PAINT

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include<dos.h>
#include<stdlib.h>


int code=1;
union REGS i,o;
int bgcolor=5;
struct SREGS s;
char FILL[]={"Fills the selected region in active color and pattern."};
char BRUSH[]={"Draw colors with brush"};
char BAR[]={"Draws A Bar "};
char TEXT[]={"Draw a box and Type Text in it."};
char  NEW[]={"Creates A New File"};
char  OPEN[]={"Opens An Existing File"};
char  SAVE[]={"Saves The Active File"};
char  ABOUT[]={"Displays Information About Program"};
char  PENCIL[]={"Draws A Free Form Line One Pixel Width"};
char  PAINT[]={"Fills An Area With Current Drawing Colour select draw
color by right click"};
char  RECTANGLE[]={"Draws A Rectangle"};
char  ELLIPSE[]={"Draws An Ellipse"};
char  LINE[]={"Draws A Straight Line"};
char  POLYLINE[]={"Draws A Polygon"};
char  COLOUR[]={"Left  Click -> Foreground Color  Right Click ->
Background Color"};
char  ERASER[]={"Erases A Portion Of Figure"};
char  EXIT[]={"Quits Program"};

int hourglass[32]={
                        /*hourglass screen mask*/
                        0x0000,0x0000,0x0000,0x0000,
```

```
                        0x8001,0xc003,0xf00f,0xfc3f,
                        0xfc3f,0xf00f,0xc003,0x8001,
                        0x0000,0x0000,0x0000,0x0000,
                        /*the mouse ptr bitmap*/
                        0xffff,0x8001,0xffff,0x8001,
                        0x4002,0x2004,0x1008,0x0240,
                        0x0240,0x0810,0x2004,0x4002,
                        0x8001,0xffff,0x8001,0xffff};


int cursor[32]={
            //screen mask
            0xe1ff,0xe1ff,0xe1ff,0xe1ff,
            0xe1ff,0x0000,0x0000,0x0000,
            0x0000,0x0000,0x0000,0x0000,
            0x0000,0x0000,0x0000,0x0000,

            //bit map
            0x1e00,0x1200,0x1200,0x1200,
            0x13ff,0x1249,0x1249,0xf249,
            0x9001,0x9001,0x9001,0x8001,
            0x8001,0x8001,0xffff,0x0000,
      };

 cursor2[32]={
      0x0000,0x0000,0x0000,0x0000,
      0x8008,0xc003,0xf00f,0xfc3f,
      0xfc3f,0xf00f,0xc003,0x8001,
      0x0000,0x0000,0x0000,0x0000,
      };
int plus[32]={
                        /*+ screen mask*/
                        0xfe7f,0xfe7f,0xfe7f,0xfe7f,
                        0xfe7f,0xfe7f,0xfe7f,0x0000,
```

```
                0x0000,0xfe7f,0xfe7f,0xfe7f,
                0xfe7f,0xfe7f,0xfe7f,0xfe7f,
                /*+mouseptr bitmap*/
                0x0180,0x0180,0x0180,0x0180,
                0x0180,0x0180,0x0180,0xfe7f,
                0xfe7f,0x0180,0x0180,0x0180,
                0x0180,0x0180,0x0180,0x0180};

int rubber[32]={

                /*Eraser screen mask*/
                0x0000,0x0000,0x0000,0x0000,
                0x0000,0x0000,0x0000,0x0000,
                0x0000,0x0000,0x0000,0x0000,
                0x0000,0x0000,0x0000,0x0000,
                /*eraser bitmap*/
                0xffff,0x8001,0x8001,0x8001,
                0x8001,0x8001,0x8001,0x8001,
                0x8001,0x8001,0x8001,0x8001,
                0x8001,0x8001,0x8001,0xffff};

int pencil[32] = {
                0x3ff ,0x5ff ,0x6ff ,0x1b7f,
                0x1dbf,0x6edf,0xb76f,0xdbb7,
                0xeddb,0xf6ed,0xfb76,0xfdb8,
                0xfed9,0xff63,0xffa7,0xffcf,

                0xfc00,0xfa00,0xf900,0xe480,
                0xe240,0x9120,0x4890,0x2448,
                0x1224,0x912 ,0x489 ,0x247 ,
                0x126 ,0x9c  ,0x58  ,0x30   };

int bottle[32]={
                0x0000,0xbffe,0xdffe,0xeffe,
```

```
                                0xf7fe,0xf7fe,0xf7fe,0xf7fe,
                                0xf000,0xf000,0xf000,0xf7fe,
                                0xf7fe,0xf7fe,0xf7fe,0xf000,
                                0xffff,0x4001,0x2001,0x1001,
                                0x801 ,0x801 ,0x801 ,0x801 ,
                                0xfff ,0xfff ,0xfff ,0x801 ,
                                0x801 ,0x801 ,0x801 ,0xfff };

int hand[32]={/*hand-screenmask+pointer bitmap*/
                                0xe1ff,0xe1ff,0xe1ff,0xe1ff,
                                0xe1ff,0x0000,0x0000,0x0000,
                                0x0000,0x0000,0x0000,0x0000,
                                0x0000,0x0000,0x0000,0x0000,
                                0x1e00,0x1200,0x1200,0x2100,
                                0x13ff,0x1249,0x1249,0xf249,
                                0x9001,0x9001,0x9001,0x8001,
                                0x8001,0x8001,0xffff,0x0000};

//******************* ALL Mouse functions *****************************
 //detecting mouse
void changecursor(int *shape){
 i.x.ax=9;
 i.x.bx=0;
 i.x.cx=0;
 i.x.dx=(unsigned)shape;
 segread(&s);
 s.es=s.ds;
 int86x(0x33,&i,&i,&s);
 return;
}
restrictmouseptr(int x1,int y1,int x2,int y2){
 i.x.ax=7;
 i.x.cx=x1;
 i.x.dx=x2;
```

