SMT. GEETA D. TATKARE POLYTECHNIC, GOVE-KOLAD

COMPUTER DEPARTMENT

A MICROPROJECT
Report on

Phone Book Using Linked List In C

Submitted in partial fulfillment by M.S.B.T.E. norms

For the academic year 2022-23

For award in Diploma in

(Computer Engineering)

SUBMITTED BY

Sr.No.	Name of Student	Roll No.
1	Raj Santosh Bhonkar	01
2	Shwet Suhas Wagh	12
3	Rohan Mahesh Pednekar	14

Under The Guidance Of

Ms. Bhumika Salvi

Computer Graphics

Title of Micro-Project: <u>Graphical Snake Game Using C.</u>

1.0   Brief Introduction

The player controls a long, thin creature, resembling a snake, which roams around on a bordered plane, picking up food (or some other item), trying to avoid hitting its own tail or the edges of the playing area. Each time the snake eats a piece of food, its tail grows longer, making the game increasingly difficult

2.0   Aim of the Micro-Project

This Micro-Project aims is to make the graphical game (<u>snake game</u>) using C

3.0   Action Plan

S. No.	Details of activity	Planned Start date	Planned Finish date	Name of Responsible Team Members
1	Topic assignment and approval of aim	10/10/2022	15/10/2022	All Members
2	Making of action plan and work on annexure 1	17/10/2022	21/10/2022	All Members
3	Searching of related information	01/11/2022	05/11/2022	All Members
4	Collecting of related information	07/11/2022	12/11/2022	Rohan Pednekar
5	Arrange the information	14/11/2022	19/11/2022	Raj Bhonkar
6	Work on report presentation	21/11/2022	28/11/2022	Shwet Wagh
7	Preparation in annexure II	28/11/2022	03/12/2022	Rohan Pednekar
8	Approval of annexure II	05/12/2022	10/12/2022	All Members

4.0 Resources Require

S. No.	Name of Resource/material	Specifications	Qty	Remarks
1	Dell laptop	AMD Ryzen 5 3450U	1	Required
2	Dev C++	Application	1	Required
3	Microsoft Word	Application	1	Required
4	Google Chrome	Web Browser	1	Required

Title of Micro-Project: <u>Phone Book Using Linked List In C</u>

1.0 Brief Description.

Brief:-

This Project in C language of Snake Game is a simple console application with very
simple graphics. In this project, you   can play the popular "Snake Game" just like you
played it elsewhere. You have to   use the up, down, right, left arrows to move the snake.
The snake game is one of the simplest game concepts ever, and just like Tetris it's
addictive. Your goal is to move the snake and eat as many "food" blocks as possible.
There is only one food block at any given time.

The game called "Snake" or "Snake Game" typically involve the player controlling a line
or snake, there is no

official version of the game, so gameplay varies.

The most common version of the game involves the
snake

or line eating items which make it longer, with the

objective being to avoid running into a border or the

snake

itself for as long as possible.
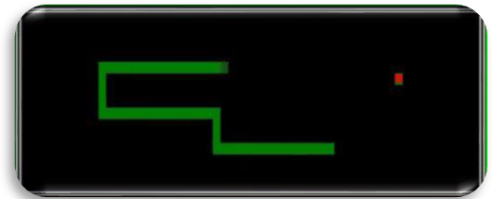
The player loses when the snake either runs into a border or its own body. Because of
this, the game becomes
more difficult as it goes on, due to the growth of the snake.

Nokia has installed the "Snake Game" on many of its phones. The game is also available
on several websites,
including YouTube, which allows viewers to play the game while a video loads.

- **History Of Snake Game :-**

  The Snake has appeared in many different forms over the decades, but it's first appearance took place in the mid 1970s and was called Blockade. It was the creation of Gremlin Industries, who specialized in coin-operated arcade machines. In 1984, they closed their doors, never to open again. But their game still lives on.

  By 1997, it had found its way into people's pockets, onto their Nokia phones and created the craze of mobile gaming among teenagers. The Nokia 6110 was Nokia's first phone with Snake and they continued to manufacture new models with the game installed throughout the next decade.

- **Objective :-**

  This Project in C language of Snake Game is a simple console application with very simple graphics.
  In this project, you can play the popular "Snake Game" just like you played it elsewhere. You have to use the up, down, right or left arrows to move the snake.

