Programming Language:

Week 1:

- **Day-1, 2, 3 :**
  - **CPP**- Introduction, Variables and Operators: Introduction, Variables, Data types.
  - **Java**- Introduction, Variables and Operators: Introduction, Variables, Data types.
- **Day- 4, 5, 6 :**
  - **CPP**- Input/Output,Arithmetic, Logical, Bitwise.
  - **Java**- Wrapper class,Input/Output, Operators in Java, Bitwise.

Week 2:

- **Day- 1, 2, 3 :**
  - **CPP**- Flow Control, Function & Loops: If-else, for loop, while loop.
  - **Java**- Flow Control, Loops & Function: If-else, for loop, while loop.
- **Day- 4, 5, 6 :**
  - **CPP**- jump statements, Patterns, Functions & its Applications.
  - **Java**- jump statements, Patterns, Functions & its Applications.

Week 3:

- **Day- 1, 2, 3, 4:**
  - **CPP**- Arrays, String, Pointers & Reference: 1D & Multidimensional Arrays, References & Pointers, C style Strings.
  - **Java**- Arrays & String : 1D & Multidimensional Arrays, String in Java, StringBuilder & StringBuffer.
- **Day- 5, 6:**
  - **CPP**- Struct and Union, Quiz
  - **Java**- Quiz

Week 4:

- **Day- 1, 2, 3:**
  - **CPP**- C++ OOPs: Constructors & Destructors, Inheritance.
  - **Java**- Java OOPs: Encapsulation, Inheritance.

- **Day- 4, 5, 6:**
  CPP- Operator Overloading, Friend Function in C++.
  Java- Interface,Polymorphism, Abstraction, Constructors.

Week 5:

- **Day- 1, 2, 3:**
  CPP- Advanced: Exceptions, Function pointers, Lambda Expressions.
  Java- Advanced: BigInteger, File Handling.

- **Day- 4, 5, 6:**
  CPP- Smart pointer, Errors, Dynamic Memoryallocation.
  Java- Multithreading, Exceptions.

Week 6:

- **Day- 1, 2, 3:**
  CPP- Advanced: Exceptions, Function pointers, Lambda Expressions, Smart pointer, Errors, Dynamic Memory allocation.
  Java- Advanced: BigInteger, File Handling, Multithreading, Exceptions.

Data Structures(Basics):

Week 7:

- **Day- 1 :** Introduction : Asymptotic Analysis (Finding time and space complexities)
- **Day- 2, 3 :** Arrays: Types, Operations on Arrays
- **Day - 4, 5, 6 :** Basic Recursion

Week 8:

- **Day-1, 2, 3 :** Hashing: Different Types of Hashing Techniques,Collision resolution Techniques.
- **Day- 4, 5, 6 :** Searching: Linear & Binary Search(Iterative and Recursive).

Week 9:

- **Day-1, 2, 3, 4 :** Sorting: Insertion Sort, Merge Sort, Quick Sort, Cycle Sort, Counting Sort, Radix Sort, Bucket Sort, Custom Sort using STL
- **Day- 5, 6 :** Linked Lists: Singly Linked List, Search,

Week 10:

- **Day-1, 2, 3:** Linked Lists: Insert, Delete, Reverse Operations. Circular Linked Lists: Insert & Delete Operations
  Day- 4, 5 : Doubly Linked Lists: Insert & Delete Operations
- **Day- 6 :** Solve available practice questions

Week 11:

- **Day-1, 2:** Stack: Stack Operations, Implementation.
- **Day- 3 :** Solve available practice questions
- **Day- 4, 5 :** Queue: Queue Operations, Implementation.
- **Day- 6 :** Deque Operations, Implementation. Solve available practice questions

Week 12:

- **Day- 1, 2, 3 :** Tree: Binary Tree, Tree Traversals, Questions
- **Day- 4, 5 :** Binary Search Tree: Search, Insert, Delete, Floor & Ceil.
- **Day- 6 :** Heaps: Binary Heap(Min and Max Heap).