```
 int86(0x33,&i,&o);
 i.x.ax=8;
 i.x.cx=y1;
 i.x.dx=y2;
 int86(0x33,&i,&o);
}

initmouse()
{
i.x.ax=0;
int86(0x33,&i,&o);
return o.x.ax;
}
//show mouse on screen
void showptr()
{
i.x.ax=1;
int86(0x33,&i,&o);

}
  //hide mouse
void hideptr()
{
i.x.ax=2;
int86(0x33,&i,&o);
}
void getmpos(int *button,int*x,int* y)
{
i.x.ax=3;
int86(0x33,&i,&o);
*button=o.x.bx;
*x=o.x.cx;     //x cor
*y=o.x.dx;           //y cor
}
```

```
void placeptr(int x, int y)
{
i.x.ax=4;
i.x.cx=x; //x coordinate
i.x.dx=y; //y coordinate
int86(0x33,&i,&o);
return;
}
//**************** Main function **********************************
int main()
{
	//	void * brush;
		//void * pencil, * eraser;

		int active_color=0,i,left,right,pattern=0;
		int x,y,button;
		int gdriver=DETECT,gmode;
		initgraph(&gdriver,&gmode,"..\\bgi");
		initmouse();
		//brush=draw_brush();
		//pencil=draw_pencil();
		//eraser=draw_eraser();
		draw_panel();
		show_selected_color(active_color);
		setcolor(0);
		outtextxy(192,9,"Untitled");

	while(1)
		{

		 // show_mouse_ptr(); // show mouse pointer on the screen
		  getmpos(&button,&x,&y);
		   if(button==1) //color selection in color box
```

```
{
   getmpos(&button,&x,&y);
    left=15,right=35;
  for(i=0;i<7;i++)     //rectangle(left,50,right,63);
  {
    if((x>left)&&(x<right)&&(y>30)&&(y<45))
    {
              active_color=i;

    }
    left+=20;
    right+=20;
  }

   left=15,right=35;
  for(i=0;i<7;i++)     //rectangle(left,50,right,63);
  {
    if((x>left)&&(x<right)&&(y>50)&&(y<63))
    {
              active_color=i+8;
    }
    left+=20;
    right+=20;
  }
  show_selected_color(active_color);
}//if ends


if(button==1) //fill pattern selection in pattern box
{
   getmpos(&button,&x,&y);
    left=15,right=25;
  for(i=0;i<5;i++)     //rectangle(left,50,right,63);
  {
```

```
    if((x>left)&&(x<right)&&(y>205)&&(y<225))
    {
            pattern=i+1;

    }
    left+=15;
    right+=15;
   }

    left=15,right=25;
   for(i=0;i<5;i++)     //rectangle(left,50,right,63);
   {
    if((x>left)&&(x<right)&&(y>230)&&(y<250))
    {
            pattern=i+6;
    }
    left+=20;
    right+=20;
   }
  // show_selected_color(active_color);
  setcolor(15);
  rectangle(10,166,89,190);
  setfillstyle(pattern,active_color);
  floodfill(20,180,15);
 }//if ends

 gotoxy(3,18);
// printf("%d",pattern);
 //show pattern selected in flood fill box
// setcolor(15);
// rectangle(10,170,90,190);
// setfillstyle(pattern,15);
 //floodfill(20,180,15);
```

```
                select_tool(active_color,pattern);
        //      paint_with_brush(brush,active_color);// paint color with
brush
                getmpos(&button,&x,&y);
                if((x>568)&&(x<615)&&(y>326)&&(343)&&(button==1)){
                  return;
                }
        if((x>568)&&(x<615)&&(y>164)&&(y<183)&&(button==1)){
                //  setfillstyle(1,bgcolor);
                 // floodfill(200,200,15);
                 int i,j;
                  for(i=101;i<540;i++){
                    for(j=81;j<460;j++){
                              putpixel(i,j,bgcolor);
                    }
                  }
        }
        // about
                if((x>568)&&(x<615)&&(y>286)&&(y<303)&&(button==1)){
                  FILE *fp;
                  int i,j;
                  char ch;
                 hideptr();
                              fp=fopen("temp.bmp","w+");
                             if(fp==NULL)
                             {
                               outtextxy(200,200,"cannot open file ");
                               return ;
                             }
                    for(i=100;i<540;i++)
                   {
                             for(j=80;j<470;j++)
                    {
                               ch=getpixel(i,j);
```

```
                fputc(ch,fp);
             }
            }
             fclose(fp);


          setcolor(3);
          setfillstyle(1,2);
          bar3d(144,126,507,403,0,1);
          outtextxy(195,185,"Developed By :");
          setcolor(4);
          outtextxy(251,223,"Narinder Sharma");
          setcolor(5);
          outtextxy(194,266,"G.G.M SCIENCE COLLEGE JAMMU
");
          outtextxy(174,363,"Press ESC To Exit ");
          while(1){
           char ch;
           ch=getch();
           if(ch==27){
           break;}
          }
            fp=fopen("temp.bmp","r+");
                    if(fp==NULL)
                    {
                      outtextxy(200,200,"cannot open file ");
                      return ;
                    }
             for(i=100;i<540;i++)
            {
                    for(j=80;j<470;j++)
             {
                      ch=fgetc(fp);
                      putpixel(i,j,ch);
```

```
                    if(ch==EOF)
                    break;
                  }
                 }
                  fclose(fp);

               showptr();

