Program 3a

Write A Program 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

Code:

```
#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++){</pre>
       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");
     }
  }
```

```
Enter your choice:1
Enter a value to insert:4
Insert 4 into queue
1.Insert
2.Delete
3.Display
4.Exit
Enter your choice:1
Enter a value to insert:5
Insert 5 into queue
1.Insert
2.Delete
3.Display
4.Exit
Enter your choice:1
Enter a value to insert:9
Insert 9 into queue
1.Insert
2.Delete
3.Display
4.Exit
Enter your choice:1
Enter a value to insert:9
Insert 9 into queue
1.Insert
2.Delete
3.Display
4.Exit
Enter your choice:3
Queue Elements
4 5 9
1.Insert
2.Delete
3.Display
4.Exit
Enter your choice:4
```

Dote Pige	100
14 10 24 13 UPP to stimulate the westing of a queue of integers using an avoidy	3/6 (" Queue 35 ompty ");
int opene (MAX) - construct when int spent secret = -1; there int signil()	Bent ++; deleted from quone, "quone (gort)
Section Secon = max 15 / 1/10	al Bont > Sterry
siding state - mix - 1; may	2 3 48 ent = 31 e 0 s = -1.
exturn yeart == -1: Il front > eng.	yed diplay ()
void arginer (int value)	& (isempty ())
or (infinite)	Pf (" Queue is empty ")
perint (" Queue exertero")	A(" duene alements: ") - ger (int i = geont; i <= recon; i+1)
$ \begin{array}{c} \text{SI}(\text{Ront} == -1) & \text{tigtus} \\ -\frac{1}{2} & -\frac{1}{2} + \frac{1}{2} + \frac$	Ph (" hd, " quoue [i])
	Set most ()
grene larger = value; grene larger = value; grene larger = value; grene ", value);	int main () int cheice, value; de ?
pr (" % of invested to queue ", value);	do ? perint! (" quene operations"),
reid dequere	(" team" ! " ! Atrice
if (is ompty ())	P. (" 2. dolote ") P. (" 3. dolote ") P. (" 4. ext ")
	P. J. A. Exa

Dote_/_/_Page	Dote
Pl (" Enter your charce")	Company of the state of the sta
switch (charce)	Queue operations it may privately of
Case 1: pt ("Enter value to inscert"); st ("Yeter value); enqueue (value);	along a Deletering that arrows of
omarione (value);	18 day Enter your chaire: 3 days shariff
case 3: dequeue();	Quere is smpty!
cate 8: display ();	invention Enter your choice 1 Enter the value to invent 3 3 invent into the queue
boienk;	dilation Enter your choice & delated gram queue
case 4: A(" Exting")	A COMPANY OF THE PARTY OF THE P
default: 2 paintle ("Involid choice");	Enter your choice: 3 months Queue alements were: 459
3	exit Entern your charce: 4 Exiting
ushile (choice 1=4)	P treuni to autor restra repressa
20	
(" treach . ") Through	Manufer H.
(" near & ") (a	2 (Bornala hi) tanà hay
(" try a") 10	The their trans last paul anoth ?) Grand