Chapter 4 Program – Design Document

1. Analysis of the Problem
2. This program calculates the number of cookies boxes needed to hold the cookies, leftover cookies, the number of containers needed to store the cookie boxes, and leftover boxes.
3. The constants are 24 cookies per box and 75 boxes of cookies per container. They are both constant integers.
4. The total number of cookies is an integer that is entered by the user. (ie: 12345)
5. The values of all variables are printed to the console window, with all variables being integers.
6. Algorithm
7. Declare variables.
8. Use const int for MAX\_COOKIES and MAX\_CONTAINERS
9. Use int for totalCookies, boxCookies, containerBoxes
10. Read input from user.
11. totalCookies, boxCookies, and containerBoxes entered as an int
12. Perform calculation.
13. totalBoxes = totalCookies / boxCookies
14. extraCookies = totalCookies % boxCookies
15. totalContainers = totalBoxes / containerBoxes
16. extraBoxes = totalBoxes % containerBoxes
17. Calculations are performed and stored as an int.
18. Display results
19. The values of all variables are printed to the console window, with all variables being whole numbers.
20. User Documentation
21. First user input is a whole number for total amount of cookies.
22. Second user input is a whole number for number of cookies in one box. (A constant)
23. Third user input is a whole number for boxes in a container. (A constant)
24. Output are all whole numbers for Number of Boxes Needed, Number of Containers Needed, Number of Leftover Boxes Needed, and Number of Leftover Cookies Needed.