ACPCE
Where knowledge is second nature

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Semester: 3

# Experiment Evaluation Sheet

## Experiment No.: 4

## Experiment Name:
Write a program to implement the concept of Queue with Insert, Delete, Display and Exit operations.

| Sr No. | Evaluation Criteria | Marks (Out of 9) | Performance Date | Correction Date and Signature of Instructor |
|---|---|---|---|---|
| 1 | Experiment Performance | | | |
| 2 | Journal Performance | | | |
| 3 | Punctuality | | | |
| Total | | | | |

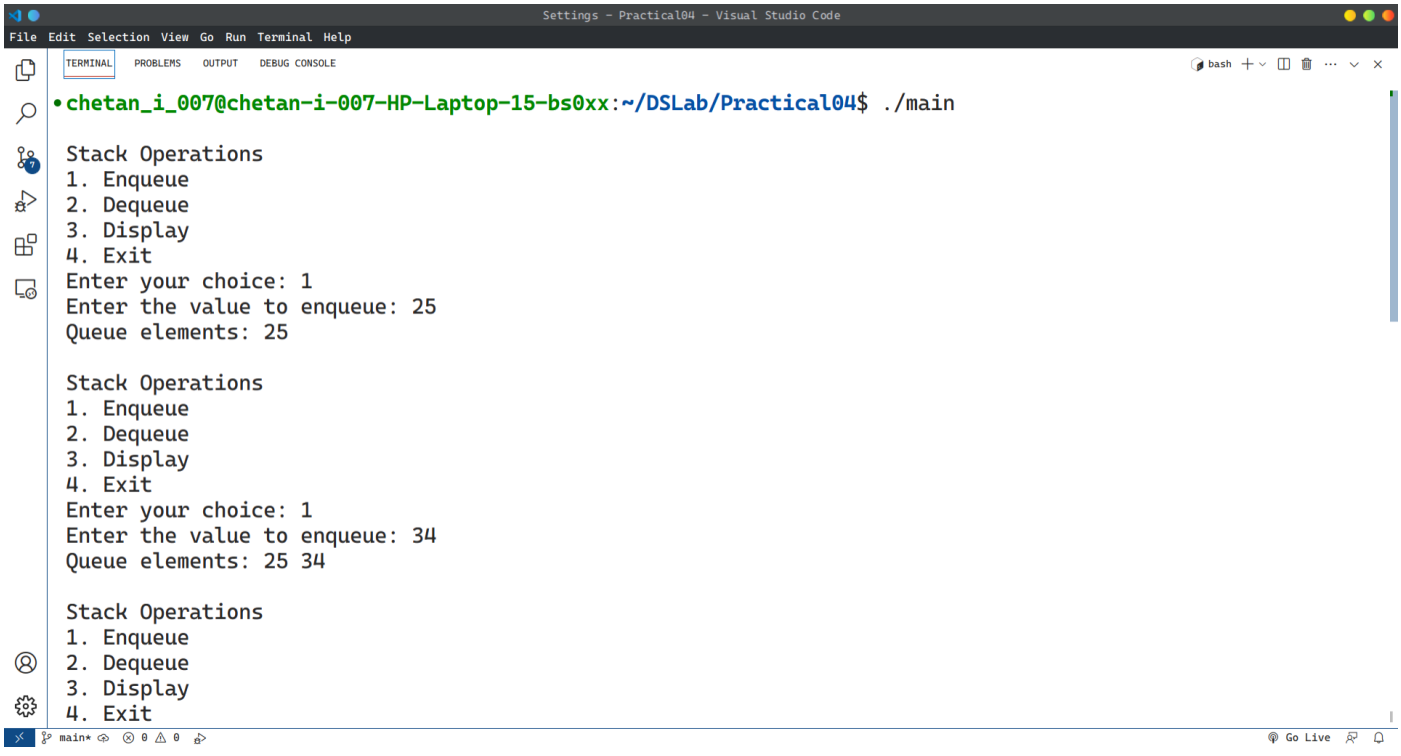
## Code :

```
#include <stdio.h>

int queue[10], front = 0, rear = -1;

int isFull() {
   if(rear == 9)
      return 1;
   else
      return 0;
}
int isEmpty() {
   if(rear == -1)
      return 1;
   else
      return 0;
}
void enqueue(int value) {
   if (isFull()) {
      printf("Queue is Full: Cannot enqueue element %d\n", value);
   } else {
      rear++;
      queue[rear] = value;
   }
}
int dequeue() {
   if (isEmpty()) {
      printf("Queue is empty: Cannot dequeue element.\n");
      return -1;
   } else {
      for (int i = 0; i <= rear; i++) {
         queue[i] = queue[i+1];
      }
      rear--;
   }
}
void display() {
   if (isEmpty()) {
      printf("Queue is empty.\n");
   } else {
      printf("Queue elements: ");
      for (int i = 0; i <= rear; i++) {
         printf("%d ", queue[i]);
      }
      printf("\n");
   }
}

int main() {
   int choice, value;

   do {
      printf("\nStack Operations\n");
      printf("1. Enqueue\n");
```

