**Week 1 (Starting August 27, 2024): R Programming and Data Manipulation**

* **Day 1 (August 27): R Basics and Data Structures**
  + **Review R syntax, data types, and structures (vectors, lists, data frames, matrices).**
  + **Practice writing functions and using control structures (if-else, loops).**
  + **LeetCode Question: Two Sum (Easy) - Practice basic problem-solving skills.**
* **Day 2 (August 28): Data Manipulation with dplyr and tidyr**
  + **Master data wrangling with dplyr (select, filter, mutate, summarize, join).**
  + **Practice reshaping data with tidyr (gather, spread, separate, unite).**
  + **LeetCode Question: Subarray Sum Equals K (Medium) - Focus on data manipulation logic.**
* **Day 3 (August 29): Data Import and Export**
  + **Learn to import/export data from various formats (CSV, Excel, SQL, APIs).**
  + **Practice reading and writing data using readr, readxl, DBI, and httr.**
  + **LeetCode Question: Merge Two Sorted Lists (Easy) - Understand importing/exporting concepts in coding.**
* **Day 4 (August 30): Review and Practice**
  + **Solve end-to-end problems involving data manipulation using dplyr and tidyr.**
  + **LeetCode Question: Group Anagrams (Medium) - Practice manipulating and grouping data.**
* **Day 5 (August 31): Rest or Light Practice**
  + **LeetCode Question: Best Time to Buy and Sell Stock (Easy) - Light practice focusing on simple logic.**

**Week 2 (September 2-6, 2024): Exploratory Data Analysis (EDA) and Visualization**

* **Day 1 (September 2): EDA with R**
  + **Review summary statistics and correlation analysis in R.**
  + **Practice identifying trends, patterns, and outliers using R base functions and dplyr.**
  + **LeetCode Question: Find All Numbers Disappeared in an Array (Easy) - Focus on identifying patterns.**
* **Day 2 (September 3): Data Visualization with ggplot2**
  + **Learn to create and customize plots with ggplot2 (histograms, scatter plots, box plots).**
  + **Practice visualizing multi-dimensional and time-series data.**
  + **LeetCode Question: Container With Most Water (Medium) - Work with visualizing and understanding data structure.**
* **Day 3 (September 4): Advanced Visualization Techniques**
  + **Explore interactive visualizations using plotly and ggplotly.**
  + **Practice creating complex visualizations like facet grids, heatmaps, and network graphs.**
  + **LeetCode Question: Maximal Rectangle (Hard) - Advanced visualization through matrix understanding.**
* **Day 4 (September 5): Review and Practice**
  + **Complete an EDA and visualization project from start to finish.**
  + **LeetCode Question: Word Ladder (Hard) - Apply concepts of transformation and visualization.**
* **Day 5 (September 6): Rest or Light Practice**
  + **LeetCode Question: Single Number (Easy) - Simple yet effective problem for light practice.**

**Week 3 (September 9-13, 2024): Statistics, Probability, and Hypothesis Testing**

* **Day 1 (September 9): Descriptive and Inferential Statistics in R**
  + **Review statistical functions in R (mean, median, variance, standard deviation).**
  + **Understand sampling distributions and perform hypothesis tests using t-tests and chi-square tests.**
  + **LeetCode Question: Median of Two Sorted Arrays (Hard) - Focus on statistical concepts.**
* **Day 2 (September 10): Probability Distributions and Bayesian Analysis**
  + **Learn about and implement probability distributions in R (Normal, Binomial, Poisson).**
  + **Practice Bayesian analysis using the bayesplot and rstanarm packages.**
  + **LeetCode Question: Permutations (Medium) - Practice probability and combinatorial concepts.**
* **Day 3 (September 11): Hypothesis Testing and A/B Testing**
  + **Design and analyze A/B tests using R (t-tests, ANOVA).**
  + **Practice with real-world datasets to understand statistical significance and confidence intervals.**
  + **LeetCode Question: Search Insert Position (Easy) - Basic problem for applying A/B testing logic.**
* **Day 4 (September 12): Review and Practice**
  + **Solve problems involving statistical analysis and hypothesis testing using R.**
  + **LeetCode Question: Valid Anagram (Easy) - Understand statistical significance through simple logic.**
* **Day 5 (September 13): Rest or Light Practice**
  + **LeetCode Question: Reverse Linked List (Easy) - Light practice with simple operations.**

