**ACROPOLIS INSTITUTE OF TECHNOLOGY AND RESEARCH INDORE**



SUBJECT: Computer graphics and multimedia

PROJECT : Balloon shooting game in C++

Submitted to: Submitted By:

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ABSTRACT

BALLOON SHOOTING GAME is a simple game using c and cpp features. You can easily learn and is easy to run because this game works in Turbo C compiler.

The main features are included is Graphics and DOS commands.   
  
Basic commands used in this game :

**1. initgraph** : initgraph is used to initialising of graphics mode in the program.  
                 ex. initgraph(&gm,&gd," C:\\TurboC3\\BGI ");  
here gm uses Graphics detect mode and gd points to graphics features to be used in program and last is a string.

**2. setbkcolor :**sets the current background color.  
   for ex. if you want to set background color to blue, you can call setbkcolor(BLUE); or setbkcolor(1);

**3. getimage** : saves a bit image of the specified region into memory.

**4. putimage** : outputs a bit image onto the screen.

**5. settextstyle** : sets the current text characteristics.  
 Declaration : settextstyle(int font, int direction, int charsize);

**6. outtextxy** : displays a string at the specified location (in graphics mode).  
  Declaration : outtextxy(int x, int y, "textstring" );

**7. itoa** : converts an integer to a string. It lies on stdlib header library.  
 Return Values : On success, point to target string. On error, there is no error.

INTRODUCTION

This is a simple balloon shooting game made in C++ language.

In this game, there are number of balloons, a bow and arrows for shooting the balloons. The balloons rise from the lower portion of the screen. The   
bow is put on left side which can move up and down.

If you shoot a balloon you will get 20 points.

There are total three levels in our game.

There are 10 balloons and 6 arrows in first level. If you get a minimum score of 100, you will be eligible for entering in second level. If you not get this minimum score, you are not qualified for second level and game will be over and you are looser.

There are 8 balloons and 6 arrows in second level. If you get a minimum score of 180, you will be eligible for entering in third level.

In third level there are 6 balloons and 6 arrows.  
  
If you completed all the three levels, you will be winner.

The up and down arrow key are used for positioning the bow.

The space key will be used for shooting.

ABOUT THE PROJECT

Different Functions used in the project:-  
  
**void draw\_balloon(int ,int )**:  
This function is used for drawing a balloon. In this function we first use setcolor and setfillstyle which set the color red and also filling style.  
After this we are using fillellipse for drawing the ballon and line for drawing the thread.  
  
**void draw\_burst ( int x, int y ):**  
This function is used for making the image of bursting of balloon.  
  
**void draw\_bow(int x, int y):**  
This function is used for drawing the bow. In this, we are using setcolor, setlinestyle for setting the color and style of the line.   
  
After that we are using line and arc functions for drawing the bow.  
  
**void draw\_arrow(int x, int y):**  
This function is used for drawing the arrow. In which we are using linerel for drawing the arrow by considering the relative position of each  
line.  
  
**void shoot(int \*x, int \*y):**  
In this function we put the image of the arrow on the screen when it desired. After shooting an arrow we decrease the number of arrows. Here   
we also display the number of remaining arrows. Pointers are used to pass the coordinates by reference.  
  
**void fly(int \*x, int \*y):**  
This function is used for flying the balloons. The balloons will fly from lower portion of the screen to upper portion. If one balloon crosses the  
screen or is shot then there is a decrement in number of balloons. We also display the number of remaining balloons in this function.  
  
**void start():**  
This function is used for showing our welcome screen. Here we are using setbkcolor, settextstyle, setcolor, setusercharsize, outtextxy and in last clearviewport for clearing the welcome screen.  
  
