Table of Contents

## 0.1 FunctionDef choose\_random\_item

# 1 Function: choose\_random\_item(items: List[str])

## 1.1 Overview

The choose\_random\_item function selects and returns a single random item from a given list of strings.

## 1.2 parameters

* **items** (List[str]): A non-empty list of strings from which a random item will be chosen.

## 1.3 Description

This function provides a simple way to get a random element from a list. The core logic is handled by Python’s built-in random.choice() method.

Before attempting to select an item, the function first validates the input list items. It checks if the list is empty using the condition if not items:. If the list is found to be empty, the function immediately raises a ValueError with the message “items must not be empty”. This prevents runtime errors that would occur if random.choice() were called with an empty sequence.

If the list is not empty, the function proceeds to call random.choice(items). This method selects a single item from the list with uniform probability, meaning each item has an equal chance of being chosen. The selected string is then returned as the result.

# Internal logic example  
import random  
  
def choose\_random\_item(items: list[str]) -> str:  
 # 1. Check if the list is empty  
 if not items:  
 # 2. Raise an error if it is  
 raise ValueError("items must not be empty")  
 # 3. Return a random choice if it's not empty  
 return random.choice(items)

## 1.4 Usage Notes

* The input list items must not be empty. Providing an empty list will result in a ValueError.
* This function relies on Python’s random module. Ensure it is imported in the environment where the function is used.
* The selection is uniformly random, meaning every item in the list has an equal chance of being chosen on any given call.

**Output Example**: A single string from the input list.

"example\_string"

## 1.5 Example

# Example usage  
import random # This import is necessary for the function to work  
  
# Define a list of options  
options = ["apple", "banana", "cherry", "date", "elderberry"]  
  
# Call the function with the list  
selected\_item = choose\_random\_item(options)  
  
# Print the result  
print(f"The randomly selected item is: {selected\_item}")

**Output:**

The randomly selected item is: cherry

*(Note: The actual output will be one of the items from the options list, chosen randomly.)*

## 1.6 FunctionDef shuffle\_copy

# 2 Function: shuffle\_copy(items: List[int])

## 2.1 Overview

The shuffle\_copy function returns a new, randomly shuffled copy of a given list, ensuring the original list remains unchanged.

## 2.2 parameters

* **items** (List[int]): The list of integers that you want to create a shuffled copy of.

## 2.3 Description

This function provides a safe way to shuffle a list without altering the original data structure. The process involves three main steps:

1. A shallow copy of the input items list is created using copy = list(items). This is a critical step that isolates the operation from the original list, preventing its mutation.
2. The random.shuffle() method is then called on this copy. This function shuffles the elements of the list in-place, rearranging them into a random order.
3. Finally, the function returns the copy, which now contains the same elements as the original items list but in a new, randomized sequence.

# Internal logic of the function  
import random  
  
# 1. A shallow copy of the input list is created.  
copy = list(items)  
  
# 2. The copy is shuffled in-place.  
random.shuffle(copy)  
  
# 3. The shuffled copy is returned.  
return copy

## 2.4 Usage Notes

* This function is non-mutating. The original list passed as the items parameter will not be modified.
* The function requires the random module to be imported in the script where it is used.
* The order of elements in the returned list is non-deterministic and will likely be different on each execution.

**Output Example**: A possible return value for an input of [1, 2, 3] could be:

[2, 1, 3]

## 2.5 Example

import random  
from typing import List  
  
# The function must be defined or imported  
def shuffle\_copy(items: List[int]) -> List[int]:  
 """Return a shuffled copy of the given list without mutating the input."""  
 copy = list(items)  
 random.shuffle(copy)  
 return copy  
  
# Example usage  
original\_list = [10, 20, 30, 40, 50]  
shuffled\_list = shuffle\_copy(original\_list)  
  
print(f"Original List: {original\_list}")  
print(f"Shuffled Copy: {shuffled\_list}")

**Output:**

Original List: [10, 20, 30, 40, 50]  
Shuffled Copy: [30, 50, 10, 20, 40]