Experiment No. 02 (Implementation of Queue using Array for real-world application.)

```
#include <stdio.h>
int Q[100], F=-1, R=-1,i,n,x,ch;
void insert();
void del();
void display();
int main()
{
printf("Enter size of queue:");
scanf("%d",&n);
do
{

printf("\nMenu:\n 1. Insert 2. Delete 3. Display 4. Exit\n");
printf("Your Choice:");
scanf("%d",&ch);
switch(ch){
case 1:insert();
break;
case 2:del();
break;
case 3:display();
break;
case 4: break;
default: printf("Invalid Choice");
}
}while(ch!=4);
return 0;
}
void insert()
```

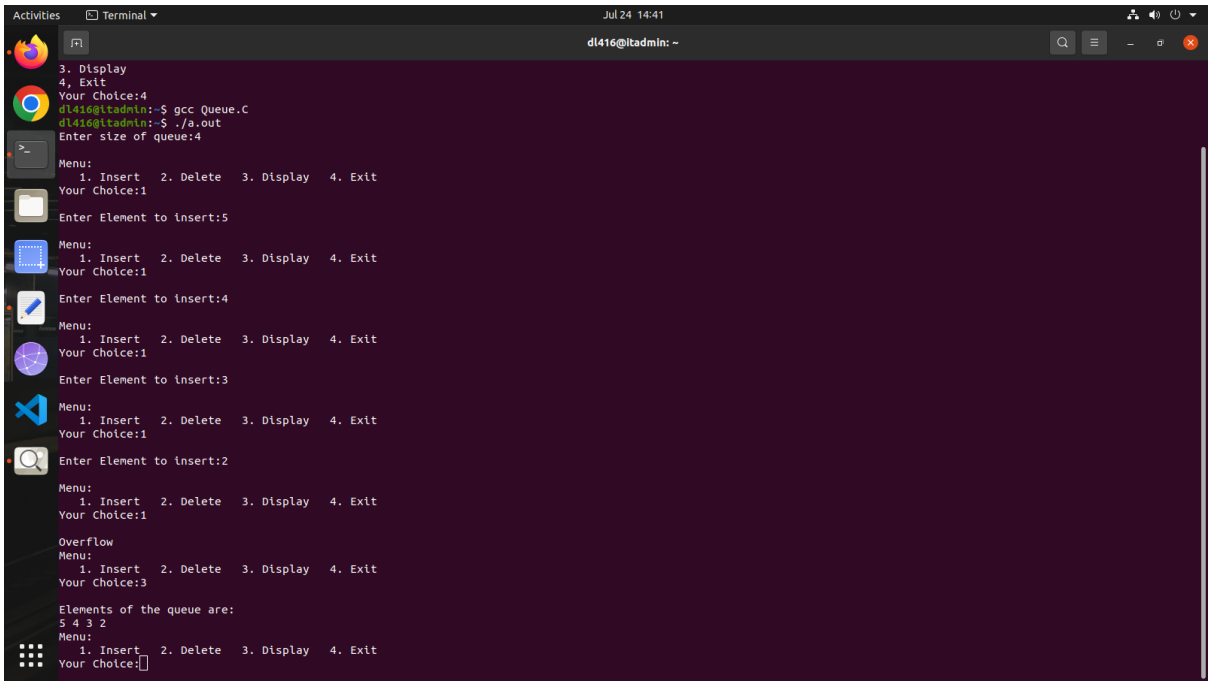
```
{
if (R >= n-1)
printf("\nOverflow");
else
{
R++;
printf("\nEnter Element to insert:");
scanf("%d",&Q[R]);
if(F==-1)
F=0;

}
}
void del()
{
if(F==-1)
printf("\nUnderflow");

else
{
printf("\nDeleted Element is:%d", Q[F]);
if(F==R)
F=R=-1;
else#include <stdio.h>
int Q[100], F=-1, R=-1,i,n,x,ch;
void insert();
void del();
void display();
int main()
{
printf("Enter size of queue:");
scanf("%d",&n);
```

