

Web application to find combo offer.

Input

Pid	Price
P1	64
P2	88
P3	152
P4	93
P5	76
-	-
-	-
-	-
-	-

Product List

upload



Output

{P2,P5,P7}  
{P1,P3,P6,P7}  
{P2,P6,P9}  
{P3,P7,P9,P12}

Product Sets

# Project

## ComboFinder

### Develop Web Interface

File Name

Browse File....

Lower Limit

490

Upper Limit

510

Email Id

psrana@gmail.com

Submit



Sikh soldiers in Paris during World War 1  
#sikh #paris #history #worldwar

**What is your  
observation??**



# Image Colorization

# More Examples.....



Abraham Lincoln, 16th U.S. President

# More Examples.....



Theodore Roosevelt, 26th U.S. President

**Can you think any APPLICATION  
that can be developed using  
Image Colorization??**

**Convert Black & White movies  
to Colored.**

**Methodology/Approach ??**

# Approach

1. Take any Colored Movie



2. Extract Frames



3. Convert Frames to B&W



4. Train **GAN** on Colored and  
B&W images

**GAN** → Generative Adversarial Networks  
(invented by **Ian Goodfellow** in 2014 in **Beer Bar**)



# Approach.....

5. Take any new B&W Movie



6. Extract Frames



7. Apply **GAN** on B&W Frames



8. Merge all the frames into a single  
movie

# Outcome



# Product (Web Service)

# Product (Web Service)

## Online Doc to PDF Converter

### Web Interface

File Name

Browse File....

Email Id

psrana@gmail.com

Submit

# Product (Web Service)

## B2C: B&W to Colour

### Web Interface

File Name

Browse B&W movie file....

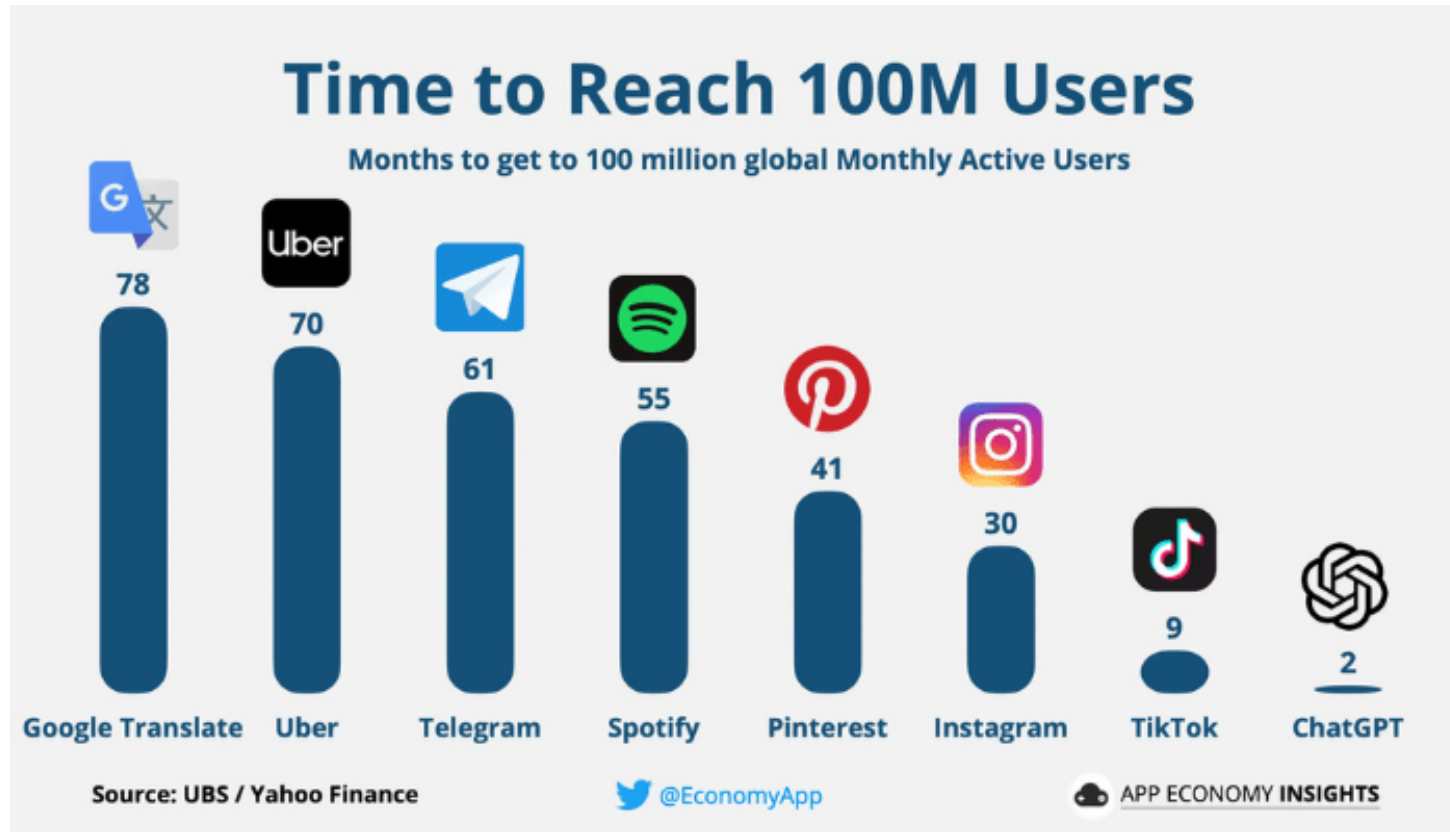
Email Id

psrana@gmail.com

Submit

# Why Web Service Important ?????

# Why Web Service Important ????



- It is not possible, if ChatGPT available as API / Github / executable file, etc.