              }
      // ************** SAVE A FILE ********************


if((x>568)&&(x<615)&&(y>246)&&(y<263)&&(button==1)){

                     FILE *fp;
               int i,j;
               char ch;
               char buffer[16],c[16];
               hideptr();
                      fp=fopen("temp.bmp","w+");
                    if(fp==NULL)
                    {
                      outtextxy(200,200,"cannot open file ");
                      return ;
                    }
                 for(i=200;i<=450;i++)
                {
                    for(j=170;j<=315;j++)
                 {
                      ch=getpixel(i,j);
                      fputc(ch,fp);
                 }
                }
                 fclose(fp);
```

```
setcolor(2);
        rectangle(200,170,450,315);
        rectangle(200,170,450,190);
        setfillstyle(1,8);
        floodfill(220,220,2);
        setfillstyle(1,4);
        floodfill(326,180,2);
        setcolor(2);
        outtextxy(236,178,"SAVE");
        outtextxy(227,205,"Enter File Name :");
        // c[i]=32;
         for(i=0;c[i-1]!='\n'&& i<10;i++){
           int x1=266,y1=240;
           label:
           c[i]=getch();
           if(c[i]==13){
             c[i]='\0';
             break;
           }
           if(c[i]==8){
             setcolor(8);
             outtextxy(x1,y1,c);
             i=i-1;
            // c[i-1]=32;
             c[i]='\0';
            // y1+=10;
             setcolor(2);
             outtextxy(x1,y1,c);showptr();
             goto label;

           }
          // c[i+1]=32;
           c[i+1]='\0';
           sprintf(buffer,"%s",c);
```

```
                outtextxy(x1,y1,buffer);

              }//for ends
//show file is saved
setfillstyle(1,3);
floodfill(220,220,2);
outtextxy(220,220,"File is saved successfully");
while(1){
  ch=getch();
  if(ch==13){
            break;
  }
 }

 fp=fopen("temp.bmp","r+");
            if(fp==NULL)
            {
              outtextxy(200,200,"cannot open file ");
              return ;
            }
   for(i=200;i<=450;i++)
  {
            for(j=170;j<=315;j++)
   {
              ch=fgetc(fp);
              putpixel(i,j,ch);
              if(ch==EOF)
              break;
   }
  }
   fclose(fp);
              //saved file
              strcat(c,".bmp");
               fp=fopen(c,"w+");
```

```
                if(fp==NULL)
                {
                  outtextxy(200,200,"cannot open file ");
                  return ;
                }
              for(i=100;i<=540;i++)
             {
                for(j=80;j<=460;j++)
              {
                  ch=getpixel(i,j);
                  fputc(ch,fp);
              }
             }
             fputc(bgcolor,fp);
              fclose(fp);


          showptr();


           } // save button ends

//***********************************************
//****************** OPEN AN IMAGE *****************

          getmpos(&button,&x,&y);
          if((x>568)&&(x<615)&&(y>204)&&(y<223)&&(button==1)){
                FILE *fp,*fp1;
           int i,j;
           char ch;
           char buffer[16],c[20];
           hideptr();
                  fp=fopen("temp.bmp","w+");
                if(fp==NULL)
```

```
        {
          outtextxy(200,200,"cannot open file ");
          return ;
        }
 for(i=200;i<=450;i++)
{
        for(j=170;j<=315;j++)
 {
          ch=getpixel(i,j);
          fputc(ch,fp);
 }
}
 fclose(fp);
 setcolor(2);
        rectangle(200,170,450,315);
        rectangle(200,170,450,190);
        setfillstyle(1,8);
        floodfill(220,220,2);
        setfillstyle(1,4);
        floodfill(326,180,2);
        setcolor(2);
        outtextxy(236,178,"OPEN");
        outtextxy(227,205,"Enter File Name :");

           for(i=0;c[i-1]!='\n'&& i<10;i++){
          int x1=266,y1=240;
          label1:
          c[i]=getch();
          if(c[i]==13){
            c[i]='\0';
            break;
          }
          if(c[i]==8){
            setcolor(8);
```

```
                    outtextxy(x1,y1,c);
                    i=i-1;
                   // c[i-1]=32;
                    c[i]='\0';
                   // y1+=10;
                    setcolor(2);
                     outtextxy(x1,y1,c);showptr();
                     goto label1;

                   }
                  // c[i+1]=32;
                   c[i+1]='\0';
                   sprintf(buffer,"%s",c);
                   outtextxy(x1,y1,buffer);

                 }//for ends

//show file is opened
strcat(c,".bmp");

fp1=fopen(c,"r+");
if(fp1==NULL){ // check if file exists.
              //read background
              outtextxy(300,300,"Cannot open file");
              delay(1000);
             fp=fopen("temp.bmp","r+");
             if(fp==NULL)
             {
               outtextxy(200,200,"cannot open file ");
               //delay(1000);
               return ;
             }

  for(i=200;i<=450;i++)
```

```
  {
          for(j=170;j<=315;j++)
   {
            ch=fgetc(fp);
            putpixel(i,j,ch);
            if(ch==EOF)
            break;
   }
  }
   fclose(fp);

} //if ends
else{
  setfillstyle(1,8);
  floodfill(220,220,2);
  outtextxy(220,220,"File is Opened Successfully");
  while(1){
   ch=getch();
   if(ch==13){
          break;
   }
  }

   for(i=100;i<=540;i++)
  {
          for(j=80;j<=460;j++)
   {
            ch=fgetc(fp1);
            putpixel(i,j,ch);
            if(ch==EOF)
            break;
   }
  }
  bgcolor=getc(fp1);
```

```
                fclose(fp1);

              }//else ends

                //open file
                //strcat(c,".bmp");


