Koneru Lakshmaiah Education Foundation
(Deemed to be University)

FRESHMAN ENGINEERING DEPARTMENT

A Project Based Lab Report

On

"BILL NOTIFICATION SYSTEM"

SUBMITTED BY:

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UNDER THE GUIDANCE OF

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CERTIFICATE

This is to certify that the project-based laboratory report entitled "bill notification system" submitted by Mr./Ms. **P.Adithya vardhan,** bearing **Regd. No. : 180030349** to the **Department of Basic Engineering Sciences-1, KL University** in partial fulfillment of the requirements for the completion of a project based Laboratory in "TECHNICAL SKILLS-2 (CODING)"course in I B Tech 2 Semester, is a bonafide record of the work carried out by him/her under my supervision during the academic year 2018 – 2019.

PROJECT SUPERVISOR

S.Harika

HEAD OF THE DEPARTMENT

DR.T.Vamisdhar

ACKNOWLEDGEMENTS

It is great pleasure for me to express my gratitude to our honorable President **Sri. Koneru Satyanarayana**, for giving the opportunity and platform with facilities in accomplishing the project-based laboratory report.

I express the sincere gratitude to our principal **Prof Dr. N.Venkataram** for his administration towards our academic growth.

I express sincere gratitude to HOD-BES-1**DR.T.Vamsidhar** for his leadership and constant motivation provided in successful completion of our academic semester. I record it as my privilege to deeply thank for providing us the efficient faculty and facilities to make our ideas into reality.

I express my sincere thanks to our project supervisor **S.Harika** for her novel association of ideas, encouragement, appreciation and intellectual zeal which motivated us to venture this project successfully.

Finally, it is pleased to acknowledge the indebtedness to all those who devoted themselves directly or indirectly to make this project report success.

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ABSTRACT

The main aim of this project is to implement bill notification system, which alerts the user to pay the bill based on its due date. There are three modules in this project

- Creating priority queue of bills

- Managing priority of bills based on due date
- User alerts

Requirement: To implement this project, students should have knowledge on**

- Priority queues
- Input and output statements
- Structures, pointers

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INTRODUCTION

In computer science, a priority queue is an abstract data type which is like a regular queue or stack data structure, but where additionally each element has a "priority" associated with it. In a priority queue, an element with high priority is served before an element with low priority. In some implementations, if two elements have the same priority, they are served according to the order in which they were enqueued, while in other implementations, ordering of elements with the same priority is undefined.

While priority queues are often implemented with heaps, they are conceptually distinct from heaps. A priority queue is an abstract concept like "a list" or "a map"; just as a list can be implemented with a linked list or an array, a priority queue can be implemented with a heap or a variety of other methods such as an unordered array.

A priority queue must at least support the following operations:

- Is empty: check whether the queue has no elements.
- insert_with_priority: add an element to the queue with an associated priority.
- pull_highest_priority_element: remove the element from the queue that has the highest priority, and return it.

AIM

Aim: To implement bill notification system, which alerts the user to pay the bill based on its due date.

Advantges:-

People like it when their lives are made easier. While no one really wants to be reminded that they owe money, more companies are catching on to the fact that what matters most to consumers these days is trust and convenience, even when it comes to paying bills. Unlike unwanted marketing messages, bill reminders are the result of specific opted-in actions taken by the consumer, and are a hugely important touchpoint between companies and consumers.

Disadvantags:-

No disadvantages

Future enhancements:-

There are a number of directions to enhance the work presented here in this thesis and to explore new applications for the ideas about extensibility presented here. This thesis has introduced a MSL data structure as a concurrent data structure. The MSL is designed on the ground of doubly linked list, in it there is overhead to maintain the pointers. There is need to design a concurrent MSL with singly linked list, or to reduce pointer overhead. As we have studied in above chapters, that both skip list and MSL are applicable for dictionary. How the concurrent MSL is apply on this concurrent data structure in much better way than skip list.The proliferation of commercial shared-memory multiprocessor machines has brought about significant changes in the art of concurrent programming. Our future work is to investigate the behavior of lock 135 based, lock-free MSL & lock-free priority queue with other concurrency approaches available in the literature. This will include analytical analysis & performance measurements.

SYSTEM REQUIREMENTS

- **SOFTWARE REQUIREMENTS:**

  The major software requirements of the project are as follows:

  Language : Turbo-C

  Operating system: Windows Xp or later.