# How to create Web Applications??

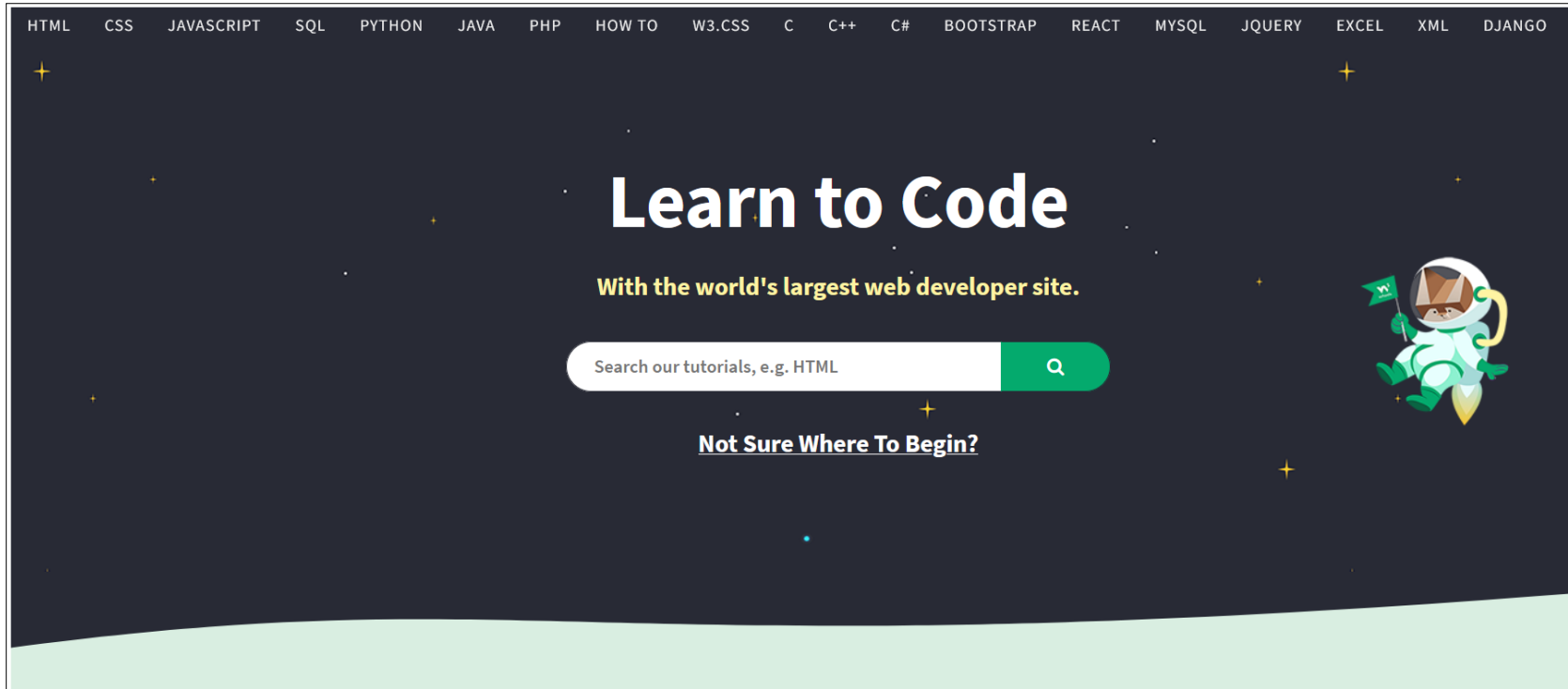
## Tech Stack (WebDev)

- **Django**
- **Flask**
- **Flutter**
- **JavaScript**
- **Angular**
- **Mern**
- **React**
- **Node**



# Best Place to Learn

Visit [www.w3schools.com](http://www.w3schools.com)



# Hottest Topics ???

# Hottest Topics Research / Projects

- 1. Generative AI (ChatGPT, Bard, QuillBot, Mid Journey, etc)**
- 2. LLM – Large Language Model**
- 3. Prompt Engineering**
- 4. Deep Learning**
- 5. Machine Learning**
- 6. Transfer Learning**
- 7. Reinforcement Learning**
- 8. IoT**
- 9. Big Data Analytics**
- 10. Virtual Reality**
- 11. Block Chain**
- 12. NLP (Natural Language Processing)**
- 13. Image Processing or Computer Vision**
- 14. ....many many more**

# Prompt Engineering

## Important elements to include in ChatGPT Prompts

1. **Tone**
2. **Format**
3. **Objective**
4. **Context**
5. **Examples**

### Examples:

1. I am a BE Computer Science 2<sup>nd</sup> year student, write 10 goals for me.
2. I am a Dean of student affairs write an induction speech for newly joined students.
3. many more.....

