DATA STRUCTURE

C++ Report

On

MEDICAL BILL

1. ***Rationale:-***

- This project is based on generating a program to Create, Insert, Display and Search for Medical Billing system Using c. We are implementing this program by using concepts of C-Language like link list.

2. ***Aims/Benefits of the Micro-Project:-***

- We are creating data structure of medical bill.

❖ **BENEFITS:**

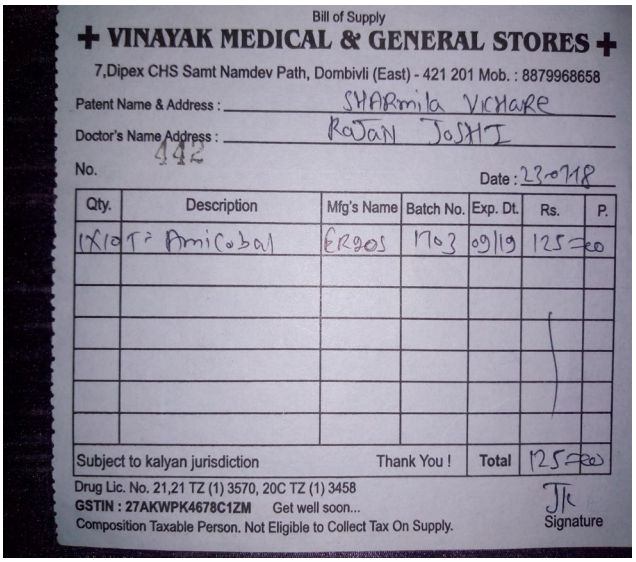
a) It is beneficial for retrieval of data's related to the medicines or type customers by the shopkeepers.
b) Also, it is beneficial for maintaining data.

3. ***Course Outcomes Addressed:-***

a) Perform basic operations on array.
b) Implemented basic operations on linked list.
c) Implement program to create and transverse tree to solve problems.

4. ***Literature Review:-***

a) Collected 5 samples (medical bill) for referential purpose.



Bill of Supply

+ VINAYAK MEDICAL & GENERAL STORES +

7,Dipex CHS Samt Namdev Path, Dombivli (East) - 421 201 Mob. : 8879968658

Patent Name & Address : SHARmila VICHARE

Doctor's Name Address : RAJAN JOSHI

No. 442 Date : 23/07/18

Qty.	Description	Mfg's Name	Batch No.	Exp. Dt.	Rs.	P.
1X10T	Amicobal	ERIOS	1103	09/19	125=00	

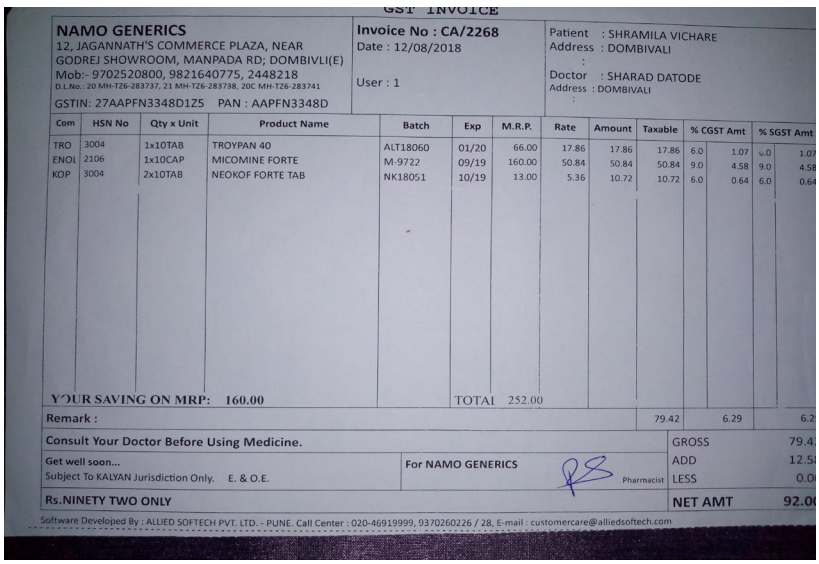
Subject to kalyan jurisdiction Thank You ! Total 125=00

Drug Lic. No. 21,21 TZ (1) 3570, 20C TZ (1) 3458

GSTIN : 27AKWPK4678C1ZM Get well soon...

Composition Taxable Person. Not Eligible to Collect Tax On Supply.

Signature



GST INVOICE

NAMO GENERICS
12, JAGANNATH'S COMMERCE PLAZA, NEAR GODREJ SHOWROOM, MANPADA RD; DOMBIVLI(E)
Mob:- 9702520800, 9821640775, 2448218
D.L.No.- 20 MH-TZ6-283737, 21 MH-TZ6-283738, 20C MH-TZ6-283741
GSTIN: 27AAPFN3348D1Z5 PAN : AAPFN3348D

Invoice No : CA/2268
Date : 12/08/2018
User : 1

Patient : SHRAMILA VICHARE
Address : DOMBIVALI
Doctor : SHARAD DATODE
Address : DOMBIVALI

Com	HSN No	Qty x Unit	Product Name	Batch	Exp	M.R.P.	Rate	Amount	Taxable	% CGST Amt	% SGST Amt
TRO	3004	1x10TAB	TROYPAN 40	ALT18060	01/20	66.00	17.86	17.86	17.86	6.0 1.07	6.0 1.07
ENOL	2106	1x10CAP	MICOMINE FORTE	M-9722	09/19	160.00	50.84	50.84	50.84	9.0 4.58	9.0 4.58
KOP	3004	2x10TAB	NEOKOF FORTE TAB	NK18051	10/19	13.00	5.36	10.72	10.72	6.0 0.64	6.0 0.64

YOUR SAVING ON MRP: 160.00 TOTAL 252.00

Remark : 79.42 6.29 6.2

Consult Your Doctor Before Using Medicine.

