

CS 112 Assignment 6e

Submit your finished code to the Dropbox. You will need to pass off the assignments with the TA or tutor during their office hours (their information is in the CS 112 Course Information section of the Table of Contents), or the instructor in class. Follow the formatting guide which is also found in the CS 112 Course Information section.

Read the instructions carefully. Make sure your output matches the example run.

Objectives:

In this assignment you will learn how to do the following:

- Parse through a string one character at a time
- Use a DECREMENT for-loop
- Use a control variable in a while-loop that is DECREMENTED in the body of the loop
- Compare and contrast the benefits of using different types of loop structures
- Use a function call inside a print statement

Program: function reverse()

Write a program that asks the user to enter something. Do NOT perform input validation on what the user entered.

Have your main() function call a second function that you write called for_reverse(), passing the user's input as an argument. Your for_reverse() function will use a decrementing for-loop to reverse the string and return the reversed string back to main(). The call to the for_reverse() function inside of main() should be embedded inside a print statement that says "Using the for-loop: The reverse of XXXXX is : XXXXX"

Have your main() function call a third function that you write called while_reverse(), passing the user's input as an argument. Your while_reverse() function will use a control variable that is decremented in the body of the while-loop to reverse the string and return the reversed string back to main(). The call to the while_reverse() function inside of main() should be embedded inside a print statement that says "Using the while-loop: The reverse of XXXXX is : XXXXX"

After the program has finished, ask the user if they would like to play again. Use input validation to ensure the user answers with a 'Y' or 'N'. Keep the program running in an infinite loop until the user indicates they want to quit.

Key program requirements:

- Write a function called `for_reverse()` with the appropriate number of parameters
- Use a DECREMENT for-loop inside of the `for_reverse()` function
- Write a function called `while_reverse()` with the appropriate number of parameters
- Use a control variable in a while-loop that is DECREMENTED inside `while_reverse()`
- Call both functions from print statements inside of `main()`
- Use of global variables is NOT allowed
- Make sure your program output matches the Example Run

Ponder – Discuss the following with your partner. Failure to do this activity and discuss these questions before you attempt to pass off your program will result in a failed pass off.

- Discuss the differences between writing the reverse function with a for-loop and a while-loop.
- Discuss which loop structure you prefer IN THIS CASE and why?
- After embedding the function calls inside of print statements, discuss other ways functions can be called in your code.

Example Run

This program will ask the user to enter something and then print out a reversed version of the user's input.

Please enter something: RULDS2?

Using the for-loop: The reverse of 'RULDS2?' is : ?2SDLUR

Using the while-loop: The reverse of 'RULDS2?' is : ?2SDLUR

Would you like to play again? (Y/N): Y

This program will ask the user to enter something and then print out a reversed version of the user's input.

Please enter something: Python is Great!!!

Using the for-loop: The reverse of 'Python is Great!!!' is : !!!taerG si nohtyP

Using the while-loop: The reverse of 'Python is Great!!!' is : !!!taerG si nohtyP

Would you like to play again? (Y/N): N

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