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The following functions compose the Borland Graphics Interface and are usually available for 16 bit DOS applications. Use th onscreen graphics with text. They are defined in graphics.h.

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 getch();
 closegraph();      /* closes down the graphics system */
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
    {
    printf("Graphics error occurred");
    printf("Press any key to halt:");
    getch();     /* wait for a key */
    exit(1);
    }
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)

    {
    printf("Graphics error occurred");
    printf("Press any key to halt:");
    getch();
    exit(1);
    }
 outtext("Welcome to Borland Graphics Interface");
/* output the message */
 getch();
 closegraph();
 return 0;
}
```

```
//outtextxy
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
    {
    printf("Graphics error occurred");
    printf("Press any key to halt:");
    getch();
    exit(1);
    }
 outtextxy(175,250,"Welcome to Borland Graphics Interface");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//outtextxy
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
    {
    printf("Graphics error occurred");

    printf("Press any key to halt:");
    getch();
    exit(1);
    }
 setbkcolor(BLUE);
 outtextxy(175,250,"Welcome to Borland Graphics Interface");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error,maximumcolor;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
    {
    printf("Graphics error occurred");
    printf("Press any key to halt:");
    getch();
    exit(1);
    }
 maximumcolor = getmaxcolor();
 for (i=0; i<=maximumcolor;i++)
   {
   setbkcolor(i);
   outtextxy(175,250,"Welcome to Borland Graphics Interface");
   outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
   getch();
   }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error,maximumcolor;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {

 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 maximumcolor = getmaxcolor();
 for (i=0; i<=maximumcolor;i++)
 {
 setbkcolor(i);
 sprintf(message, "Background color: %d",i); /* create a message string */
 outtextxy(250, 240,message);
 outtextxy(250, 240,message);
 outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
 getch();
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error,maximumcolor;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 maximumcolor = getmaxcolor();
 for (i=0; i<=maximumcolor;i++)
 {
 cleardevice(); /* clear the screen */
 setbkcolor(i);
 sprintf(message, "Background color: %d",i);
 outtextxy(250, 240,message);
 outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
 getch();
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>

#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error,maximumcolor;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 maximumcolor = getmaxcolor();
 for (i=0; i<=maximumcolor;i++)
 {
 cleardevice();
 setcolor(i);
 sprintf(message, "Graphics color: %d",i);
 outtextxy(250, 240,message);
 outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
 getch();
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,j=0,error,maximumcolor;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
```

```
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for (i=1; i<11; i++)
 {
 /* select the text style, direction, and size */
 settextstyle(SANS_SERIF_FONT, HORIZ_DIR, i);

 sprintf(message, "Size: %d", i);
 outtextxy(1,j, message);
 /* advance to the next text line */
 j += textheight(message);
 }
 getch();
 closegraph();
 return 0;
}
```

```
/* textwidth example */
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,j=0,k=0,error,maximumcolor;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 j = getmaxy() / 2;
 settextjustify(LEFT_TEXT, CENTER_TEXT);
 for (i = 1; i < 11; i++)
 {
 settextstyle(SANS_SERIF_FONT, HORIZ_DIR, i);
 sprintf(message, "Size: %d", i);
 outtextxy(k, j, message);
 /* advance to the end of the text */
 k+= textwidth(message);
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char range[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();

 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 sprintf(range, "X values range from 0..%d", getmaxx());
 outtextxy( getmaxx()/2,getmaxy()/2 ,range);
 outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