# Plans

# Plans

- 1. Short Term (Current Sem | June to Dec)**
- 2. Long Term (at age 40 yr)**

# Plans

## **1. Short Term (Current Semester | June to Dec)**

- **Solve 500 Data Structure problems**
- **Create 20 mini projects**
- **Create 2 major projects**
- **Meet 50 Seniors**
- **Participate in 5 Hackathons**
- **Solve 20 Kaggle Problems**
- **..... many more**

## **2. Long Term (at age 40 yr)**

- **100 Cr in bank account**
- **100 Km walk (Patiala to Karnal)**
- **250 Km cycling (Patiala to Delhi)**
- **Run 5 marathons**
- **..... many more**

# Plans

## **1. Short Term (Current Semester | June to Dec)**

- **Solve 500 Data Structure problems**
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- **..... many more**

**Revise the plan after every semester**



# Generative AI

Explore: [www.futuretools.io](http://www.futuretools.io)

- List latest AI Tools
- Explore daily 1-2 AI Tools

The screenshot shows the FutureTools website interface. At the top, the logo "Future Tools" is on the left, and navigation links "Home", "AI News", "Learn", "Glossary", and "Submit" are on the right. A main heading reads: "FutureTools Collects & Organizes All The Best AI Tools So YOU Too Can Become Superhuman!". Below this is a search bar with the placeholder text "Search - Try things like 'YouTube' or 'SEO' to find specific tools for your needs...". A grid of filter categories follows, including AI Detection, Aggregators, Avatar, Chat, Copywriting, Finance, For Fun, Gaming, Generative Art, Generative Code, Generative Video, Image Improvement, Image Scanning, Inspiration, Marketing, Motion Capture, Music, Podcasting, Productivity, Prompt Guides, Research, Self-Improvement, Social Media, Speech-To-Text, Text-To-Speech, Text-To-Video, Translation, Video Editing, and Voice Modulation. At the bottom of the filters are checkboxes for "Free", "Freemium", "GitHub", "Google Colab", "Open Source", and "Paid". A section titled "Matt's Picks" contains a "Featured on Product Hunt" badge (with a count of 335) and a "Join The Free Newsletter" button. Below the filters, it says "Showing 1626 of 1626 Total Tools." and a "Sort (Default - Newest)" dropdown. The main content area displays four tool cards: "Lumiere3D" (a tool to edit cinematic shoe videos, marked as a "Featured Listing"), "Cheat Layer" (the first chatGPT automation platform, marked as a "Featured Listing"), "Rooms" (a browser-based tool for creating and remixing interactive rooms, with tags for "Gaming" and "Generative Code", and a count of 12), and "Ask an AI God" (a ChatGPT-like interface, with a tag for "Chat" and a count of 5). Each card includes a small thumbnail image and a brief description.

# Hottest Topics Research / Projects

**70% Jobs** in AI/DS/DA/ML/DL are in two domains

- Image Processing / Computer Vision
- Text (Natural Language Processing)

## **Action Plan**

- 10-15 Mini projects
- 4-5 Major Projects

## Earn Money

1. Explore [numer.ai](#)
2. This is the **hardest** data science tournament on the planet.
3. They convert the **stock market** problem to the binary classification problem.
4. You can also participate in this tournament, by staking your model.
5. **[Most important]** You can **recover** your entire **Tuition Fee** in just six month by participate and compete in it.
6. Guidance and help will be provided.

# Projects

**[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com) → Resource**

## **4. Machine Learning / Deep Learning Projects**

- **Leading India AI Internship Projects**
- **Leading India AI Research Projects (Important)**
- **MITACS Projects**
- **25 Open-Source Machine Learning**
- **100 ML projects for final year students**
- **Google Open Source - Machine Learning Projects**
- **6 Interesting Machine Learning Project Ideas For Beginners**
- **Awesome Deep Learning Project Ideas**
- **30 Amazing Machine Learning Open Source Tools Projects 2019**
- **Smart India Hackthon Problems (Important)**
- **GAN Projects**
- **500+ AI (ML, DL, CV, NLP, etc) Projects with Code (Important)**

