Chapter 4 Pseudocode

while time is less than 7:30 am

continue sleeping

if time is after 7:30 am

for loop (frequency of 5)

ring alarm

set alarm sound to alarm

if not showered yet

shower and brush teeth

if time is before 7:40 am & showered

go to breakfast

else

go to chapel

while at breakfast

for loop (repeat until full)

have eggs and cereal

if time is 7:50 am

end breakfast and go to chapel

while at chapel

if Mrs. Humphrey has not begun talking yet

sit quietly in seat

else

stand up to pray

Chapter 4 Concepts

Recursion is about using previous procedures to obtain a solution for a new one. For example, in the terms of a function of n, a recursive solution will reuse increasingly smaller values of n, (n-1) then (n-2) then (n-3) until it reaches the most basic function (perhaps when n=1) to determine the value of the function at n. Recursion adds each iteration to the known value of the previous iteration to obtain the final solution.

Chapter 4 Exercises

9. 15

11. 6

18. 4

Search function: A search function is a way to process lists that determines whether or not a certain value/item exists or not in a particular list. This is done by either the Binary Search algorithm (divide and conquer) or the Sequential Search algorithm, in which the worst case is roughly proportional to the length of the list.

Litvin 5.3

Reserved words are words with a specific purpose in Java. These words cannot be used as arbitrary names/variables by the programmer, as they can only be used in the method described by their purpose. They are important as they are able to define and be used as basic and specific functions within a program.

In Java, syntax is especially important as every character/symbol/number/letter has a purpose. Even the slightest syntax error, perhaps forgetting to add a bracket or parentheses, will prevent the program from compiling correctly. Java syntax is also very strict and specific; therefore, it is even more important to work within its boundaries.

Style also plays a huge factor in programming. As Java’s syntax is complex and strict, it is even more important to have good style. This includes, but not limited to, spacing, line breaks between sections of code, and proper and clear indents. With a clear style, other readers can recognize the processes and function of a particular program instead of just looking at a giant heap of code.