# Study Resources

Java Vocabulary Study List

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## Overview

This document contains a list of basic Java concepts that you should know and be comfortable discussing in preparation for technical interviews and your first days on the job.

1. What is a variable?

2. What is a variable declaration?

3. What is a variable assignment?

4. What makes up a method's signature?

5. What is a method parameter?

6. What is a method body?

7. What is a class?

8. What is an object?

9. What is the heap?
   The JVM has a heap that is the runtime data area from which memory for all class instances and arrays are allocated.

10. What does the public keyword mean?
    Able to be access by anyone within the project (subclass, package, current class)

11. What does the static keyword mean?
    target is unique as class level, instead of individual object of the class. Thus, to call the target, use class.target, not need to create object to access

12. What does the private keyword mean?
    able to be access only within the current class

13. What does the final keyword mean?
    can not be changed

14. What does the protected keyword mean?
    can be accessed by anything that are within the same package or current class, or by subclass (doesn't matter if in different package)

15. What is an interface? A Java interface is a bit like a class, except a Java interface can only contain method signatures and fields.
    An Java interface cannot contain an implementation of the methods, only the signature (name, parameters and exceptions) of the method.
    You can use interfaces in Java as a way to achieve polymorphism.

16. What is an array? Java provides a data structure, the array, which stores a fixed-size sequential collection of elements of the same type.
    An array is used to store a collection of data, but it is often more useful to think of an array as a collection of variables of the same type.

17. What does the abstract keyword mean? How is it used in conjunction with classes?
    An abstract class is a class that is declared abstract —it may or may not include abstract methods. Abstract classes cannot be instantiated, but they can be subclassed.

18. What is an ArrayList?

19. What is a List? How is it different than an ArrayList?

20. What is inheritance?

21. What is polymorphism?

22. What does the term override mean?

23. What does the term overload mean?

24. What is a HashMap?

25. What is a Map? How is it different than a HashMap?

26. What is a Collection? Collections in java is a framework that provides an architecture to store and manipulate the group of objects.

27. What is an iterator? Iterator in Java is nothing but a traversing object, made specifically for Collection objects like List and Set.
    Java iterator is an interface belongs to collection framework allow us to traverse the collection and access the data element of collection, without bothering the user about specific implementation of that collection it.

28. What is the difference between a while loop and a do/while loop?

29. What is a switch statement?

30. What is an exception?

31. What is an unchecked exception?
exception that is not checked at compiled time, like 5/0, it compiles fine, but will throw exception

32. What is a checked exception?
exception that is checked at compiled time, like using scanner, you have to either throw it or catch it to handle it

33. What is a runtime exception?
runtime exception is also unchecked exception

34. What does encapsulation mean?

35. What does it mean if a class is cohesive?   do 1 thing & do it well

36. What is the single responsibility principle?

37. What is data hiding?

38. What does it mean if one class is derived from another class?   inheritence

39. What does it mean if one class extends another class?

40. What is a base class?   AKA = parent class / super class

41. What is an abstract base class?
can have fields, but the method has to be only header without implementation, its whole purpose is to be inherited, not instantiated

42. What is a superclass?   the class whose properties are inherited is known as superclass (base class, parent class).

43. What is a subclass?   The class which inherits the properties of other is known as subclass (derived class, child class)

44. What is specialization?

45. What does it mean to be loosely coupled?   It is a system design, use iphone & samsung as example (Tight & Loose)

46. Why is it a good idea to split your applications into layers?

47. What does it mean to cast a variable?

48. What does a finally block do?

49. What is a try/catch?

50. What does the throws keyword mean?

51. How is the import keyword used?

52. What is a package?

53. What is JavaDoc?

54. What is scope?

55. What does API stand for?

56. What is an accessor?

57. What is a mutator?

58. What is a constructor?

59. What does the term generic mean?

60. What are the two categories of nested classes?

61. What is a local class?

62. What is a static nested class?

63. What level of access to the properties and methods of the enclosing class does a static nested class have?

64. Under what conditions can a local class access variables in the enclosing scope?

65. What is shadowing?

66. What is composition?  How is it used?

67. What is the default constructor?

68. Is the Java language pass by value or pass by reference?

69. What does pass by value mean?

70. What does pass by reference mean?

71. What is the stack?  What kinds of variables are created there?

72. What is garbage collection?

73. How does the garbage collector know when to return memory to the heap?

74. What is a lambda?

75. What is a stream (in the context of the new Java 8 Collection API)?

76. What are aggregate operations?

77. What is a pipeline?