- **Logic Behind Snake Game:-**

  Every node in the snake will be represented using an object that keeps track of the X and Y position. You'll follow the same logic, but you'll be moving each node to the previous node's position, then the head to the new position. You won't need to represent anything as numbers.

- **Computer Graphics :-**
  - ❑ Computer Graphics is one of the most influential and engaging aspect of computers.
  - ❑ Video games, animation, multimedia predominantly works using computer graphics.
  - ❑ There are many things we can do in graphics apart from drawing figures of various shapes.

- **Graphics in C :-**
  - ❑ There is a wide number of function in C which are for putting pixel on graphic screen to form lines, shapes and patterns.
  - ❑ The Default output mode of C language programs is "Text" mode.
  - ❑ We have to switch to "Graphics" mode before drawing any graphical shape like line, rectangle, circle etc.

2.0   Aim of Micro Project

This Micro-Project aims is to make the graphical game (snake game) using C.

3.0   Course Outcomes Integrated

1. Utilize visual and geometric information of game.
2. Implement standard algorithms to draw various graphics object using c program.
3. Develop a program for user interface and live time pursuit.

4.0 Actual Procedure Followed.

Algorithm: -

Step 1: - Start

Step 2: - If Snake == Boundary then

    Go To Step **Step 7**

    [END OF IF]

Step 3: - Repeat **Step 4** And **Step 5** While Snake! = Boundary**.**

Step 4: -If Key = Right Then

    Set Move To Right

    Else If Key = Left Then

    Set Move To Left

    Else If Key = Up Then

    Set Move To Up

    Else If Key = Down Then

    Set Move To Down

    [END OF IF]

Step 5: -If Snake == Food Then

    Snake Length = Length + 1 AND

    Score= Snake Length.
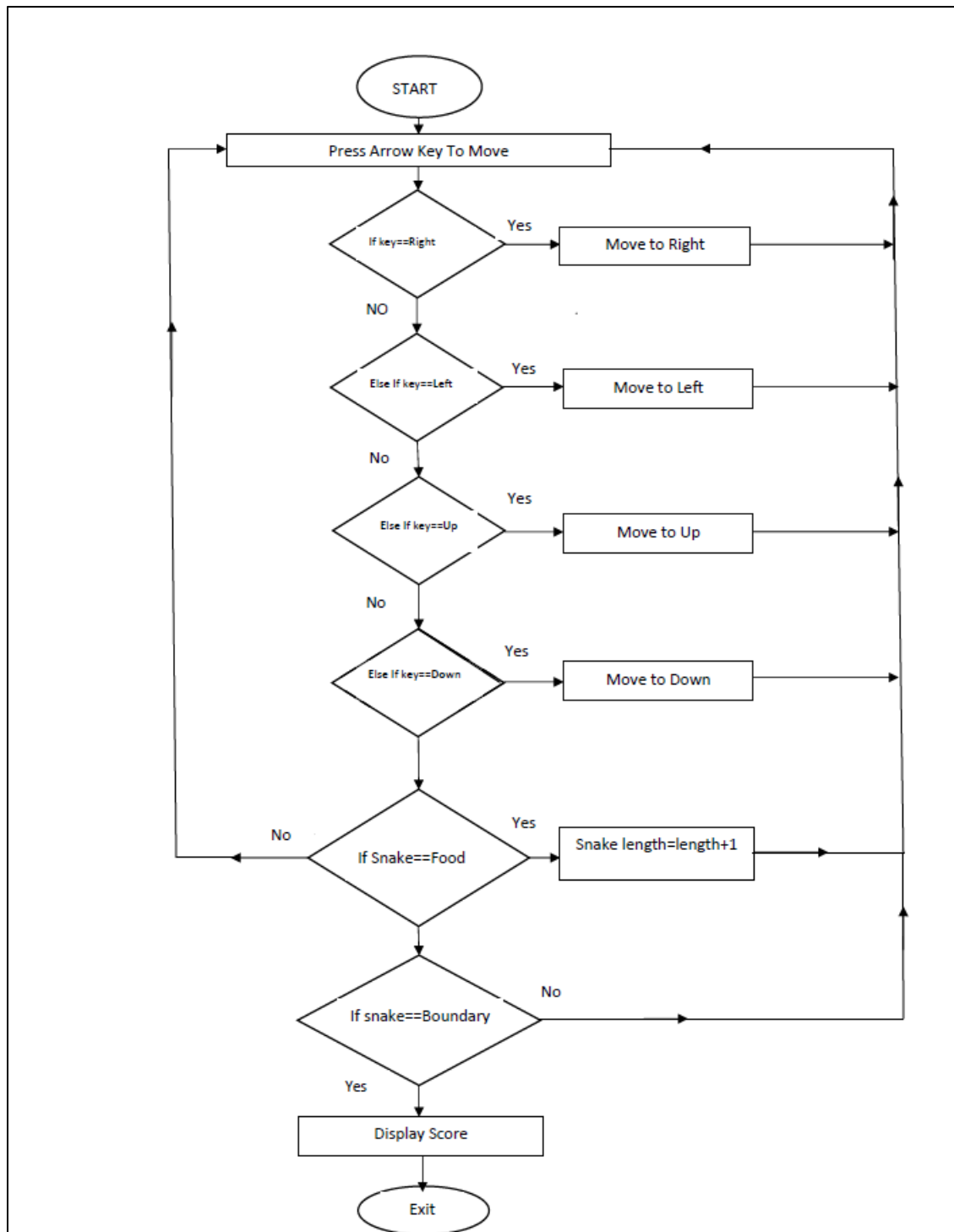
    [END OF IF]

