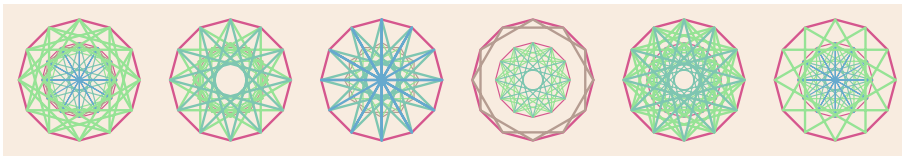


Exercise 14 for Students of Computer Science

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Introduction to the Scala programming language

1. How do the **while** loops in Scala compare to the **while** loops in Java and Kotlin?
2. When are semicolons required in Scala?
3. Are variable declarations in Scala more like those in Java or more like those in Kotlin?
4. What are the seven numeric types in Scala?
5. Java has reference types and primitive types. Is that also the case in Scala?
6. What is a wrapper class in Java? Does Scala have wrapper classes?
7. Java provides a class named `BigInteger` that models a very large integer. Scala provides a similar class. How does Scala's version differ from Java's class?

8. Show two ways of using a plus sign to add two integers.
9. Scala, unlike Java, allows programmers to overload the definitions of operators.
10. Compare the documentation for the Java and Scala APIs. How does the organization differ? How might you find the documentation for a particular class or method in Scala?
11. Java provides mathematical functions as static methods in the Math class. What is Scala's way of providing mathematical functions?
12. When can a Scala programmer call a method without parentheses?
13. Java allows chained assignments. Scala allows chained assignments, but they will seldom make sense in Scala. Explain.
14. A reference to a particular element of an array in Scala looks different than does a similar reference in Java. How so?
15. The way of writing the type of a function in Scala differs from the way of doing the same thing in Kotlin. How so?
16. How might a Scala programmer write something equivalent to this Java code: `for(int i = 0; i < N; i+) +?`
17. Show how to create a map in Scala in two ways. In the first case, use parentheses. In the second case, use arrows.
18. What is a checked exception?
19. When must a Scala programmer include an equals sign in the definition of a function?
20. Must a Scala programmer include a `return` statement in the definition of a function?