QUIZ GAME CHALLENGE

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Abstract

This project is created for the DSA-project. Who's the Boss? - Quiz Game Challenge Who's the Boss? - Grouped Game Challenge This is a multiplayer quiz game which will evaluate the points based on time management and knowledge. Questions will be asked levelwise.

Programming language used: Python 3

What’s used inside the project?

- Sorting:selection sort
- Dictionary
- List
- I/O algorithm
- Recursion
- String comparison algorithm
- Tkinter library
- Stack
- Queue

Sorting:selection sort

Selection sort is a simple and easy-to-understand sorting algorithm that works by repeatedly finding the minimum element from an unsorted list and moving it to the beginning of the list. It maintains two sub-lists in the given list: the sorted sub-list and the unsorted sub-list. The algorithm starts with an empty sorted sub-list and a full unsorted sub-list, and then iteratively selects the minimum value from the unsorted sub-list and places it at the end of the sorted sub-list until the entire list is sorted.

Dictionary

Dictionaries are Python’s implementation of a data structure that is more generally known as an associative array. A dictionary consists of a collection of key-value pairs. Each key-value pair maps the key to its associated value. You can define a dictionary by enclosing a comma-separated list of key-value pairs in curly braces ({}). A colon (:) separates each key from its associated value:

List

In Python, lists are used to store multiple data at once. For example, Suppose we need to record the ages of 5 students. Instead of creating 5 separate variables, we can simply create a list: A list is created in Python by placing items inside [], separated by commas . For example,

```
# A list with 3 integers numbers = [1, 2, 5]

print(numbers)

# Output: [1, 2, 5]
```

I/O algorithm

In Python, input and output operations (I/O Operations) are **performed using two built-in functions**. Following are the two built-in functions to perform output operations and input operations. print( ) - Used for output operation. input( ) - Used for input operations.

Recursion

Python also accepts function recursion, which means a defined function can call itself.

Recursion is a common mathematical and programming concept. It means that a function calls itself. This has the benefit of meaning that you can loop through data to reach a result.

The developer should be very careful with recursion as it can be quite easy to slip into writing a function which never terminates, or one that uses excess amounts of memory or processor power. However, when written correctly recursion can be a very efficient and mathematically-elegant approach to programming.

String comparison algorithm

String comparison algorithms are used to determine whether two strings are equal or not. There are several algorithms for string comparison, and the most common and what we used is Naive string algorithm.

Naive string comparison -> This algorithm compares each character in the two strings sequentially and returns true if all characters match. The time complexity of this algorithm is O(n), where n is the length of the strings.

Tkinter library

Tkinter is the standard GUI library for Python . Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

Use of tkinter in python

- Displaying Text and Images With Label Widgets.
- Displaying Clickable Buttons With Button Widgets.
- Getting User Input With Entry Widgets.
- Getting Multiline User Input With Text Widgets.
- Assigning Widgets to Frames With Frame Widgets.
- Adjusting Frame Appearance With Reliefs.

Stack

A stack is a linear data structure that follows the principle of Last In First Out (LIFO). This means the last element inserted inside the stack is removed first.

Basic operations that allow us to perform different actions on a stack.

- Push: Add an element to the top of a stack
- Pop: Remove an element from the top of a stack
- IsEmpty: Check if the stack is empty
- IsFull: Check if the stack is full
- Peek: Get the value of the top element without removing it

Queue

Like stack, queue is **a linear data structure that stores items in First In First Out (FIFO) manner**. With a queue the least recently added item is removed first. A good example of queue is any queue of consumers for a resource where the consumer that came first is served first

Thank you for paying your attention

Any Queries ?