    [END OF LOOP]

Step 6: -If Snake == Boundary Then

    Print Score.

    [END OF IF]

Step 7: - Exit.

Flowchart:-

START

Press Arrow Key To Move

If key==Right — Yes → Move to Right

NO

Else If key==Left — Yes → Move to Left

No

Else If key==Up — Yes → Move to Up

No

Else If key==Down — Yes → Move to Down

If Snake==Food — Yes → Snake length=length+1

No

If snake==Boundary — No

Yes

Display Score

Exit

Program: -

```c
#incluce<stdio.h>
#include<graphics.h>
#include<time.h>
int main()
{
        int i,X[100],Y[100],rx,ry,gm,gd,l,d=2,s=16;
        srand(time(NULL));
        detectgraph(&gd,&gm);
        initgraph(&gd,&gm,NULL);
        setfillstyle(1,1);
        bar(s-s/2,s-s/2,(s/2)+s*(1350/s),s+s/2);
        bar(s-s/2,(-s/2)+s*(700/s),(s/2)+s*(1350/s),(s/2)+s*(700/s));
        bar(s-s/2,s-s/2,s+s/2,(s/2)+s*(700/s));
        bar((-s/2)+s*(1350/s),s-s/2,(s/2)+s*(1350/s),(s/2)+s*(700/s));
        X[0]=s*(1350/(2*s)); Y[0]=s*(700/(2*s));
   bar(X[0]-s/2,Y[0]-s/2,X[0]+s/2,Y[0]+s/2);
   l=5;
   for(i=1;i<l;i++)
   {
      X[i]=X[0]-(i*s);
      Y[i]=Y[0];
      bar(X[i]-s/2,Y[i]-s/2,X[i]+s/2,Y[i]+s/2);
   }
   rx=s; ry=s;
   setfillstyle(1,2);
   while(getpixel(rx,ry)!=0)
       {
               rx=s*(1+rand()%(1350/s-1));
               ry=s*(1+rand()%(700/s-1));
       }
       bar(rx-s/2,ry-s/2,rx+s/2,ry+s/2);
   delay(2000);
       while(1)
       {
       setfillstyle(1,0);
               bar(X[l-1]-s/2,Y[l-1]-s/2,X[l-1]+s/2,Y[l-1]+s/2);
               for(i=l-1;i>0;i--)
       {
               X[i]=X[i-1];
```

```c
                Y[i]=Y[i-1];
                }
        if(d==0)
                        X[0]=X[0]-s;
                if(d==1)
                        Y[0]=Y[0]-s;
        else if(d==2)
                        X[0]=X[0]+s;
                else if(d==3)
                        Y[0]=Y[0]+s;
                if(getpixel(X[0],Y[0])==1)
                        break;
                if((GetAsyncKeyState(VK_RIGHT))&&(d!=0))
                        d=2;
                else if((GetAsyncKeyState(VK_UP))&&(d!=3))
                        d=1;
                else if((GetAsyncKeyState(VK_LEFT))&&(d!=2))
                        d=0;
                else if((GetAsyncKeyState(VK_DOWN))&&(d!=1))
                        d=3;
                if(getpixel(X[0],Y[0])==2)
                {
                        rx=s; ry=s;
                        setfillstyle(1,2);
                        while(getpixel(rx,ry)!=0)
                        {
                                rx=s*(1+rand()%(1350/s-1));
                                ry=s*(1+rand()%(700/s-1));
                        }
                        bar(rx-s/2,ry-s/2,rx+s/2,ry+s/2);
                        l=l+1;
                }
                setfillstyle(1,1);
                for(i=0;i<l;i++)
                bar(X[i]-s/2,Y[i]-s/2,X[i]+s/2,Y[i]+s/2);
                delay(100);
        }
        printf("score : %d",l-5);
        while(!GetAsyncKeyState(VK_RETURN));
```

```
            closegraph();
            getch();
            return 0;
    }
```