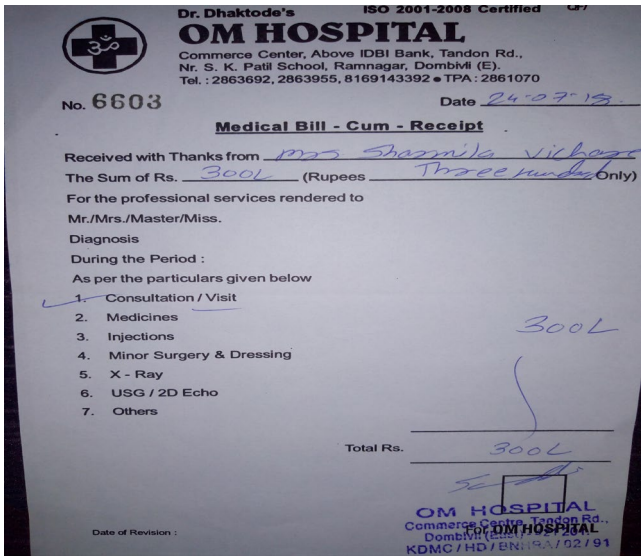
Get well soon... Subject To KALYAN Jurisdiction Only. E. & O.E.

For NAMO GENERICS Pharmacist

GROSS 79.4
ADD 12.5
LESS 0.0

Rs.NINETY TWO ONLY NET AMT 92.0

Software Developed By : ALLIED SOFTECH PVT. LTD. - PUNE. Call Center : 020-46919999, 9370260226 / 28, E-mail : customercare@alliedsoftech.com



Dr. Dhaktode's ISO 2001-2008 Certified

OM HOSPITAL

Commerce Center, Above IDBI Bank, Tandon Rd., Nr. S. K. Patil School, Ramnagar, Dombivli (E). Tel. : 2863692, 2863955, 8169143392 • TPA : 2861070

No. 6603 Date 24/07/18

Medical Bill - Cum - Receipt

Received with Thanks from Mrs Sharmila Vichare

The Sum of Rs. 300/- (Rupees Three hundred Only)

For the professional services rendered to

Mr./Mrs./Master/Miss.

Diagnosis

During the Period :

As per the particulars given below

1. Consultation / Visit 300/-
2. Medicines
3. Injections
4. Minor Surgery & Dressing
5. X - Ray
6. USG / 2D Echo
7. Others

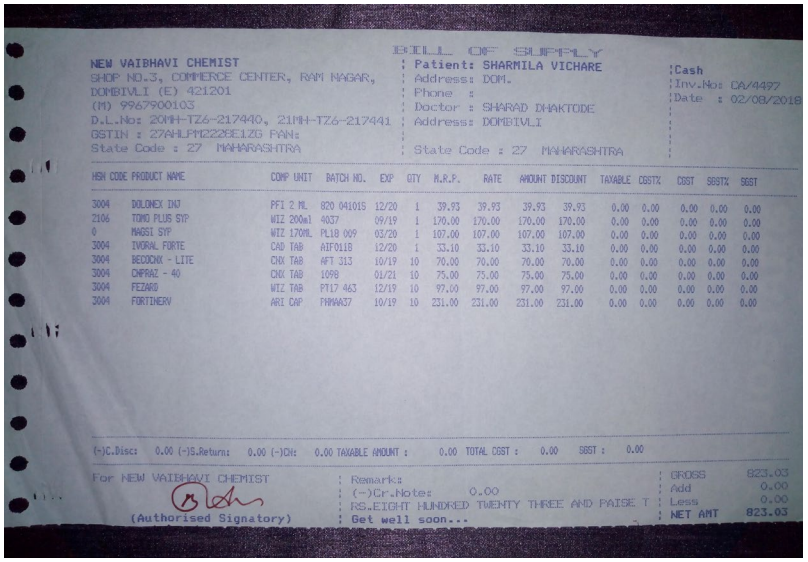
Total Rs. 300/-

OM HOSPITAL Commerce Center, Tandon Rd., Dombivli (E)

For OM HOSPITAL

Date of Revision :

KDMC / HD / BN / 9A / 02 / 91



BILL OF SUPPLY

NEW VAIBHAVI CHEMIST
SHOP NO.3, COMMERCE CENTER, RAM NAGAR,
DOMBIVLI (E) 421201
(M) 9967900103
D.L.No: 20MH-TZ6-217440, 21MH-TZ6-217441
GSTIN : 27AHLPM2228E1ZG PAN:
State Code : 27 MAHARASHTRA

Patient: SHARMILA VICHARE
Address: DOM.
Phone :
Doctor : SHARAD DHAKTODE
Address: DOMBIVLI
State Code : 27 MAHARASHTRA

