

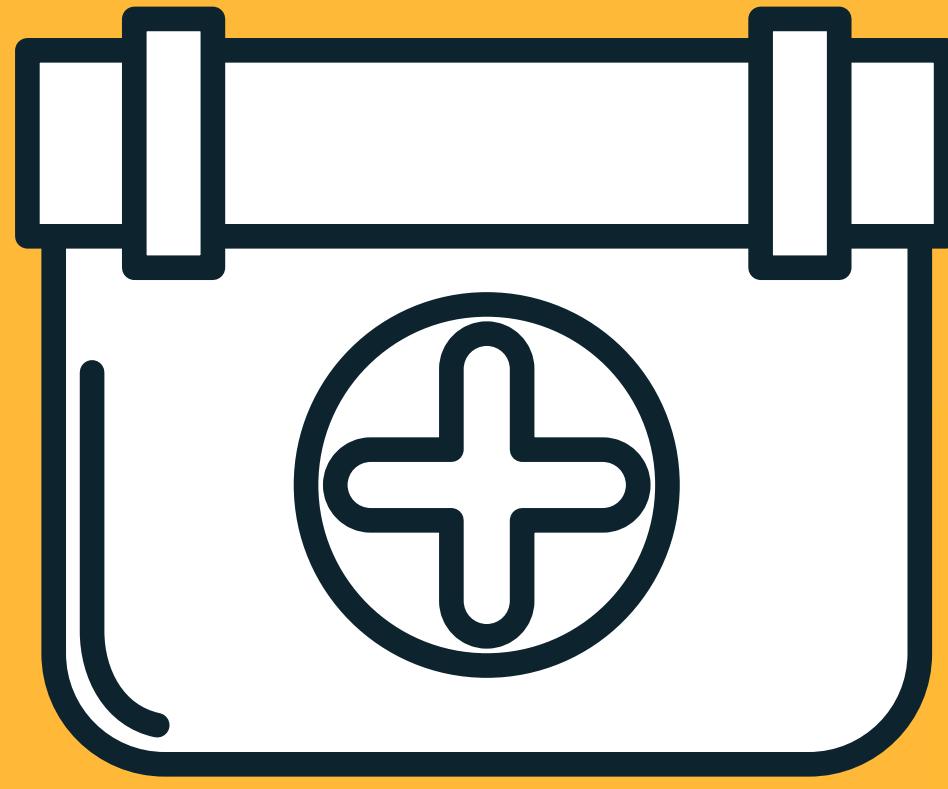
# HOSPITAL MANAGEMENT SYSTEM

Data Structure and

Algorithm



Team 8





# ABSTRACT

*The following project contains the information related to the development of Hospital Management system Site. The main aim of the project is to develop an application that is going to make it possible for the patient to take an appointment, view and taking the doctor's checkup and patients can be order their medicines in the online system. There are separate classes where each class is described in detail. After each phase of the Software Development is explained, the created system will be evaluated together with the software development process that was applied in order to implement the application.*

# INTRODUCTION

## 1 Problem Definition

The purpose of Hospital Management System is to create appointment of the doctor, View of the list of the checkup and the patient will get the recommendation of the medicines from the doctor. The need of this system arose because as is the known fact the India has the least doctors in the whole world and it is not possible to handle such a large system manually. By computerizing it, it became possible to overcome the limitations and make the system operations more efficient. The complexity in handling data and record of such a vast system has been reduced and has become a lot easier by computerizing the system.