5.0   Actual Resources Used

S. No.	Name of Resource/material	Specifications	Qty	Remarks
1	Dell laptop	AMD Ryzen 5 3450U	1	Available
2	Dev C++	Application	1	Available
3	Microsoft Word	Application	1	Available
4	Web Browser	Google Chrome	1	Available

6.0   Outputs of the Micro-Projects

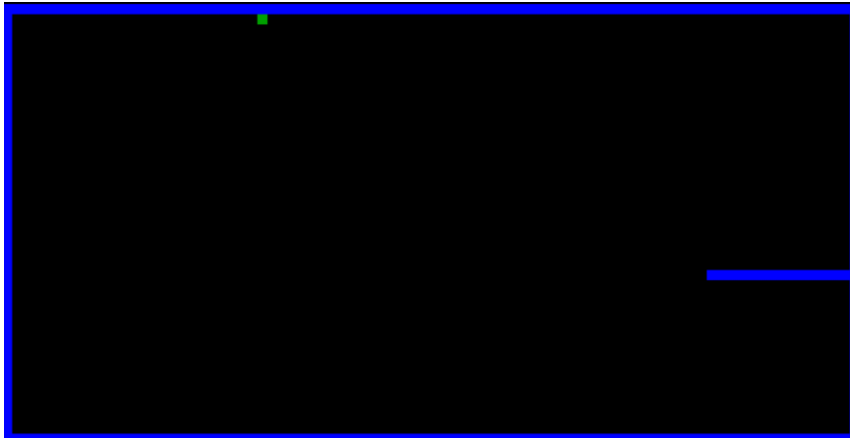**When Starts:-**

After Eating Food:-

1)


```
score : 3
```

2)

F:\Computer sci
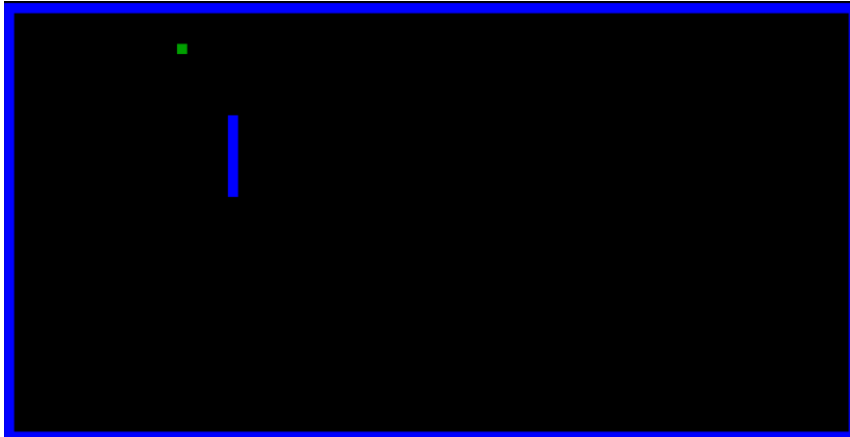
```
score : 10
```

7.0   Skill Developed / learning out of this Micro-Project

- We have developed creativity and team work.

- We got better understanding of graphical functions and mechanism.

- We develop time management and communication skill.

- We learn more about Computer Graphics.