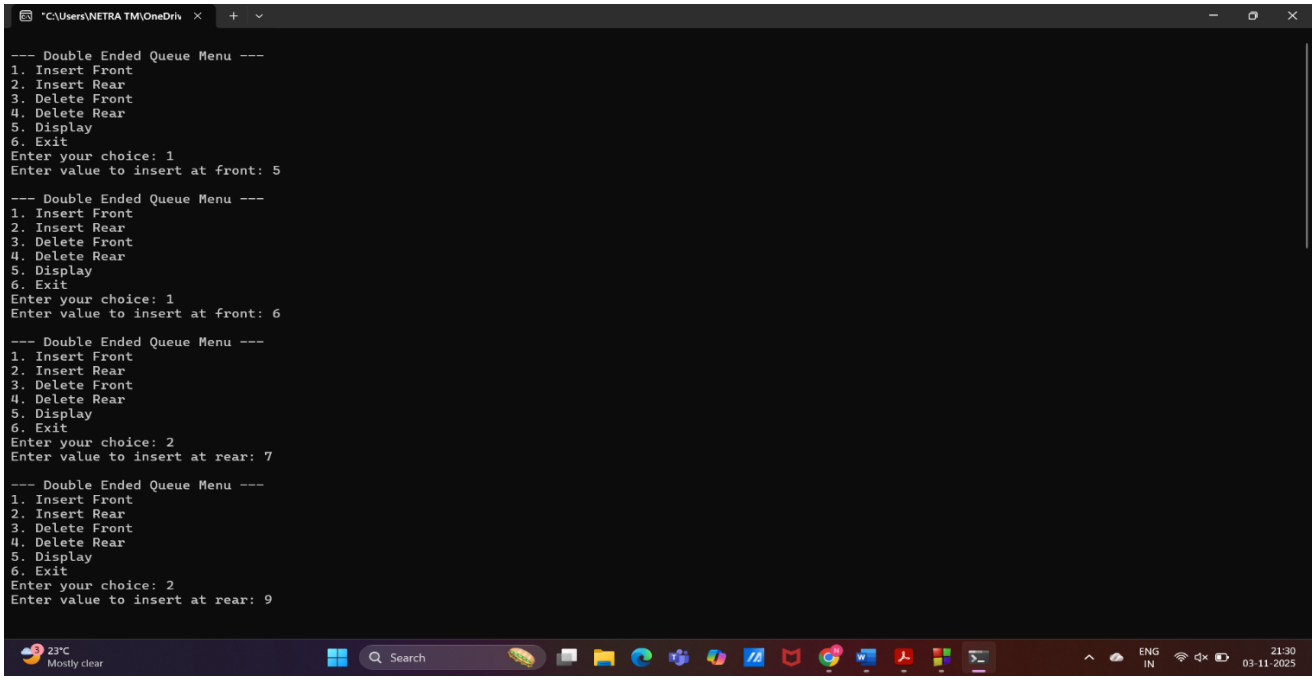
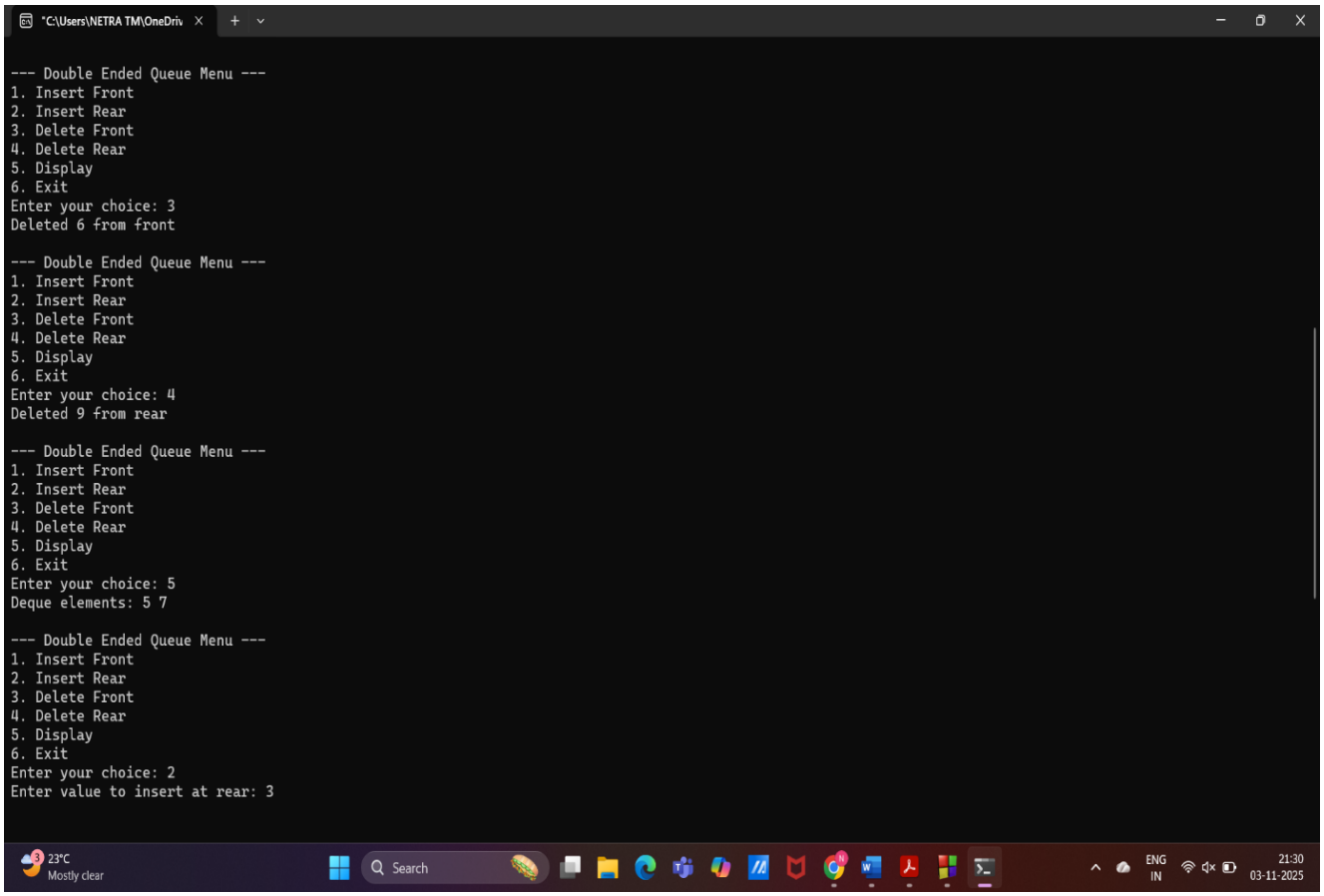
```
#include <stdio.h>
#define SIZE 5

int deque[5];
int front = -1, rear = -1;

void insertFront(int x) {
   if ((front == 0 && rear == SIZE - 1) || (front == rear + 1)) {
      printf("Deque is full!\n");
      return;
   }
   if (front == -1) {
      front = rear = 0;
   } else if (front == 0) {
      front = SIZE - 1;
   } else {
      front--;
   }
   deque[front] = x;
}

void insertRear(int x) {
   if ((front == 0 && rear == SIZE - 1) || (front == rear + 1)) {
      printf("Deque is full!\n");
      return;
   }
   if (front == -1) {
      front = rear = 0;
   } else if (rear == SIZE - 1) {
      rear = 0;
   } else {
```

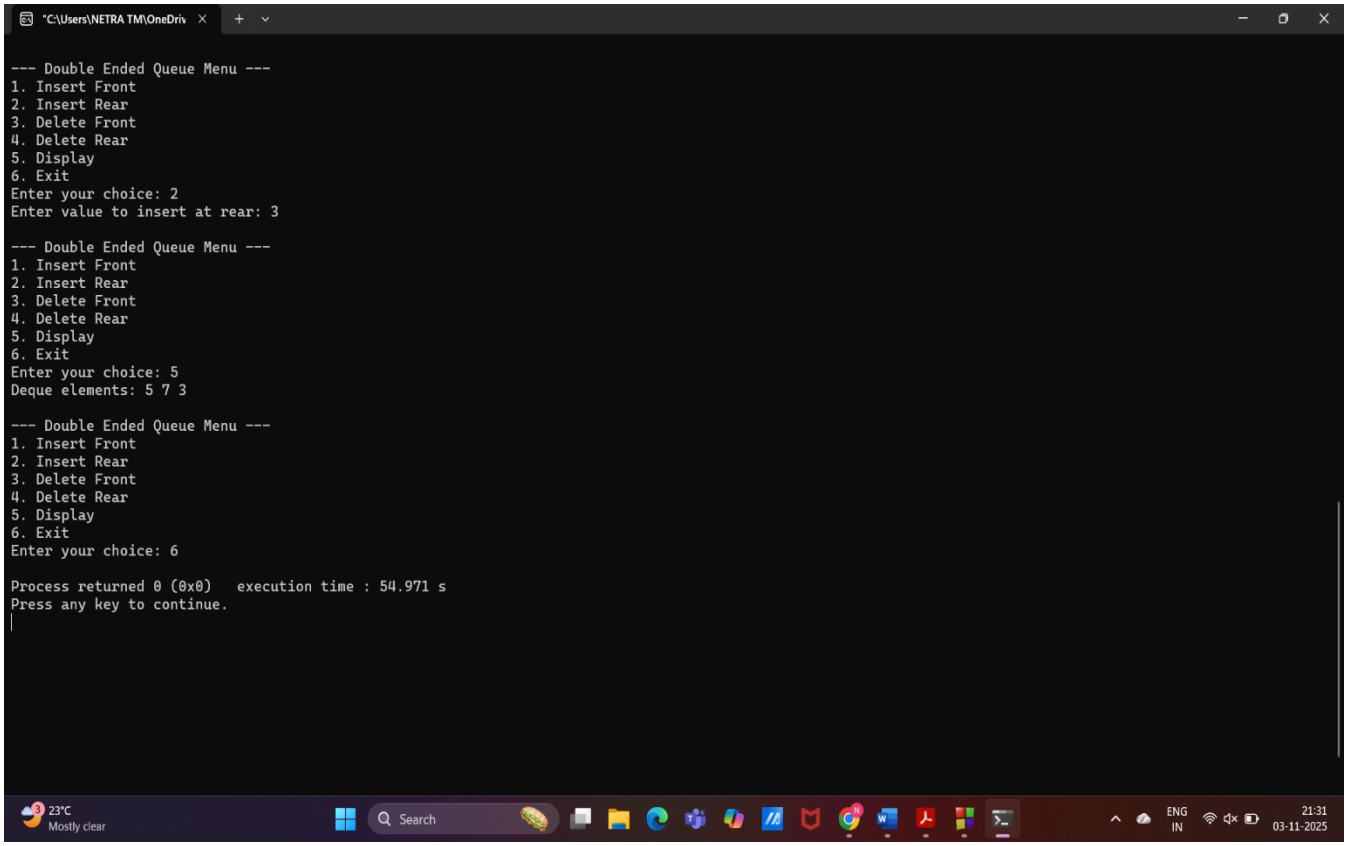
```
        rear++;
    }
    deque[rear] = x;
}

void deleteFront() {
    if (front == -1) {
        printf("Deque is empty!\n");
        return;
    }
    printf("Deleted %d from front\n", deque[front]);
    if (front == rear) {
        front = rear = -1;
    } else if (front == SIZE - 1) {
        front = 0;
    } else {
        front++;
    }
}

void deleteRear() {
    if (front == -1) {
        printf("Deque is empty!\n");
        return;
    }
    printf("Deleted %d from rear\n", deque[rear]);
    if (front == rear) {
        front = rear = -1;
    } else if (rear == 0) {
        rear = SIZE - 1;
