DSA Lab Assignment 11

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SEC : A   **Class Roll :180**

Topic : Queue Algorithms

Question: Write a C program (menu driven) to implement the following operations on a Simple Queue. (Represent the QUEUE using Linked List).

1. Insert

2. Delete

3. Display

4. Exit

 CODE ::

```
#include<stdio.h>
#include<stdlib.h>
struct node
{
 int data;
 struct node *next;
};
struct node *front;
struct node *rear;
void insert();
void delete();
void display();
void main ()
{
 int choice;
 while(choice != 4)
 {
 printf("\n1.insert an element\n2.Delete an element\n3.Display the
queue\n4.Exit\n");
 printf("\nEnter your choice :");
 scanf("%d",& choice);
 switch(choice)
 {
 case 1:
 insert();
 break;
 case 2:
 delete();
```

```c
        break;
        case 3:
        display();
        break;
        case 4:
        exit(0);
        break;
        default:
        printf("\nEnter valid choice??\n");
        }
        }
}
void insert()
{
 struct node *ptr;
 int item;

 ptr = (struct node *) malloc (sizeof(struct node));
 if(ptr == NULL)
 {
 printf("\nOVERFLOW\n");
 return;
 }
 else
 {
 printf("\nEnter value?\n");
 scanf("%d",&item);
 ptr -> data = item;
 if(front == NULL)
 {
 front = ptr;
 rear = ptr;
 front -> next = NULL;
 rear -> next = NULL;
 }
 else
 {
 rear -> next = ptr;
 rear = ptr;
 rear->next = NULL;
 }
 }
}
void delete ()
{
 struct node *ptr;
 if(front == NULL)
 {
```

```c
printf("\nUNDERFLOW\n");
return;
}
else
{
ptr = front;
front = front -> next;
free(ptr);
}
}
void display()
{
 struct node *ptr;
 ptr = front;
 if(front == NULL)
 {
printf("\nEmpty queue\n");
 }
 else
 { printf("\nprinting values .....\n");
 while(ptr != NULL)
 {
printf("\n%d\n",ptr -> data);
 ptr = ptr -> next;
 }
 }
}
```

OUTPUT