Weekly Pair-Programming Challenge: Build a Sorted Copy of a List

You have a list of ten integers, called **original\_list**, arranged in no particular order. Your mission is to write Python code that:

1. **Creates** a new list named **sorted\_list**.
2. **Populates** **sorted\_list** with every integer from **original\_list**, arranged in **ascending order** (smallest to largest).
3. **Leaves** **original\_list** unchanged throughout your program.
4. **Avoids** using Python’s built‑in sorting capabilities (list.sort() or sorted()). Instead, implement the sorting logic yourself using loops, comparisons, and optional helper functions.
5. **Prints** both lists at the end to verify your work:

Original: [the original unsorted list]  
Sorted: [your sorted copy]

**Starting Data**

Use this initial list when you begin:

original\_list = [7, 2, 9, 4, 1, 8, 5, 10, 3, 6]

You may test additional ten-element lists after your solution works.

**Recommended Function Structure**

Define a function with the following signature:

def make\_sorted\_copy(old\_list):

# your sorting logic here

return new\_list

* **Input**: old\_list (a list of integers)
* **Output**: new\_list (a sorted copy of old\_list)
* **Behavior**: Does not modify old\_list.

**Constraints on Your Algorithm**

* **Do not** call .sort() on any list.
* **Do not** call sorted().
* Use only:
  + Loops (for or while)
  + Conditional statements (if/else)
  + Variable assignments
  + Optional helper functions you write
* You **may** use list.append(), list.pop(), and list indexing (e.g., old\_list[i]).

**Stretch Goal: Error Handling**

Surround your sorting logic with a try/except block. If the input is not a list of integers, print an error message:

print("Error: Input must be a list of integers.")

**Final Output**

In your main program (outside the function), write:

sorted\_list = make\_sorted\_copy(original\_list)

print("Original:", original\_list)

print("Sorted: ", sorted\_list)

**Submission Requirements**

* A single **.py** file containing:
  1. The make\_sorted\_copy function.
  2. A main section defining original\_list, calling your function, and printing both lists.
* Ensure your code runs without errors and produces the correct result.

Good luck! Work closely with your partner, include clear comments, and test your solution on at least two different ten-integer lists.