    } else {
```

```
        rear--;
    }
}

void display() {
    if (front == -1) {
        printf("Deque is empty!\n");
        return;
    }
    printf("Deque elements: ");
    int i = front;
    while (1) {
        printf("%d ", deque[i]);
        if (i == rear)
            break;
        i = (i + 1) % SIZE;
    }
    printf("\n");
}

// Main function with switch menu
int main() {
    int choice, x;
    while (1) {
        printf("\n--- Double Ended Queue Menu ---\n");
        printf("1. Insert Front\n");
        printf("2. Insert Rear\n");
        printf("3. Delete Front\n");
        printf("4. Delete Rear\n");
        printf("5. Display\n");
        printf("6. Exit\n");
```

```
        printf("Enter your choice: ");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                printf("Enter value to insert at front: ");
                scanf("%d", &x);
                insertFront(x);
                break;
            case 2:
                printf("Enter value to insert at rear: ");
                scanf("%d", &x);
                insertRear(x);
                break;
            case 3:
                deleteFront();
                break;
            case 4:
                deleteRear();
                break;
            case 5:
                display();
                break;
            case 6:
                return 0;
            default:
                printf("Invalid choice!\n");
        }
    }
    return 0;
}
```


"C:\Users\NETRA TM\OneDriv
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 1
Enter value to insert at front: 5
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 1
Enter value to insert at front: 6
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 2
Enter value to insert at rear: 7
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 2
Enter value to insert at rear: 9
23°C
Mostly clear
Search
ENG
IN
21:30
03-11-2025


"C:\Users\NETRA TM\OneDriv
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 3
Deleted 6 from front
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 4
Deleted 9 from rear
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 5
Deque elements: 5 7
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 2
Enter value to insert at rear: 3
23°C
Mostly clear
Search
ENG
IN
21:30
03-11-2025


"C:\Users\NETRA TM\OneDriv
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 2
Enter value to insert at rear: 3
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 5
Deque elements: 5 7 3
--- Double Ended Queue Menu ---
1. Insert Front
2. Insert Rear
3. Delete Front
4. Delete Rear
5. Display
6. Exit
Enter your choice: 6
Process returned 0 (0x0) execution time : 54.971 s
Press any key to continue.
23°C
Mostly clear
Search
ENG
IN
21:31
03-11-2025