Set A - Real World Example Questions

Q1. A food delivery app breaks its development into frontend, backend, and tracking modules.

Q2. A compiler identifies similar code blocks to reuse optimization logic.

Q3. A subway map shows only major stations and routes, ignoring small details.

Q4. A robot exploring a maze follows one corridor until dead end before backtracking.

Q5. A chess AI stops exploring a move branch once it detects a losing path.

Q6. A database updates cached results only when queried again.

Q7. A music app finds the most played 3-song sequence in user playlists.

Q8. A file manager displays folders level by level from root to subfolders.

Q9. An organization chart showing CEO $\rightarrow$ Managers $\rightarrow$ Employees.

Q10. A GPS app updates routes when a shorter path is discovered.

Q11. A database rebalances its tree after frequent inserts to maintain performance.

Q12. A regex 'a*' matches zero or more occurrences of 'a' in a word.

Q13. An online store precomputes offers for popular items to load pages faster.

Q14. A heap ensures the parent element always has a higher priority.

Q15. A sorting algorithm divides the array around a pivot element.

Q16. A low-level system checks if a number is even using bitwise AND operation.

Q17. A Fibonacci function saves previous values to speed up future calls.

Q18. After each pass in bubble sort, the largest number stays at the end.

Q19. A delivery company uses Dijkstra’s algorithm to find shortest delivery routes.

Q20. A text analyzer separates a word into its beginning and ending patterns.

Q21. A company breaks project tasks into subtasks handled by different teams.

Q22. An antivirus program detects similar virus patterns in multiple files.

Q23. A navigation app hides traffic details but shows only major routes.

Q24. A game bot explores all nodes on one level before going to the next.

Q25. A backtracking Sudoku solver stops early when conflict arises.

Q26. A caching mechanism delays updates to data until it’s actually accessed.

Q27. A temperature monitor computes average readings for every 10-second interval.

Q28. An HR system displays employees sorted by department hierarchy.

Q29. A route planner recalculates paths when a new bridge reduces travel time.

Q30. A search tree adjusts itself after every insertion to stay balanced.