

CS 112 Assignment 6a

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 practice the following:

- Write a function
- Pass arguments to the function
- Return a value from the function back to your main program

Program: function max_num()

Write a program that asks the user for three numbers. Use input validation to ensure the user entered three valid numbers.

Have your main() function call a second function that you write called max_num(), passing the three numbers as arguments. Your max_num() function will determine which of the three numbers is the largest and return that value back to main() via the return statement. You must write your own code to figure out which of the three numbers is the largest. You may NOT use Python's built in max() function. Print out the largest number in main().

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

Key program requirements:

- Do input validation on all three numbers and the 'Y'/'N' play again question
- Write a function called max_num() which has three parameters
- Return the largest of the three numbers to your main() function via the return statement
- Print out the largest number in main()
- Use of Python's max() function is NOT allowed
- Use of global variables is NOT allowed
- The names of the three variables inside main() which are passed to max_num() as arguments MUST be different than the names of the three parameters inside of your max_num() function

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.

- On a separate piece of paper, draw boxes that represent the various memory locations that will be used by your program.
- With your partner, use your finger or a pen to point at each line of code as you trace through the program from beginning to end. Yes, really use your finger or a pen.
- Step through each line IN THE ORDER THAT IT WILL BE EXECUTED from beginning to end.
- Discuss what each line of code does.
- Make assumptions of what numbers the user will enter, then write those numbers in the appropriate memory locations as you trace through the code with your finger.
- Show the paper with your memory locations to the TA or instructors when you pass off the program.

Example Run

This program will ask the user for 3 numbers and figure out which is the largest of the three.

Please enter the first number: the first number
Invalid response. Please enter a whole number.

Please enter the first number: 50
Please enter the second number: sixty
Invalid response. Please enter a whole number.

Please enter the second number: 60
Please enter the third number: 40

The largest of the three numbers is 60

Would you like to play again? (Y/N): I do
Invalid response. Please answer with a 'Y' or 'N'.
Would you like to play again? (Y/N): Y

This program will ask the user for 3 numbers and figure out which is the largest of the three.

Please enter the first number: 12
Please enter the second number: 10
Please enter the third number: 8

The largest of the three numbers is 12

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