

# Data Science Roadmap – Prep. By Abdullah Sajid(21-se-01) & Syed Ali Taqi(21-se-59)

## Week 1: Foundations of Data Science

- **Day 1-2**: Data Science Overview - Understanding the data science lifecycle and its applications.
- **Day 3-4**: SQL for Data Science - Introduction to SQL for data querying and manipulation.
- **Day 5-7**: Python for Data Science - Basics of Python programming for data analysis.

## Week 2: Data Manipulation and Visualization

- **Day 1-2**: NumPy - Exploring the fundamental library for numerical operations in Python.
- **Day 3-4**: Pandas - Data manipulation and analysis with Pandas DataFrames.
- **Day 5-7**: Data Visualization - Matplotlib and Seaborn for creating impactful data visualizations.

## Week 3: Statistics and Probability

- **Day 1-2**: Full Statistics for Data Science - Understanding key statistical concepts and techniques.
- **Day 3-4**: Probability - Introduction to probability theory in data science.
- **Day 5-7**: AI and Machine Learning - Overview of artificial intelligence and machine learning concepts.

## Week 4: Machine Learning Fundamentals

- **Day 1-2**: Full Machine Learning - Introduction to the machine learning process.
- **Day 3-4**: Machine Learning Algorithms - Overview of various ML algorithms and their use cases.
- **Day 5-7**: Supervised and Unsupervised Learning - Understanding the difference between supervised and unsupervised learning.

## **Week 5: Web Development and Deployment**

- **Day 1-2:** Streamlit - Creating interactive web applications for data science.
- **Day 3-4:** Flask - Introduction to web development with Flask.
- **Day 5-7:** Cloud Deployment - Deploying data science projects on cloud platforms.

## **Week 6: Advanced Topics in Data Science**

- **Day 1-2:** Deep Learning - Introduction to deep learning concepts and neural networks.
  - **Day 3-4:** Computer Vision - Exploring computer vision techniques using OpenCV.
  - **Day 5-6:** Natural Language Processing (NLP) - Basics of NLP for text analysis.
  - **Day 7:** Data Visualization and Reporting - Utilizing Microsoft Power BI for data visualization and reporting.
  - **Final:** Kaggle, Internships, and Jobs - Opportunities and career paths in data science, including Kaggle competitions and internships.
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