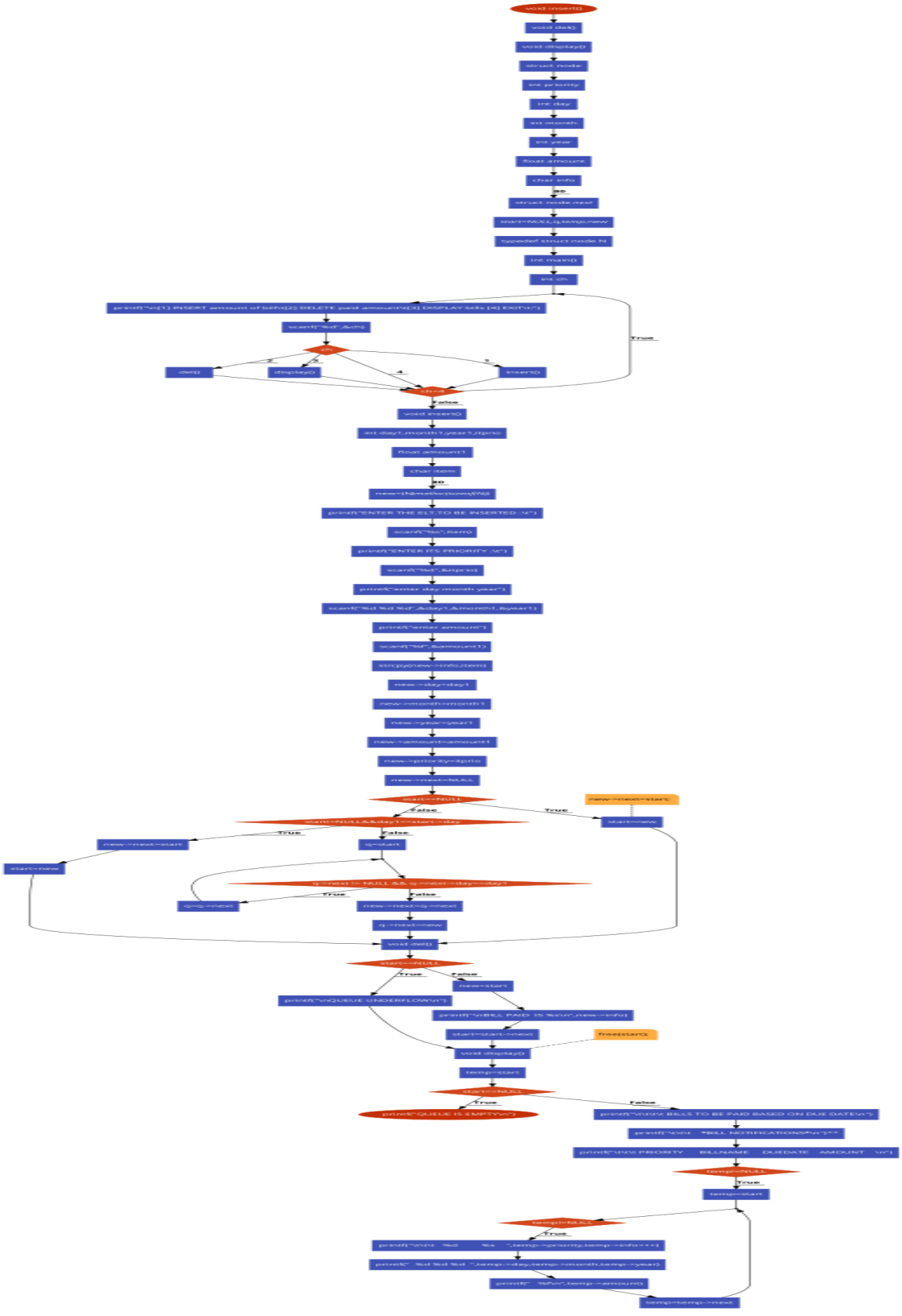
- **HARDWARE REQUIREMENTS:**

  The hardware requirements that map towards the software are as follows:

  RAM :4.00 GB

  Processor: Intel(R) Core(TM)i3-4005U CPU @ 1.70GHz

FLOW CHART



Algorithm

STEP 1: Start the programme.

STEP 2: Assigning the functions for insertion,deletion and display the bills.

STEP 3: Read priorty,day,month and year in int data type and amount in float data type and info as char.

STEP 4: Creating a node.

STEP 5: Taking switch case function for giving cases for insert,delete display the fuctions .

case 1:insert();

break;

case 2:del();

break;

case 3:display();

break;

case 4:exit();

break;

STEP 6: Taking while loop to enter the choice less than or equal to 4.

STEP 7: Create the insert function to insert the bills.

VOID INSERT()

STEP 8: Create the delete function to delete the bills.

VOID DELETE()

STEP 9: Create the display function to displsay the overall bill notification.

VOID DISPLAY()

STEP 10: In void display function to displsay the bills

If(start==null)

Printf(“empty”);

Else

Print the bill notifaction such as

printf("\t\t\t\t BILLS TO BE PAID BASED ON DUE DATE\n");

printf("\t\t\t ********BILL NOTIFICATIONS******\n");

printf("\t\t\t PRIORITY BILLNAME DUEDATE AMOUNT \n");

STEP 11: End of programme.