Cash
Inv.No: CA/4497
Date : 02/08/2018

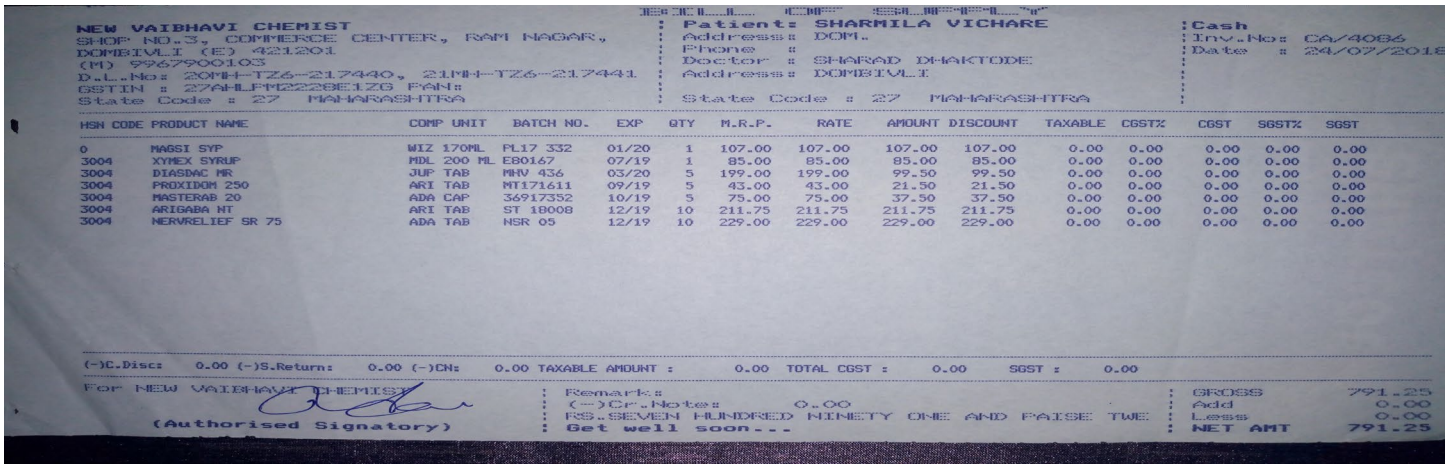
HSN CODE	PRODUCT NAME	COMP UNIT	BATCH NO.	EXP	QTY	M.R.P.	RATE	AMOUNT	DISCOUNT	TAXABLE	CGST%	CGST	SGST%	SGST
3004	DOLONEX INJ	PFI 2 ML	820 041015	12/20	1	39.93	39.93	39.93	39.93	0.00	0.00	0.00	0.00	0.00
2106	TONO PLUS SYP	WIZ 200ml	4037	09/19	1	170.00	170.00	170.00	170.00	0.00	0.00	0.00	0.00	0.00
0	MAGGI SYP	WIZ 170ML	PL18 009	03/20	1	107.00	107.00	107.00	107.00	0.00	0.00	0.00	0.00	0.00
3004	IVORAL FORTE	CAD TAB	AIF0118	12/20	1	33.10	33.10	33.10	33.10	0.00	0.00	0.00	0.00	0.00
3004	BECOZINC - LITE	CDC TAB	AFT 313	10/19	10	70.00	70.00	70.00	70.00	0.00	0.00	0.00	0.00	0.00
3004	CIPRAZ - 40	CDC TAB	1098	01/21	10	75.00	75.00	75.00	75.00	0.00	0.00	0.00	0.00	0.00
3004	FEZARO	WIZ TAB	PT17 463	12/19	10	97.00	97.00	97.00	97.00	0.00	0.00	0.00	0.00	0.00
3004	FORTINERV	ARI CAP	PMAA37	10/19	10	231.00	231.00	231.00	231.00	0.00	0.00	0.00	0.00	0.00

(-)C.Disc: 0.00 (-)S.Return: 0.00 (-)CN: 0.00 TAXABLE AMOUNT : 0.00 TOTAL CGST : 0.00 SGST : 0.00

For NEW VAIBHAVI CHEMIST
(Authorised Signatory)

Remark:
(-)Cr.Note: 0.00
RS.EIGHT HUNDRED TWENTY THREE AND PAISE T
Get well soon...

GROSS 823.03
Add 0.00
Less 0.00
NET AMT 823.03



NEW VAIBHAVI CHEMIST
SHOP NO.3, COMMERCE CENTER, RAM NAGAR,
DOMBIVLI (E) 421201
(M) 9967900103
D.L.No: 20MH-TZ6-217440, 21MH-TZ6-217441
GSTIN : 27AHLPM2228E1ZG PAN:
State Code : 27 MAHARASHTRA

Patient: SHARMILA VICHARE
Address: DOM.
Phone :
Doctor : SHARAD DHAKTODE
Address: DOMBIVLI
State Code : 27 MAHARASHTRA