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

```
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char range[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 sprintf(range, "Y values range from 0..%d", getmaxy());
 outtextxy( getmaxx()/2,getmaxy()/2 ,range);
 outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//delay
int main()
 {

 int gd=DETECT,gm,error,i;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for(i=0;i<=getmaxy();i++)
 {
 cleardevice();
 sprintf(message, ".<<---(x=0,y=%d) :: www.CProgrammingExpert.com",i);
 outtextxy( 0,i ,message);
 delay(100);
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//delay
int main()
 {
 int gd=DETECT,gm,error,i;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for(i=0;i<=getmaxx();i++)
 {
 cleardevice();
 sprintf(message, ".<<---(x=%d,y=10) :: www.CProgrammingExpert.com",i);
 outtextxy( i,10 ,message);
 delay(100);
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for(i=1;i<=150;i+=10)
 {
 cleardevice();
 arc (310,250,360-i, (360-i)+150,i);
 //void arc (int x, int y, int startangle, int endangle, int radius);
 outtextxy(getmaxx()-200,getmaxy()-100,"Center:(310,250)");
 sprintf(message, "Radius : %d",i);
 outtextxy(getmaxx()-200,getmaxy()-80,message);
 sprintf(message, "Start angle : %d ",360-i);
 outtextxy(getmaxx()-200,getmaxy()-60,message);
 sprintf(message, "End angle : %d",(360-i)+150);
 outtextxy(getmaxx()-200,getmaxy()-40,message);
 getch();
 }
 cleardevice();
 for(i=1;i<=150;i+=10)
 arc (310,250,360-i, (360-i)+150,i);
 outtextxy(getmaxx()-250,getmaxy()-40,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()

 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 bar (320,250, 250, 10);
 outtextxy(getmaxx()-200,getmaxy()-100,"Left : 320");
 outtextxy(getmaxx()-200,getmaxy()-80,"Top : 250");
 outtextxy(getmaxx()-200,getmaxy()-60,"Right : 250");
 outtextxy(getmaxx()-200,getmaxy()-40,"Bottom : 10");
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 bar3d(320,250, 250, 50,35,125);
 outtextxy(getmaxx()-200,getmaxy()-140,"Left : 250");
 outtextxy(getmaxx()-200,getmaxy()-120,"Top : 250");
 outtextxy(getmaxx()-200,getmaxy()-100,"Right : 250");
 outtextxy(getmaxx()-200,getmaxy()-80,"Bottom : 50");
 outtextxy(getmaxx()-200,getmaxy()-60,"Depth : 35");
 outtextxy(getmaxx()-200,getmaxy()-40,"Top Flag : 125");
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;

}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for(i=10;i<=210;i+=10)
 {
 cleardevice();
 circle (320, 250,i);
 outtextxy(getmaxx()-200,getmaxy()-60,"Center : (320,250)");
 sprintf(message, "Radius : %d",i);
 outtextxy(getmaxx()-200,getmaxy()-40,message);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 }
 cleardevice();
 for(i=10;i<=210;i+=10)
 circle (320, 250,i);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 int poly[10],maxx, maxy;
 initgraph(&gd,&gm,"f:\\tc\\bgi");

 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 maxx = getmaxx();
 maxy = getmaxy();
 maxy = getmaxy();
 poly[0] = 30; /* first vertex */
 poly[1] = maxy / 2;
 poly[2] = maxx - 30; /* second vertex */
 poly[3] = 30;
 poly[4] = maxx - 75; /* third vertex */
 poly[5] = maxy - 30;
 poly[6] = maxx / 2; /* fourth vertex */
 poly[7] = maxy / 2;
 poly[8] = poly[0]; /* drawpoly doesn't automatically close */
 poly[9] = poly[1]; /* the polygon, so we close it */
 drawpoly(5, poly); /* draw the polygon */
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,poly[10],maxx, maxy,i,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 maxx = getmaxx();
 maxy = getmaxy();
 poly[0] = 30;
 poly[1] = maxy / 2;
 poly[2] = maxx - 30;
 poly[3] = 30;
 poly[4] = maxx - 75;

 poly[5] = maxy - 30;
 poly[6] = maxx / 2;
 poly[7] = maxy / 2;
 poly[8] = poly[0]; /* drawpoly doesn't automatically close */
 poly[9] = poly[1];
 for (i=EMPTY_FILL; i
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,i;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 line(0, 0, getmaxx(), getmaxy()); /* draw a line */
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,j,error;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for(i=50,j=100;i<=100;i+=10,j+=20)