## 2

## Objective

### **Main objectives of a Hospital Management System are:**

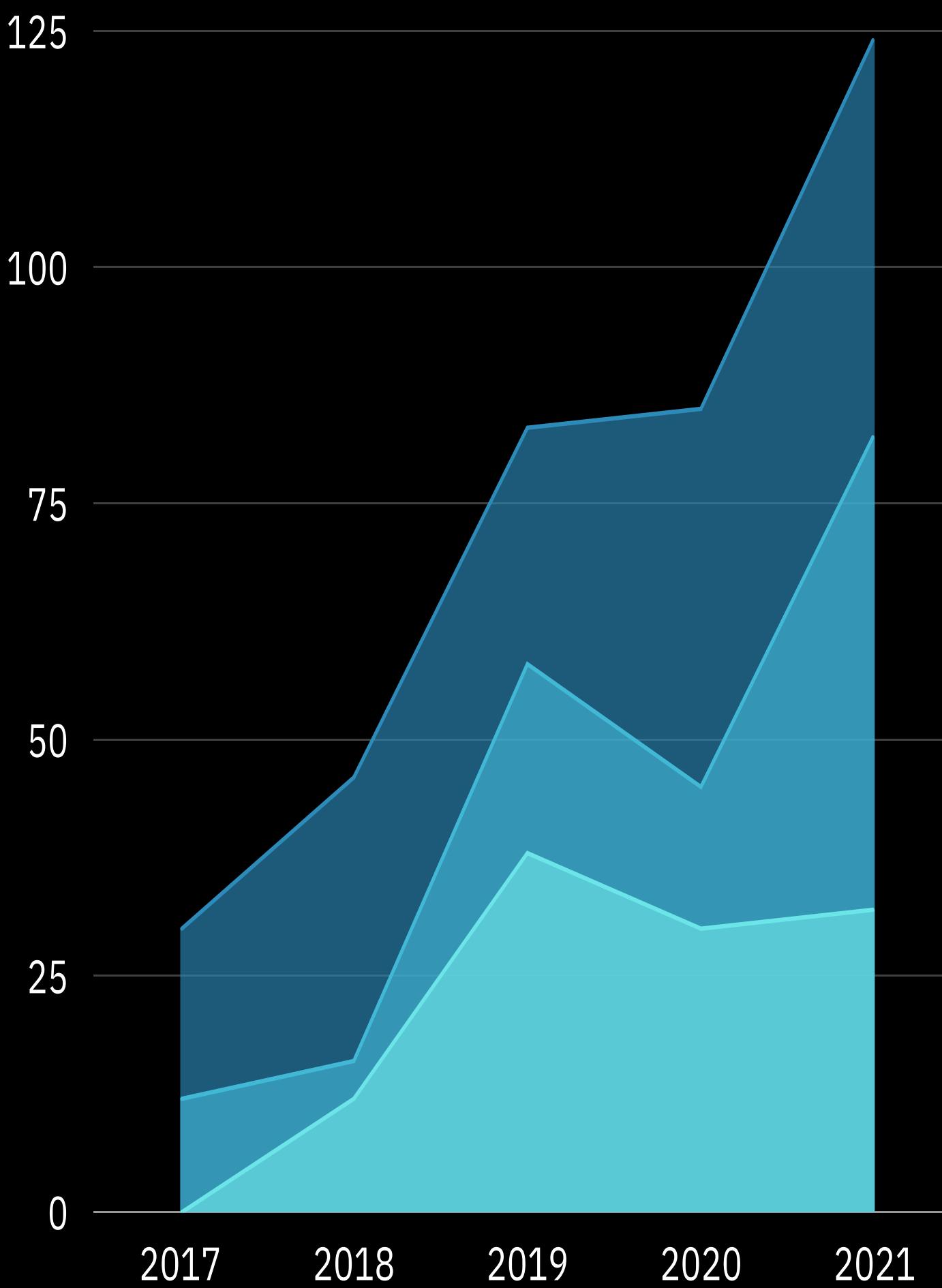
- Design a system for better patient care.
- Reduce hospital operating costs.
- Provide MIS (Management Information System) report on demand to management for better decision making.
- Better co-ordination among the different departments.
- Provide top management a single point of control.



# SYSTEM REQUIREMENT

The Data Structure and Algorithm concept that we have used in our program are

- Linked List
- Doubly Linked List
- Priority Queue
- Binary Search tree

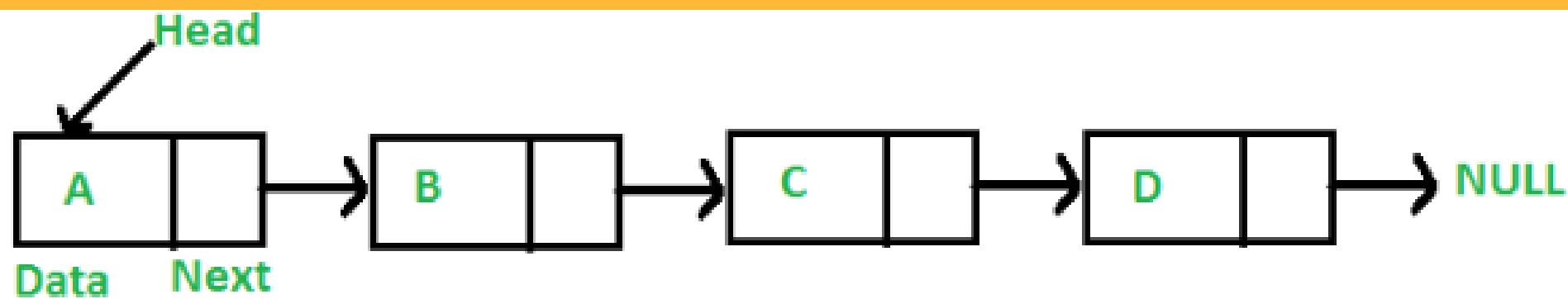


# LINKED LIST

A linked list is a linear data structure, in which the elements are not stored at contiguous memory locations. The elements in a linked list are linked using pointers as shown in the image. A linked list is represented by a pointer to the first node of the linked list. The first node is called the head. If the linked list is empty, then the value of the head points to NULL.