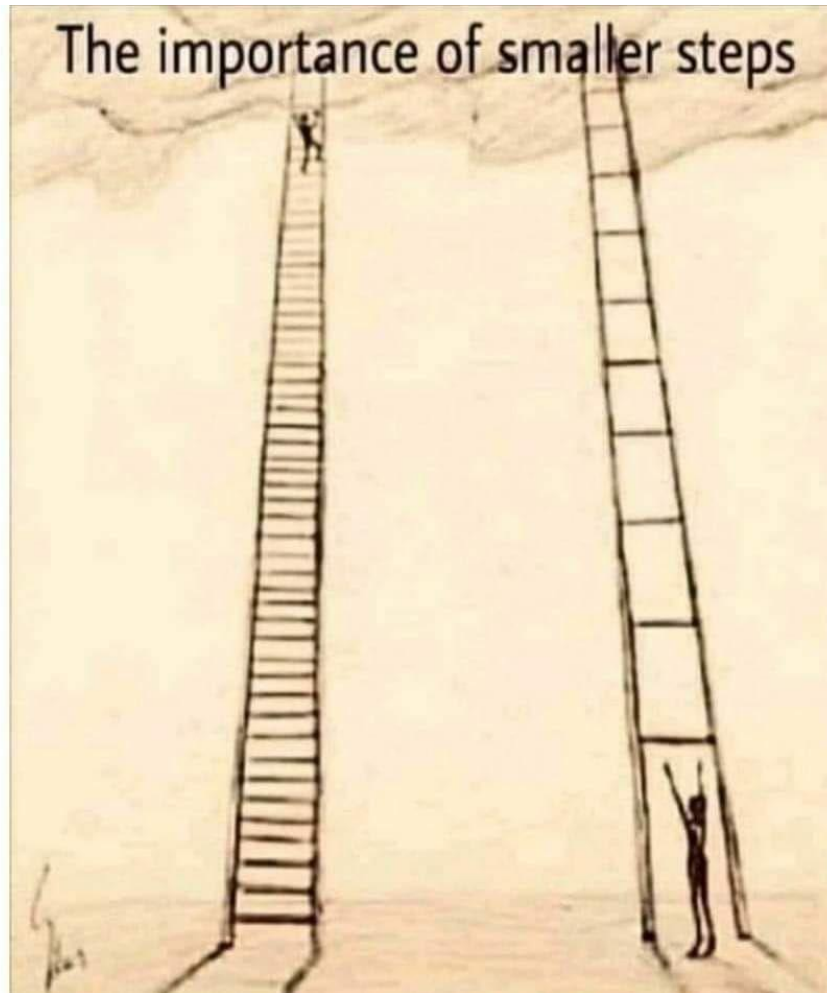
# **How to select a Research Topic/ Project Topic?**

**(A Million Dollar Question)**

# For Project Idea: Explore

- It is not a job of single day.
- English playwright, John Heywood's saying that “**Rome was not built in a day**, but they were laying bricks every hour”, is a reminder of the fact that it requires time and patience to create something big and great.

# Importance of Consistency



# For Project Idea: Explore

It is not a job of single day.

## 1. Explore

- Hackathons, Funding agency site, Project calls, etc

## 2. Study

- Case study, Funding stories ([YourStory.com](http://YourStory.com))

## 3. Discuss

- With Friend, Faculty, Teacher, Mentor, Students

## 4. Build Team and Implement

## 5. Present



# For Project Idea: Note it down

**For any **new idea** just prepare 1-2 page writeup**

- 1. Title**
- 2. Objectives (3-4)**
- 3. Methodology (Flow Chart)**
- 4. Expected Outcome (Website/APP)**
- 5. Requirement (equipment)**

# Example: Project Tile

- 1. Design and Development of the Wearable Health Activity Tracker Device**
- 2. Design and Develop a technological solution for detecting usage of LoRa in a given area**

# Explore Hackathons

**[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com) → Resource**

## **7. Explore Hackthons**

- **Kaggle.com**
- **Codalab.org**
- **Chalearn.org**
- **ChaHub.org**
- **MLWave.com**
- **TunedIt.org**
- **ChALearnLap**
- **Innocentive.com**
- **DreamChallenges.org**
- **CrowdAnalytix.com**
- **DataHack@AnalyticsVidhya.com**
- **Numer.ai**
- **GenomeInterpretation.org**
- **GrandChallenges.org**

**“If you give 100 hour per week, you can complete your PhD in three years”**

**- Prof. Bhim Singh,  
Electrical Engineering Department,  
IIT Delhi**

# Saturday & Sunday

## **”Week End Projects”**

**Maximize the Utilization of Saturday & Sunday**

- **Learn new things/topics**
- **Do Projects**
- **Explore/Participate in Hackathons**


# Video - Think BIG


**WittyFeed**  
**Parveen Singhal**

# Research Papers

## Explore - PapersWithCode.com

Publishes recent research in AI, ML, DL, DS, Image, Text




[Browse State-of-the-Art](#) [Datasets](#) [Methods](#) [More](#) 

[Top](#) [New](#) [Greatest](#)

[Subscribe](#)



### Trending Research



#### Matching Anything by Segmenting Anything

🔗 siyuanliiii/masa • 6 Jun 2024

The robust association of the same objects across video frames in complex scenes is crucial for many applications, especially Multiple Object Tracking (MOT).


