

AI Internship Quick Notes (Python + DSA + SQL + AI)

■ Python Basics

- 1 Python dynamically typed hai — variable ka type automatic detect hota hai.
- 2 ``=`` assignment ke liye use hota hai, ``==`` comparison ke liye.
- 3 ``for`` loop fixed range ke liye hota hai, ``while`` loop condition-based.
- 4 Common data types: int, float, str, list, tuple, set, dict.
- 5 Function: `def func_name(params): return value.`

■ DSA (Data Structures & Algorithms)

- 1 List: Ordered, mutable, duplicates allowed. Example: [1,2,3]
- 2 Tuple: Ordered, immutable. Example: (1,2,3)
- 3 Set: Unordered, unique items only. Example: {1,2,3}
- 4 Dictionary: Key-Value pairs. Example: {'name':'Ali', 'age':20}
- 5 Sorting arranges data; Searching finds specific data.

■ File Handling

- 1 Modes: 'r' (read), 'w' (write), 'a' (append), 'x' (create).
- 2 Use ``with open('file.txt', 'r') as f:`` for safe file handling.
- 3 Reading: `f.read()`, `f.readline()`, Writing: `f.write('text')`.
- 4 `FileNotFoundError` occurs if file not found in read mode.

■ SQL Basics

- 1 SQL = Structured Query Language, used for managing databases.
- 2 `SELECT * FROM table;` → sab data dekhne ke liye.
- 3 `WHERE` condition filter ke liye use hota hai.
- 4 `INSERT INTO students VALUES ('Ali', 20);`
- 5 `DELETE` removes data, `DROP` puri table delete karta hai.
- 6 `PRIMARY KEY` har record ko unique banata hai.

■ AI & Machine Learning Basics

- 1 AI (Artificial Intelligence): Machine ko human-like decision lene ki ability dena.
- 2 Machine Learning: System data se seekhta hai bina explicitly code kiye.
- 3 Dataset: Model ko training ke liye data provide karta hai.
- 4 Supervised Learning → Labeled data; Unsupervised → Unlabeled data.
- 5 Example: Image Recognition, Chatbots, Recommendation Systems.

Tip: Monday ke test se pehle ye notes 2 dafa revise kar lo aur W3Schools pe examples run karo. ■