# Cognizant - Backend Developer

## Interview Process

- Round 1: Aptitude test/Skill-based assessment test
- Round 2: Technical Interview
- Round 3: HR Interview

## Interview Questions

1. What are the four principles of Object-Oriented Programming (OOP)?
2. Explain the difference between ArrayList and LinkedList.
3. How does Java handle exceptions? Describe the try-catch-finally block.
4. What is multithreading in Java? Explain the benefits.
5. Describe the difference between FileInputStream and FileReader.
6. What is JDBC? How does it interact with databases?
7. Explain the Spring framework and its core components.
8. What is Hibernate, and how does it simplify database operations?
9. How do you use JUnit for testing in Java applications?
10. What are the main data types in Python?
11. Explain the use of 'if-elif-else' in Python.
12. How do you define and call a function in Python?
13. How do you create a class and an object in Python?
14. What is the purpose of modules and packages in Python?
15. Explain file handling in Python, and how to read and write files.
16. What is Django, and what are its main features?
17. Describe Flask and its use cases.
18. How does NumPy simplify array manipulation in Python?
19. What are React components, and how do they work?
20. Explain state management in React.
21. What are props in React, and how do they facilitate communication between components?
22. What are React lifecycle methods, and why are they important?
23. Explain React Hooks and their advantages.
24. What is the Context API, and how does it help manage state in a React application?
25. Describe Redux and its role in state management.
26. How does React Router help with navigation in a React application?
27. What is Jest, and how is it used for testing in React applications?
28. What are the main data types in C, and how do they differ?
29. Explain the use of pointers in C.
30. Describe the difference between a structure and a union in C.
31. What is the difference between a compiler and an interpreter?

32. Describe the three basic types of programming constructs: sequence, selection, and iteration.
33. Explain the concept of recursion and provide an example.
34. What are the main types of data structures, and how do they differ?
35. Explain the concept of Big O notation in the context of algorithm complexity.
36. Describe the difference between a stack and a queue.
37. What is Agile software development, and what are its key principles?
38. Explain the Waterfall model and its stages.
39. How does the Scrum framework facilitate Agile development?