**Wipro Training**

1. Variable

* Local Variable
* Instance Variable
* Static

1. Access Modifier

* Pubic
* Private
* Protected
* Default

1. JDK, JRE, JVM
2. Class and Object: (class is a non-primitive data type which user makes and with the help of object of that class we can use that class)
3. Method

* User Defined
* Predefined or Built-in function

1. Static Method
2. Instance Method
3. Naming Convention
4. Datatype

* Primitive
* Non-Primitive/Reference

1. Control Statement
2. Constructor
3. This Keyword
4. Array
5. OOPs
6. Inheritance

* Single
* Multilevel
* Hierarchical

1. Relationship between classes

* Aggregation
* Association
* Composition

17. Encapsulation

18. Abstraction

* Abstract Class
* Interface

19. Multiple Inheritance through Interface

20. Polymorphism

* Method Overloading
* Method Overriding

21. Super Keyword

22. Final Keyword

23. Exception Handling

* Checked Exception
* Unchecked Exception

24. Try Catch Finally Throw Throws

25. File Handling

26. Package

27. String

* String
* String Buffer
* String Builder

28. String Literal Pools

29. Why String is Immutable

30. Why String is Final

31. Difference Between == and equals ()

32. Thread vs Process

33. Multithreading

34. Synchronized vs Non-Synchronized

35. API (Application Programming Interface)

36. JDBC (Java Database Connectivity)

37. JAR (Java Archive)

38. Java Database Connectivity (Steps for DB Connection)

39. Operation on Database through Java application

40. Collection Framework

41. Collection Object

42. Collection (Interface)

* List (Interface)
* Array List (Class)
* Linked List (Class)
* Doubly Linked List
* Circular Linked List
* Vector (Class)
* Stack (Class)
* Set (Interface)
* Hash Set and Its Internal Working (Class)
* Queue (Interface)
* Priority Queue (Class)
* Deque (Interface)

43. List Vs Set

44. Array List Vs Linked List

45. Cursor

* Iterator
* List Iterator
* Enumeration

46. Iterator Vs List Iterator

47. Legacy Class

48. Map (Interface)

* HashMap and Its Internal Working (Class)
* Has Table (Class)

49. Generics

50. Array Vs Collection Framework

51. Git vs Git Hub

52. git init

53. git clone

54. git status

55. git add

56. Tracked files

* Modified
* Unmodified

57. Untracked files

58. Staged files

59. git commit

60. git log

61. git branch

62. git checkout

63. get checkout -b

64. git checkout main

65. git merge

66. git push origin

67. git push -u origin

68. git pull origin

69. git fetch origin

70. git rm

71. Remove-Item -Recure -Force.git

72. git –oneline – decorate

73. git remove -v

74. git checkout branch\_name

Ls

75. push vs pull

76. Lambda Expression

77. Functional Interface

78. Functional Interface Annotation

79. Predefined Functional Interface

* Function<T, R>
* Predicate<T>
* Consumer<T>
* Supplier<T>
* Unary Operator<T>
* Binary Operator<T>

80. Anonymous Class

81. Lambada expression Vs Anonymous Class

82. Method Reference

83. Constructor Reference

84. Stream API

* Intermediate Operation
* filter ()
* map ()
* distinct ()
* sorted ()
* limit ()
* peek ()
* Terminal Operation
* collect ()
* foreach ()
* reduce ()
* count ()
* anyMatch ()
* allMatch ()
* noneMatch ()
* findFirst ()
* findAny()

85. Optional Class

* Optional.ofNullable ()
* Optional.of ()

86. Date and Time API

87. Thread Life Cycle

88. Thread Pool

89. Executor Service

90. Comparable and Comparator

91. Collection and Collections

**DAILY-TASKS**

1. Variable Types: Local, Instance, and Static

What are the differences between local, instance, and static variables in Java? Write a program to demonstrate their usage.

2. Variable Scope

How does the scope of variables differ inside methods, blocks, and classes? Write a program to illustrate variable scope.

3. Final Variables

What are final variables in Java, and how do they behave when we attempt to modify their values? Write a program to demonstrate the concept.

4. Type Inference (var in Java 10+)

How does Java’s var feature introduced in Java 10 work? Write a program demonstrating type inference for variables.

5. Static vs Non-Static Variables

What is the difference between static and non-static variables in Java? Write a program to demonstrate their behavior in memory.

6. Primitive vs Reference Variables

What are the differences between primitive and reference variables in Java? Write a program to explain how they behave differently.

7. Constant Variables with static final

How can we use static final variables to define constants in Java? Write a program to calculate the area and circumference of a circle using constants.

8. Shadowing Variables

What is variable shadowing in Java? Write a program to demonstrate shadowing at different levels (class, method, block).

9. Default Values of Variables

What are the default values of instance and static variables in Java? Write a program to display these default values.

10. Volatile Variables

What is the purpose of the volatile keyword in Java? Write a program to demonstrate its effect in a multithreading scenario.

11. Library Management System

Description: A simple program to manage book records, borrowers, and transactions.

Features:

Classes: Book, Member, Transaction.

Methods: Add, update, delete books/members, issue/return books.

File handling to persist data.

12. Student Grade Management System

Description: Manage student details, courses, and calculate grades.

Features:

Classes: Student, Course, Grade.

Methods: Add student/course, assign grades, calculate GPA.

Collections framework (Array List/HashMap) for data storage.

13. Employee Payroll System

Description: Calculate salaries and manage employee details.

Features:

Classes: Employee, Payroll, Department.

Methods: Calculate salary, bonuses, and generate reports.

Inheritance for different employee types (e.g., permanent, contractual).

14. Banking Application

Description: A program to simulate a simple banking system.

Features:

Classes: Account, Customer, Transaction.

Methods: Deposit, withdraw, transfer funds.

Use polymorphism for different account types (savings, current).

15. E-commerce Product Management

Description: Manage products, customers, and orders in an e-commerce setting.

Features:

Classes: Product, Order, Customer.

Methods: Add/remove products, create orders, calculate total cost.

File handling to save order history.

16. Hospital Management System

Description: A simple system to manage patients, doctors, and appointments.

Features:

Classes: Patient, Doctor, Appointment.

Methods: Schedule appointments, manage patient records.

Exception handling for invalid operations.

17. Inventory Management System

Description: Track products and stock levels for a small business.

Features:

Classes: Product, Supplier, Inventory.

Methods: Add/update/remove products, low-stock alerts.

Use interfaces for supplier-related operations.

18. Online Quiz System

Description: A program to create and conduct quizzes.

Features:

Classes: Question, Quiz, User.

Methods: Add questions, take quiz, calculate scores.

Collections to store questions and results.

19. Vehicle Rental System

Description: Manage vehicle rentals for a business.

Features:

Classes: Vehicle, Customer, Rental.

Methods: Rent/return vehicles, calculate rental costs.

Use abstract classes for different vehicle types (e.g., car, bike).

20. Hotel Room Booking System

Description: Book and manage hotel rooms.

Features:

Classes: Room, Customer, Booking.

Methods: Book/check-out rooms, check availability.

Use inheritance for room types (standard, deluxe).