Cash
Inv.No: CA/4086
Date : 24/07/2018

HSN CODE	PRODUCT NAME	COMP UNIT	BATCH NO.	EXP	QTY	M.R.P.	RATE	AMOUNT	DISCOUNT	TAXABLE	CGST%	CGST	SGST%	SGST
0	MAGGI SYP	WIZ 170ML	PL17 332	01/20	1	107.00	107.00	107.00	107.00	0.00	0.00	0.00	0.00	0.00
3004	XYMEX SYRUP	MDL 200 ML	E80167	07/19	1	85.00	85.00	85.00	85.00	0.00	0.00	0.00	0.00	0.00
3004	DIASDAC MR	JUP TAB	MHV 436	03/20	5	199.00	199.00	99.50	99.50	0.00	0.00	0.00	0.00	0.00
3004	PROXIDOM 250	ARI TAB	MT171611	09/19	5	43.00	43.00	21.50	21.50	0.00	0.00	0.00	0.00	0.00
3004	MASTERAB 20	ADA CAP	36917352	10/19	5	75.00	75.00	37.50	37.50	0.00	0.00	0.00	0.00	0.00
3004	ARIGABA NT	ARI TAB	ST 18008	12/19	10	211.75	211.75	211.75	211.75	0.00	0.00	0.00	0.00	0.00
3004	NERVRELIEF SR 75	ADA TAB	NSR 05	12/19	10	229.00	229.00	229.00	229.00	0.00	0.00	0.00	0.00	0.00

(-)C.Disc: 0.00 (-)S.Return: 0.00 (-)CN: 0.00 TAXABLE AMOUNT : 0.00 TOTAL CGST : 0.00 SGST : 0.00

For NEW VAIBHAVI CHEMIST
(Authorised Signatory)

Remark:
(-)Cr.Note: 0.00
RS.SEVEN HUNDRED NINETY ONE AND PAISE TWE
Get well soon...

GROSS 791.25
Add 0.00
Less 0.00
NET AMT 791.25

b) Identified the attributes that are essential to develop a basic medical bill.
Bill_no, store_id, amount, c_name, medicine, d_name.

c) Data structure used:
1) Link list: It can allows Dynamic Allocation of Memory.

5. *Actual Methodology Followed:-*

A. Prepared an Algorithm and Flowchart.

❖ **Algorithms:-**

1) Create.

❖ Function call: create (bill_no, store_id, amount, c_name, medicine, d_name);
(Bill_no->b, store_id->s, amount->a, c_name->c, medicine->m, d_name->d)

1. Start.
2. Create a temp node and allocate memory to it.
3. Set bill_no field of node with b.
   Set store_id field of node with s.
   Set customer_name field of node with c.
   Set medicine field of node with m.
   Set amount field of node with a.
   Set doctor_name field of node with d.
4. Set next field of node with NULL value.

5. Set temporary node as a 1st mode by storing its address in header node (start).
6. Stop.

2) Insert at the end.

❖ Function call: inserte (bill_no, store_id, amount, c_name, medicine, d_name);
(Bill_no->b, store_id->s, amount->a, c_name->c, medicine->m, d_name->d)

1. Start.
2. Create a temp node with pointer and allocate memory to it.
3. Set bill_no field of temp node with data (b).
   Set customer_name of temp node with data (c).
   Set medicine of temp node with data (m).
   Set store-id of temp node with data (s).
   Set doctor_name of temp node with data (d).
4. Set amount of temp node with data (a).
5. Set next field with NULL value.
6. Set pointer q with address of 1st node.
7. Repeat step 12 till next field of node is NULL.
8. Increment pointer with respect to size of node.
9. Set last node (q) next field with address of temp node.
10. Stop.

3) Display.

❖ Function call: display();

1. Start.
2. Create pointer q of type struct node.
3. Initialize pointer q with address from start node.
4. Repeat step 5 till q reaches to last node.

5.1. Display bill_no, customer_name, store_id, amount, medicine, doctor_name.
5.2. Increment pointer q with respect to address of node.

5. Display fields of last node.
6. Stop.

4) Search.

Function call: search();

