**5-dars: Stack and Queue  
5 ball**

**Ishning maqsadi**: Talabalarga stack va queue nimalaigi va uning qanday ishlashi haqida malumot berish.

**Vazifa: Stack va Queue bo’yicha mashqlar.**

**1. Stack va Queue farqlari:**

- Stack va Queue o‘rtasidagi asosiy farqlarni tushuntiring. Stack qanday LIFO (Last In, First Out) tartibda ishlaydi va Queue qanday FIFO (First In, First Out) tartibda ishlaydi? Har ikkisiga hayotdan misollar keltiring.

**2. Stackdagi amallar (push, pop):**

- Massiv: `Arr = [7, 3, 9, 2, 5]`. Ushbu massivdan foydalangan holda Stack yarating. Keyin quyidagi amallarni bajaring:

- `push(10)` ni bajaring.

- Ikkita `pop()` operatsiyasini bajaring.

- Stackning oxirgi holatini ko'rsating.

**3. Queuedagi amallar (enqueue, dequeue):**

- Massiv: `Arr2 = [6, 2, 8, 1]`. Ushbu massiv asosida Queue yarating. Keyin quyidagi amallarni bajaring:

- `enqueue(3)` ni bajaring.

- Bitta `dequeue()` operatsiyasini bajaring.

- Queue holatini ko'rsating.

**4. Algoritmlarning Big O va Space Complexity tahlili:**

- Stack va Queue uchun `push`, `pop`, `enqueue` va `dequeue` operatsiyalarining Big O notatsiyasi va Space Complexity sini tahlil qiling. Ular o'rtasidagi farqlarni tushuntirib bering. Qaysi biri samaraliroq ekanini izohlang.

**5. Elementlar bilan ishlash (Queue):**

- Navbat: `B = [12, -4, 0, 9]`. Ushbu navbat asosida quyidagi amallarni bajaring:

- `enqueue(5)` ni bajaring.

- Ikkita `dequeue()` operatsiyasini bajaring.

- Queue oxirgi holatini ko‘rsating.

**Baholash:**

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