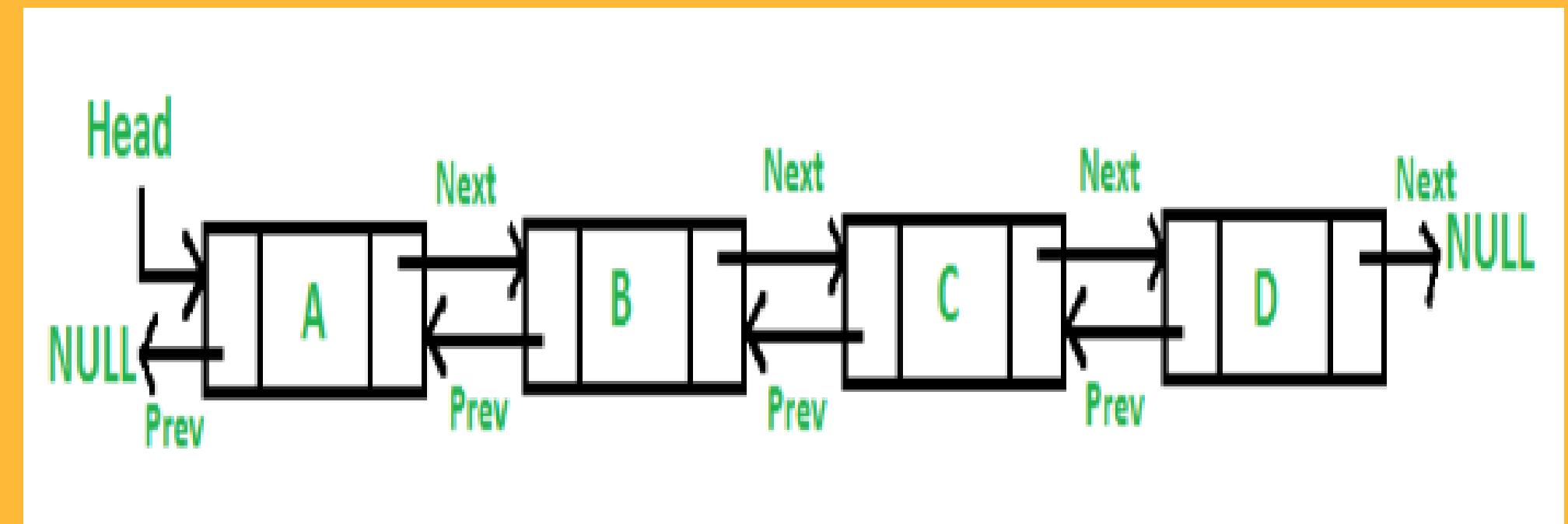
Each node in a list consists of at least two parts:

1. A Data Item
2. Pointer



# DOUBLY LINKED LIST

A Doubly Linked List (DLL) contains an extra pointer, typically called previous pointer, together with next pointer and data which are there in singly linked list. It navigates forward and backward direction

