Experiment 03\linear_queue.c

```c
#include <stdio.h>
#define MAX 100

int queue[MAX];
int front = -1, rear = -1;

void enqueue(int value) {
    if (rear == MAX - 1)
        printf("Queue Overflow\n");
    else {
        if (front == -1) front = 0;
        queue[++rear] = value;
        printf("%d enqueued\n", value);
    }
}

void dequeue() {
    if (front == -1 || front > rear)
        printf("Queue Underflow\n");
    else {
        printf("%d dequeued\n", queue[front]);
        front++;
    }
}

void display() {
    if (front == -1 || front > rear)
        printf("Queue is empty\n");
    else {
        printf("Queue: ");
        for (int i = front; i <= rear; i++)
            printf("%d ", queue[i]);
        printf("\n");
    }
}

int main() {
    int choice, value;
    while (1) {
        printf("\n1. Enqueue  2. Dequeue  3. Display  4. Exit\n");
        printf("Enter choice: ");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                printf("Enter value: ");
                scanf("%d", &value);
                enqueue(value);
```

```
49                  break;
50              case 2:
51                  dequeue();
52                  break;
53              case 3:
54                  display();
55                  break;
56              case 4:
57                  return 0;
58              default:
59                  printf("Invalid choice\n");
60          }
61      }
62  }
63
```