Libraries:

Week 13:

- **Day- 1, 2:**
  CPP- STL Overview: Introduction, Iterators & templates.
  Java- Collections Overview: Introduction, Generics, Collection, Iterators

- **Day- 3:**
  CPP- Pairs
  Java- Lambda Expressions

- **Day- 4:**
  CPP- Vectors: Vectors & its Questions
  Java- Streams

- **Day- 5, 6:**
  CPP- Forward list & List: Introduction and Questions
  Java- ArrayList: Introduction and Questions

Week 14:

- **Day- 1, 2, 3, 4:**
  CPP- Stack & Queue: Different Questions
  Java- Stack & Queue: Different Questions

- **Day- 5, 6:**
  CPP- Priority Queue
  Java- Deque & Priority Queue

Week 15:

- **Day- 1, 2, 3:**
  CPP- Set & MultiSet
  Java- HashSet and LinkedHashSet, TreeSet

- **Day- 4, 5:**
  CPP- Map & Multimap
  Java- HashMap and LinkedHashMap, TreeMap

- **Day- 6:**
  CPP- Unordered_set
  Java- String:

Week 16:

- **Day- 1:**
  CPP- Unordered_map
  Java- String: Continued..

- **Day- 2:**
  CPP- Non-Mutating STL Algorithms
  Java- Comparator & Comparable

- **Day- 3:**
  CPP- Set & MultiSet
  Java- Array Class

- **Day- 4, 5:**
  CPP- Mutating STL Algorithms
  Java- Sorting: Methods & Questions

- **Day- 6:**
  CPP- String and More
  Java- Collections Class

Data Structures(Advanced):

Week 17:

- **Day-1 :** Mathematics : GCD, Prime, Factorial, Sieve of Eratosthenes, Computing Power
- **Day- 2, 3 :** Bit Magic : Bit Operators,Tricks to use bit manipulation.
- **Day - 4 :** Recursion: Questions
- **Day- 5, 6 :** Arrays: Questions, Prefix Sum, Sliding Window

Week 18:

- **Day-1, 2, 3 :** Searching: Two pointer approach &Questions
- **Day- 4, 5, 6 :** Sorting: Questions

Week 19:

- **Day-1, 2, 3 :** Matrix :Operations on Matrix(SearchRotate,Transpose).
- **Day- 4, 5, 6 :** Solve available practice questions

Week 20:

- **Day-1, 2, 3 :** Hashing: Hashing Questions
- **Day- 4, 5, 6 :** Strings: Basic Operations, Naive Pattern Search, Other searching algorithms(KMP, Rabin-Karp).

Week 21:

- **Day-1, 2, 3 :** Linked Lists:Linked List & its Questions
- **Day - 4, 5 :** Stacks: Infix, Prefix & Postfix, Questions
- **Day- 6 :** Queue & Deque: Different Questions.

Week 22:

- **Day-1, 2, 3 :** Tree: Binary Tree, Tree Traversals, Different Questions
- **Day- 4, 5, 6 :** Binary Search Tree: AVL (Basic Introduction),Self Balancing Trees and their use in sets and maps STL.

Week 23:

- **Day-1, 2, 3 :** Tree: Solve medium level questions of tree on GeeksforGeeks.
- **Day- 4, 5, 6 :** Binary Search Tree: Solve medium level questions of tree on GeeksforGeeks.

Week 24:

- **Day-1, 2, 3 :** Heaps: Heap Sort, Min & Max Heap
- **Day - 4, 5, 6 :** Solve available practice questions.

Week 25:

- **Day-1, 2 :** Graphs: Graph Implementation, Traversals,
- Cycle Detection.
- **Day - 3, 4, 5, 6 :** Bipartite Graph, Minimum Spanning Tree, Topological Sorting, & solve available questions of graph.