             }//open ends
   //************************************************

//    ************************************************


             //close button  **********************************
             if((x>620)&&(x<638)&&(y>3)&&(y<18) &&(button==1)){
              return ;
             }
             else if(!(x>620)&&(x<638)&&(y>3)&&(y<18))
             {

              hideptr();
              setfillstyle(1,7);
              floodfill(625,10,12);
              line(622,12,633,6);
              line(622,6,633,12);
              showptr();
             }
             else if((x>620)&&(x<638)&&(y>3)&&(y<18)){
               hideptr();
               setfillstyle(1,4);
               floodfill(625,10,12);
               line(622,12,633,6);
              line(622,6,633,12);
```

```
                showptr();
               }
                line(622,12,633,6);
                line(622,6,633,12);

      //*************************************************************

               if(1)// code to display mouse position
               {

                char buffer[20];
                setcolor(4);
                //rectangle(550,440,630,460);
                getmpos(&button,&x,&y);
                sprintf(buffer,"x:%d y:%d ",x,y);
               // delay(10);
                outtextxy(530,467,buffer);
                delay(50);
                setcolor(7);
                outtextxy(530,467,buffer);
               }
               hover();
               changebgcolor();
               info();
             }//while ends
             closegraph();

}//main ends
//*************************************************************************
  info(){
    int x,y,button;
    setcolor(8);
    rectangle(0,462,640,480);
    setfillstyle(1,8);
```

```
    floodfill(50,470,8);
    getmpos(&button,&x,&y);
    if((x>6)&&(x<155)&&(y>26)&&(y<69)){  //color box
      setcolor(4);
      outtextxy(10,465,"Left Click ->Foreground color  Right
Click->Background Color");
      delay(20);
    }
    else{
              setcolor(8);
      outtextxy(10,465,"Left Click ->Foreground color  Right
Click->Background Color");

    }

    if((x>568)&&(x<615)&&(y>164)&&(y<183)){
    setcolor(4);
    outtextxy(10,465,NEW);
    delay(50);
    }
    else{
      setcolor(8);
      outtextxy(10,465,NEW);
    }

    if((x>568)&&(x<615)&&(y>204)&&(y<223)){  //open
    setcolor(4);
    outtextxy(10,465,OPEN);
    delay(50);
    }
    else{
      setcolor(8);
      outtextxy(10,465,OPEN);
    }
```

```
if((x>568)&&(x<615)&&(y>246)&&(y<263)){     //save
setcolor(4);
outtextxy(10,465,SAVE);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,SAVE);
}

if((x>568)&&(x<615)&&(y>286)&&(y<303)){   //about
setcolor(4);
outtextxy(10,465,ABOUT);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,ABOUT);
}

if((x>568)&&(x<615)&&(y>326)&&(y<343)){//exit
setcolor(4);
outtextxy(10,465,EXIT);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,EXIT);
}

if((x>451)&&(x<478)&&(y>39)&&(y<57)){   //rectangle
setcolor(4);
outtextxy(10,465,RECTANGLE);
```

```
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,RECTANGLE);
}

if((x>492)&&(x<512)&&(y>39)&&(y<59)){ //ellipse
setcolor(4);
outtextxy(10,465,ELLIPSE);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,ELLIPSE);
}

if((x>525)&&(x<546)&&(y>41)&&(y<56)){    //line
setcolor(4);
outtextxy(10,465,LINE);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,LINE);
}

if((x>10)&&(x<50)&&(y>100)&&(y<150)){    //text
setcolor(4);
outtextxy(10,465,TEXT);
delay(50);
}
else{
  setcolor(8);
```

```
  outtextxy(10,465,TEXT);
}

if((x>568)&&(x<594)&&(y>42)&&(y<55)){  //bar3d
setcolor(4);
outtextxy(10,465,BAR);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,BAR);
}

if((x>227)&&(x<256)&&(y>27)&&(y<50)){ //pencil
setcolor(4);
outtextxy(10,465,PENCIL);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,PENCIL);
}

if((x>272)&&(x<306)&&(y>29)&&(y<49)){  //eraser
setcolor(4);
outtextxy(10,465,ERASER);
delay(50);
}
else{
  setcolor(8);
  outtextxy(10,465,ERASER);
  delay(50);
}
```

```
  if((x>372)&&(x<412)&&(y>29)&&(y<49)){//brush
  setcolor(4);
  outtextxy(10,465,BRUSH);
  delay(50);
  }
  else{
    setcolor(8);
    outtextxy(10,465,BRUSH);
  }

  if((x>323)&&(x<360)&&(y>29)&&(y<49)){   //fill
  setcolor(4);
  outtextxy(10,465,FILL);
  delay(50);
  }
  else{
    setcolor(8);
    outtextxy(10,465,FILL);
  }
}  //info()ends

changebgcolor(){
 int x,y,button,i,left,right;
 getmpos(&button,&x,&y);
 if(button==2){ //right click
            getmpos(&button,&x,&y);
                  left=15,right=35;
                for(i=0;i<7;i++)     //rectangle(left,50,right,63);
                {
                  if((x>left)&&(x<right)&&(y>30)&&(y<45))
                  {
                              bgcolor=i;
                              hideptr();
                              setcolor(bgcolor);
```

```
                rectangle(100,80,540,460);
                setfillstyle(1,bgcolor);
                floodfill(200,200,bgcolor);
                showptr();

              }
              left+=20;
              right+=20;
            }

             left=15,right=35;
            for(i=0;i<7;i++)     //rectangle(left,50,right,63);
            {
              if((x>left)&&(x<right)&&(y>50)&&(y<63))
              {
                bgcolor=i+8;
                 hideptr();
                setcolor(bgcolor);
                rectangle(100,80,540,460);
                setfillstyle(1,bgcolor);
                floodfill(200,200,bgcolor);
                showptr();