IMPLEMENTATION

```
#include<stdio.h>
#include<string.h>
#include<malloc.h>
void insert();
void del();
void display();

struct node
{
int priority;
int day;
int month;
int year;
float amount;
char info[80];
struct node *next;
}*start=NULL,*q,*temp,*new;


typedef struct node N;
int main()
{
int ch;
do
{
printf("\n[1] INSERT amount of bill\t[2] DELETE paid amount\t[3] DISPLAY bills [4]
EXIT\t:");
scanf("%d",&ch);
switch(ch)
{
case 1:insert();
break;
case 2:del();
break;
```

```
case 3:display();
break;
case 4:
break;
}
}
while(ch<4);
}

void insert()
{
int day1,month1,year1,itprio;
float amount1;
char item[80];
new=(N*)malloc(sizeof(N));
printf("ENTER THE ELT.TO BE INSERTED :\t");
scanf("%s",item);
printf("ENTER ITS PRIORITY :\t");
scanf("%d",&itprio);
printf("enter day month year");
scanf("%d %d %d",&day1,&month1,&year1);
printf("enter amount");
scanf("%f",&amount1);
strcpy(new->info,item);
new->day=day1;
new->month=month1;
new->year=year1;
new->amount=amount1;
new->priority=itprio;
new->next=NULL;
if(start==NULL )
{
//new->next=start;
start=new;
```

```
}
else if(start!=NULL&&day1<=start->day)
{  new->next=start;
start=new;
}
else
{
q=start;
while(q->next != NULL && q->next->day<=day1)
{q=q->next;}
new->next=q->next;
q->next=new;
}
}

void del()
{
if(start==NULL)
{
printf("\nQUEUE UNDERFLOW\n");

}
else
{
new=start;
printf("\nBILL PAID  IS %s\n",new->info);
start=start->next;
//free(start);
}
}

void display()
{
temp=start;
```

```
if(start==NULL)
printf("QUEUE IS EMPTY\n");
else
{
printf("\t\t\t\t BILLS TO BE PAID BASED ON DUE DATE\n");
printf("\t\t\t    *********BILL NOTIFICATIONS******\n");
printf("\t\t\t PRIORITY     BILLNAME    DUEDATE    AMOUNT    \n");
if(temp!=NULL)
for(temp=start;temp!=NULL;temp=temp->next)
{
printf("\t\t\t   %d         %s    ",temp->priority,temp->info);
printf("  %d %d %d  ",temp->day,temp->month,temp->year);
printf("   %f\n",temp->amount);
//temp=temp->next;
}
}
}
```

INTEGRATION AND SYSTEM TESTING

OUTPUTS :

```
[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
1
ENTER THE ELT.TO BE INSERTED :  current
ENTER ITS PRIORITY :    1
enter day month year12 2 2000
enter amount1235454

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
1
ENTER THE ELT.TO BE INSERTED :  paper
ENTER ITS PRIORITY :    2
enter day month year20 2 2000
enter amount2300

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
1
ENTER THE ELT.TO BE INSERTED :  water
ENTER ITS PRIORITY :    3
enter day month year25 2 2000
enter amount500

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
1
ENTER THE ELT.TO BE INSERTED :  gas
ENTER ITS PRIORITY :    4
enter day month year26 2 2000
enter amount560

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
1
ENTER THE ELT.TO BE INSERTED :  milk
ENTER ITS PRIORITY :    5
enter day month year30 2 2000
enter amount5000

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
3
                            BILLS TO BE PAID BASED ON DUE DATE
                        *********BILL NOTIFICATIONS******
                    PRIORITY      BILLNAME     DUEDATE    AMOUNT
                      1         current      12 2 2000     1235454.000000
                      2         paper      20 2 2000     2300.000000
                      3         water      25 2 2000     500.000000
                      4         gas      26 2 2000     560.000000
                      5         milk      30 2 2000     5000.000000

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
2

BILL PAID  IS current

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT      :3
                            BILLS TO BE PAID BASED ON DUE DATE
```

```
                              BILLS TO BE PAID BASED ON DUE DATE
                            *********BILL NOTIFICATIONS******
                          PRIORITY      BILLNAME     DUEDATE    AMOUNT
                            1         current      12 2 2000     1235454.000000
                            2         paper      20 2 2000     2300.000000
                            3         water      25 2 2000     500.000000
                            4         gas      26 2 2000     560.000000
                            5         milk      30 2 2000     5000.000000

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT
2

BILL PAID  IS current

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT      :3
                              BILLS TO BE PAID BASED ON DUE DATE
                            *********BILL NOTIFICATIONS******
                          PRIORITY      BILLNAME     DUEDATE    AMOUNT
                            2         paper      20 2 2000     2300.000000
                            3         water      25 2 2000     500.000000
                            4         gas      26 2 2000     560.000000
                            5         milk      30 2 2000     5000.000000

[1] INSERT amount of bill       [2] DELETE paid amount  [3] DISPLAY bills [4] EXIT      :4


...Program finished with exit code 0
Press ENTER to exit console.
```

CONCLUSION

We can implement bill notification sytem using this project. We can arrange all our bills in priority order by using this project. This project also gives alerts based on its last date of the bills.

This project finally is very useful in arranging bills on its due date, And it decreases the burden for the user.