**int testkeys():**  
This function is used for getting the ascii code and scan code for the key pressed.

IMPLEMENTATION

**CODE**

# include <graphics.h>  
# include <conio.h>  
# include <iostream.h>  
# include <stdlib.h>  
# include <dos.h>  
#define ARROW\_SIZE 7  
#define BALLOON\_SIZE 3  
int flag\_arrow=0,flag\_balloon=1,count\_arrow=6,count\_balloon=10;  
void \*balloon,\*bow,\*arrow,\*burst;  
void \*clear\_balloon,\*clear\_burst;  
void draw\_balloon(int ,int );  
void draw\_burst ( int x, int y );  
void draw\_bow(int x,int y);  
void draw\_arrow(int x, int y);  
void shoot(int \*x, int \*y);  
int testkeys();  
void fly(int \*x, int \*y);  
void start();  
void main()  
{  
int gmode = DETECT, gdriver , area ;  
initgraph ( &gmode, &gdriver, "C:\TurboC3\BGI" ) ;  
setbkcolor(1);  
start();  
int maxx = getmaxx() ;  
int maxy = getmaxy() ;  
int p=400,q=300,m=100,n=100,x=m,y=n,key,score=0,finish=0,level=1,l\_flag=1;  
char score1[5],ch,cnt\_ball[5],char\_level[2];  
rectangle ( 0, 0, maxx, maxy - 10 ) ;  
draw\_burst(200,300);  
area=imagesize(0,0,32,24);  
burst=malloc(area);  
getimage(200-16,300-12,200+16,300+12,burst );  
putimage(200-16,300-12,burst,XOR\_PUT);  
draw\_balloon(p,q);  
area=imagesize(p-4\*BALLOON\_SIZE,q- 5\*BALLOON\_SIZE,p+4\*BALLOON\_SIZE,q+7\*BALLOON\_SIZE);  
balloon=malloc(area);  
getimage(p-4\*BALLOON\_SIZE,q-5\*BALLOON\_SIZE,p+4\*BALLOON\_SIZE,q+7\*BALLOON\_SIZE,balloon);  
putimage(p-4\*BALLOON\_SIZE,  q-5\*BALLOON\_SIZE, balloon, COPY\_PUT);  
draw\_arrow(x ,y  );  
area = imagesize(x, y-ARROW\_SIZE,  x+(6\*ARROW\_SIZE), y+ARROW\_SIZE);  
arrow=malloc(area);  
getimage(x, y-ARROW\_SIZE, x+(6\*ARROW\_SIZE),  y+ARROW\_SIZE,arrow);  
putimage(x, y-ARROW\_SIZE,arrow,XOR\_PUT);  
draw\_bow(x,y);  
area=imagesize(x+25,y-65,x+66,y+65);  
bow=malloc(area);  
getimage(x+25,y-65,x+66,y+65,bow);  
if ( balloon == NULL || burst == NULL || bow ==  NULL )  
{  
cout<<"Insufficient memory... Press any key " ;  
getch() ;  
closegraph() ;  
restorecrtmode() ;  
exit( 0 ) ;  
}  
while (!finish)  
{  
settextstyle(8,0,1);  
setusercharsize(4,4,3,3);  
outtextxy(getmaxx()/2-100,5,"LEVEL : ");  
itoa(level,char\_level,10);  
setfillstyle(0,0);  
bar(getmaxx()/2+40,15,getmaxx()/2+70,45);  
outtextxy(getmaxx()/2+50,5,char\_level);  
rectangle(5,360,250,460);  
if( flag\_balloon && count\_balloon>0 )  
fly( &p, &q );  
else  
{  
q = 400;  
flag\_balloon = 1;  
}  
if( kbhit() )  
{  
key = testkeys();  
if(key==77)  
flag\_arrow = 1;  
}  
if( key == 27 )  
break;  
if (key == 80 &&!flag\_arrow)  
{  
x=125;  
putimage(x,y-65,bow,XOR\_PUT);  
if(y<300)  
y+=25;  
putimage(x,y-65,bow,XOR\_PUT);  
draw\_bow(x-25,y);  
key=0;  
}  
if (key == 72 &&!flag\_arrow)  
{  
x=125;  
putimage(x,y-65,bow,XOR\_PUT);  
if(y>70)  
y-=25;  
putimage(x,y-65,bow,XOR\_PUT);  
draw\_bow(x-25,y);  
key=0;  
}  
if(count\_arrow > 0 && count\_balloon > 0)  
{  
if(score==100 && l\_flag==1)  
{  
level=2;  
count\_balloon=8;  
count\_arrow=6;  
l\_flag=2;  
}  
if(score==180 && l\_flag==2)  
{  
level=3;  
count\_balloon=6;  
count\_arrow=6;  
l\_flag=0;  
}  
if( key == 77 || flag\_arrow)  
{  
shoot(&x,&y);  
draw\_bow(m,y);  
if(x>(p-12) && x<(p+12) && y>(q-15) &&  y<(q+25))  
{  
putimage(p-16,q-12,burst,COPY\_PUT);  
sound(1500);  
delay(800);  
nosound();  
putimage(p-16,q-12,burst,XOR\_PUT);  
count\_balloon--;  
settextstyle(10,0,1);  
