

Python & DSA Preparation Checklist for Google STEP

Python Topics

Basics

- Variables & Data Types
- Input/Output
- Operators & Expressions
- Conditional Statements (if, elif, else)
- Loops (for, while)

Data Structures in Python

- Strings
- Lists
- Tuples
- Sets
- Dictionaries

Functions

- Defining & calling functions
- Parameters & return values
- Lambda functions
- Recursion

Object-Oriented Programming

- Classes and Objects
- `__init__()` Constructor
- Instance vs Class variables
- Inheritance & Polymorphism

Advanced Python

- File Handling (read, write, with)
- Exception Handling (try, except)
- List Comprehension

Python & DSA Preparation Checklist for Google STEP

- Modules & Packages
- Working with JSON
- map(), filter(), reduce(), zip()

DSA Topics

Arrays & Strings

- Traversal, Insertion, Deletion
- Prefix Sum
- Sliding Window
- Two Pointers
- Subarrays and substrings

Linked Lists

- Singly & Doubly Linked List
- Reversal, Middle, Cycle Detection

Stacks & Queues

- Using Lists, Deque
- Parentheses problems
- Monotonic Stack

Recursion & Backtracking

- Factorial, Fibonacci
- Subsets, Permutations
- N-Queens (basic idea)

Hashing (Dictionaries & Sets)

- Frequency Counting
- HashMaps
- HashSet Problems

Searching & Sorting