 Domain Generalization  Multiple Object Tracking +2

★ 144

2.38 stars / hour

[Paper](#)

[Code](#)



#### LLaVA-UHD: an LMM Perceiving Any Aspect Ratio and High-Resolution Images

🔗 openbmb/omnilmm • 🐍 PyTorch • 18 Mar 2024

To address the challenges, we present LLaVA-UHD, a large multimodal model that can efficiently perceive images in any aspect ratio and high resolution.

★ 6,757

2.13 stars / hour

[Paper](#)

[Code](#)

# Writing Skills

## One Page Writing

**Helps to improve technical writing skills**



# Writing Skills

## One Page Writing

Helps to improve technical writing skills

1. Get a register.
2. Select any recent paper of your interest.
3. Write its Abstract and Conclusion by hand.
4. Do it daily for 30 days for two papers.
5. Underline the good sentences.
6. Learning: How to write an abstract and how to conclude your work.

# Writing Skills

## Format: One Page Writing

SN: # | Date

**Title:**

**Journal Name:**

**Abstract:**

**Conclusion:**

## Learning: One Page Writing

- How to write an Abstract
- How to conclude your work.
- How to write future scope.
- Select idea from others future scope.

# Writing Skills

## One Page Writing

- Checking of One Page Writing will be on every **Monday**

# Where to get Research Papers/ Books?

**[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com) → Resource**

## **5. One Page Writing (List of research papers - Good for Literature Survey & Projects)**

- **Paper with Codes - (Version1)**
- **Paper with Codes - (Version2)**
- **arXiv**

# Where to get Research Papers/ Books?

**[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com) → Resource**

## **6. Miscellaneous**

- **Library Genesis - Download Free Books**
- **Sci-Hub - Download Free Research Papers**
- **Github Repo of Sai Siddartha Maram (BE 3rd yr student, Thapar)**
- **Generating New Ideas for ML Projects Through ML**
- **Deep Learning Resource @ NVIDIA**

# Join Mailing Groups?

**Helps in selecting research topics,  
recent news and updates**

- [bit.ly/MachineLearningBlogAndResource](http://bit.ly/MachineLearningBlogAndResource)  
[feedburner.google.com/fb/a/mailverify?uri=analyticsvidhya](http://feedburner.google.com/fb/a/mailverify?uri=analyticsvidhya)
- [www.innocentive.com/blog](http://www.innocentive.com/blog)
- [www.crowdanalytix.com/blog](http://www.crowdanalytix.com/blog)
- [www.kdnuggets.com/news/subscribe.html](http://www.kdnuggets.com/news/subscribe.html)
- [www.r-bloggers.com/blogs-list/](http://www.r-bloggers.com/blogs-list/)

# Top class conferences in ML/DL

## 1. ICML

**International Conference on Machine Learning**

## 2. CVPR

**International Conference on Computer Vision and Pattern Recognition**



# Hot Topics

**Hot Topics in ICML/CVPR  
2023 ???**

# Hot Topics

- **LLMs (Large Language Models)**
- **Generative Adversarial Networks (GANs)**
- **70-80% Papers are based on GAN and Explainable-AI in ICML-2023**

# Learn Fast

- 1. To learn FAST Learn from slides.**
- 2. Learn from Youtube / Videos.**

**Explore on Youtube**

- Krish Naik**
- The Coding Train**

# Showcase your Projects

1. **Share your Project/code on GitHub**
2. **Explore**

Go to [psrana.com](https://psrana.com) → **“7. Github ReadMe”**

## Interview

# **Present your work**

- 1. Given Weekly / Monthly ppt to your friends, boss, students, kids or to your wife.**
- 2. Record it and improve it.**

# Resource Persons

- 1. Faculty from Thapar**
- 2. Expert from Industry**
- 3. Hackathon winners**
- 4. Kaggle Grand Masters**
- 5. PhD Scholars of Thapar**

# Plan

- **Timing 8:45 AM to 1 PM, Mon to Fri (+Sat).**
- **Total 32-33 Lectures**
- **10 Lectures → By PSRana**
  - **Python, R, ML, Optimization**
- **20 Lectures → By other experts**
  - **Chat Bot, Text Analytics, Image Classification, Object Detection, Matlab, Blockchain, IoT, CNN/RNN, Many More...**



# Masters – MS Program

## Before Completing BE/ BTech

- Publish 2-3 Research Papers
- 15-20 Mini Projects
- 4-5 Major Projects
- 8-10 Hackathons
- Grand Master / Master in Kaggle
- 50+ Projects on Github
- GRE Score
- GATE

# Create Profile

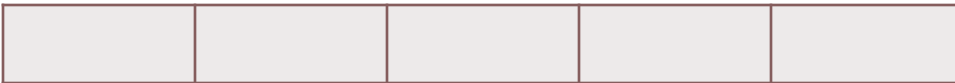
1. **GitHub.com**
2. **Kaggle.com**
3. **Numer.ai**
4. **LinkedIn (Follow ChatGPT)**

# Quiz

There are 25 horses and single track is there.  
Only 5 horses can run at a time on the track.  
There is no stop watch to record the time.  
**How many minimum** races are required to  
choose **top three** horses ?