              }
              left+=20;
              right+=20;
            }

 }
}//changebgcolor()ends

hover(){
 int x,y,button;
 getmpos(&button,&x,&y);
```

```
if((x>225)&&(x<260)&&(y>28)&&(y<50)){//pencil
 if(button==1){
  setcolor(2);
  rectangle(225,28,260,50);
 }
  else{
            setcolor(4);
            rectangle(225,28,260,50);
  }
}
else{
 setcolor(15);
 rectangle(225,28,260,50);
}

if((x>275)&&(x<310)&&(y>28)&&(y<50)){//eraser
 if(button==1){
  setcolor(2);
  rectangle(275,28,310,50);
 }
  else{
            setcolor(4);
            rectangle(275,28,310,50);
  }
}
else{
 setcolor(15);
 rectangle(275,28,310,50);
}

if((x>325)&&(x<365)&&(y>28)&&(y<50)){//fill
 if(button==1){
  setcolor(2);
  rectangle(325,28,365,50);
```

```
 }
  else{
            setcolor(4);
            rectangle(325,28,365,50);
  }
}
else{
 setcolor(15);
 rectangle(325,28,365,50);
}

if((x>375)&&(x<415)&&(y>28)&&(y<50)){//brush
 if(button==1){
  setcolor(2);
  rectangle(375,28,415,50);
 }
  else{
            setcolor(4);
            rectangle(375,28,415,50);
  }
}
else{
 setcolor(15);
 rectangle(375,28,415,50);
}

if((x>451)&&(x<478)&&(y>39)&&(y<57)){//rectangle
 if(button==1){
  setcolor(2);
  rectangle(450,38,479,58);
 }
  else{
            setcolor(4);
            rectangle(450,38,479,58);
```

```
  }
}
else{
 setcolor(15);
 rectangle(450,38,479,58);
}

if((x>492)&&(x<512)&&(y>39)&&(y<59)){//circle
 if(button==1){
  setcolor(2);
  rectangle(491,38,513,60);
 }
  else{
            setcolor(4);
            rectangle(491,38,513,60);
  }
}
else{
 setcolor(7);
 rectangle(491,38,513,60);
}

if((x>525)&&(x<546)&&(y>41)&&(y<56)){//line
 if(button==1){
  setcolor(2);
  rectangle(524,40,547,57);
 }
  else{
            setcolor(4);
            rectangle(524,40,547,57);
  }
}
else{
 setcolor(7);
```

```
 rectangle(524,40,547,57);
}

if((x>567)&&(x<594)&&(y>42)&&(y<55)){//bar3d
 if(button==1){
  setcolor(2);
  rectangle(566,38,598,56);
 }
  else{
            setcolor(4);
            rectangle(566,38,598,56);
  }
}
else{
 setcolor(7);
 rectangle(566,38,598,56);
}

if((x>10)&&(x<50)&&(y>100)&&(y<150)){//text box
 if(button==1){
  setcolor(2);
  rectangle(10,100,50,150);
 }
  else{
            setcolor(4);
            rectangle(10,100,50,150);
  }
}
else{
 setcolor(15);
 rectangle(10,100,50,150);
}

  if((x>568)&&(x<615)&&(y>164)&&(y<183)){//new
```

```
 if(button==1){
  setcolor(2);
  rectangle(568,164,615,183);
 }
  else{
            setcolor(4);
            rectangle(568,164,615,183);
  }
}
else{
 setcolor(15);
 rectangle(568,164,615,183);
}

 if((x>568)&&(x<615)&&(y>204)&&(y<223)){//open
 if(button==1){
  setcolor(2);
  rectangle(568,204,615,223);
 }
  else{
            setcolor(4);
            rectangle(568,204,615,223);
  }
}
else{
 setcolor(15);
 rectangle(568,204,615,223);
}

 if((x>568)&&(x<615)&&(y>246)&&(y<263)){//save
 if(button==1){
  setcolor(2);
  rectangle(568,246,615,263);
 }
```

```
  else{
            setcolor(4);
            rectangle(568,246,615,263);
  }
}
else{
 setcolor(15);
 rectangle(568,246,615,263);
}

 if((x>568)&&(x<615)&&(y>286)&&(y<303)){//about
 if(button==1){
  setcolor(2);
  rectangle(568,286,615,303);
 }
  else{
            setcolor(4);
            rectangle(568,286,615,303);
  }
}
else{
 setcolor(15);
 rectangle(568,286,615,303);
}

 if((x>568)&&(x<615)&&(y>326)&&(y<343)){//exit
 if(button==1){
  setcolor(2);
  rectangle(568,326,615,343);
 }
  else{
            setcolor(4);
            rectangle(568,326,615,343);
  }
```

```
    }
    else{
     setcolor(15);
     rectangle(568,326,615,343);
    }
   }//hover() ends

//****************************** SCREEN *************************
draw_panel()
{
 setcolor(15);
 rectangle(0,0,639,20);

 //setcolor(2);
 setcolor(15);
 rectangle(0,20,639,479);
 rectangle(0,20,639,75);//create tool bar
 rectangle(10,25,160,70); //create color panel
 create_color_box();
 setfillstyle(1,7);
 floodfill(30,47,15);  //fill color box layers
setfillstyle(1,7);
 floodfill(400,50,15);//fill tool bar
 floodfill(10,10,15);  //fill top
 outtextxy(320,10,"Paint ");
 floodfill(100,400,15);
 setcolor(15);
 rectangle(100,80,540,460);//working panel
 setfillstyle(1,bgcolor);
 floodfill(150,200,15);
 setcolor(15);
               rectangle(215,25,420,70);  //tool bar
               rectangle(225,28,260,50); //pencil
               line(270,25,270,70);
```