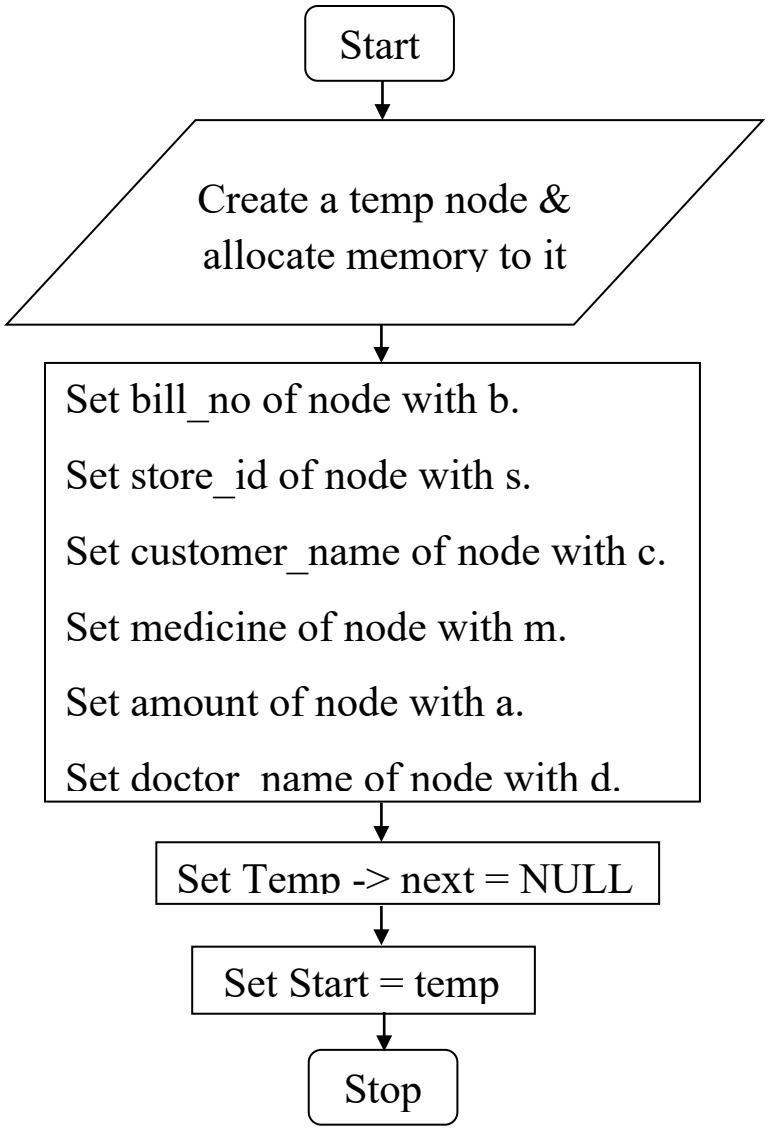
1. Start.
2. Declare a variable se (search element), flag=0.
3. Declare pointer q of type struct node.
4. Accept value for se.
5. Initialize pointer q with the address of 1st node.
6. Repeat step 7 till pointer reaches to last node.
7. Compare se with the primary key of info field,
8. If se=temp-> bill_no, Then
   Set flag=1and go to step 10

Otherwise,
Increment q pointer with respect to size of node.

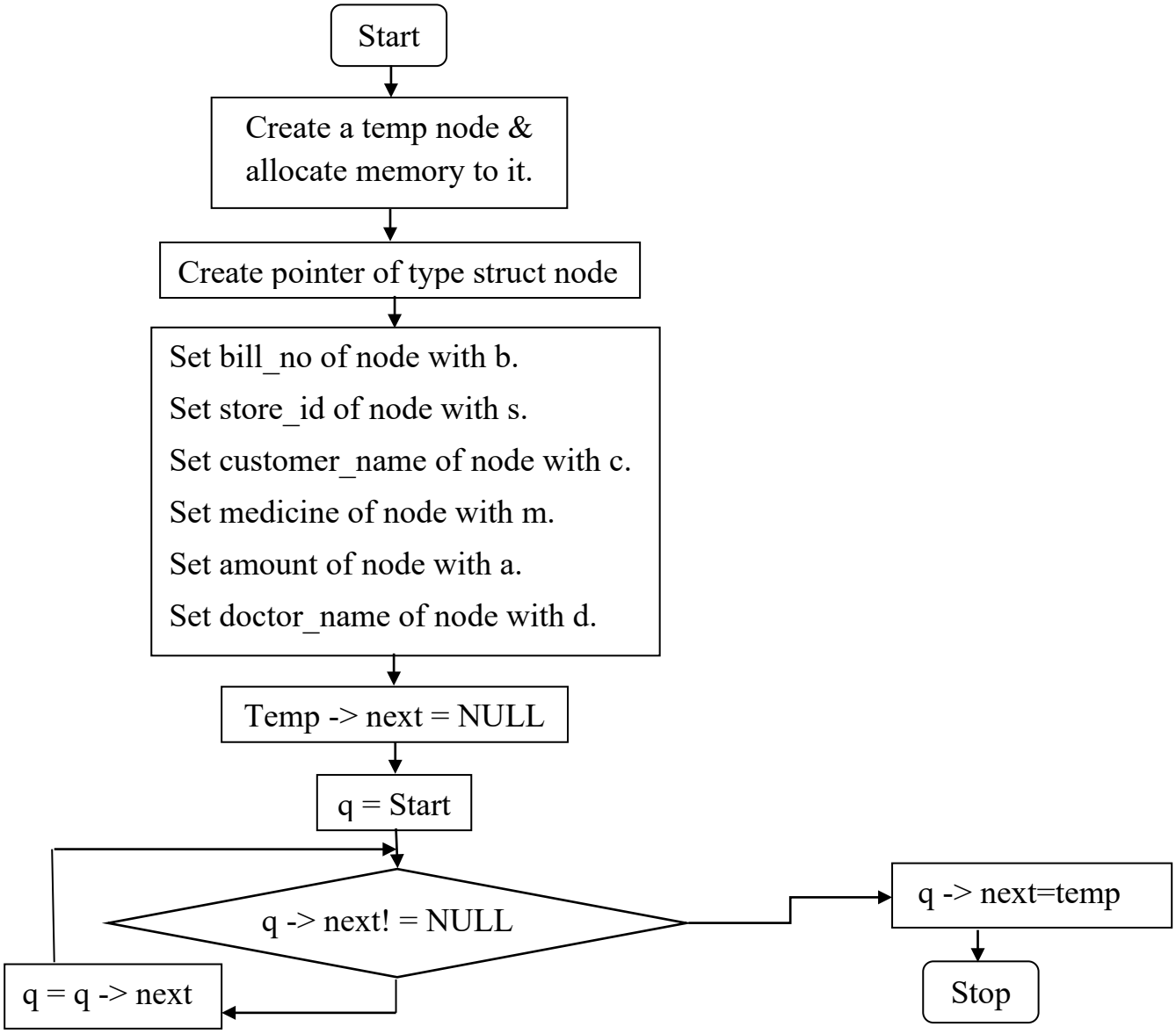
9. Compare se with bill_no of last node (medical bill)
   If they are equal, set flag=1.
10. Check for value of variable flag
    If flag=1 then display element found
    Otherwise,
11. Display not found.
12. Stop.