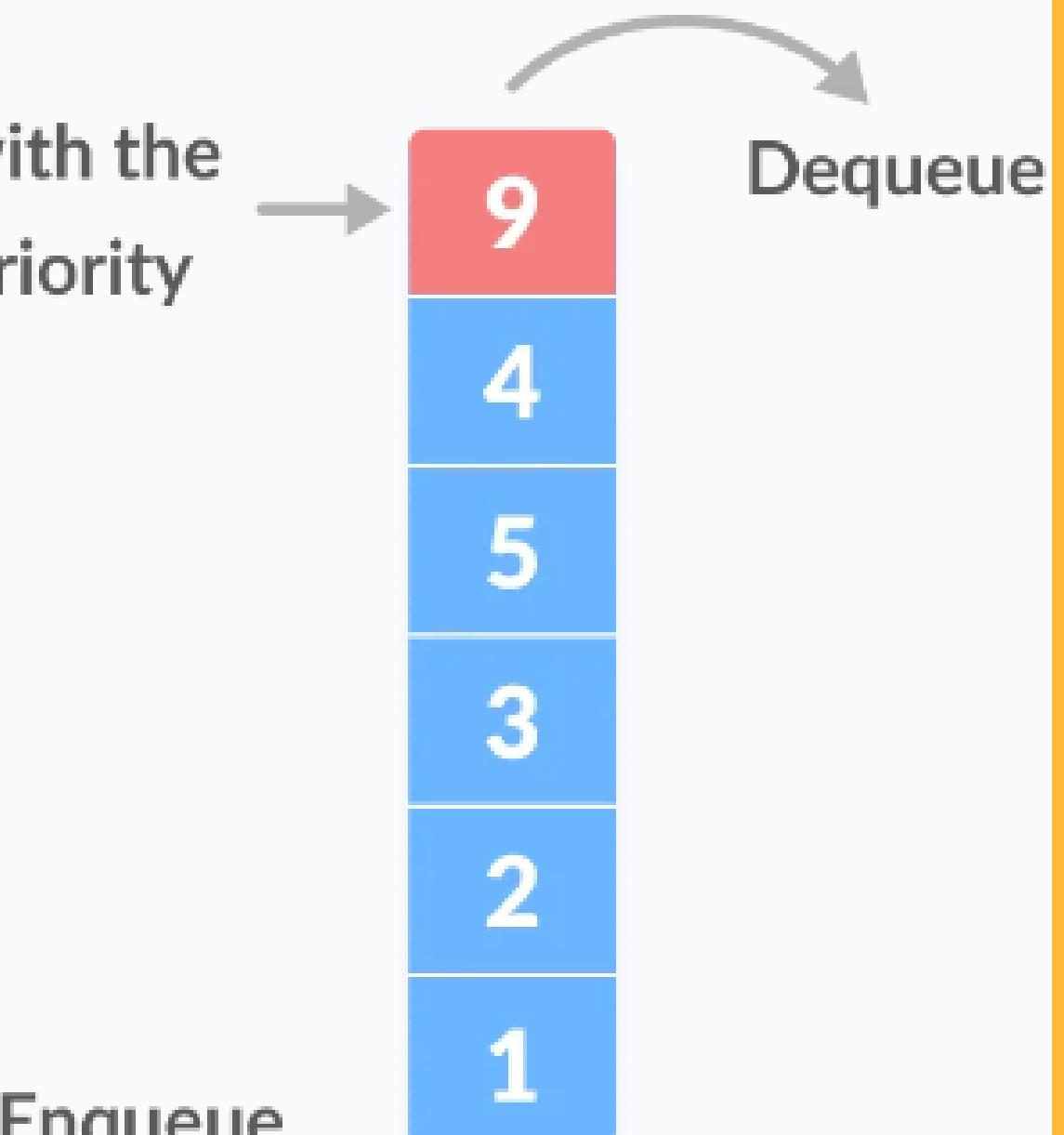


# PRIORITY QUEUE

A priority queue is a special type of queue in which each element is associated with a priority value. And, elements are served on the basis of their priority. That is, higher priority elements are served first.

However, if elements with the same priority occur, they are served according to their order in the queue.

Element with the highest priority



ex of priority queue

# BINARY SEARCH TREE

Binary search looks for a particular item by

comparing the middle most item of the

collection. If a match occurs, then the index of item is returned. If the middle item is greater

than the item, then the item is searched in the sub-array to the left of the middle item.

Otherwise, the item is searched for in the subarray to the right of the middle item. This

