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BIT YEAR TWO

EXERCISE THREE

PROJECT 11

STACK QUESTION BOTH CHALLENGE AND REFLECTION

Q1. Demonstrate stack bahavior by pushing ["task1", "task2" , "task3" , "task 3"] then popping one and adding

"task4".

Q2. Why does LIFO ordering make sense for undoing mistakes in app?

ANSWERS

A1. Step1. We start with an empty

Stack=[]

Step2: Append each step

tack=[]

stack.append("task1")

stack.append("task2")

stack.append("task3")

step 3: we pop one

tack= []

stack.pop()

step4: we add task4.

stack.append("task4")

step4: we print queue and getting results.

Result is

['task1', 'task2', 'task4']

A2. Why LIFO makes sense for undo

Undo = reverse the latest action first.

In apps, your newest action depends on the ones before it.

Example:

1. You type a word.

2. You highlight it.

3. You deletes it by mistake.

If undo worked FIFO, it would undo typing first (step1) — leaving the highlight and deletion meaningless.

With LIFO, undo removes step 3 first → exactly what you expect.

 That's why apps use stack (LIFO) logic for undo.

Queue question both challenge and reflectiuon

Q1. compare queue vs stack for modeling customers lining up at a restaurant . which is correct and why?

Customers lining up at a restaurant

Stack (LIFO):

Last customer to arrive would be served first.

This is unfair and unrealistic — imagine someone cutting in front of everyone else just because they came last.

So, a stack is not correct here.

Queue (FIFO):

First customer to arrive get served first.

Others wait in order.

This models real-life restaurant lines (or any fair service line).

 Correct model: Queue (FIFO**).**

Q2Why does LIFO ordering make sense for undoing mistakes in apps?

Fairness: Everyone gets served in the order they arrived.

Transparency: Prevents corruption or favoritism (someone skipping ahead).

Efficiency: Keeps the process orderly and predictable.

Trust: Citizens feel confident the system treats them equally. FIFO ensures first-come, first-served, which is essential for fairness in public services.