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Experiment No. 01

```
#include <stdio.h>
int Q[100], front=-1, rear=-1, i, n, x, choice;
void insert();
void delete ();
void display();

void main()
{
   printf("WELCOME\n");
   printf("Enter the size of Queue (Maximum size = 100): ");
   scanf("%d", &n);
   do
   {
      printf("\n Queue Operation available: \n");
      printf("\t1.Insert \t2.Delete \t3.Display \t4.Exit \n");
      printf("\n Enter your choice: ");
      scanf("%d", &choice);
      switch (choice)
      {
      case 1:
         insert();
         break;
      case 2:
         delete ();
         break;
      case 3:
         display();
         break;
      case 4:
         printf("Program is Finished !! ");
         break;
      default:
         printf("Please enter a valid choice 1, 2, 3, 4 \n");
         break;
      }
```

```
    } while (choice != 4);
}

void insert()
{
    if (rear>= n - 1)
    {
        printf(" Queue Overflow ! \n");
    }
    else
    {
        printf(" Enter the element to insert: ");
        scanf("%d", &x);
        rear++;
        Q[rear] = x;
        if (front == -1)
        {
            front= 0;
        }
    }
}

void delete ()
{
    if (front == -1)
    {
        printf(" Queue Underflow ! \n");
    }
    else
    {
        printf(" The deleted element is: %d \n", Q[front]);
        if (front == rear)
            front = rear = -1;
        else
            front++;
    }
}

void display()
{
    if (rear< 0)
```

```
    {
        printf(" Queue is empty ! \n");
    }
    else
    {
        printf(" The elements in the Queue are: \n");
        for (i = front; i < n; i++)
        {
            printf(" %d ", Q[i]);
        }
        printf("\n");
    }
}
```