```
        rectangle(275,28,310,50);//eraser
        line(320,25,320,70);
        rectangle(325,28,365,50); //fill color box
        rectangle(333,32,360,46);
        rectangle(333,36,360,46);
        setfillstyle(1,4);
        floodfill(340,40,15);
        setcolor(12);

        outtextxy(335,60,"Fill");
        setcolor(15);
        line(370,25,370,70);
        rectangle(375,28,415,50); // brush
        outtextxy(376,38,"BRUSH");
        //line(380,30,410,45);
        setcolor(3);
        //line(405,31,390,39);
        //line(412,31,394,39);
        //line(405,31,412,31);
//      ellipse(390,40,0,100,3,2);
        //circle(390,40,2);
        //setfillstyle(1,4);
        //floodfill(390,40,3);
        setcolor(12);
        outtextxy(375,60,"Brush");

        setcolor(12);
        line(240,30,237,45);//vertical line 1
        line(244,30,242,45);//vertical line  2
        line(240,30,244,30);// horizontal top
        line(240,32,244,32);
        line(237,45,238,46);
        line(242,45,238,46);
        setfillstyle(1,12);
```

```
floodfill(242,35,12);
outtextxy(222,60,"Pencil");

rectangle(280,32,305,45);//eraser icon
rectangle(290,32,305,45);
floodfill(295,38,12);
outtextxy(272,60,"Eraser");

setcolor(15);
rectangle(440,25,620,70);//shape tool
rectangle(444,28,616,67);//shape tool
rectangle(451,39,478,57);//rectangle tool
line(483,25,483,71);
circle(502,49,10);//circle
line(520,25,520,71);
line(546,41,525,56);//line tool
line(560,25,560,71);
bar3d(567,42,594,55,3,1);//bar3d

rectangle(10,100,50,150);// text box outer layer
rectangle(15,105,45,135);//text box
outtextxy(20,120,"A");
setcolor(0);
outtextxy(20,140,"TEXT ");
setcolor(15);
create_fillstyle_box();

setcolor(12);
rectangle(620,3,638,16);
setcolor(15);
line(622,12,633,6);
line(622,6,633,12);
//option dialog box
rectangle(561,108,625,408);
```

```
                rectangle(564,110,622,406);
                line(564,150,622,150);
                line(564,152,622,152);
                rectangle(568,164,615,183);//new
                rectangle(570,166,613,181);
                rectangle(568,204,615,223);//open
                rectangle(570,206,613,221);
                rectangle(568,246,615,263);//save
                rectangle(570,248,613,261);
                rectangle(568,286,615,303);//about
                rectangle(570,288,613,301);
                rectangle(568,326,615,343);//exit
                rectangle(570,328,613,341);
                setfillstyle(1,8);
                floodfill(568,126,15);
                floodfill(573,173,15);
                floodfill(573,211,15);
                floodfill(573,253,15);
                floodfill(573,295,15);
                floodfill(573,332,15);

                setcolor(2);
                outtextxy(568,126,"Options");
                outtextxy(573,173,"New");
                outtextxy(573,211,"Open");
                outtextxy(573,253,"Save");
                outtextxy(573,294,"About");
                outtextxy(573,332,"Exit");

}

create_fillstyle_box()
{
  int i;
```

```
  int left,right;
  setcolor(15);
  rectangle(10,200,90,260);
  left=15;right=25;
  for(i=1;i<6;i++)
  {
   rectangle(left,205,right,225);
   setfillstyle(i,15);
   floodfill(left+5,210,15);
   left+=15;
   right+=15;
  }

  left=15,right=25;
  for(i=6;i<11;i++)
  {
   rectangle(left,230,right,250);
   setfillstyle(i,15);
   floodfill(left+5,240,15);
   left+=15;
   right+=15;
  }

}//end of function

create_color_box()
{
 int i,left,right;
 setcolor(15);
 left=15;right=35;
 for(i=0;i<7;i++)
 {
  rectangle(left,30,right,45);
  setfillstyle(1,i);
```

```
  floodfill(left+5,40,15);
  left+=20;
  right+=20;
 }
 left=15,right=35;
 for(i=8;i<15;i++)
 { rectangle(left,50,right,63);
   setfillstyle(1,i);
   floodfill(left+5,55,15);
   left+=20;
   right+=20;
 }
}

show_selected_color(int color)
{
  setcolor(15);
  rectangle(165,25,185,50);
  setfillstyle(1,color);
  floodfill(180,35,15);
  setcolor(0);
  outtextxy(170,53,"color");
}

detect_tool()
{
  int bt,x,y;
  getmpos(&bt,&x,&y);
  if(bt==1)
  {
   //225,28,260,50); //pencil
   if((x>225)&&(x<260)&&(y>28)&&(y<50))
   {
    code=1;
```

```
}
//275,28,310,50);//eraser
if((x>275)&&(x<310)&&(y>28)&&(y<50))
{
 code=2;
}
//325,28,365,50 // fill
if((x>325)&&(x<365)&&(y>28)&&(y<50))
{
 code =3;
}

 //375,28,415,50); // brush
if((x>375)&&(x<415)&&(y>28)&&(y<50))
{
  code=4;
}
//rectangle tool
if((x>451)&&(x<478)&&(y>39)&&(y<57))
{
 code=5;
}
//circle
if((x>492)&&(x<512)&&(y>39)&&(y<59))
{
 code=6;
}
//(15,105,45,135) text box
if((x>15)&&(x<45)&&(y>105)&&(y<135))
{
  code=7;//text box;
}
if((x>525)&&(x<546)&&(y>41)&&(y<56)){
 code=8;//line
```

