WEEK5

Date

Implimenting circular Queue

```
#include <stdio.h>
# define MAX 5
int queue[MAX]
int front=-1, rear=-1
void insert (void);
int delete (void);
void display(void);
int main()
{
  int option, val
  clrscr()
  do
  {
      printf("\n1: Insert\n");
      printf("\n2: Delete \n");
      printf("\n 3: Display \n");
      printf("Enter your option\n");
      Scanf("%d", &option);
      switch (option)
      {
          case 1:
             insert()
             break;

          case 2:
             vale = delet ();
             if (val != -1)
             printf("Deleted Number is %d\n",
                                      val);
             break;

          case3: display()
           break
}   }
```

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```
} while (option != 5)
return 0

Void insert()
{
    int num;
    printf ("Enter the number to be added\n")
    scanf ("%d" &num)-
    if (front==0 && rear==MAX-1)
        printf ("overflow\n");

    else if (front==-1 && rear==-1)
     {
        front = rear =0
        queue [rear]=num
     }

    else if (rear= MAX-1 && front !=0)
     {
        rear =0
        queue [rear) =num;
     }
    else
     {
        rear ++
        queue [rear] = num;
     }
}
```

```
int delete()
{
   int Val;
   if (front ==-1 && rear ==-1)
   {
      printf ("\n Underflow");
       return -1
   }
   Val = queue[front]
   if (front == rear)
   {
       front = rear =-1
   }
   else
   {
       if (front =Max-1 ]
            front =0
       else
            front ++
   }
 return Val
}

Void display()
{
   int i
   printf ("\n");
   if (front ==-1 && rear ==-1)
        print ("\n Queue is empty");

   else
   {
       if (front < rear)
{
    for( int i = front; i< max; i++)
        printf( "%d\n", queue[i]);

    ~~for (i=0;~~

}
else
{
    for (int i = front ; i< Max; i ++)
        printf ("%d" ,queue(i]);
    for(int i=0; i<= rear; i++)
        printf ("%d \n", queue [i]);
}
}
}
```

OUTPUT

```
1:   INSERT
2:     DELETE
3:      DISPLAY
4:       EXIT
Enter   your   option
 1
Enter the   number  to be  inserted
10


1:  INSERT
2:   DELETE
3:     DISPLAY
4:       EXIT
Enter      Your    option
 3



10
```

Implementing Linear Queue

```
#include<stdio.h>
# include <math.h>
# include <stdlib.h>
# define max5
int  q[max]
int   front=-1 rear=-1
void   insert();
int    delete();
void   display();
int  main()
{
       int option Val
       printf ("  *** Menu ***\n");
       printf (" 1: Insert \n");
        printf (" 2: Delete \n");
       printf (" 3: Display \n")
       printf ("  4:  exit \n")
       printf  (" Enter the option \n");
       scanf ("%d", & option)
       switch (option)
       {
              case 1:
                     insert()
                     break;

             case 2:
                     Val=delete();
                     if (Val!=-1)
                            printf ("Item deleted
                                  is: %d\n",Va
```

```
      break;

   case 3:
           dis play();
           break;

 case 4:
          exit (0)
  }

} while (option != 5);
   return 0

}

void insert()
 {
    int num;
    printf ("Enter the item to be inserted \n");
     Scanf ("%d", & num);
     if (rear == max -1)
    {
          printf ("overflow\n");
    }
    if (front == -1 && rear == -1)
    {
           front = 0;
           rear = 0;
           q[rear] = num;
     }
     else
     {
           rear ++;
           q [rear] = num;
     }
```

```
int delete()
{
    int Val
    if( front==-1||front>rear)
    {
        printf("UNDERFLOW\n");
        return -1;
    }
    else
    {
        Val = q [front]
        front++;
        if( front>rear)
        {
            front=-1;
            rear=-1;
        }
        return val
    }

}


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

OUTPOT

```
1: Insert
2: Delete
3: Display
Enter your option
1
Enter the number to inserted
2


1: insert
2: Delete
3: Display
4: exit
Enter your option
1
Enter the number to be inserted
6
1: insert
2: Delete
3: display
4: exit
Enter your option
3


2
6
```