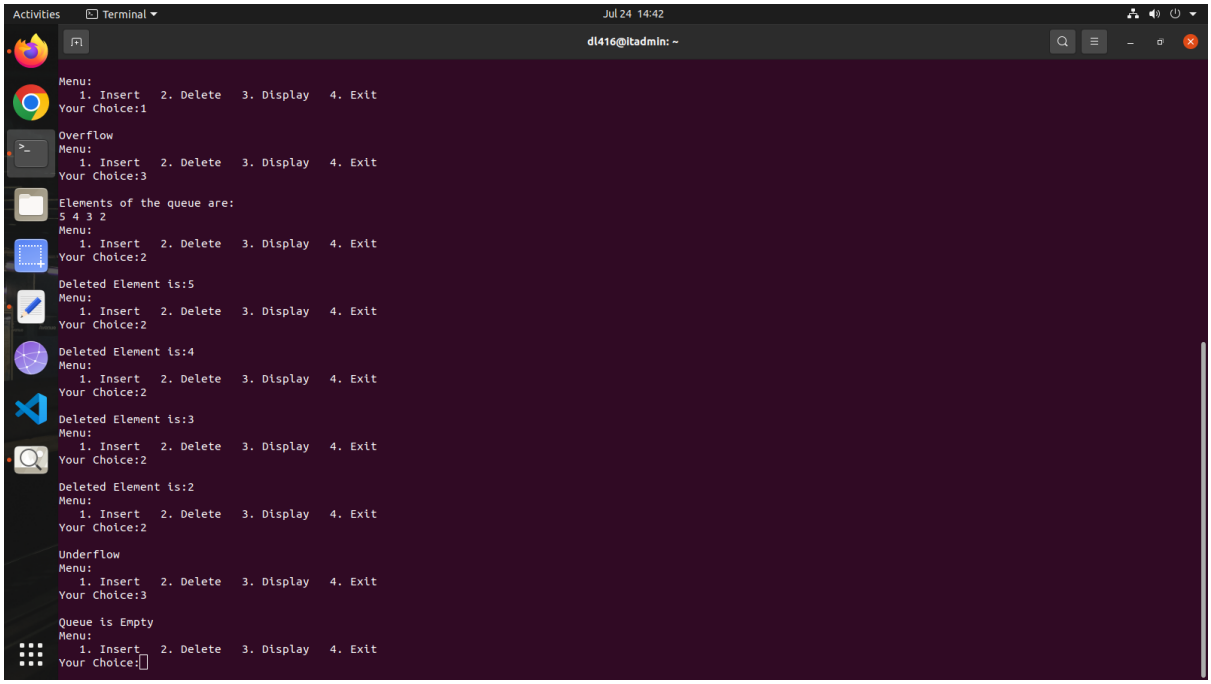
```
do
{

printf("\nMenu:\n 1. Insert 2. Delete 3. Display 4. Exit\n");
printf("Your Choice:");
scanf("%d",&ch);
switch(ch){
case 1:insert();
break;
case 2:del();
break;
case 3:display();
break;
case 4: break;
default: printf("Invalid Choice");
}
}while(ch!=4);
return 0;
}
void insert()
{
if (R >= n-1)
printf("\nOverflow");
else
{
R++;
printf("\nEnter Element to insert:");
scanf("%d",&Q[R]);
if(F==-1)
F=0;

}
```

```
}
void del()
{
if(F==-1)
printf("\nUnderflow");
else
{
printf("\nDeleted Element is:%d", Q[F]);
if(F==R)
F=R=-1;
else

F++;

}
}
void display()
{
if(R<0)
printf("\nQueue is Empty");
else
{
printf("\nElements of the queue are:\n");
for(i=F;i<=R;i++)
printf("%d ", Q[i]);

}
}

F++;

}
```

```
}
void display()
{
if(R<0)
printf("\nQueue is Empty");
else
{
printf("\nElements of the queue are:\n");
for(i=F;i<=R;i++)
printf("%d ", Q[i]);

}
}
```

Output:




Activities
Terminal
Jul 24 14:42
dl416@ltadmin: ~
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:1
Overflow
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:3
Elements of the queue are:
5 4 3 2
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:2
Deleted Element is:5
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:2
Deleted Element is:4
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:2
Deleted Element is:3
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:2
Deleted Element is:2
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:2
Underflow
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice:3
Queue is Empty
Menu:
1. Insert 2. Delete 3. Display 4. Exit
Your Choice: