

Junior Knights Assignments for List Practice

Objectives

1. To learn how to use lists.

Problem: Number List Program (numlist.py)

Write a program that will allow the user to add numbers to a list, remove numbers from a list and print the numbers in a list. At the beginning of the program, present the user with a menu with the following four options:

1. Add a number
2. Remove a number
3. Print the list
4. Quit

If the user chooses to add a number, ask them which number they want to add, and add it to the end of the list.

If the user chooses to remove a number, ask them which number they want to remove, check if that number is in the list. If it is not, print an error message stating that the number isn't in the list. If it is in the list, then remove the first occurrence of that number.

If the user chooses to print the list, do so.

After each selection, reprompt the user with the menu. The program ends when the user selects choice 4.

You may assume the user always properly enters information, so no error checking is necessary.

Input Specification

Note: It is guaranteed that whoever uses your program will adhere to these specifications. This means that you do NOT have to check for them!

Each menu choice entered will be an integer in between 1 and 4, inclusive.

Each number entered to add or remove will be an integer in between 1 and 100, inclusive.

Output Specification

For option 1, ask the question, "What number do you want to add?". After the user enters a number, print out, "Your number has been added."

For option 2, ask the question, "What number do you want to remove?"

If the number asked to be removed isn't in the list, just print out, "Sorry, that number is not in the list." If the number is in the list, remove it and then print out, "Your number has been removed."

For option 3, print the list in the default format that Python prints lists, with brackets denoting the start and end of the list and commas between items. Precede the printed list with the phrase, "Your list is."

After the user quits, print out, "Thanks for using the list generator!"

Output Samples

Below is one sample output of running the program. **Note that this sample is NOT a comprehensive test.** You should test your program with different data than is shown here based on the specifications given above. In the sample run below, for clarity and ease of reading, the user input is given in *italics* while the program output is in **bold**. (Note: When you actually run your program no bold or italics should appear at all. These are simply used in this description for clarity's sake.)

Sample Run

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

1

What number do you want to add?

25

Your number has been added.

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

1

What number do you want to add?

16

Your number has been added.

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

3

Your list is [25, 16]

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

2

What number do you want to remove?

30

Sorry, that number is not on the list.

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

1

What number do you want to add?

30

Your number has been added.

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

2

What number do you want to remove?

16

Your number has been removed.

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

3

Your list is [25, 30]

What selection would you like to make?

1. Add a number
2. Remove a number
3. Print the list
4. Quit

4

Thank you for using the list generator!

Problem: Name Sort Program (namesort.py)

Write a program that will allow the user to enter several names, store those in a list, and print out the unique names in alphabetical order. You may assume all names entered contain uppercase letters only.

You may assume the user always properly enters information, so no error checking is necessary.

Input Specification

Note: It is guaranteed that whoever uses your program will adhere to these specifications. This means that you do NOT have to check for them!

The first integer entered, indicating the number of names to be entered, will be in the range [1,20]. Each name will contain uppercase letters only.

Output Specification

Output each unique name entered, in sorted order. (So if a name was entered 2 or 3 times, only print it out once.)

Sample Run

How many names to enter?

8

Please enter each name, one per line, uppercase letters only.

MALIA

ANDREW

TAYLOR

JAHMAL

MALIA

TAYLOR

MALIA

KALYANI

Here is a list of the unique names in sorted order:

ANDREW

JAHMAL

KALYANI

MALIA

TAYLOR

Problem: Pizza Store Program (pizza.py)

In this problem, you'll ask the pizza store for the price of each of its pizzas. Then, you'll take several orders. For each order, you'll print out the total cost with tax and tip. Assume that tax and tip together amounts to 20% of the order.

Input Specification

Note: It is guaranteed that whoever uses your program will adhere to these specifications. This means that you do NOT have to check for them!

The first number entered, the number of different types of pizza the store sells will be a positive integer in between 2 and 10.

Each of the pizza prices will be a positive floating point number less than 100.00.

For each of the pizza orders, the amount of each type of pizza will be a non-negative integer in between 0 and 100.

Output Specification

For each order, output its total price with tax and tip.

Sample Run

```
How many types of pizza do you sell?
5
Please enter cost of each type of pizza, in order, one price per line.
3.00
3.50
4.50
5.00
6.00
How many orders do you want to process?
2
For order #1, how many pizzas of each type do you want? (Enter 1 per line.)
1
1
1
1
1
Order #1 will cost $26.4.
For order #2, how many pizzas of each type do you want? (Enter 1 per line.)
0
0
2
1
6
Order #2 will cost $60.0
```

Problem: Histogram Program (histogram.py)

In this problem, you'll ask a teacher to enter each of her students' test scores. Then you'll print a histogram of the scores broken into 11 groups of scores (0 – 9, 10 – 19, ..., 90 – 99, 100).

Input Specification

Note: It is guaranteed that whoever uses your program will adhere to these specifications. This means that you do NOT have to check for them!

The first number entered, the number of test scores the store sells will be a positive integer in between 2 and 30.

Each of the test scores will be an integer in between 0 and 100, inclusive.

Output Specification

Just print one histogram with all of the test scores, in a horizontal format. (For a challenge, try vertical!)

Sample Run

How many test scores to enter?

10

Please enter the test scores, 1 per line.

100

80

79

83

89

92

88

50

75

81

Here is your histogram of scores:

0-9

10-19

20-29

30-39

40-49

50-59 *

60-69

70-79 **

80-89 *****

90-99 *

100 *