LAB WEEK 5 PROGRAM
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 3-D

CIRCULAR QUEUE

```c
#include<stdio.h>
#define size 5
int items[size];
int front=-1;
int rear=-1;
void main();
void Enqueue();
void Dequeue();
void Display();

void main()
{
int choice;
while(1)
{   int value;
   printf("Enter your choice\n");
   printf("1.Enqueue \n2.Dequeue\n3.Display\n");
   scanf("%d",&choice);
   switch (choice)
   {
      case 1:
      printf("enter the element\n");
      scanf("%d",&value);
      Enqueue(value);
      break;
      case 2:
      Dequeue();
      break;
      case 3:
      Display();
      break;

      default:
      printf("invalid choice, enter again\n");
   }
}
}
void Enqueue(int element)
{
if(front==rear+1 || (front==0 && rear==size-1))
{
   printf("queue is full!");
}

else
```

```c
{
  if(front==-1)
    front=0;
  rear=(rear+1)%size;
  items[rear]=element;
  printf("%d inserted on queue\n",element );

}

}
void Dequeue()
{
int element;
if(front==-1)
{
    printf("queue is empty!");
}
else
{
    element=items[front];
    if (front==rear)
    {
        front=-1;
        rear=-1;
    }
    else
    {
    front=(front+1)%size;
    printf("the deleted item is %d\n",element);

    }
     return (element);
}

}

void Display()
{
int element,i;
if(front==-1){
    printf("queue is empty\n");
}
else
{
    printf("items are-\n");
    for (i = front; i != rear; i = (i + 1) % size){
        printf("%d\n",items[i]);

    }
    printf("%d\n",items[rear]);
}
}
```
    OUTPUT GIVEN BELOW

input

```
main.c:77:14: warning: 'return' with a value, in function returning void
main.c:56:6: note: declared here
Enter your choice
1.Enqueue
2.Dequeue
3.Display
1
enter the element
1
1 inserted on queue
Enter your choice
1.Enqueue
2.Dequeue
3.Display
1
enter the element
2
2 inserted on queue
Enter your choice
1.Enqueue
2.Dequeue
3.Display
1
enter the element
3
3 inserted on queue
Enter your choice
1.Enqueue
2.Dequeue
3.Display
3
items are-
1
2
3
Enter your choice
1.Enqueue
2.Dequeue
3.Display
```

Copy output to clipboard