process continues on the sub-array as well until

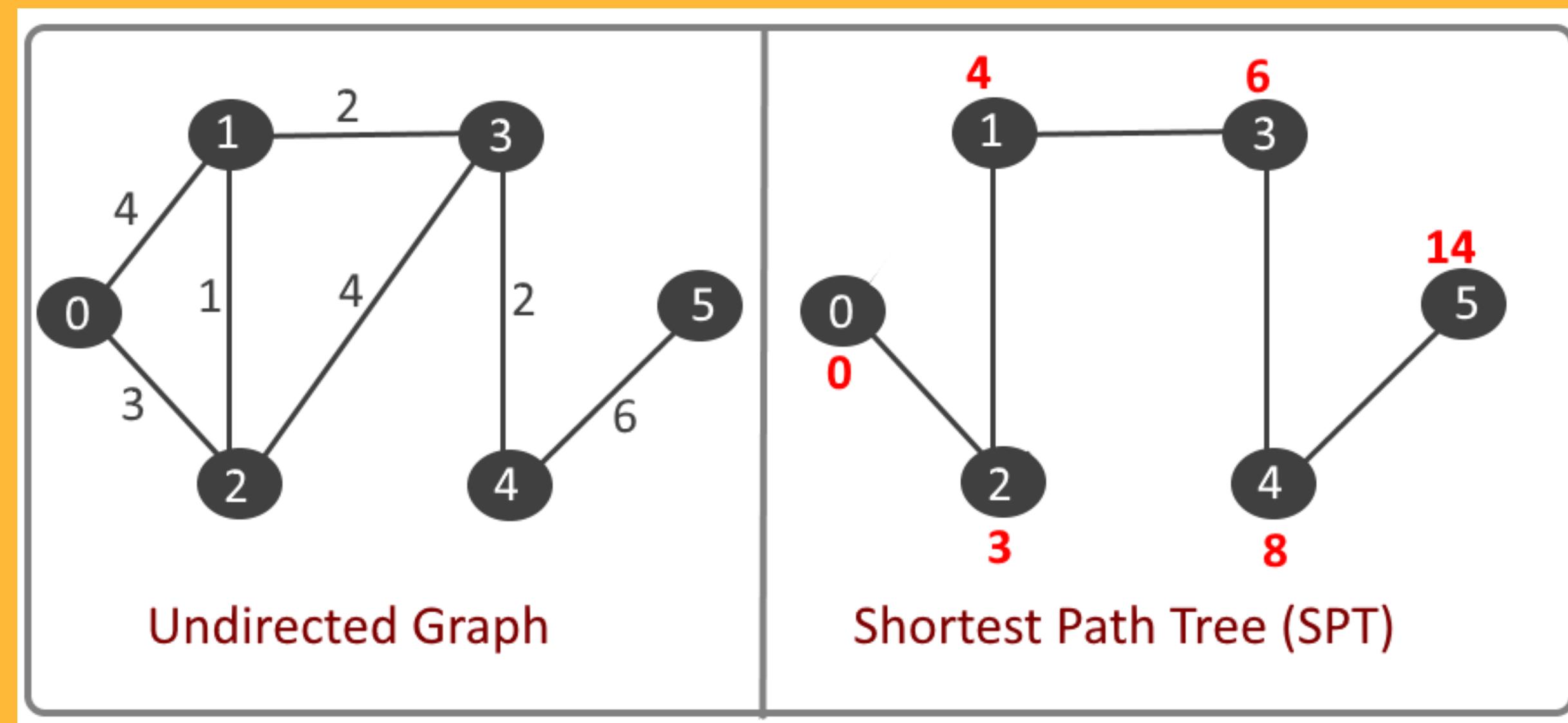
the size of the subarray reduces to zero.

Binary Search										
0	1	2	3	4	5	6	7	8	9	
Search 23	2	5	8	12	16	23	38	56	72	91
	L=0	1	2	3	M=4	5	6	7	8	H=9
23 > 16 take 2 <sup>nd</sup> half	2	5	8	12	16	23	38	56	72	91
	0	1	2	3	4	L=5	6	M=7	8	H=9
23 < 56 take 1 <sup>st</sup> half	2	5	8	12	16	23	38	56	72	91
	0	1	2	3	4	L=5, M=5	H=6	7	8	9
Found 23, Return 5	2	5	8	12	16	23	38	56	72	91

ex. of binary search

# Dijkstra Algorithm:

**Dijkstra algorithm** is one of the prominent algorithms to find the shortest path from the source node to a destination node. It uses the greedy approach to find the shortest path.