# Answer

Make the batches of 5 and race



# Answer

Total Races = 5

B11	B12	B13	B14	B15
-----	-----	-----	-----	-----

B21	B22	B23	B24	B25
-----	-----	-----	-----	-----

B31	B32	B33	B34	B35
-----	-----	-----	-----	-----

B41	B42	B43	B44	B45
-----	-----	-----	-----	-----

B51	B52	B53	B54	B55
-----	-----	-----	-----	-----

# Answer

Choose best from each batch, race and arrange the batch accordingly

B21	B22	B23	B24	B25
-----	-----	-----	-----	-----

B41	B42	B43	B44	B45
-----	-----	-----	-----	-----

B11	B12	B13	B14	B15
-----	-----	-----	-----	-----

B51	B52	B53	B54	B55
-----	-----	-----	-----	-----

B31	B32	B33	B34	B35
-----	-----	-----	-----	-----

Total Races = 6

# Answer

Choose best from each batch, race and arrange the batch accordingly

B21	B22	B23	B24	B25
-----	-----	-----	-----	-----

B41	B42	B43	B44	B45
-----	-----	-----	-----	-----

B11	B12	B13	B14	B15
-----	-----	-----	-----	-----

B51	B52	B53	B54	B55
-----	-----	-----	-----	-----

B31	B32	B33	B34	B35
-----	-----	-----	-----	-----

Fastest is **B21**

Rest may be present in B22, B23, B41, B42, B11

Total Races = 7

# Daily Activity

- **Daily Task** | **Due Date:** Today 23:59:59 | **Submission Link**

- 5-Points of today's learning (Revision of Today's Lecture)
- 1-One Page writing (Two papers) | For research papers (Go to Resource --> 5. One Page Writing) | [Click Here](#)
- 1-Generative AI Tool | Future Tools - [Click Here](#)
- 1-Audio Book | [Click Here](#)
- 2-Puzzles (Brain Steller) | [Click Here](#)
- 2-Interview Puzzles | [Click Here](#)
- 1-Activity that I love



# 2 - Puzzles

## Puzzles for Interview

1. Playlist-01 | [Click Here](#)
2. Playlist-02 | [Click Here](#)
3. Playlist-03 | [Click Here](#)
4. Playlist-04 | [Click Here](#)
5. Playlist-05 | [Click Here](#)
6. Playlist-06 | [Click Here](#)
7. Playlist-07 | [Click Here](#)
8. Playlist-08
  - Puzzle-01 | [Click Here](#) | Apple
  - Puzzle-02 | [Click Here](#) | Microsoft
  - Puzzle-03 | [Click Here](#) | Google
  - Puzzle-04 | [Click Here](#) | Apple
  - Puzzle-05 | [Click Here](#) | Google
  - Puzzle-06 | [Click Here](#) | Amazon
  - Puzzle-07 | [Click Here](#) | Bloomberg
  - Puzzle-08 | [Click Here](#) | Microsoft

# 1 - Book

## Must Read Books in 2023

SN	Book
1	Atomic Habits
2	The Courage to be Disliked
3	Ikigai: The Japanese secret to a long and happy life
4	The Psychology of Money
5	ReWork
6	INCHPIN
7	The Alchemist
8	Sapiens
9	Man's Search For Meaning
10	TUESDAYS WITH MORRIE

# Video - Motivation

मम्मी मेरी कहती है

# Prizes

- 20 students will be awarded “**Best Data Science Expert**” in Kaggle evaluations.
- 20 students will be awarded “**Super Consistent**”.

# Goal of Summer School

- 1. Solve ~100 Puzzles.**
- 2. Participate in ~20 Kaggle competitions.**
- 3. Write ~100 research papers (using One-page writing).**
- 4. Listen/Read ~50 Audio Books.**
- 5. Explore ~50 Generative AI Tools.**
- 6. 20 Mini Projects.**
- 7. 2-3 Major Projects in a group of 2-5 students**

# Day 2

- **Topic of the Day**

- Basics of Python Programming (using Google Colab) | [Click Here](#) | Dr. PSRana

- **Self Learning**

- Download and install Anaconda on your local machine | [Click Here](#)
  - Learn how to install packages in Python using pip/conda
  - Try to install OpenCV and Yolo packages
- Python Tutorial | [Click Here](#)
- Python Video Tutorial | [Click Here](#)

- **Resource of the Day**

- Anaconda Cloud | [Click Here](#)

- **Assignment / Mini Project** | **Due Date: Tomorrow 23:59:59**

- Mini Project-01: Python Assignment | [Click Here](#) | [Submission Link](#)
- Mini Project-02: Challenge Question | [Click Here](#) | [Submission Link](#)
- Mini Project-03: Subset Selection Problem | [Click Here](#) | [Submission Link](#)
- Mini Project-04: ComboFinder | [Click Here](#) | [Submission Link](#)
- Mini Project-05: Text File Conversion | [Click Here](#) | [Submission Link](#)

- **Daily Task** | **Due Date: Today 23:59:59** | [Submission Link](#)

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- 2-Interview Puzzles | [Click Here](#)
- 1-Activity that I love