```
   }
   if((x>567)&&(x<594)&&(y>42)&&(y<55)){
    code=9;//bar3d
   }
   if((x>568)&&(x<615)&&(y>164)&&(183)){
    code=10;//new
   }
   if((x>568)&&(x<615)&&(y>204)&&(223)){
    code=11;//open
   }
   if((x>568)&&(x<615)&&(y>246)&&(263)){
    code=12;//save
   }
   if((x>568)&&(x<615)&&(y>286)&&(303)){
    code=13;//about
   }
   if((x>568)&&(x<615)&&(y>326)&&(343)){
    code=14;//exit
    return;
   }
 }
  return code;
}

fill_pattern(int pattern, int active_color){
  int a,b,c,d,color1,color2,color3,color4,button,x,y;
  changecursor(bottle);
   getmpos(&button,&x,&y);

                    if(button==1)
                    {
                      a=b=x;
                      c=d=y;
                     for(a;a<535;a++)
```

```
{
 hideptr();
 color1=getpixel(a,y);
 showptr();
 if((color1!=bgcolor))
 {
  break;
 }
}// for ends
 for(;b>105;b--)
{
 hideptr();
 color2=getpixel(b,y);
 showptr();
 if((color2!=bgcolor))
 {
  //printf("\n%d",color2);
  break;
 }
}// for ends

for(c;c<455;c++)
{
 hideptr();
 color3=getpixel(x,c);
 showptr();
// printf("%d ",color1);
 if((color3!=bgcolor))
 {
  //printf("%d",color3);
  break;
 }
}// for ends
```

```
                for(d;d>90;d--)
                {
                 hideptr();
                 color4=getpixel(x,d);
                 showptr();
                 if((color4!=bgcolor))
                 {
                 // printf("\n%d",color4);
                  break;
                 }
                }// for ends

                if(color1==color2)
                  if(color3==color4)
                  if(color1==color4)
                          {
                            setcolor(color1);
                            rectangle(100,80,540,460);
                            delay(10);
                            hideptr();
                            setfillstyle(pattern,active_color);
                            floodfill(x,y,color1);
                            showptr();
                          }
              }//button==1 close

}

select_tool(int active_color,int pattern)
{
   int x,y,button,x1,y1;
    code=detect_tool();
   //225,28,260,50); //pencil
    getmpos(&button,&x,&y);
```

```
    if((x>115)&&(x<525)&&(y>95)&&(y<455)) //working space
    { showptr();
     switch(code){
     case 1 :      //pencil draw code
                              changecursor(pencil);
                              getmpos(&button,&x,&y);
                              getmpos(&button,&x1,&y1);
                              while(button==1 &&
((x>100)&&(x<540)&&(y>80)&&(y<460))){

                                 if((x>100)&&(x<529)&&(y>80)&&(y<449)){
                                  hideptr();
                                  setcolor(active_color);
                                  line(x,y,x1,y1);
                                  showptr();
                                 }
                                 x1=x,y1=y;
                                 getmpos(&button,&x,&y);
                              }
                                //end
                              break;
     case 2 :     // eraser box
                                  changecursor(rubber);
                                  getmpos(&button,&x,&y);
                                  while(button==1
&&((x>100)&&(x<529)&&(y>80)&&(y<449)))
                                  {       hideptr();
                                                setcolor(bgcolor);
                                                rectangle(x,y,x+10,y+10);
                                                setfillstyle(1,bgcolor);
                                                floodfill(x+4,y+4,bgcolor);
                                                showptr();
                                                getmpos(&button,&x,&y);
                                  } changecursor(rubber);
```

```
                        //end
                        break;
    case 3 :   fill_pattern(pattern,active_color);  //fill pattern
                       break;
    case 4 :      // brush draw

                        getmpos(&button,&x,&y);
                        changecursor(pencil);
                        while(button==1
&&((x>100)&&(x<529)&&(y>80)&&(y<449)))
                       {
                       if(((x>100)&&(x<540)&&(y>80)&&(y<460))){
                        hideptr();
                        setcolor(active_color);
                        circle(x,y,0);
                        circle(x+1,y,0);
                        circle(x,y+1,0);
                        circle(x+1,y+1,0);
                        showptr();
                        }
                        getmpos(&button,&x,&y);
                        //circle(x1,y1,0);
                       // circle(x1+1,y1,0);
                        //circle(x1,y1+1,0);
                        //circle(x1+1,y1+1,0);

                       }
                       break;
    case 5 :  draw_rect(active_color);
                  break;
    case 6 :  draw_circle(active_color);
                  break;
    case 7 :  type_text(active_color);
                  break;
```

```
    case 8 :  draw_line(active_color);
                    break;
    case 9 :  draw_bar(active_color,pattern);
                    break;
    default: showptr();

    }//end of switch
   }//end of working space
   else
   {
    showptr();
    changecursor(hand);
   }

} //function ends


draw_line(int active_color){
 int x,y,bt,x1,y1,k=0;
 //showptr();
 changecursor(plus);
// outtextxy(200,34,"line");
 getmpos(&bt,&x1,&y1);
 getmpos(&bt,&x,&y);
                while(bt==1 && ((x>100)&&(x<540)&&(y>80)&&(y<460)))
                {
                    k=bt;
                     if (bt==1 &&((x>100)&&(x<540)&&(y>80)&&(y<460))){
                    hideptr();
                    setcolor(active_color);
                    line(x1,y1,x,y);
                    delay(100);
                    setcolor(bgcolor);
                    line(x1,y1,x,y);
```