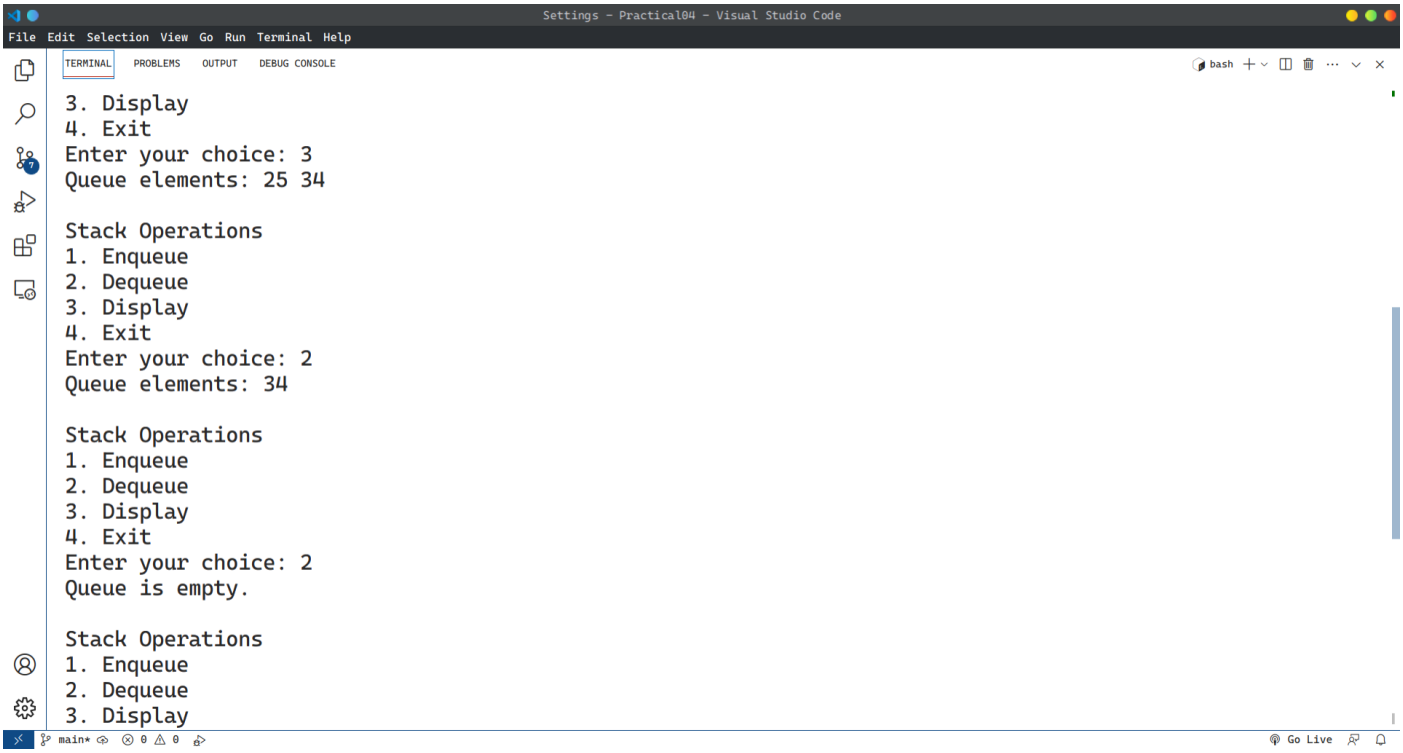
## Code :