# Communication

- **If you are not getting mails kindly join Google group  
[www.ThaparSummerSchool.com](http://www.ThaparSummerSchool.com)**
- **Contact to me**  
Prashant.Singh@thapar.edu
- **If you are not registered, kindly let me know.**

# Join Google Group & WhatsApp Group

**Join WhatsApp Group**



**Join Mailing Group**





# Finally

- **"Mathematics is the queen of all the sciences" – Anonymous**
- **Whenever you have time, solve/explore maths problems, solve/explore graph problems, do maths using R/Python/Matlab/Octave, explore competitions, explore dataset.**
- **"Great minds discuss ideas, Average minds discuss events, Small minds discuss people"**
- **"Success is a journey...not a Destination!!!!"**

**Start your Journey**

**Now**

**Good Luck**

**Thanks**

**Learning by Doing**

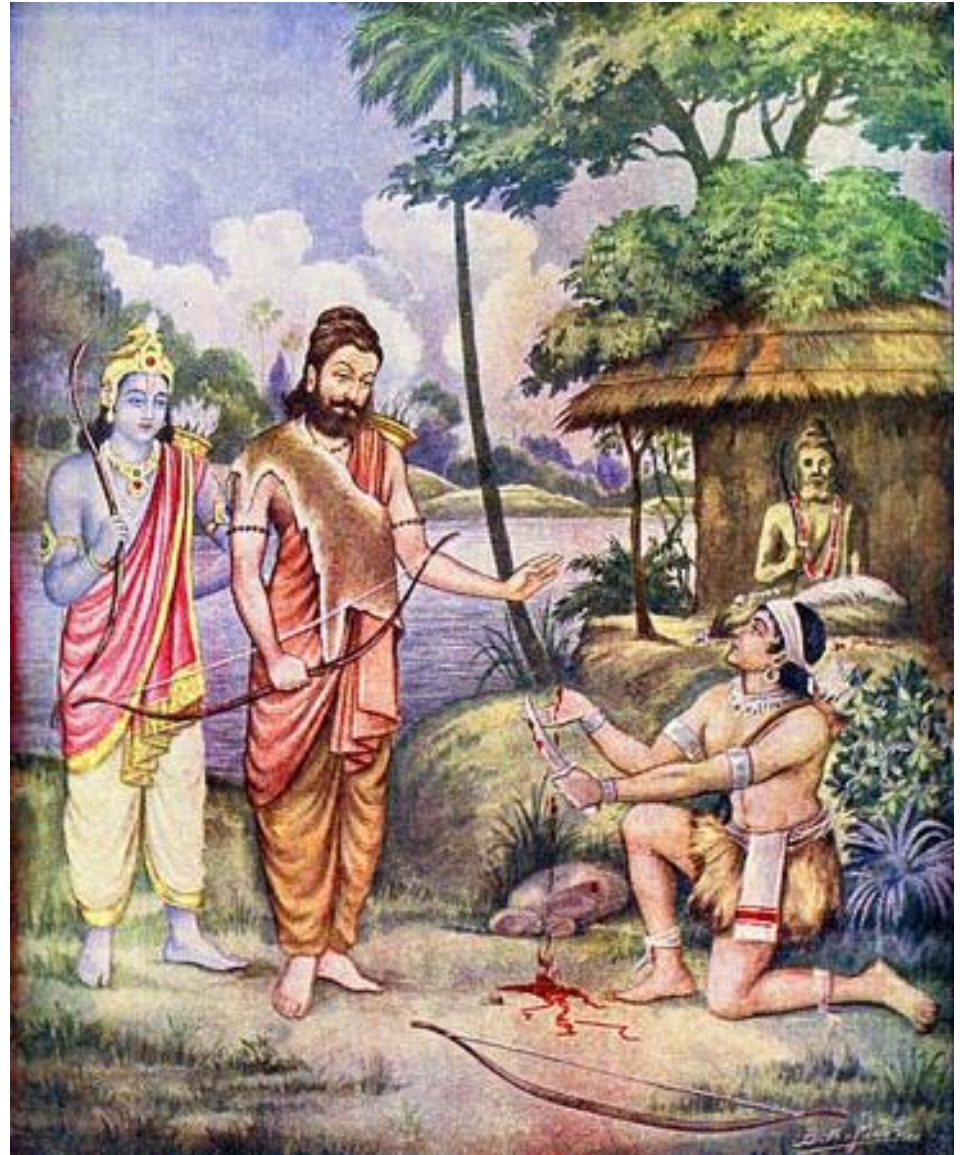
**psrana@gmail.com**

# Story of Eklavya

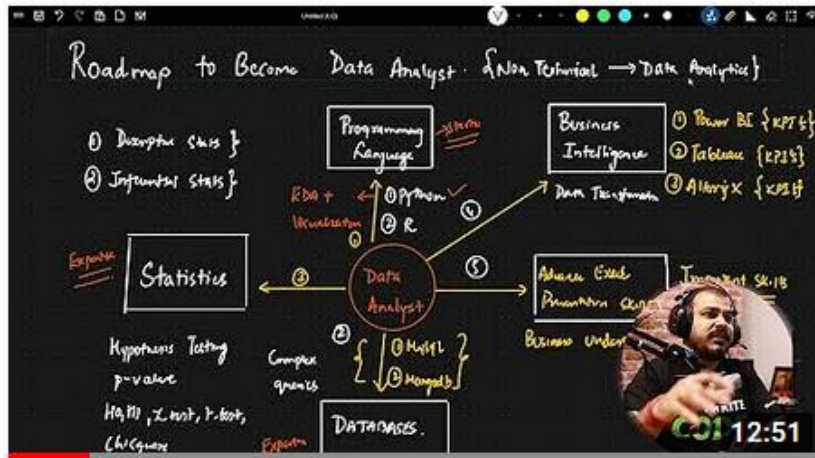
**Eklavya**

# Story of Eklavya

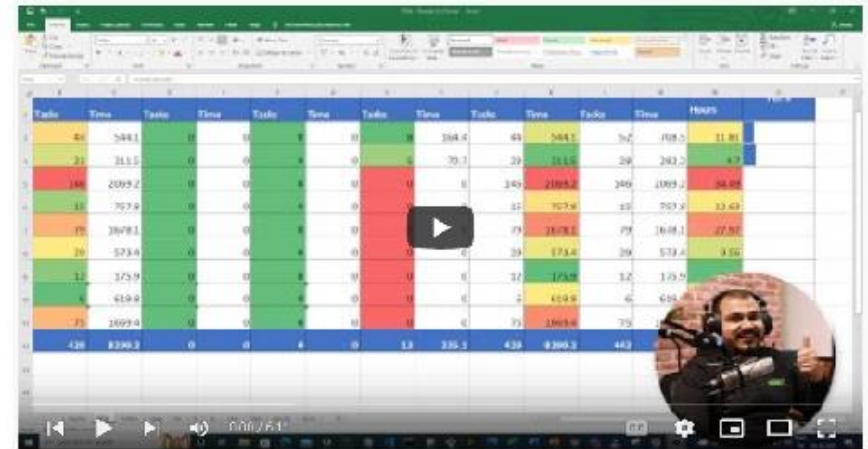
## Eklavya – Best Student



# Two videos to watch



Roadmap To Become Data Analyst in 2022|  
Krish Naik Hindi



# Self Learning Checklist

- Make your **daily-learning** checklist on Google form
- It can be asked to share at any time

Day	Activity / Learning in the Class	Self Learning
Day-1		
Day-2		
Day-3		
Day-4		
Day-5		
Day-6		

# Krish Naik Learning Checklist

[Click Here](#) to Explore

SN	Title	Link	Count	Time	Time (H)
1	Python	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVNUL99R4bDIVYsncUNvwUBB">https://www.youtube.com/playlist?list=PLZoTAELRMXVNUL99R4bDIVYsncUNvwUBB</a>	52	708.5	11.81