 {
 cleardevice();
 ellipse (getmaxx()/2,getmaxy()/2,0,360,j+75, j); //<<<<<<<<<
 line(getmaxx()/2,getmaxy()/2,(getmaxx()/2)+j+75,getmaxy()/2);
 line(getmaxx()/2,getmaxy()/2,getmaxx()/2,(getmaxy()/2)-j);
 sprintf(message, "Center (%d,%d)",getmaxx()/2,getmaxy()/2);
 outtextxy(getmaxx()-200,getmaxy()-120,message);
 outtextxy(getmaxx()-200,getmaxy()-100,"Start agle : 0");
 outtextxy(getmaxx()-200,getmaxy()-80,"End angle : 360");
 sprintf(message, "xradius: %d ",j+75);
 outtextxy(getmaxx()-200,getmaxy()-60,message);
 sprintf(message, "yradius : %d",j);
 outtextxy(getmaxx()-200,getmaxy()-40,message);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 }
 cleardevice();
 for(i=50,j=100;i<=100;i+=10,j+=20)
 ellipse (getmaxx()/2,getmaxy()/2,0,360,j+75,j);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>

#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,i,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 /* loop through the fill patterns */
 for (i = EMPTY_FILL; i < USER_FILL; i++)
 {
 /* set fill pattern */
 setfillstyle(i, getmaxcolor());
 /* draw a filled ellipse */
 fillellipse(getmaxx() / 2, getmaxy() / 2,200, 150);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* floodfill example */
#include <stdlib.h>
int main()
 {
 int gd=DETECT,gm,i,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {

 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor()); /* select drawing color */
 setfillstyle(SOLID_FILL, getmaxcolor()); /* select fill color */
 rectangle(0, 0, getmaxx(), getmaxy()); /* draw a border around the screen */
 circle(getmaxx() / 3, getmaxy() /2, 50);
 circle(getmaxx()-20, 10, 50);
 circle(100, 100, 50);
 circle(getmaxx() / 2, 20, 100);
 circle(getmaxx()-75, getmaxy()-25, 200);
 circle(20, getmaxy()-20, 25);
 getch();
 floodfill(2, 2, getmaxcolor()); /* fill in bounded region */
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* getarccoords example */
int main()
 {
 int gd=DETECT,gm,error,stangle = 90, endangle = 360;
 struct arccoordstype info;
 char message1[80], message2[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 arc(getmaxx() / 2, getmaxy() / 2, stangle, endangle, 100); /* draw arc */
 getarccoords(&info);
 /* convert arc information into strings */
 sprintf(message1, "*- (%d, %d)", info.xstart, info.ystart);
 sprintf(message2, "*- (%d, %d)", info.xend, info.yend);
 outtextxy(info.xstart, info.ystart, message1);
 outtextxy(info.xend, info.yend, message2);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* getaspectratio example */
int main()
 {
 int gd=DETECT,gm,error,xasp, yasp;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 getaspectratio(&xasp, &yasp); /* get current aspect ratio settings */
 circle( getmaxx() / 2, getmaxy() / 2, 100);
 getch();
 cleardevice();
 setaspectratio(xasp/2, yasp);
 circle( getmaxx() / 2, getmaxy() / 2, 100); /* draw wide circle */
 getch();
 cleardevice();
 setaspectratio(xasp, yasp/2);
 circle( getmaxx() / 2, getmaxy() / 2, 100);

 getch();
 cleardevice();
 setaspectratio(xasp, yasp);
 circle( getmaxx() / 2, getmaxy() / 2, 100);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* getfillpattern example */
int main()
 {
 int gd=DETECT,gm,error;
 char pattern[8] = {0x00, 0x70, 0x20,0x27, 0x25, 0x27, 0x04, 0x04};
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 setfillpattern(pattern,getmaxcolor()); /* select a user-defined fill pattern */
 bar(30, 30, getmaxx()-30, getmaxy()-30);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 getfillpattern(pattern); /* get the current user-defined fill pattern */
 pattern[0] -= 5; /* alter the pattern we grabbed */
 pattern[1] -= 10;
 pattern[2] += 10;
 pattern[3] -= 15;
 setfillpattern(pattern, getmaxcolor());
 /* fill the screen with the new pattern */
 bar(30, 30, getmaxx()-30, getmaxy()-30);

 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
 }
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* getbkcolor example */
int main()
 {
 int gd=DETECT,gm,error,color;
 char name[35];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 color = getbkcolor();
