

```
#include <stdbool.h>
```

```
#include <stdlib.h>
```

```
typedef struct {
```

```
    int* data;
```

```
    int front;
```

```
    int rear;
```

```
    int size;
```

```
} Queue;
```

```
typedef struct {
```

```
    Queue* q1;
```

```
    Queue* q2;
```

```
} MyStack;
```

```
Queue* createQueue(int size) {
```

```
    Queue* queue = (Queue*)malloc(sizeof(Queue));
```

```
    queue->data = (int*)malloc(size * sizeof(int));
```

```
    queue->front = queue->rear = -1;
```

```
    queue->size = size;
```

```
    return queue;
```

```
}
```

```
void enqueue(Queue* queue, int value) {
```

```
    if (queue->rear == -1) {
```

```
        queue->front = queue->rear = 0;
```

```
    } else {
```

```
        queue->rear = (queue->rear + 1) % queue->size;
```

```
    }
```

```
    queue->data[queue->rear] = value;
```

```
}
```

```
int dequeue(Queue* queue) {  
    int value = queue->data[queue->front];  
    if (queue->front == queue->rear) {  
        queue->front = queue->rear = -1;  
    } else {  
        queue->front = (queue->front + 1) % queue->size;  
    }  
    return value;  
}
```

```
bool isEmpty(Queue* queue) {  
    return queue->front == -1;  
}
```

```
MyStack* myStackCreate() {  
    MyStack* stack = (MyStack*)malloc(sizeof(MyStack));  
    stack->q1 = createQueue(1000); // Adjust the size as needed  
    stack->q2 = createQueue(1000);  
    return stack;  
}
```

```
void myStackPush(MyStack* obj, int x) {  
    enqueue(obj->q1, x);  
}
```

```
int myStackPop(MyStack* obj) {  
    if (isEmpty(obj->q1)) {  
        return -1; // Stack is empty  
    }  
}
```

```

while (obj->q1->front != obj->q1->rear) {
    enqueue(obj->q2, dequeue(obj->q1));
}

int poppedValue = dequeue(obj->q1);

// Swap q1 and q2
Queue* temp = obj->q1;
obj->q1 = obj->q2;
obj->q2 = temp;

return poppedValue;
}

```

```

int myStackTop(MyStack* obj) {
    if (isEmpty(obj->q1)) {
        return -1; // Stack is empty
    }
}

```

```

while (obj->q1->front != obj->q1->rear) {
    enqueue(obj->q2, dequeue(obj->q1));
}

```

```

int topValue = dequeue(obj->q1);
enqueue(obj->q2, topValue);

```

```

// Swap q1 and q2
Queue* temp = obj->q1;
obj->q1 = obj->q2;
obj->q2 = temp;

```

```

        return topValue;
    }

    bool myStackEmpty(MyStack* obj) {
        return isEmpty(obj->q1);
    }

    void myStackFree(MyStack* obj) {
        free(obj->q1->data);
        free(obj->q1);
        free(obj->q2->data);
        free(obj->q2);
        free(obj);
    }

```

Output:

Input
["MyStack", "push", "push", "top", "pop", "empty"]
[[], [1], [2], [], [], []]
Output
[null, null, null, 2, 2, false]
Expected
[null, null, null, 2, 2, false]