setusercharsize(30,70,20,70);  
outtextxy(20,380,"BALLOONS LEFT:");  
setfillstyle(0,0);  
bar(200,370,230,400);  
itoa(count\_balloon,cnt\_ball,10);  
outtextxy(200,380,cnt\_ball);  
flag\_balloon=0;  
score+=20;  
itoa(score,score1,10);  
setfillstyle(0,0);  
bar(190,getmaxy()-50,230,getmaxy()-30);  
setcolor(RED);  
outtextxy(20,getmaxy()-50,"SCORE          : ");  
outtextxy(190,getmaxy()-50,score1);  
}  
key=0;  
}  
}  
else  
{  
clearviewport();  
setbkcolor(9);  
setcolor(10);  
settextstyle(4,0,7);  
setusercharsize(120,50,120,40);  
outtextxy(getmaxx()/2-220,getmaxy() /2-180,"GAME OVER");  
settextstyle(8,0,1);  
setusercharsize(50,60,40,50);  
if(count\_arrow<=0)  
outtextxy(getmaxx()/2-100,getmaxy() /2-70,"NO MORE ARROWS");  
if(count\_balloon<=0)  
outtextxy(getmaxx()/2-120,getmaxy() /2-70,"NO MORE BALLOONS");  
outtextxy(getmaxx()/2-120,getmaxy() /2-20,"YOUR SCORE IS : ");  
itoa(score,score1,10);  
outtextxy(getmaxx()/2+150,getmaxy() /2-20,score1);  
if(level==1)  
outtextxy(getmaxx()/2-220,getmaxy() /2+20,"YOU REQUIRE TO PRACTICE MORE");  
if(level==2)  
outtextxy(getmaxx()/2-70,getmaxy() /2+20,"WELL PLAYED");  
if(level==3)  
outtextxy(getmaxx()/2-220,getmaxy() /2+20,"YOU ARE AN EFFICIENT SHOOTER");  
outtextxy(getmaxx()/2-30,getmaxy()/2+50," (Q)UIT");  
settextstyle(1,0,1);  
setusercharsize(30,65,30,60);  
outtextxy(30,430,"THIS GAME HAS BEEN  DEVELOPED BY AKSHAY");  
outtextxy(230,450,"http://cprogrammingbyakshay.blogspot.com");  
while( getch() != 'q');  
finish=1;  
break;  
}  
}  
free(bow);  
free(arrow);  
free(balloon);  
closegraph();  
}  
void draw\_balloon(int x,int y)  
{  
setcolor(RED);  
setfillstyle(1,RED);  
fillellipse(x,y,3\*BALLOON\_SIZE,4\*BALLOON\_SIZE) ;  
line(x,y+4\*BALLOON\_SIZE,x,y+6\*BALLOON\_SIZE);  
}  
void draw\_burst ( int x, int y )  
{  
setlinestyle(0,0,1);  
line ( x - 16, y - 12, x - 10, y - 2 ) ;  
line ( x - 10, y - 2, x - 16, y ) ;  
line ( x - 16, y, x - 10, y + 2 ) ;  
line ( x - 10, y + 2, x - 16, y + 12 ) ;  
line ( x - 16, y + 12, x - 6, y + 2 ) ;  
line ( x - 6, y + 2, x, y + 12 ) ;  
line ( x, y + 12, x + 6, y + 2 ) ;  
line ( x + 6, y + 2, x + 16, y + 12 ) ;  
line ( x - 16, y - 12, x - 6, y - 2 ) ;  
line ( x - 6, y - 2, x, y - 12 ) ;  
line ( x, y - 12, x + 6, y - 2 ) ;  
line ( x + 6, y - 2, x + 16, y - 12 ) ;  
line ( x + 16, y - 12, x + 10, y - 2 ) ;  
line ( x + 10, y - 2, x + 16, y ) ;  
line ( x + 16, y, x + 10, y + 2 ) ;  
line ( x + 10, y + 2, x + 16, y + 12 ) ;  
}  
void draw\_bow(int x,int y)  
{  
setcolor(RED);  
setlinestyle(0,0,1);  
line(x+32,y-49,x+32,y+49);  
setlinestyle(0,0,3);  
arc(x,y,300,60,60);  
arc(x+34,y-56,100,220,6);  
arc(x+34,y+56,140,260,6);  
}  
void shoot(int \*x, int \*y)  
{  
char cnt\_arrow[5];  
putimage(\*x, \*y-ARROW\_SIZE, arrow,  COPY\_PUT);  
delay(3);  
putimage(\*x, \*y-ARROW\_SIZE, arrow, XOR\_PUT);  
\*x+=ARROW\_SIZE;  
if (\*x>590)  
{  
\*x=155;  
flag\_arrow=0;  
count\_arrow--;  
settextstyle(10,0,1);  
setusercharsize(30,70,20,70);  
outtextxy(20,400,"ARROWS LEFT :");  
setfillstyle(0,WHITE);  
bar(200,400,220,425);  
itoa(count\_arrow,cnt\_arrow,10);  
outtextxy(200,400,cnt\_arrow);  
}  
}  
void draw\_arrow(int x, int y)  
{  
setlinestyle(0,0,2);  
moveto(x, y);  
linerel(6\*ARROW\_SIZE, 0);  
linerel(-2\*ARROW\_SIZE, -1\*ARROW\_SIZE+1);  
linerel(0, 2\*ARROW\_SIZE-1);  
linerel(2\*ARROW\_SIZE, -1\*ARROW\_SIZE);  
}  
int testkeys()  
{  