 itoa(color, name, 10); /* convert color value into a string */
 strcat(name, " is the current background color.");
 /* display a message */
 outtextxy(getmaxx() / 2, getmaxy() / 2, name);
 outtextxy(getmaxx()-125,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#include
/* getpixel example */
```

```
#define PIXEL_COUNT 1000
#define DELAY_TIME 100 /* in milliseconds */
int main()
 {
 int gd=DETECT,gm,error,i, x, y, color, maxcolor, seed;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 maxcolor = getmaxcolor() + 1;
 while (!kbhit())
 {
 seed = random(32767);
 srand(seed); /* seed the random number generator */
 for (i=0; i
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//clearviewport()
int main()
 {
 int gd=DETECT,gm,error,height;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 height = textheight("l");
 outtextxy(0, 0, "* <-- (0, 0) in default viewport");
 setviewport(150, 150, getmaxx()-150, getmaxy()-150, 1); /* create a new viewport */
 outtextxy(0, 0, "* <-- (0, 0) in new viewport");
 outtextxy(0, 2*height, "Press any key to clear viewport:");
 getch();
 clearviewport(); /* clear the viewport */
 outtextxy(0, 0, "Press any key to quit:");
 outtextxy(getmaxx()-300,getmaxy()-10,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//settextjustify
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2, getmaxy() / 2, "Press a key to close the graphics system:");
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 printf("Hi,We're now back in text mode.\n");

 printf("Press any key to halt:");
 getch();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//detectgraph
#include
/* the names of the various cards supported */
char *dname[] = { "requests detection",
"a CGA",
"an MCGA",
"an EGA",
"a 64K EGA",
"a monochrome EGA",
"an IBM 8514",
"a Hercules monochrome",
"an AT&T 6300 PC",
"a VGA",
"an IBM 3270 PC"
};
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 clrscr();
 printf("You have %s video display card.\n", dname[gd]);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 printf("Press any key to halt:");
 getch();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* getcolor example */
int main()
 {
 int gd=DETECT,gm,error;
 int color, midx, midy;
 char colname[35];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 color = getcolor(); /* get the current drawing color */
 itoa(color, colname, 10); /* convert color value into a string */
 strcat(colname, " is the current drawing color.");
 outtextxy(getmaxx() / 2, getmaxy() / 2, colname);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* getdrivername example */
int main()
 {
 int gd=DETECT,gm,error;
 char *drivername;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setcolor(getmaxcolor());
 drivername = getdrivername(); /* get the name of the device driver in use */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 strcat(drivername," is currently loaded driver");
 outtextxy(getmaxx() / 2, getmaxy() / 2, drivername); /* output the name of the driver
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 struct fillsettingstype fillinfo;
 char message1[50], message2[50];
 char *fillname[] = { "EMPTY_FILL", "SOLID_FILL", "LINE_FILL",
"LTSLASH_FILL", "SLASH_FILL","BKSLASH_FILL", "LTBKSLASH_FILL",
"HATCH_FILL", "XHATCH_FILL", "INTERLEAVE_FILL", "WIDE_DOT_FILL",
"CLOSE_DOT_FILL", "USER_FILL" }; /* The names of the fill styles supported */
```

```
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 getfillsettings(&fillinfo); /* get info about current fill pattern and color */
 sprintf(message1, "%s is the fill style.", fillname[fillinfo.pattern]);
 sprintf(message2, "%d is the fill color.", fillinfo.color);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2, (getmaxy() / 2)-2*textheight("l"), message1);
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+2*textheight("l"), message2);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
 }
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,mode;
 char strnumber[80], strmode[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 mode = getgraphmode(); /* get mode number and name strings */