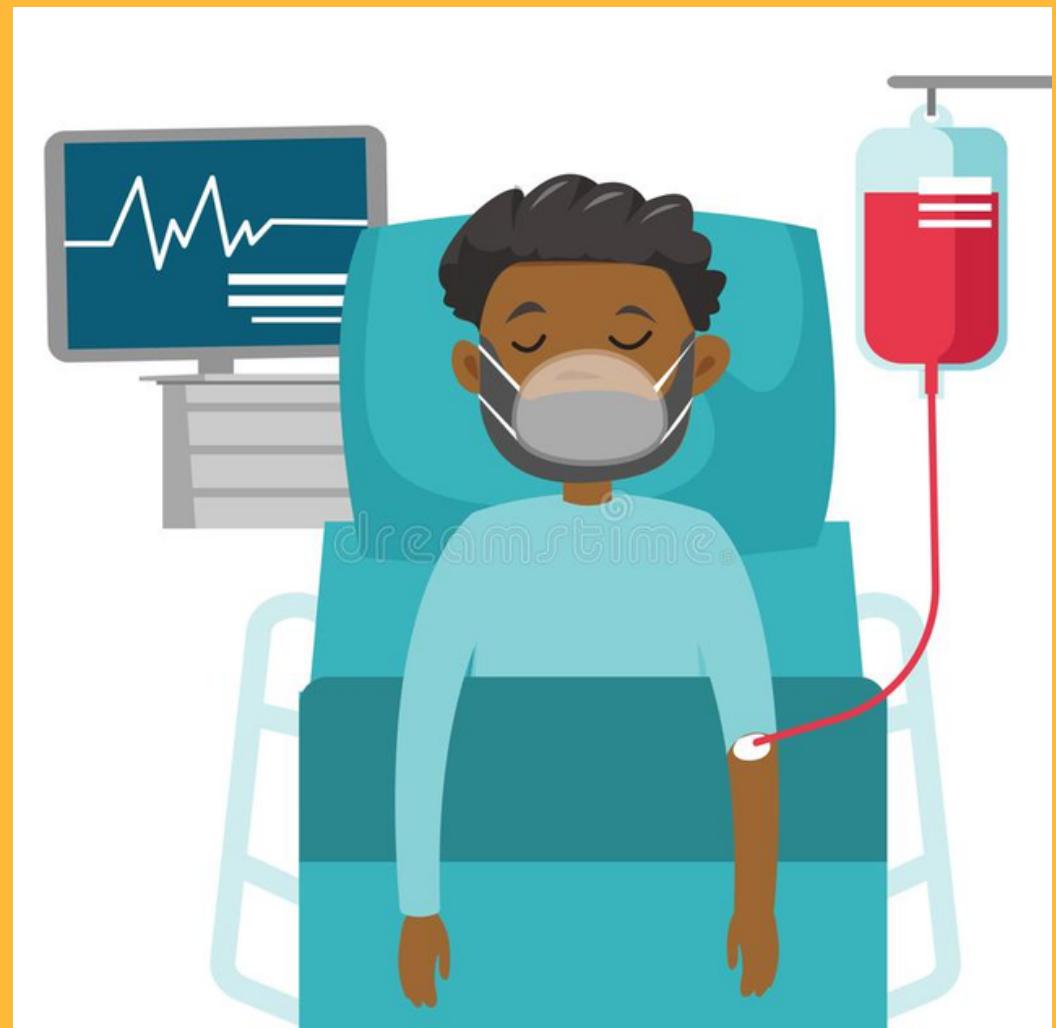


# PROJECT DETAIL

This project contains mainly five classes

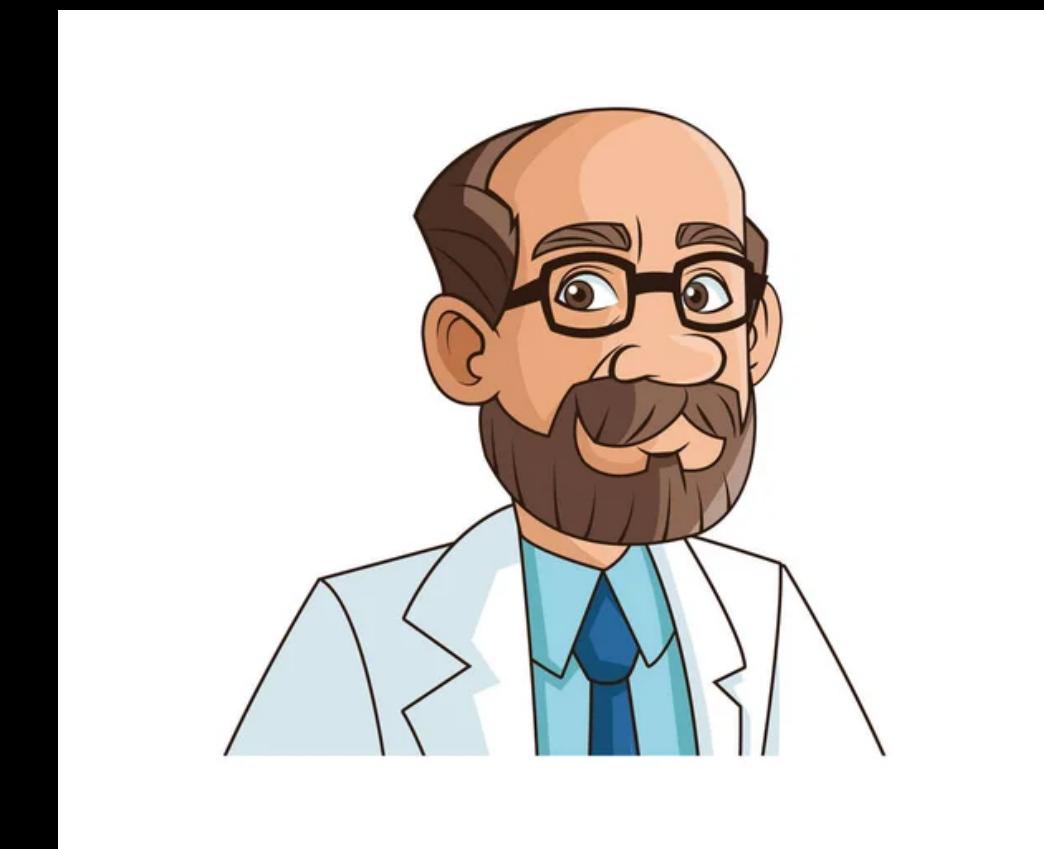
- Patient
- Doctor
- Checklist
- Online Medecince
- Contact list