union REGS ii, oo ;  
ii.h.ah = 0 ;  
int86 ( 22, &ii, &oo ) ;  
/\* if ascii code is not 0 \*/  
if ( oo.h.al )  
return ( oo.h.al ) ;  /\* return ascii code \*/  
else  
return ( oo.h.ah ) ;  /\* return scan code \*/  
}  
void fly(int \*x, int \*y)  
{  
int x1;  
putimage(\*x-4\*BALLOON\_SIZE, \*y-5\*BALLOON\_SIZE, balloon, COPY\_PUT);  
delay(20);  
char cnt\_ball[5];  
putimage(\*x-4\*BALLOON\_SIZE, \*y-5\*BALLOON\_SIZE, balloon, XOR\_PUT);  
\*y-=BALLOON\_SIZE;  
if(\*y<= 20)  
{  
\*y=400;  
x1=450+rand()%150;  
\*x=x1;  
count\_balloon--;  
settextstyle(10,0,1);  
setusercharsize(30,70,20,70);  
outtextxy(20,380,"BALLOONS LEFT:");  
setfillstyle(0,0);  
bar(200,370,230,400);  
itoa(count\_balloon,cnt\_ball,10);  
outtextxy(200,380,cnt\_ball);  
}  
}  
void start()  
{  
setbkcolor(0);  
settextstyle(7,0,0);  
outtextxy(10,400,"  PRESS ANY KEY TO  CONTINUE....");  
settextstyle(1,0,0);  
setcolor(4);  
setusercharsize(25,15,20,4);  
outtextxy(70,150,"BALLOON SHOOTING");  
float octave[7] = { 130.81, 146.83, 164.81,  174.61, 196, 220, 246.94};  
settextstyle(1,0,3);  
setcolor(WHITE);  
while( !kbhit() )  
{  
sound( octave[ random(7) ]\*4 );  
delay(300);  
}  
nosound();  
getch();  
clearviewport();  
rectangle(1,1,638,478);  
settextstyle(3,0,1);  
setusercharsize(50,30,50,30);  
outtextxy(150,10,"INSTRUCTIONS");  
setbkcolor(BLACK);  
settextstyle(1,0,1);  
setusercharsize(40,70,20,20);  
outtextxy(10,70,"1. You can play three levels.");  
outtextxy(10,110,"2. You can move the bow UP  and DOWN with the help of arrow keys.");  
outtextxy(10,150,"3. Press right arrow key to  shoot the arrow.");  
outtextxy(10,190,"4. You score 20 points every  time you shoot the balloon.");  
outtextxy(10,230,"5. First level has 6 arrows  and 10 balloons.");  
outtextxy(10,270,"6. You require to score 100  points to enter the second level.");  
outtextxy(10,310,"7. Second level has 6 arrows  and 8 balloons.");  
outtextxy(10,350,"8. You require to score 200  points to enter the third level.");  
outtextxy(10,390,"9. Third level has 6 arrows  and 6 balloons.");  
settextstyle(7,0,1);  
outtextxy(150,430,"PRESS ANY KEY TO  CONITINUE");  
getch();  
setusercharsize(1,1,1,1);  
settextstyle(0,0,0);  
setbkcolor(10);  
clearviewport();  
}

**OUTPUT:**

**** 

 

ADVANTAGES OF BALLOON SHOOTING GAME

1. **It streamlines decision making** because players develop long-term ability to figure out effectively the possibilities of an option, evaluating the best way to go. Playing this game develop a better perception of what is happening around players.
2. The interaction in this game **improves** hand-eye coordination of children.
3. It helps us to stay focused.
4. It make us feel more effective.
5. These games are full of fun .Thus make our mood fresh.

CONCLUSION

This is all about our project balloon shooting game .This project is written in a very simple c++ language .

This project is well suited for designing 2D and 3D objects, as well as for carrying out the basic graphic functionalities.

Out of many features this project demonstrates some popular and commonly used features like translation, rotation , scaling and many more.

It serves as an important stepping stone for venturing into other fields of computer graphics design and applications.

This is a very interesting game.It will surely fascinates the children .

You will have a lot of fun while playing this game .