 sprintf(strnumber, "%d is the current mode number.", mode);
 sprintf(strmode, "%s is the current graphics mode.", getmodename(mode));
 settextjustify(CENTER_TEXT, CENTER_TEXT);

 outtextxy(getmaxx() / 2, getmaxy() / 2, strnumber);
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+2*textheight("l"), strmode);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 struct linesettingstype lineinfo;
 char linestyle[80], linepattern[80], linewidth[80];
 char *linename[] = { "SOLID_LINE", "DOTTED_LINE", "CENTER_LINE",
"DASHED_LINE", "USERBIT_LINE" };
/* the names of the line styles supported */
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 getlinesettings(&lineinfo); /* get information about current line settings */
 sprintf(linestyle, "%s is the line style.", linename[lineinfo.linestyle]);
 /* convert line information into strings */
 sprintf(linepattern, "0x%X is the user-defined line pattern.",lineinfo.upattern);
 sprintf(linewidth, "%d is the line thickness.", lineinfo.thickness);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2,getmaxy() / 2, linestyle);
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+2*textheight("1"), linepattern);
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+4*textheight("1"), linewidth);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char colstr[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 sprintf(colstr, "This mode supports colors 0..%d", getmaxcolor());
/* grab the color info. and convert it to a string */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2,getmaxy() / 2, colstr);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char modestr[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 sprintf(modestr, "This driver supports modes 0..%d",getmaxmode());
 /* grab the mode info. and convert it to a string */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2,getmaxy() / 2, modestr);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,mode;
 char strnumber[80], strmode[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 mode = getgraphmode(); /* get mode number and name strings */
 sprintf(strnumber, "%d is the current mode number.", mode);
 sprintf(strmode, "%s is the current graphics mode.",getmodename(mode));
 settextjustify(CENTER_TEXT, CENTER_TEXT);

 outtextxy(getmaxx() / 2, getmaxy() / 2, strnumber);
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+2*textheight("W"), strmode);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setwritemode(XOR_PUT); /* select XOR drawing mode */
 line(0, 0, getmaxx(), getmaxy());
 getch();
 line(0, 0, getmaxx(), getmaxy()); /* erase the line by drawing over it */
 getch();
 setwritemode(COPY_PUT); /* select overwrite drawing mode */
 line(0, 0, getmaxx(), getmaxy());
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gdriver = EGA, gmode = EGAHI, error,height;
 initgraph(&gdriver,&gmode,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 height = textheight("1");
 setactivepage(1); /* select the off screen page for drawing */
 circle(getmaxx()/2,getmaxy()/2,150); /* draw a circle on page #1 */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
/* output a message on page #1 */
 outtextxy(getmaxx() / 2, getmaxy() / 2, "This is page #1:");
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+height, "Press any key to halt:");
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 setactivepage(0); /* select drawing to page #0 */
 ellipse (getmaxx()/2,getmaxy()/2,0,360,150, 100);
 outtextxy(getmaxx() / 2, getmaxy() / 2, "This is page #0.");
 outtextxy(getmaxx() / 2, (getmaxy() / 2)+height, "Press any key to view page #1:");
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 /* select page #1 as the visible page */
 setvisualpage(1);
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>

#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,a,b,result;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 circle(getmaxx()/2,getmaxy()/2,175);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2, getmaxy() / 2, "Press a key to close the graphics system:");
 getch();
 closegraph(); /* closes down the graphics system */
