1. What is Java?
2. What are the main features of Java?
3. Explain the difference between JDK, JRE, and JVM.
4. What is bytecode in Java?
5. What is the Java Virtual Machine (JVM) and how does it work?
6. What is the difference between a JIT compiler and a JVM interpreter?
7. What are the different types of memory areas allocated by JVM?
8. What is a class in Java?
9. What is an object in Java?
10. What are the basic principles of Object-Oriented Programming (OOP)?
11. What is the difference between a class and an object?
12. What is inheritance in Java?
13. Explain method overloading with an example.
14. Explain method overriding with an example.
15. What is encapsulation in Java?
16. What is abstraction in Java?
17. What is polymorphism in Java?
18. What are access modifiers in Java?
19. What is the difference between public, protected, and private access modifiers?
20. What is a constructor in Java?
21. What is the purpose of the this keyword in Java?
22. What is the super keyword in Java?
23. What is the static keyword in Java?
24. What is the final keyword in Java?
25. What is the difference between final, finally, and finalize?
26. What is a package in Java?
27. What is the import statement used for in Java?
28. What is the difference between an abstract class and an interface?
29. What is an inner class in Java?
30. What is an anonymous inner class?
31. What is a nested class in Java?
32. What is the difference between a local inner class and an anonymous inner class?
33. What is a lambda expression in Java?
34. What is the purpose of the main method in Java?
35. Why is the main method static in Java?
36. What is the difference between System.out.println and System.err.println?
37. What are Java primitive data types?
38. What is autoboxing and unboxing in Java?
39. What is a wrapper class in Java?
40. What is type casting in Java?
41. What is the difference between implicit and explicit type casting?
42. What is a string in Java?
43. What is the difference between String, StringBuilder, and StringBuffer?
44. What are the benefits of using the StringBuilder class?
45. What is the charAt method in the String class?
46. How do you convert a string to a character array in Java?
47. What is an array in Java?
48. How do you declare and initialize an array in Java?
49. What is the difference between a one-dimensional and a two-dimensional array?
50. How do you find the length of an array in Java?
51. What is the difference between an array and an ArrayList?
52. What is a multidimensional array in Java?
53. What is the purpose of the break statement in Java?
54. What is the purpose of the continue statement in Java?
55. What is the difference between break and continue?
56. What are loops in Java?
57. What is the difference between a for loop and a while loop?
58. What is the enhanced for loop in Java?
59. What are conditional statements in Java?
60. What is the difference between if-else and switch statements?
61. What is an exception in Java?
62. What is the difference between checked and unchecked exceptions?
63. How do you handle exceptions in Java?
64. What is the purpose of the try-catch block in Java?
65. What is the finally block in Java?
66. What is the purpose of the throw and throws keywords in Java?
67. What is a custom exception in Java?
68. What is the NullPointerException in Java?
69. What are assertions in Java?
70. What is the purpose of the assert keyword?
71. What is the difference between an interface and an abstract class?
72. What is the purpose of the default keyword in interfaces?
73. What is the static keyword in interfaces?
74. What are default methods in interfaces?
75. What is a functional interface in Java?
76. What is the @FunctionalInterface annotation used for?
77. What is the Stream API in Java?
78. What are lambda expressions used for?
79. What is the Optional class in Java?
80. What is a thread in Java?
81. How do you create a thread in Java?
82. What is the difference between Runnable and Callable?
83. What is the lifecycle of a thread in Java?
84. What is the synchronized keyword used for in Java?
85. What is a deadlock in Java?
86. What is the purpose of the wait and notify methods in Java?
87. What is the difference between notify and notifyAll?
88. What is the Executor Framework in Java?
89. What is the purpose of the ThreadPoolExecutor class?
90. What is garbage collection in Java?
91. What are the different types of garbage collectors in Java?
92. What is the purpose of the System.gc() method?
93. What is the finalize method in Java?
94. What is a memory leak in Java?
95. What is the difference between heap and stack memory in Java?
96. What is the difference between a shallow copy and a deep copy in Java?
97. What is the purpose of the clone method in Java?
98. What is the Serializable interface used for?
99. What is the purpose of the transient keyword in Java?
100. What is reflection in Java?