❖ Flowcharts:-

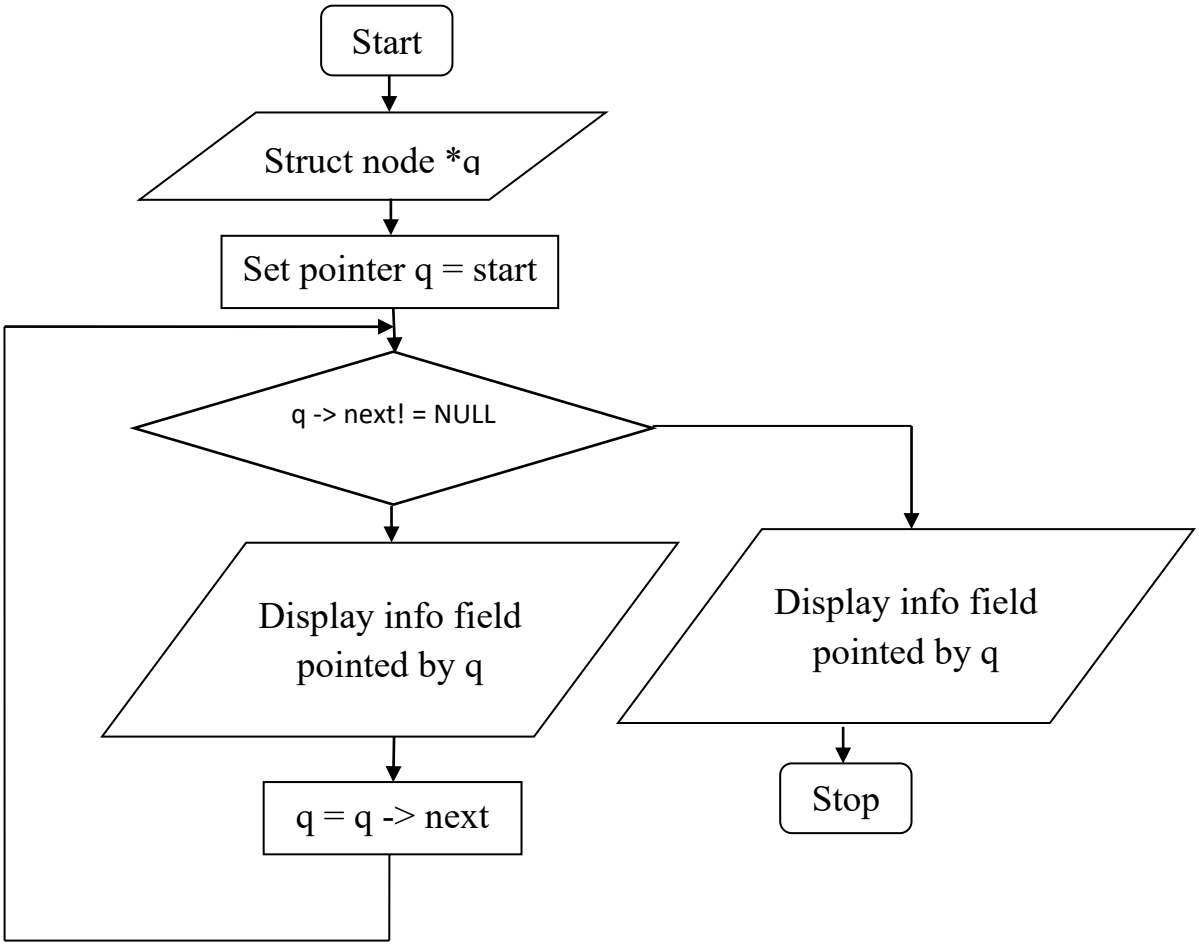
1) Create.