```
                showptr();
                }
                  getmpos(&bt,&x,&y);
              }
              if(k==1 &&((x>100)&&(x<540)&&(y>80)&&(y<460))){
              hideptr();
               setcolor(active_color);
               line(x1,y1,x,y);
               k=0;
               showptr();
              }
              showptr();
}

 draw_bar(int active_color,int pattern){
    int k,x1,y1,x,y,button,depth=20;
  // showptr();
  changecursor(plus);
    getmpos(&button,&x1,&y1);
    getmpos(&button,&x,&y);
              while(button==1 &&
((x>120)&&(x<520)&&(y>100)&&(y<440)))
              {

                k=button;
                getmpos(&button,&x,&y);
               if(button==1 &&((x>120)&&(x<520)&&(y>100)&&(y<440))){
                hideptr();
                setcolor(active_color);
                bar3d(x1,y1,x,y,depth,1);
                delay(100);
                setfillstyle(pattern,active_color);
                setcolor(bgcolor);
                bar3d(x1,y1,x,y,depth,1);
```

```
                showptr();
                }
              }
               if(k==1 &&((x>120)&&(x<520)&&(y>100)&&(y<440)))
              {
               hideptr();
               setcolor(active_color);
               bar3d(x1,y1,x,y,depth,1);
               k=0;
               showptr();
              }
              showptr();

}

 draw_rect(int active_color){
  int k,x1,y1,x,y,button;
  // showptr();
    changecursor(plus);
    getmpos(&button,&x1,&y1);
    getmpos(&button,&x,&y);

while((button==1)&&((x>100)&&(x<540)&&(y>80)&&(y<460)))
              {
                k=button;

                if((x>100)&&(x<540)&&(y>80)&&(y<460)){
                hideptr();
                setcolor(active_color);
                rectangle(x1,y1,x,y);
                delay(100);
                setcolor(bgcolor);
                rectangle(x1,y1,x,y);
                showptr();
```

```
                }
                        getmpos(&button,&x,&y);
              }
               if(k==1 &&(x>100)&&(x<540)&&(y>80)&&(y<460))
              {
               hideptr();
               setcolor(active_color);
               rectangle(x1,y1,x,y);
               k=0;
               showptr();
              }

              showptr();
 }
 type_text(int active_color){
    int k,x1,y1,x,y,button;
     int i=0,a=0,b=0,space=0;
      char buffer[8],buffer2[8];
      char ch,chprev;

   //showptr();
    changecursor(plus);
    getmpos(&button,&x1,&y1);
    getmpos(&button,&x,&y);
              while(button==1 &&
((x>100)&&(x<540)&&(y>80)&&(y<460)))
              {

                k=button;
                if((x>100)&&(x<540)&&(y>80)&&(y<460)){
                hideptr();
                setcolor(active_color);
                rectangle(x1,y1,x,y);
                delay(100);
```

```
    setcolor(bgcolor);
    rectangle(x1,y1,x,y);
    i=1;
     showptr();
    }
     getmpos(&button,&x,&y);

 }

//code to type text
     a=x1+10,b=y1+10;
   if(i==1)
   {
     //char c;
   //  ch=getch();
    while(!(ch==13))
    {
       int flag=0;
      space:
      line(a+10,b,a+10,b+10);
     ch=getch();

    if((a>x1)&&(a<x-2)&&(b>y1)&&(b<y))//control the cursor to
next line
    {
      setcolor(active_color);
      //printf("t");

     //ch=getch();
     if(ch==13)
     {

      break;
     }
```

```
  if(ch==8)
  {
            //ch=32;
           // a=a-20;
           setcolor(bgcolor);
            sprintf(buffer,"%c",ch);
            outtextxy(a,b,buffer);
            a-=10;
            ch=0;
            sprintf(buffer2,"%c",ch);
            outtextxy(a,b,buffer2);
            outtextxy(a+10,b,buffer2);
            outtextxy(a-10,b,buffer2);
//          flag=0;
           // setcolor(active_color);
           // outtextxy(a,b,buffer);
            goto space;
  //  outtextxy(a,b,buffer);
            //a=a-20;

  }


 line(a+10,b,a+10,b+10);
 sprintf(buffer,"%c",ch);
 setcolor(active_color);
 outtextxy(a,b,buffer);
 setcolor(bgcolor);
 line(a,b,a,b+10);
 a+=10;

}
else //next line
```

```
                {
                  i++;
                  a=x1+10;
                  b=y1+i*10;

                }
                }
               }



 }//end

 draw_circle(int active_color){
  int x1,y1,i=0,xr=0,yr=0,k,button,x,y;
     //showptr();
     changecursor(plus);
                getmpos(&button,&x1,&y1);
    getmpos(&button,&x,&y);
                 while(button==1 &&
((x-abs(x1-x)>100)&&(x+abs(x1-x)<540)&&(y-abs(y1-y)>80)&&(y+abs(y
1-y)<460)) )
                {

if((x-abs(x1-x)>100)&&(x+abs(x1-x)<540)&&(y-abs(y1-y)>80)&&(y+abs
(y1-y)<460)){
                  k=button;
                  hideptr();
                  setcolor(active_color);
                  ellipse(x,y,0,360,abs(x1-x),abs(y1-y));
                  delay(100);
                  setcolor(bgcolor);
                  ellipse(x,y,0,360,abs(x1-x),abs(y1-y));
                  showptr();
```

```
                }
                getmpos(&button,&x,&y);
              }

if(k==1&&((x-abs(x1-x)>100)&&(x+abs(x1-x)<540)&&(y-abs(y1-y)>80)&
&(y+abs(y1-y)<460)) )
              {
               setcolor(active_color);
               ellipse(x,y,0,360,abs(x1-x),abs(y1-y));
               k=0;
              }
      showptr();
 }//end
```