**10-Day Prep Plan**

**📅 Days 1–2 → Foundation**

* **Pick a language** (Python is fastest to learn + used widely).
* Learn basics:
  + Variables, loops, conditionals, functions.
  + Lists, dictionaries, sets, strings.
  + Input/output & exception handling.
* Practice on HackerRank “Python Basics”.
* Watch short crash course: *Python for Beginners* (YouTube).

👉 End of Day 2 Goal: Be comfortable writing simple programs (factorial, palindrome, sum of array, etc.).

**📅 Days 3–4 → Data Structures & Algorithms**

* Learn core DS:
  + Arrays, Strings, HashMaps.
  + Stacks, Queues, Linked Lists.
  + Sorting (bubble, merge, quick — understand not just code).
* Learn core algorithms:
  + Searching (linear, binary).
  + Recursion basics.
* Practice 10–15 problems (easy–medium) on LeetCode or GeeksforGeeks.

👉 End of Day 4 Goal: Be able to solve easy DSA questions in 20–25 minutes.

**📅 Days 5–6 → Operating Systems + OOP**

* **OS Basics:**
  + Processes vs Threads.
  + Deadlock (just concept).
  + Memory (stack vs heap).
* **OOP (Python/Java):**
  + Classes, objects, inheritance, polymorphism, encapsulation.
  + Write 2–3 small programs (bank account, student grades).

👉 End of Day 6 Goal: Can explain OOP + OS basics clearly in simple words.

**📅 Days 7–8 → Web Basics + Project**

* **HTML5 Basics:**
  + Structure of webpage, forms, links, tables.
  + CSS styling (very simple).
* **Mini Project Idea:** Build a “To-Do List” in Python (console app) or simple HTML page.
* Document your project → they love seeing initiative.

👉 End of Day 8 Goal: Have 1 small project to talk about in interview.

**📅 Day 9 → Mock Interview Practice**

* Practice:
  + Tell me about yourself.
  + Why Microsoft?
  + Explain a project you built.
  + Basic coding Qs (reverse string, find duplicates, sort array).
* Use Pramp or ask a friend for mock interviews.

**📅 Day 10 → Revision & Confidence Boost**

* Revise:
  + Top 10 Python/Java programs.
  + OOP & OS notes (flashcards).
  + STAR method for behavioral Qs (Situation, Task, Action, Result).
* Sleep well, stay calm — confidence matters.

**🚀 Extra Tips**

* **Daily Routine:** 5 hrs study → 2 hrs coding practice → 30 mins notes → 30 mins revision.
* **Interview Hack:** Even if you don’t know the exact answer → explain your *thought process*. Microsoft values problem-solving approach.
* **Resources:**
  + DSA: LeetCode Easy
  + OS Notes: GeeksforGeeks OS Basics
  + Python: W3Schools or FreeCodeCamp

**Day 1 – Python Basics I**

🎯 Goal: Learn syntax + simple programs

* **Tutorial:** [Python Crash Course – FreeCodeCamp (4h)](https://youtu.be/rfscVS0vtbw) → watch first 1.5h
* **Topics:** Variables, data types, input/output, if-else, loops, functions.
* **Practice:**
  + HackerRank Python Introduction (5–6 problems)
  + Write programs: factorial, Fibonacci, palindrome.

**Day 2 – Python Basics II**

🎯 Goal: Work with collections + exceptions

* **Tutorial:** Continue FreeCodeCamp (watch till OOP intro).
* **Topics:** Lists, dictionaries, sets, tuples, string operations, exception handling.
* **Practice:**
  + HackerRank Python Data Structures (6–8 problems)
  + Write programs: frequency counter (word count), find duplicates in list.

**Day 3 – Data Structures I**

🎯 Goal: Arrays, Strings, Searching

* **Notes:** GeeksforGeeks Arrays
* **Practice:**
  + LeetCode Easy:
    - Two Sum
    - Best Time to Buy and Sell Stock
    - Valid Palindrome
* **Mini Task:** Implement linear search + binary search in Python.

**Day 4 – Data Structures II**

🎯 Goal: Stacks, Queues, Linked List, Sorting

* **Notes:**
  + Stack & Queue Basics
  + Sorting Algorithms Overview
* **Practice:**
  + Implement stack/queue using list.
  + Implement bubble sort + merge sort.
  + LeetCode Easy:
    - Merge Sorted Array
    - Valid Parentheses

**Day 5 – Operating Systems Basics**

🎯 Goal: Understand OS fundamentals

* **Notes:**
  + OS Basics – GeeksforGeeks
  + Focus on: Process vs Thread, Scheduling, Deadlocks, Memory (stack vs heap).
* **Video:** [OS Concepts in 1 Hour](https://youtu.be/vBURTt97EkA)
* **Practice:** Be able to answer in your own words:
  + What’s a process?
  + How is memory allocated?
  + What causes deadlocks?

**Day 6 – OOP Concepts**

🎯 Goal: Classes, Inheritance, Polymorphism

* **Tutorial:** [Python OOP – Corey Schafer](https://youtu.be/ZDa-Z5JzLYM)
* **Practice:**
  + Write a BankAccount class (deposit, withdraw, balance).
  + Write a Student class (inheritance from Person).
* **Concept Questions:**
  + Difference between class & object?
  + What is polymorphism? Give example.

**Day 7 – HTML & Web Basics**

🎯 Goal: Understand HTML5 structure

* **Tutorial:** [HTML & CSS Crash Course – Traversy Media](https://youtu.be/mU6anWqZJcc) (watch 1–2h)
* **Topics:** Headings, paragraphs, lists, forms, tables, links, basic CSS.
* **Practice:**
  + Build a **personal portfolio page** with your name, skills, and contact.
  + Use forms for “Contact Me”.

**Day 8 – Mini Project**

🎯 Goal: Have a project to show in interview

* Option 1 (Python): Console **To-Do List App** (add/remove tasks, save in file).
* Option 2 (HTML): **Portfolio Website** (from Day 7, improve with CSS).
* Write a short doc (2–3 lines) on features you added.
* Upload to GitHub → you can show it in interview.

**Day 9 – Mock Interview**

🎯 Goal: Practice answering + coding under pressure

* **Behavioral Questions:**
  + Tell me about yourself.
  + Why Microsoft?
  + Example when you solved a problem in a team.
* **Coding Practice:**
  + Reverse a string.
  + Find max in array.
  + Check balanced parentheses.
* Use Pramp Free Mock Interviews.

**Day 10 – Revision & Confidence**

🎯 Goal: Be calm, review key points

* **Revise:**
  + 5 OOP questions + 5 OS questions.
  + 10 LeetCode easy problems you solved.
* **Behavioral Review:** Practice answers in STAR method.
* **Mindset:** Even if stuck → explain your approach (they care more about thought process than just answer).

**✅ Final Checklist Before Interview**

* Can explain arrays, stacks, queues, sorting.
* Know OS basics (process, thread, deadlock).
* Can write simple Python programs in 15–20 min.
* Have 1 mini project ready to discuss.
* Prepared answers for “Tell me about yourself” + “Why Microsoft?”.