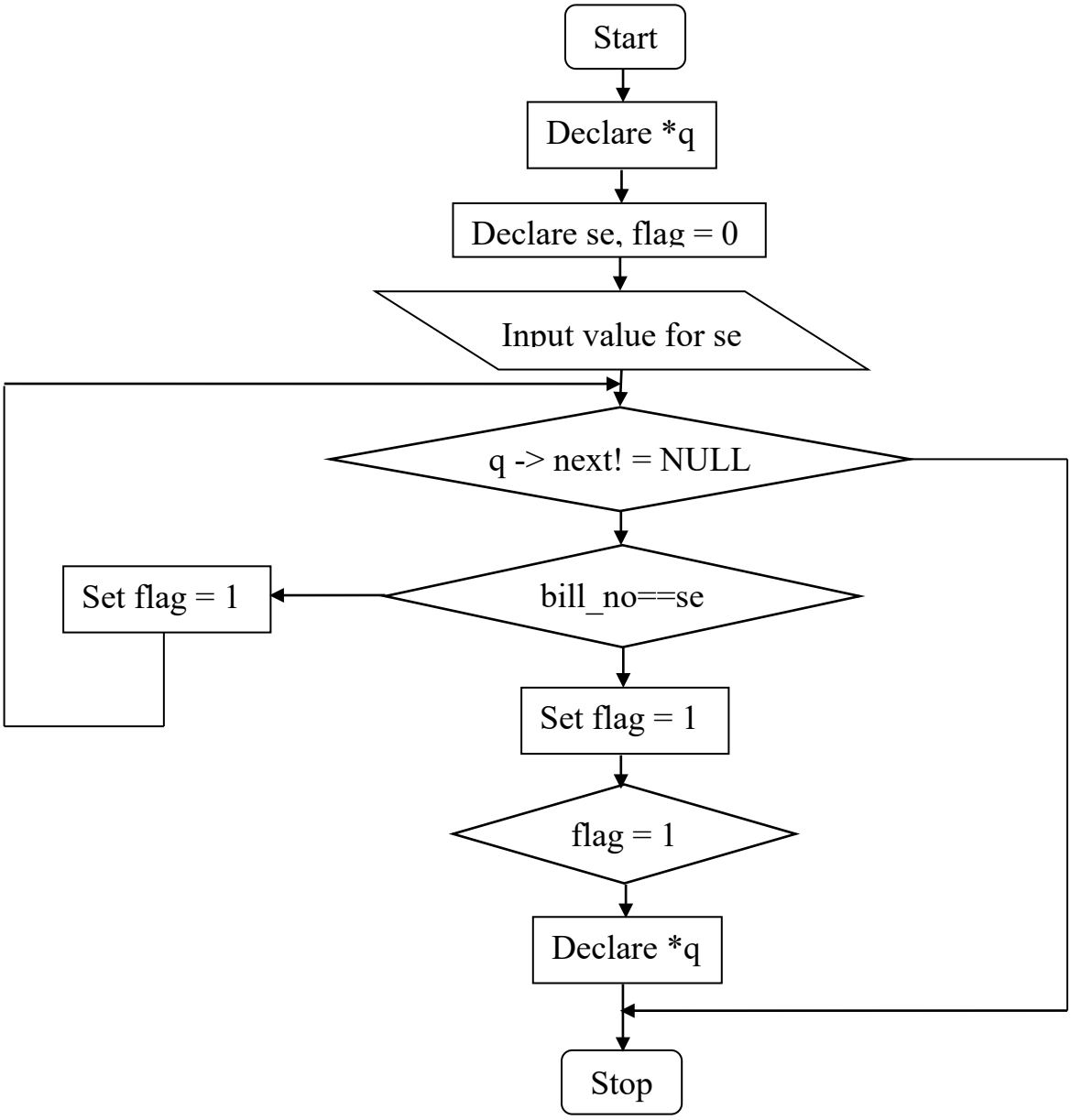
2) Insert.


Start
Create a temp node & allocate memory to it.
Create pointer of type struct node
Set bill_no of node with b.
Set store_id of node with s.
Set customer_name of node with c.
Set medicine of node with m.
Set amount of node with a.
Set doctor_name of node with d.
Temp -> next = NULL
q = Start
q -> next! = NULL
q = q -> next
q -> next=temp
Stop

3) Display.


Start
Struct node *q
Set pointer q = start
q -> next! = NULL
Display info field pointed by q
q = q -> next
Display info field pointed by q
Stop

4] Search.


Start
Declare *q
Declare se, flag = 0
Input value for se
q -> next! = NULL
bill_no==se
Set flag = 1
Set flag = 1
flag = 1
Declare *q
Stop

❖ **Program:**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
#include<process.h>
struct medicalbill
{
char c_name[20];
char medicine[20];
char d_name[20];
int bill_no;
int amount;
int store_id;
struct medicalbill *next;
}*start=NULL;
void create(int b,int s,int a,char c[],char m[], char d[]);
void inserte(int b,int s,int a,char c[],char m[],char d[]);
void display();
void search();
void main()
{
int bill_no,store_id,ch,se;
int amount;
char
c_name[20],d_name[20],medicine[20];
clrscr();
do
{
printf("\n1.CREATE \n2.INSERT \n3.DISPLAY \n4.SEARCH \n5.EXIT");
printf("\nEnter your choice:");
scanf("%d",&ch);
switch(ch)
{
case 1:
printf("\nEnter billno:");
scanf("%d",&bill_no);
printf("\nEnter store id:");
scanf("%d",&store_id);
printf("\nEnter amount:");
scanf("%d",&amount);
printf("\nEnter customer name:");
scanf("%s",&c_name);
printf("\nEnter Medicine:");
scanf("%s",&medicine);
printf("\nEnter doctor name:");
scanf("%s",&d_name);
create
(bill_no,store_id,amount,c_name,medicine,
d_name);
break;
case 2:
printf("\n Enter Bill No:");
scanf("%d",&bill_no);
printf("\n Enter store id:");
scanf("%d",&store_id);
printf("\n Enter amount:");
scanf("%d",&amount);
printf("\n Enter customer name:");
scanf("%s",&c_name);
printf("\nEnter Medicine:");
scanf("%s",&medicine);
printf("\nEnter doctor name:");
scanf("%s",&d_name);
inserte
(bill_no,store_id,amount,c_name,medicine,
d_name);
break;
case 3:
```

