**Weekly Roadmap for Python in Data Science (Twice-Weekly Meetings)**

**Month 1: Foundational Concepts & Python Basics**

* **Week 1:**
  + **Meeting 1:** Introduction to Python, Data Types (Integers, Floats, Strings, Booleans), Variables, Operators.
  + **Meeting 2:** Control Flow (Conditional Statements: if-else, elif), Loops (for, while).
* **Week 2:**
  + **Meeting 1:** Functions (defining, calling, arguments, return values).
  + **Meeting 2:** Introduction to Data Structures (Lists, Tuples).
* **Week 3:**
  + **Meeting 1:** Data Structures (Dictionaries, Sets).
  + **Meeting 2:** Working with Strings (string methods, string formatting).
* **Week 4:**
  + **Meeting 1:** Introduction to Object-Oriented Programming (Classes, Objects).
  + **Meeting 2:** Project Review & Planning: Design a simple text-based game or a basic inventory management system using the concepts learned in Month 1.

**Month 2: Essential Libraries & Data Manipulation**

* **Week 1:**
  + **Meeting 1:** Introduction to NumPy (arrays, array operations, basic linear algebra).
  + **Meeting 2:** NumPy (random number generation, statistical functions).
* **Week 2:**
  + **Meeting 1:** Introduction to Pandas (Series, DataFrames, basic operations).
  + **Meeting 2:** Pandas (data selection, indexing, filtering).
* **Week 3:**
  + **Meeting 1:** Data Cleaning with Pandas (handling missing values, data transformation).
  + **Meeting 2:** Data Aggregation and Grouping with Pandas.
* **Week 4:**
  + **Meeting 1:** Project Review & Planning: Analyze a real-world dataset (e.g., from Kaggle, UCI Machine Learning Repository) using Pandas and NumPy. Perform basic data cleaning and exploratory analysis.

**Month 3: Data Visualization & Exploratory Data Analysis (EDA)**

* **Week 1:**
  + **Meeting 1:** Introduction to Matplotlib (basic plots: line, scatter, bar).
  + **Meeting 2:** Matplotlib (customizing plots, subplots).
* **Week 2:**
  + **Meeting 1:** Introduction to Seaborn (statistical graphics, distributions, relationships).
  + **Meeting 2:** Seaborn (categorical plots, heatmaps, pair plots).
* **Week 3:**
  + **Meeting 1:** Exploratory Data Analysis (EDA) techniques (descriptive statistics, visualizations).
  + **Meeting 2:** Data Visualization best practices and storytelling with data.
* **Week 4:**
  + **Meeting 1:** Project Review & Planning: Conduct an in-depth EDA on a chosen dataset, create insightful visualizations, and present your findings.

**Month 4: Statistical Modeling & Machine Learning Introduction**

* **Week 1:**
  + **Meeting 1:** Introduction to Statistical Modeling (regression analysis).
  + **Meeting 2:** Linear Regression with Scikit-learn.
* **Week 2:**
  + **Meeting 1:** Logistic Regression with Scikit-learn.
  + **Meeting 2:** Introduction to Classification (decision trees, k-Nearest Neighbors).
* **Week 3:**
  + **Meeting 1:** Support Vector Machines (SVM) with Scikit-learn.
  + **Meeting 2:** Model evaluation metrics (accuracy, precision, recall, F1-score).
* **Week 4:**
  + **Meeting 1:** Project Review & Planning: Build a simple machine learning model (classification or regression) on a chosen dataset.

**Month 5: Advanced Machine Learning & Deep Learning**

* **Week 1:**
  + **Meeting 1:** Introduction to Ensemble Methods (Random Forests, Gradient Boosting).
  + **Meeting 2:** Model selection and hyperparameter tuning.
* **Week 2:**
  + **Meeting 1:** Introduction to Deep Learning (neural networks, perceptrons).
  + **Meeting 2:** Building a simple neural network with TensorFlow/PyTorch.
* **Week 3:**
  + **Meeting 1:** Convolutional Neural Networks (CNNs) for image recognition.
  + **Meeting 2:** Recurrent Neural Networks (RNNs) for sequential data.
* **Week 4:**
  + **Meeting 1:** Project Review & Planning: Build a more advanced machine learning model (e.g., a deep learning model) on a chosen dataset.

**Month 6: Big Data & Advanced Topics**

* **Week 1:**
  + **Meeting 1:** Introduction to Big Data technologies (Hadoop, Spark).
  + **Meeting 2:** Working with Spark for data processing and analysis.
* **Week 2:**
  + **Meeting 1:** Natural Language Processing (NLP) with NLTK (text preprocessing, sentiment analysis).
  + **Meeting 2:** Introduction to Cloud Computing (AWS, Google Cloud, Azure).
* **Week 3:**
  + **Meeting 1:** Advanced Data Visualization techniques (interactive plots, dashboards).
  + **Meeting 2:** Time Series Analysis (forecasting, anomaly detection).
* **Week 4:**
  + **Meeting 1:** Project Review & Planning: Choose a challenging project that involves big data, NLP, or another advanced topic.