LAB PROGRAM 3

WAP to simulate the working of a queue of integers using an array. Provide the following operations: Insert, Delete, Display The program should print appropriate messages for queue empty and queue overflow conditions

```
#include <stdio.h>

#define max_size 4

int queue [max_size];

int front =-1;

int rear=-1;

void insert(int value){
   if (rear==max_size -1){
      printf("Queue overflow! Cannot insert elements");
   }
   else{
      if(front == -1){
         front =0;
      }

      queue[++rear]=value;
      printf("Insert %d into queue",value);
   }
}

void delete(){
   if(front==-1 || front>rear){
      printf("Queue underflow!Cannot delete ");
   }
   else{
      printf("Deleted %d from the queue",queue[front]);
      front++;
   }
```

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

int main(){
   int choice,value;
   while(1){
      printf("\n1.Insert");
      printf("\n2.Delete");
      printf("\n3.Display");
      printf("\n4.Exit");
      printf("\nEnter your choice:");
      scanf("%d",&choice);
      switch (choice){
         case 1: printf("Enter a value to insert:");
               scanf("%d",&value);
               insert(value);
               break;
         case 2: delete();
         break;
         case 3: display();
```

```
        break;
        case 4: return 0;
        default: printf("Invalid choice! Please try again\n");
    }
}
```