**Week 4 (September 16-20, 2024): Machine Learning with R**

* **Day 1 (September 16): Supervised Learning (Regression)**
  + **Practice linear and logistic regression using the lm and glm functions.**
  + **Explore regularization techniques like Ridge and Lasso using the glmnet package.**
  + **LeetCode Question: Predict the Winner (Medium) - Apply regression logic.**
* **Day 2 (September 17): Supervised Learning (Classification)**
  + **Implement decision trees, random forests, and SVMs using rpart, randomForest, and e1071.**
  + **Evaluate models with confusion matrices, ROC curves, precision, recall, and F1 score.**
  + **LeetCode Question: Majority Element (Easy) - Classification problem logic.**
* **Day 3 (September 18): Unsupervised Learning**
  + **Practice clustering techniques like k-means, hierarchical clustering, and PCA using base R and the factoextra package.**
  + **Analyze patterns and clusters in datasets.**
  + **LeetCode Question: Kth Largest Element in an Array (Medium) - Focus on grouping and clustering.**
* **Day 4 (September 19): Review and Practice**
  + **Solve end-to-end machine learning problems using R, from model selection to evaluation.**
  + **LeetCode Question: Insert Interval (Hard) - Apply complex logic to machine learning concepts.**
* **Day 5 (September 20): Rest or Light Practice**
  + **LeetCode Question: Climbing Stairs (Easy) - Light problem for simple logic application.**

**Week 5 (September 23-27, 2024): Time Series Analysis and Model Deployment**

* **Day 1 (September 23): Time Series Analysis with R**
  + **Review time series decomposition, ARIMA models, and forecasting with the forecast package.**
  + **Practice visualizing and analyzing time-series data.**
  + **LeetCode Question: Best Time to Buy and Sell Stock II (Easy) - Focus on time-series logic.**
* **Day 2 (September 24): Deep Learning with R**
  + **Get introduced to deep learning using the keras and tensorflow packages in R.**
  + **Implement basic neural networks for simple datasets.**
  + **LeetCode Question: Binary Tree Maximum Path Sum (Hard) - Understand deep learning concepts.**
* **Day 3 (September 25): Model Deployment and R Shiny**
  + **Learn to deploy machine learning models using R Shiny.**
  + **Practice building a simple Shiny app that includes a machine learning model.**
  + **LeetCode Question: Course Schedule (Medium) - Apply concepts of deployment logic.**
* **Day 4 (September 26): Review and Practice**
  + **Complete a small project that involves time series analysis or deploying a model using Shiny.**
  + **LeetCode Question: Merge Intervals (Medium) - Practice merging and deploying concepts.**
* **Day 5 (September 27): Rest or Light Practice**
  + **LeetCode Question: Palindrome Linked List (Easy) - Simple logic for light practice.**

**Week 6 (September 30-October 4, 2024): Mock Interviews and Final Review**

* **Day 1 (September 30): Mock Interviews (Technical)**
* **Focus on solving R coding problems, EDA, and machine learning case studies.**
* **Practice with real-world datasets and explain your analysis and findings.**
* **LeetCode Question: Find the Duplicate Number (Medium) - Problem-solving logic.**
* **Day 2 (October 1): Mock Interviews (Behavioral and Case Studies)**
  + **Prepare for common behavioral questions and data science case studies.**
  + **Practice explaining your thought process, especially in R, during problem-solving.**
  + **LeetCode Question: Find Minimum in Rotated Sorted Array (Medium) - Apply case study logic.**
* **Day 3 (October 2): Review and Final Touches**
  + **Go over key concepts and areas where you feel less confident in R.**
  + **LeetCode Question: Word Search (Medium) - Focus on refining logic and solving skills.**
* **Day 4 (October 3): Light Practice and Relaxation**
  + **Solve a few problems to stay sharp, focusing on R coding.**
  + **LeetCode Question: Implement Queue using Stacks (Easy) - Simple problem to stay sharp.**
* **Day 5 (October 4): Final Mock Interview and Relaxation**
  + **Conduct a full-length mock interview, then take the rest of the day to relax.**
  + **LeetCode Question: Zigzag Conversion (Medium) - Final problem before the interview.**