```
display();
break;
case 4:
search ();
break;
case 5:
exit(0);
}
printf("\nDo you want to continue:");
scanf("%d",&ch);
} while(ch==1);
getch();
}
void create(int b,int s,int a,char c[],char m[],char d[])
{
struct medicalbill *temp;
temp=(struct medicalbill*) malloc(sizeof(struct medicalbill));
temp->bill_no=b;
temp->store_id=s;
temp->amount=a;
strcpy(temp->c_name,c);
strcpy(temp->medicine,m);
strcpy(temp->d_name,d);
temp->next=NULL;
start=temp;
}
void inserte(int b,int s,int a,char c[],char m[],char d[])
{
struct medicalbill *temp, *q;
temp=(struct medicalbill*)malloc(sizeof(struct medicalbill));
temp->bill_no=b;
temp->store_id=s;
temp->amount=a;
strcpy(temp->c_name,c);
strcpy(temp->medicine,m);
strcpy(temp->d_name,d);
temp->next=NULL;
q=start;
while(q->next!=NULL)
q=q->next;
q->next=temp;
}
void search()
{
struct medicalbill *q;
int flag=0,b;
printf("\n Enter Search element:");
scanf("%d",&b);
q=start;
while(q->next!=NULL)
{
if(q->bill_no==b)
{
flag=1;
break;
}
q=q->next;
}
if(q->bill_no==b)
{
flag=1;
}
if(flag==1)
{
printf("\n%d",q->bill_no);
printf("\n%d",q->store_id);
printf("\n%d",q->amount);
```

```
printf("\n%s",q->c_name);
printf("\n%s",q->d_name);
printf("\n%s",q->medicine);
}
else
{
printf("\nData not found");
}
}
void display()
{
struct medicalbill *q;
q=start;
printf("%20 OM SAI CHEMIST");
printf("Bill no \tStore id \tamount \tcustomer \tdoctor \tmedicine");
while(q->next!=NULL)
{
printf("\n%d",q->bill_no);
printf("%20d",q->store_id);
printf("%15d",q->amount);
printf("%12s",q->c_name);
printf("%13s",q->d_name);
printf("%13s",q->medicine);
q=q->next;
}
//printf("Bill no\t Store id\t amount\t custome\t doctor\t medicine");
printf("\n%d",q->bill_no);
printf("%20d",q->store_id);
printf("%15d",q->amount);
printf("%12s",q->c_name);
printf("%13s",q->d_name);
printf("%13s",q->medicine);
}
```

6. ***Actual Resources Used:-***

Sr. No.	Name of Resource/material	Specifications	Qty	Remarks
1)	DOS BOX.	Version 0.7	1	-
2)	Turbo C++.	Version 3.0	1	-

7. ***Outputs of the Project:-***

```
1.CREATE
2.INSERT
3.DISPLAY
4.SEARCH
5.EXIT
Enter your choice:1
Enter billno:10
Enter store id:10
Enter amount:100
Enter customer name:sohan
Enter Medicine:crocin
Enter doctor name:joshi
```

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:2

Enter Bill No:11

Enter store id:11

Enter amount:150

Enter customer name:hardik

Enter Medicine:otrivin

Enter doctor name:shah

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:1

Enter billno:10

Enter store id:10

Enter amount:100

Enter customer name:sohan

Enter Medicine:crocin

Enter doctor name:joshi

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:2

Enter Bill No:11

Enter store id:11

Enter amount:150

Enter customer name:hardik

Enter Medicine:otrivin

Enter doctor name:shah

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:2

Enter Bill No:12

Enter store id:12

Enter amount:200

Enter customer name:rufee

Enter Medicine:

cetzine

Enter doctor name:mishra

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:2

Enter Bill No:13

Enter store id:13

Enter amount:250

Enter customer name:zuha

Enter Medicine:migranil

Enter doctor name:patil

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:2

Enter Bill No:15

Enter store id:15

Enter amount:300

Enter customer name:mam

Enter Medicine:paracetamol

Enter doctor name:vichare

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:3

OM SAI CHEMIST

Bill no	Store id	amount	customer	doctor	medicine
10	10	100	sohan	joshi	crocin
11	11	150	hardik	shah	otrivin
12	12	200	rufee	mishra	cetzine
13	13	250	zuha	patil	migranil
15	15	300	mam	vichare	paracetamol

Do you want to continue:1

1.CREATE

2.INSERT

3.DISPLAY

4.SEARCH

5.EXIT

Enter your choice:4

Enter Search element:13

Bill_no=13

Store_ID=13

Amount=250

Customer_Name=zuha

Doctor_Name=patil

Medicine_Name=migranil

Do you want to continue:1

8. ***Skill Developed / Learning outcome of this Project:-***

1. We learnt to implement basic operations on link list.
2. We learnt to implement a program to create, insert, search and display in link list.

9. ***Applications of this Project:-***

1) Link List can be used to save memory by using Dynamic Data Structure.
2) It can be used to maintain the record in Easier method and can be used to access the data in faster way.

****