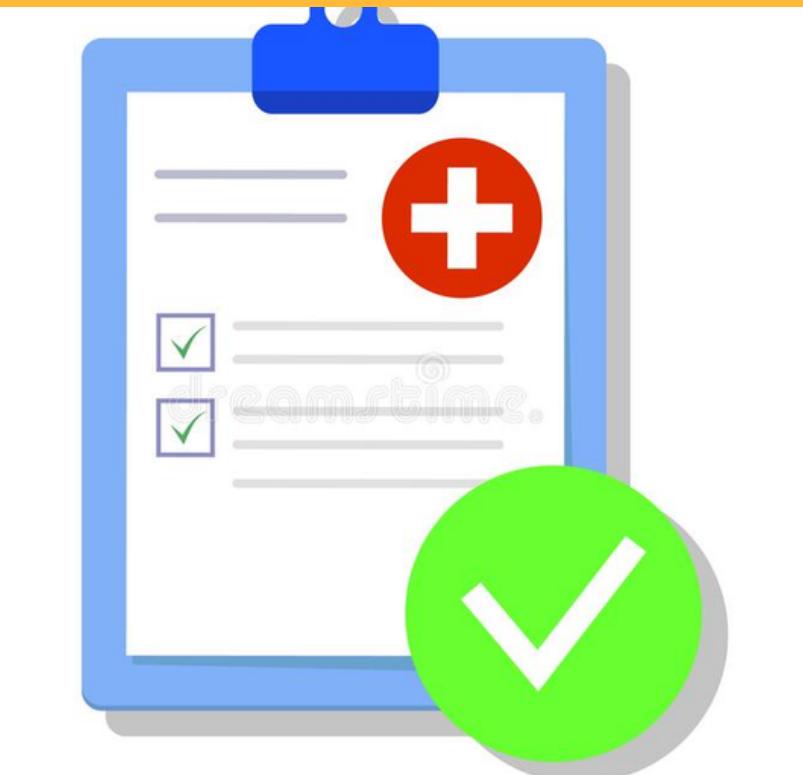
## 1.PATIENT

In this class , here patient Name , contact, blood pressure snd blood group are recorded



## 2.DOCTOR

Here, Doctors Name , their ID, contact,specilization and amount fee taken by the particular doctor



## 3.CHECKLIST

In this class, Name of the doctor and name of the patient are implemented . Priority , recommendation and display of whole data are displayed



## 5.ONLINE MEDICINE

In this class we have another sub-class that is regular and new customer, Regular customer are those who are registered in that hospital list. New customer have to give their details such as Name , Address , Number and location



## 6.CONTACT LIST OF SURGEON

It contains list of contact of surgeons in the hospital and their details. we can insert delete and display their details

# ***Beginning***

## Hospital Management System:

- We have implemented the project based on the user manner

|| \*\*\*\*\*Hospital Management System \*\*\*\*\* ||

|| Main Menu ||

Enter the 1 for insert New Doctor

Enter the 2 for insert patient

Enter the 3 for print all the Doctor

Enter the 4 for the print all the patients

Enter the 5 for purpose of medicine online

Enter the 6 for the contract of list

Enter the 7 for checkup menu

Enter the 8 for exit

# **Online Medicine Order:**

What would you like to do?  
1. Medicine order  
2. View the list  
3. Exit

## **List of medicines:**

Medicine lists			
NO.	NAMES	PRICES	
Properties			
1.	Paracetmol	Tablet	35
2.	Hydrocodone	Liquid	30
3.	Nexium	liquid	315
4.	Enbrel	Liquid	185
5.	Azithral	Tablet	119
6.	Alex	Liquid	123
7.	Thrombolytics	Tablet	115
8.	Folitrax	Tablet	426
9.	Lubrex	Liquid	120
10.	Naxpro	Tablet	156

# SYSTEM ENVIRONMENT

The design of this project contains both hardware and software.

The specifications are listed below.