Week 26:

- **Day-1, 2, 3 :** Graph Algorithms: Shortest Path Algorithms, Connected Components, Bridges, etc.
- **Day- 4, 5 ,6 :** Solve available practice questions

Week 27:

- **Day-1, 2, 3 :** Greedy : Fractional Knapsack, Activity Selection, Job Sequencing, Backtracking: Concept & Questions.
- **Day- 4, 5 ,6 :** Solve available practice questions

Week 28:

- **Day-1, 2, 3, 4, 5, 6 :** Dynamic Programming: Properties (Top Down, Bottom Up, Optimal Substructures, Overlapping Subproblems) and Standard Problems (LIS, LCS, etc), Dynamic Programming Problems (Variations of Standard Problems)

Week 29:

- **Day-1, 2, 3, 4, 5, 6 :** Dynamic Programming: Solve all the available practice questions of dynamic programming.

Week 30:

- **Day 1, 2, 3:** Tries, Segment Tree
- **Day 4, 5, 6:** Solve available practice questions

Week 31:

- **Day 1, 2, 3:** Disjoint Set Union: Operations(Union, Find), Path Compression
- **Day 4, 5, 6:** Solve available practice questions

Week 32:

- **Day-1, 2, 3 :** Linked Lists: Linked List & its Questions
- **Day - 4, 5, 6:** ,Tree, BST & its Questions

Week 33:

- **Day-1, 2, 3 :** Stack Infix, Prefix, Postfix & its Questions
- **Day - 4, 5, 6:** Queue & Deque: Different Questions

Object Oriented Design:

Week 34:

- **Day-1 :** Introduction to Classes and Objects
- **Day - 2 :** Software Development Process
- **Day- 3 :** Introduction to UML.
- **Day - 4, 5 :** Class Diagrams and Object Diagrams
- **Day- 6 :** Use Case Diagrams.

Week 35:

- **Day-1, 2 :** OOAD Case Study: Design Online Movie Ticket Booking
- **Day - 3, 4 :** OOAD Case Study: Design Ecommerce Platform
- **Day- 5 :** OOAD Case Study: Design Parking Lot
- **Day - 6 :** OOAD Case Study: Design BlackJack Card Game

Computer Subjects:

Week 36:

- **Day-1, 2, 3, 4, 5, 6 :** Operating Systems: Introduction, Multithreading, Process Management, Process Synchronization, Deadlocks, Memory management, Virtual Memory

Week 37:

- **Day-1, 2, 3, 4, 5, 6 :** Computer Networks: Introduction, Data Link Layer, Network Layer, Transport Layer, Application Layer, IP addressing.

Week 38:

- **Day-1, 2, 3, 4, 5, 6 :** TCP/IP , OSI model, protocols , and do interview questions

Week 39:

- **Day-1, 2, 3, 4, 5, 6 :** DBMS: Introduction, ER and relation Models, Database Design(Normal Forms),

File Structures, Transactions and Concurrency Control.

Week 40:

- **Day-1, 2, 3 :** SQL: SQL Queries
- **Day- 4, 5, 6 :** Computer Networking Interview Questions

Week 41:

- **Day-1, 2, 3 :** Operating Systems Interview Questions
- **Day- 4, 5, 6 :** DBMS Interview Questions

Aptitude and Reasoning:

Week 42:

- **Day-1, 2, 3 :** Quantitative Analysis: Area, Average, DecimalsFractions, DivisibilityTest, HCFandLCM, HeightDistance.
- **Day- 4, 5, 6 :** NumberSystem, Percentage, ProfitLossDiscount, RatioAndProportion.

Week 43:

- **Day-1, 2, 3 :** TimeAndWork, Trains.
- **Day- 4, 5, 6 :** Logical and Verbal Reasoning: Logical Reasoning, Basics of Grammar.

Week 44:

- **Day-1, 2, 3 :** Articles, Solution to the Coleman Exercise of Articles, Active Voice and Passive Voice, Closet Test, Passage Formation, Sentence Formation, Sentence Completion.
- **Day- 4, 5, 6 :** Subject Verb and Agreement, Determiners, Modifiers, ParallelStructure, Grammar Exercise, Error Spotting, Parajumbles, Verbal Analogies.