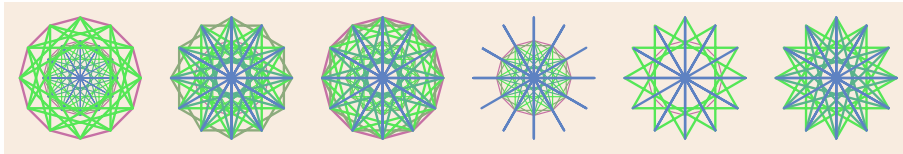


Exercise 4 for Students of Computer Science

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“Computer science is no more about computers than astronomy is about telescopes.”

—Edsger Dijkstra

- Who was Edsger Dijkstra?
- Did you ever use your phone to find your way while driving? Who invented the shortest path algorithm? Can you find a link between this algorithm and how messages are routed through the Internet?
- Find another quotation from Edsger Dijkstra. Choose one that appeals to you. Dijkstra gave us many insights!
- What did Dijkstra mean when he said that “computer science is no more about computers than astronomy is about telescopes?”

- Learning a programming language is for us a means to an end, not our main goal. There are many programming languages we might choose to learn. We must choose one.

Why should we prefer Java?

We might favor a language because of its popularity.

Find the TIOBE Index on the Internet.

- What kind of organization is TIOBE?
- Bonus question: From where did the name of the organization come? (Hint: It is a literary reference.)
- What does the index tell you?
- Java is an OOP language. Learn a little about what that means. Share with us a link to an article that helped you begin to understand this discipline for developing software.
- The Sun Microsystems Corporation created the Java programming language. (The Oracle Corporation later purchased Sun.) The company advertised the language with slogan that it abbreviated with the letters “WORA.”

What are the four words whose initials are WORA?

- Niklaus Wirth wrote a book titled “Algorithms + Data Structures = Programs.”
 - Who is Niklaus Wirth?
 - Which two algorithms for searching are required subjects of study in an Advanced Placement Computer Science A course?
 - Which three algorithms for sorting are required subjects of study in an AP Computer Science course?
 - Which three of Java’s eight primitive data types should AP students learn?
 - AP students learn how to use Java’s String class. They learn how to create and use both one-dimensional and two-dimensional arrays. They also learn how to define classes, construct instances of classes, and use those objects and their methods.

Search on the Internet for the opinions of experts: Is a class a data structure?