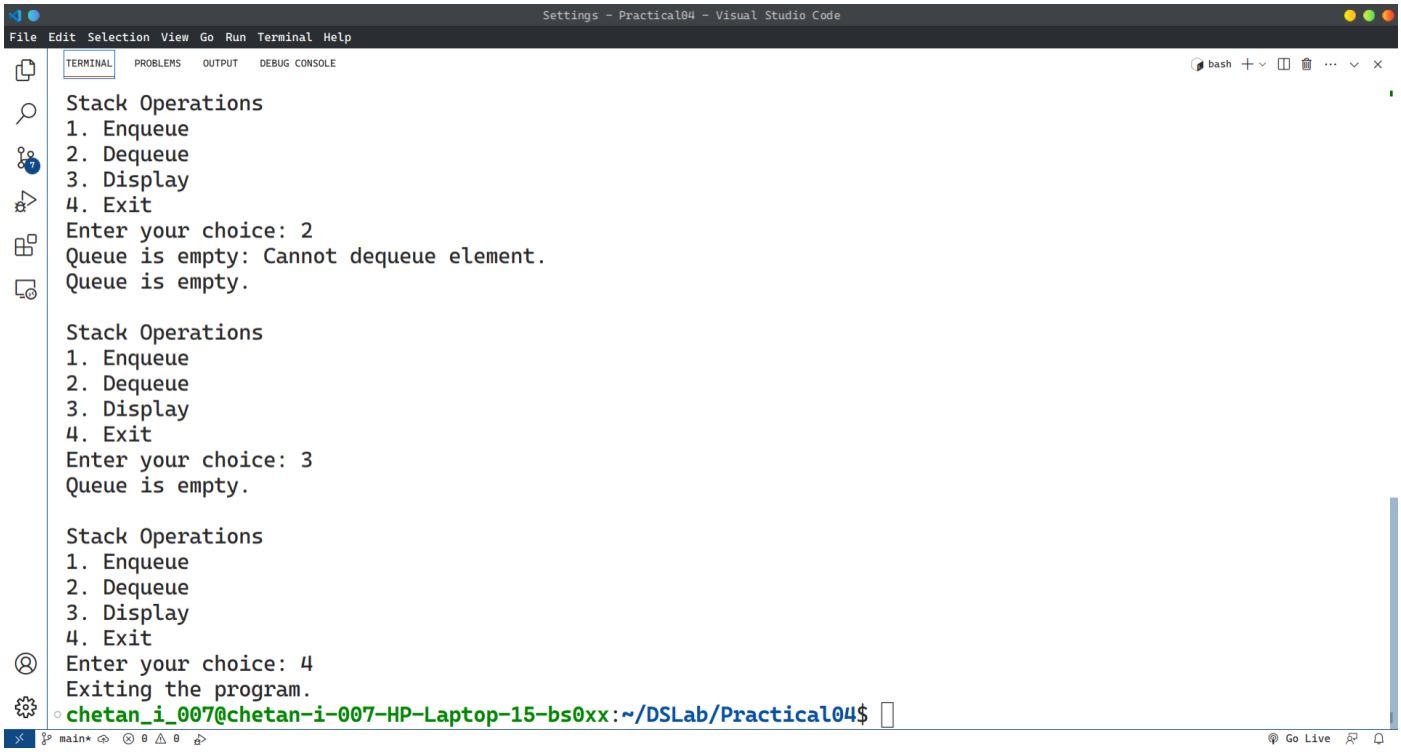
```
        printf("2. Dequeue\n");
        printf("3. Display\n");
        printf("4. Exit\n");
        printf("Enter your choice: ");
        scanf("%d", &choice);

        switch (choice) {
            case 1:
                printf("Enter the value to enqueue: ");
                scanf("%d", &value);
                enqueue(value);
                display();
                break;
            case 2:
                dequeue();
                display();
                break;
            case 3:
                display();
                break;
            case 4:
                printf("Exiting the program.\n");
                break;
            default:
                printf("Invalid choice. Please try again.\n");
        }
    } while (choice != 4);

    return 0;
}
```

## Output :



## Output :




## Conclusion :

Through this experiment we have learnt about how to implement an Queue using the C language. Various operations like enqueue, dequeue, isfull, and isempty are applied on the queue. This experiment helps us in using queue as a data structure for further reference.