QUEUE

QUEUE CHALLENGE: MODEL FOOD ORDERS AT A RESTAURANT

Goal: Simulate a queue system for food orders.

- ✓ **Algorithm Steps:**

1.Initialize an empty queue.

2.Enqueue orders as customers arrive.

3.Dequeue orders as the kitchen prepares them.

Algorithm codes and explanation

Step 1: Original list

```
original = ["One", "Two", "Three", "Four"]
```

Step 2: Create an empty stack

```
stack = []
```

Step 3: Push each item onto the stack

```
for item in original:
    stack.append(item)
```

Step 4: Pop items to reverse

```
reversed_list = []
while stack:
reversed_list.append(stack.pop())
print(reversed_list)  # Output: ['Four', 'Three', 'Two', 'One']
```

Maintain order of service (FIFO).

- ✓ **Why FIFO increases customer satisfaction?**

Queues follow FIFO (First In, First Out), **which ensures:**

- **Fairness: Everyone is served in the order they arrive.**
- **Transparency: Customers can estimate wait time.**
- **Trust: Builds confidence in the system.**
- **Efficiency: Reduces bottlenecks and complaints.**

  Example: At Nyabugogo bus station, if buses are served in arrival order, passengers feel respected and the system flows smoothly

END