- Hardware Intel: i7/ Mac Ram: Minimum 8 Gb Hardware: 20 Gb

or more

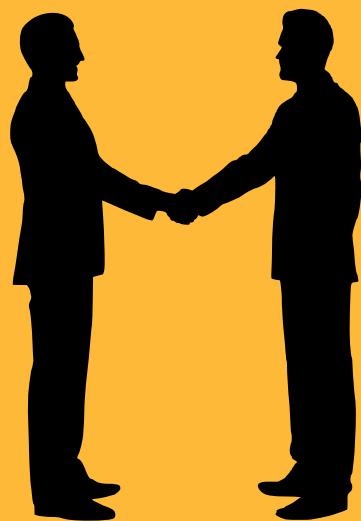
- Software Operating :System: Windows 2000/ XP/7/8/10/11

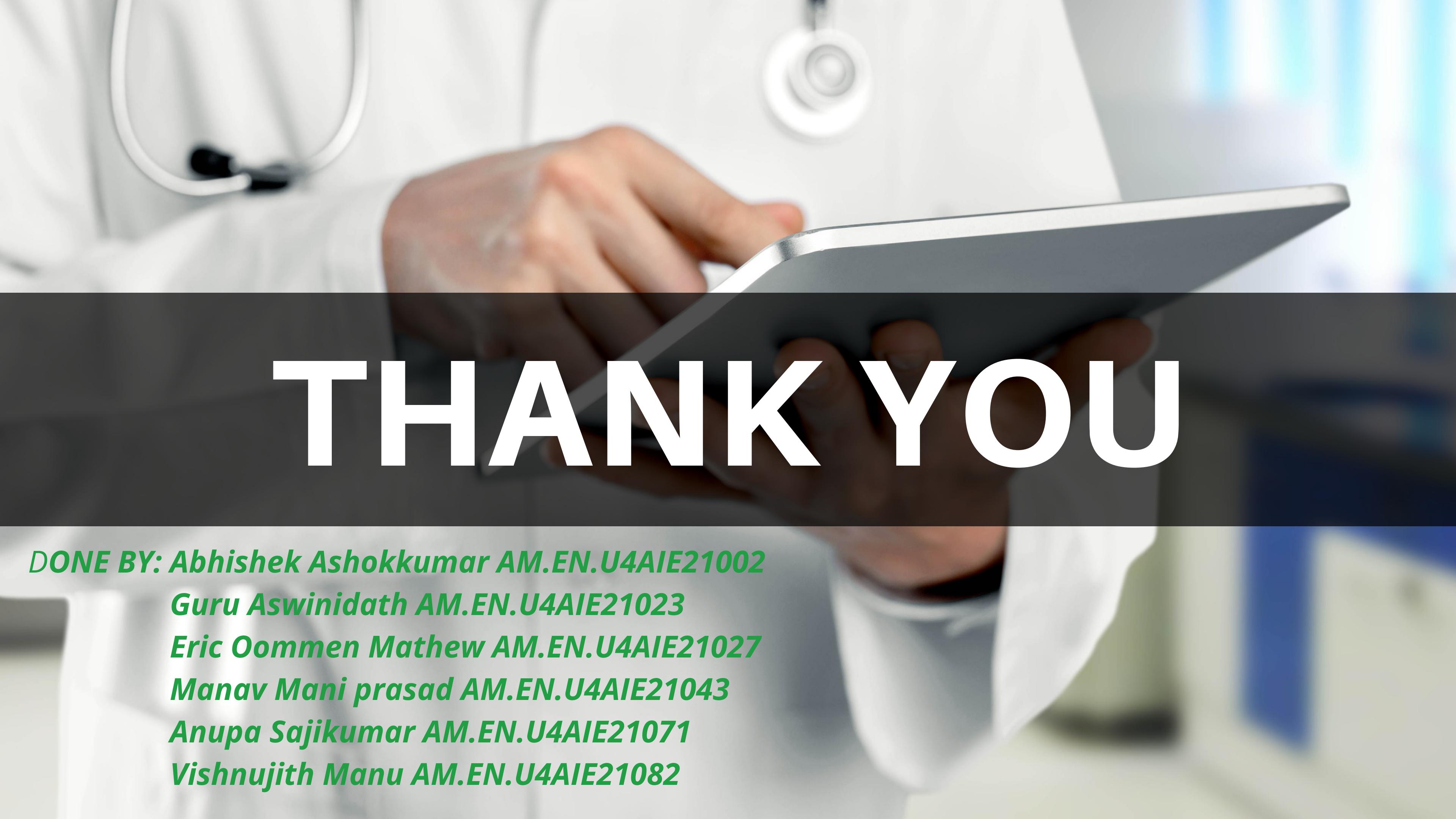
Front End: Visual Studio Code / Eclipse



# CONCLUSION

From this project we can analyze various data structure such as binary search, tree priority lined list .In various application software for which the application we choose is hospital management system Using java. We have used 12 classes in total in this application . These data structure which have used are basic concept through which we got an idea about how these various applications are benefitted for the whole society . The hospital management system is basic prototype from the actual real time hospital manage system which is suffice only for learning the concepts from data structure algorithms which can be capable for small scale application.





# THANK YOU

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