This practice problem comes from Chapter 4, practice Exercise E4.17

Understanding the problem: the user is prompted to enter an integer number and return its binary digits. The idea is to print the reminder % 2 of that number and then replace the number with number / 2. The program should keep going until the number is zero.

Step 1: Determine the inputs and outputs,

* Input is a number integer, output is 1s and 0s.

For instance, entering 13 should return 1011

Step 2: Break problem into smaller task,

By hand, I worked out these operations,

13 / 2 = 6 13 % 2 = 1

6 / 2 = 3 6 % 2 = 0

3 / 2 = 1 3 % 2 = 1

1 / 2 = 0 1 % 2 = 1

I can see that the solution to the problem is on the right side, but the looping or iteration is on the left side. In my mind, I am thinking of doing a do-loop. I realized I needed two variables, one for counting and another for displaying the binary digit because my condition is while number is not zero.

Step 3: Describe each section in pseudocode,

* Prompt for a number
* Do print the reminder of number % 2
  + Replace number with number / 2
  + Keep going until number is zero (in other words, while number is not zero)
  + Convert and concatenate to string variable to represent correct order in output

Step 4: Test pseudo code by working on a few problems (next page)

Entering 13,

A screen shot of a computer

AI-generated content may be incorrect.

Entering 25,

A screenshot of a computer

AI-generated content may be incorrect.

Entering 100,

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