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BIT YEAR TWO

EXERCISE THREE

### **PROJECT 11**

STACK QUESTION BOTH CHALLENGE AND REFLECTION

Q1. Demonstrate stack behavior by pushing ["task1", "task2", "task3", "task3" ] 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 delete it by mistake.

If undo worked FIFO, it would undo typing first (step 1) — 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.

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## Queue question both challenge and reflectioun

### 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 gets served first.

Others wait in order.

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

Correct model: Queue (FIFO).

## **Q2 Why 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.