2	Stats	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVMhVyr3Ri9IQ-t5QPbtzxJO">https://www.youtube.com/playlist?list=PLZoTAELRMXVMhVyr3Ri9IQ-t5QPbtzxJO</a>	28	282.2	4.7
3	ML	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVPBTrWtJkn3wWQxZkmTXGwe">https://www.youtube.com/playlist?list=PLZoTAELRMXVPBTrWtJkn3wWQxZkmTXGwe</a>	146	2069.2	34.49
4	FE	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVPwYGE2PXD3x0bfKnR0cJjN">https://www.youtube.com/playlist?list=PLZoTAELRMXVPwYGE2PXD3x0bfKnR0cJjN</a>	15	757.8	12.63
5	DL	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVPGU70ZGsckrMdr0FteeRUi">https://www.youtube.com/playlist?list=PLZoTAELRMXVPGU70ZGsckrMdr0FteeRUi</a>	79	1678.1	27.97
6	NLP	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVMdJ5sqbCK2LiM0HhQVWNzm">https://www.youtube.com/playlist?list=PLZoTAELRMXVMdJ5sqbCK2LiM0HhQVWNzm</a>	29	573.4	9.56
7	DML	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVOAvUbePX1ITdxQR8EY35Z1">https://www.youtube.com/playlist?list=PLZoTAELRMXVOAvUbePX1ITdxQR8EY35Z1</a>	12	175.9	2.93
8	MLOPS	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVok1pRcOCaG5xtXxgMalple">https://www.youtube.com/playlist?list=PLZoTAELRMXVok1pRcOCaG5xtXxgMalple</a>	6	619.8	10.33
9	DSIQ	<a href="https://www.youtube.com/playlist?list=PLZoTAELRMXVPkI7oRvzyNnyj1HS4wt2K-">https://www.youtube.com/playlist?list=PLZoTAELRMXVPkI7oRvzyNnyj1HS4wt2K-</a>	442	1669.4	27.82
	Total		809	8534.3	142.24

# Be Ready

## Ready with your Introduction

- **2/3 happy moments** of your life
- **2/3 failures** of your life and how you recovered from it.
- **What is your future plans?**