PIMPRI CHINCHWAD EDUCATION TRUST's.

PIMPRI CHINCHWAD COLLEGE OF ENGINEERING

(An Au■onomous Institute)

S.Y. B. TECH **Year:** 2024 – 25 **Semester:** I

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Department : Computer Engineering **Division:** B

Course : Data Structures Laboratory **Course Code:** BCE23PC02

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Assignment – 9

- **Aim:**

1. Implement a restaurant waitlist system using the queue data structure. Restaurant waitlist provide following facility:
   a) Add Party to Waitlist
   b) Seat Party
   c) Display Waitlist.

- **Source Code:**

```
#include<iostream>

using namespace std;

class Node{
    public:
    string data;
    Node *next;
public:
    Node(string data1)
    {
```

```
    data=data1;
    next=NULL;
  }
};

  class Queue{
     Node *front; Node
    *rear;
    public: Queue(){ front=rear=NULL;
  }
  void insert_wait(string data)
  {
    Node *nn=new Node(data);
    if(rear==nullptr){
      front=rear=nn;
    }
    else{
      rear->next=nn; rear=nn;
    }
  }


  void seat()
  {
      if(front==NULL){
        cout<<"empty!!";
```

```
}
    Node *temp = front; front =
      front->next; if (front ==
      NULL) {

       rear = NULL;

    }
    cout<<temp->data<<" is seated";

    delete temp;
}



void display()
{
  if (front== NULL) {
       cout << "Queue is empty" << endl; return;
    }
       cout<<"\nWaitlist(Costumers waiting):"<<endl;
    Node *temp = front; while (temp
    != NULL) {
       cout << temp->data << " "; temp =
       temp->next;
    }
    cout << endl;
}
```

```
};



    int main(){
    Queue q;
    q.insert_wait("Prachi");
    q.insert_wait("Janki");
    q.insert_wait("Tanisha");
    q.insert_wait("Sanika"); q.display();

    q.seat();

    q.display();
}
```

- **Screen shots of Output:**

  1.

```
Output
/tmp/RL2XmXTIKC.o

Waitlist(Costumers waiting):
Prachi Janki Tanisha Sanika
Prachi is seated
Waitlist(Costumers waiting):
Janki Tanisha Sanika


=== Code Execution Successful ===
```

- **Conclusion:**

  Hence, we studied about Queue and its operations.