

# While Loops Challenge 27:

## Even Odd Number Sorter App

### Description:

You are responsible for writing a program that sorts a list of comma separated numbers as either even or odd. Upon sorting the numbers into two groups, your program will then sort each group numerically and display the results.

### Step By Step Guide:

- Print a welcome message.
- Create an active flag variable that will control a while loop and set it to True.
- Use this flag to run a while loop:
  - Get user input for a series of numbers separated by a comma.
    - This series of numbers will be a string, don't change this for now.
    - Take precaution to remove any spaces the user may have put into the number using the `.replace()` method for strings.
    - Replace " " a space with "" a blank string.
    - The user may enter "1, 2, 3, 4," or they may enter "1,2,3,4".
    - You want to have the results of the program be the same regardless.
  - Turn the string into a list using the `.split()` method for strings.
    - Each element in our list should be a number.
    - The string should be split using a comma.
    - For example, if i have a list values = ['1,2,3,4,5'] calling `values.split(",")` would return a list ['1', '2', '3', '4', '5'].
    - Store this return value in a variable called `num_list`.
  - Create a blank list called `evens`.
  - Create a blank list called `odds`.
  - For every number in your list of numbers:
    - Cast the number to an integer.
    - Recall a number is even if it is divisible by 2.
    - If the number is even:
      - Append the number to the `evens` lists.
      - Print a statement that the number is even.
    - Else:
      - Append the number to the `odds` lists.
      - Print a statement that the number is odd.
  - Permanently sort your even numbers in numerical order.
  - Permanently sort your odd numbers in numerical order.

- Display all the even numbers in numerical order as formatted below.
- Display all odd numbers in numerical order as formatted below.
  
- Get user input for if they would like to continue the program.
- If the user does not want to continue:
  - Set your flag variable to False
  - Print a goodbye message thanking the user.
  
- Use at least 2 comments to describe sections of your code.
- “Chunk” your code so that is readable.
- Use appropriate and informative variable names.
- Format your output as below.

### Example Output:

Welcome to the Even Odd Number Sorter App

Enter in a string of numbers separated by a comma (,) : 1, 2, 3, 6, 18, 9, 4, 13, 22

---- Result Summary ----

1 is odd!  
 2 is even!  
 3 is odd!  
 6 is even!  
 18 is even!  
 9 is odd!  
 4 is even!  
 13 is odd!  
 22 is even!

The following 5 numbers are even:

2  
 4  
 6  
 18  
 22

The following 4 numbers are odd:

1  
 3  
 9  
 13

Would you like to run the program again (y/n): y

Enter in a string of numbers separated by a comma (,) : 1, 2, 3, 4

---- Result Summary ----

1 is odd!

2 is even!

3 is odd!

4 is even!

The following 2 numbers are even:

2

4

The following 2 numbers are odd:

1

3

Would you like to run the program again (y/n): n

Thank you for using the program. Goodbye.