GoodLuck | Page No.
Date

Program 4 (Circular queue)

```
#include <stdio.h>
#include <stdlib.h>
#define SIZE 3
 int item, front=0, rear=-1, q[SIZE], count=0;
void insertrear()
{ if (count==SIZE)
{  printf("\n queue overflow\n");
   return;
 } rear=(rear+1)%SIZE;
   q[rear]=item;
    count++;
} int deletefront()
{  if(count==0)
    return -1;
   item=q[front];
   front=(front+1)%SIZE;
   count=count-1;
   return item;
} void displayQ()
{ int i,f;
   if (count==0)
{
    printf("queue is empty\n");
```

```
return;
} f=front;
printf("contents of queue\n");
for(i=1; i<=count; i++)
{ printf("%d\n", q[f]);
  f=(f+1)%SIZE;
}}
int main()
{ int choice;
  for(;;)
{ printf("\n1.insertrear 2.deletefront 3.display
                4.exit\n");
printf("enter choice\n");
scanf("%d", &choice);
switch(choice)
{ case 1: printf("enter the item to be inserted:\n");
          scanf("%d", &item);
          insertrear();
          break;
  case 2: item=deletefront();
          if(item==-1)
          printf("Queue is empty\n");
          else
          printf("Item deleted: %d\n", item);
          break;
```

```
case 3: displayQ();
        break;
default: exit (0);
}
}
}
```

Output:

1. insertrear 2. deletefront 3. display 4. exit
enter choice : 1
Enter the item : 10
1. insertrear 2. deletefront 3. display 4. exit
enter choice : 1
Enter the item : 20
1. insert rear 2: deletefront 3. display 4. exit
enter choice : 1
Enter the item : 30
queue overflow
1. insert rear 2. deletefront 3. display 4. exit.
Enter choice : 3
contents of queue : 10 20
1. insert rear 2. delete front 3. display 4. exit
enter choice : 2
Item deleted : 10

Date

1. insertrear 2. deletefront 3. display 4. exit.
enter choice: 1
Enter the item to be inserted: 50
1. insertrear 2. deletefront 3. display 4. exit.
enter choice: 3
~~enter the int~~
contents of queue: 20 50
1. insertrear 2. deletefront 3. display 4. exit.
enter choice: 2
Item deleted: 20
1. insertrear 2. deletefront 3. display 4. exit.
enter choice: 2
Item deleted: 50

[Program finished]