Example: Program to implement a queue using Array

```
#include <stdio.h>
#define MAX 50
int queue_array[MAX];
int rear = - 1;
int front = - 1;
main()
{
   int choice;
   while (1)
   {
      printf("1.Insert \n");
      printf("2.Delete\n");
      printf("3.Display \n");
      printf("4.Exit \n");
      printf("Enter your choice : ");
      scanf("%d", &choice);

switch (choice)
      {
         case 1:
         insert();
         break;
         case 2:
         delete();
         break;
         case 3:
         display();
         break;
         case 4:
         exit(1);
         default:
         printf("Inavlid choice \n");
      } /*End of switch*/
   } /*End of while*/
} /*End of main()*/

insert()
{
   int add_item;
```

```
    if (rear == MAX - 1)
    printf("Queue Overflow \n");
    else
    {
        if (front == - 1)
        /*If queue is initially empty */
        front = 0;
        printf("Inset the element in queue : ");
        scanf("%d", &add_item);
        rear = rear + 1;
        queue_array[rear] = add_item;
    }
} /*End of insert()*/

delete()
{
    if (front == - 1 || front > rear)
    {
        printf("Queue Underflow \n");
        return ;
    }
    else
    {
        printf("Deleted Element is : %d\n", queue_array[front]);
        front = front + 1;
    }
} /*End of delete() */
display()
{
    int i;
    if (front == - 1)
        printf("Queue is empty \n");
    else
    {
        printf("Queue is : \n");
        for (i = front; i <= rear; i++)
            printf("%d ", queue_array[i]);
        printf("\n");
```

```
    }
} /*End of display() */
```