**Bubble Sort of String by ASCII Values**

**1. Introduction**

This project takes a string from the user and sorts its characters according to their **ASCII values** using the **Bubble Sort algorithm**.  
The output is the string arranged in order of ASCII codes.

**2. Process Explanation**

**Step 1: User Input**

The program first asks the user to enter a string.  
Example: if the user enters **“cat”**, then the input becomes "cat".

**Step 2: Conversion into List of Characters**

The string is broken down into separate characters.  
Example: "cat" → ['c', 'a', 't'].

**Step 3: Applying Bubble Sort**

The **Bubble Sort algorithm** is used to arrange the characters:

1. It compares two characters side by side.
2. If the first character has a **larger ASCII value** than the second, they are swapped.
3. This process continues until the list is sorted.

**Step 4: Understanding ASCII Values**

* Each character is assigned a unique numeric value known as **ASCII code**.
* Example:
  + 'a' = 97
  + 'c' = 99
  + 't' = 116

Sorting is done based on these numbers.

**Step 5: Sorting Example (String “cat”)**

* Characters: ['c', 'a', 't']
* ASCII values: c=99, a=97, t=116
* Comparison and swapping:
  + Compare c(99) and a(97) → Swap → ['a', 'c', 't']
  + Compare c(99) and t(116) → No Swap
* Final sorted order: "act"

**Step 6: Final Output**

The sorted characters are joined back into a string and displayed as the result.

**Example Runs:**

* Input: cat → Output: act
* Input: zebra → Output: aberz