 closegraph(); /* closes down the graphics system */
 printf("*****We're now back in text mode.*****\n\n");
 printf("Enter two numbers\n");
 scanf("%d%d",&a,&b);
 result=a+b;
 printf("\nSum of %d and %d is %d\n\nOK!",a,b,result);
 getch();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,i;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();

 exit(1);
 }
 setbkcolor(BLUE);
 settextstyle(TRIPLEX_FONT, HORIZ_DIR, 4);
 moveto(getmaxx() / 2, getmaxy() / 2); /* move to the text starting position */
 outtext("Norm ");
 setusercharsize(1, 2, 1, 1); outtext("Short "); /* make the text 1/2 the normal width
 setusercharsize(3, 1, 1, 1); outtext("Wide"); /* make the text 3 times normal width */
 settextstyle(GOTHIC_FONT, HORIZ_DIR, 1);
 outtextxy(getmaxx()/2,getmaxy()-30,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* the names of the text styles supported */
char *styles[] = { "DEFAULT font", "TRIPLEX font",
"SMALL font", "SANS SERIF_font",
"GOTHIC_font", "SCRIPT font","SIMPLEX font",
"TRIPLEX SCRIPT font","COMPLEX font",
"EUROPEAN font","BOLD font"};
int main()
 {
 int gd=DETECT,gm,error,i,style,size = 1;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 for (i=DEFAULT_FONT; i<=BOLD_FONT; i++)
/* loop through the available text styles */
 {
 cleardevice();
 if (i == TRIPLEX_FONT)
 if (i == TRIPLEX_FONT)
 size = 3;
 settextstyle(i, HORIZ_DIR, size); /* select the text style */
 outtextxy( getmaxx() / 2, getmaxy() / 2,styles[i]);
 outtextxy(getmaxx()-250,getmaxy()-25,"www.CProgrammingExpert.com");
 getch();
 }
 closegraph();
 return 0;
 }
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,i, height, j=0;
 struct palettetype type;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 getpalette(&type); /* grab a copy of the palette */
 for (i=0; i
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,x,y;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 x=getmaxx() / 2;
 y=getmaxy() / 2;
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 rectangle(x-175, y-50, x+175, y+50);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 outtextxy(x, y, "Press any key to exit graphics");
 getch();
 restorecrtmode(); /* restore system to text mode */
 printf("We're now in text mode.\n");
 printf("Press any key to return to graphics mode:");
 getch();
 setgraphmode(getgraphmode()); /* return to graphics mode */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 setbkcolor(BLUE);
 outtextxy(x, y, "We're back in graphics mode.");
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 outtextxy(x, y+2*textheight("1"), "Press any key to return to text mode:");
 getch();
 restorecrtmode(); /* restore system to text mode */
 printf("We're now in text mode.\n");
 printf("We're now in text mode.\n");
 printf("Press any key to halt:");
 getch();
 closegraph();
 return 0;
 }
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
char *linename[] = { "SOLID_LINES", "DOTTED_LINES",
 "CENTER_LINES","DASHED_LINES", "USERBIT_LINES" };

/* The names of the line styles supported */
int main()
 {
 int gd=DETECT,gm,error,i;
 int style, midx, midy, userpat;
 char stylename[25],message[25];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 midx = getmaxx() / 2;
 midy = getmaxy() / 2;
 userpat = 1;
for(i=1;i<=3;i++)
 {
 for (style=SOLID_LINE; style<=USERBIT_LINE; style++)
 {
 sprintf(message, "Line thickness : %d",i);
 outtextxy(midx-75, midy-100, message);
 setlinestyle(style, userpat, i); /* select the line style */
 strcpy(stylename, linename[style]); /* convert style into a string */
 rectangle(10, 10, getmaxx()-10, getmaxy()-10);
 line(10, 10, midx-10, midy);
 line(midx-10, midy, getmaxx()-10,getmaxy()-10);
 line(midx-10, midy, getmaxx()-10,10);
 line(midx-10, midy,10,getmaxy()-10);
 outtextxy(midx, midy, stylename);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 cleardevice();
 }
 getch();
 }
closegraph();
return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error, color, maxcolor, height,y = 10;
 char msg[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 maxcolor = getmaxcolor();
 height = 2 * textheight("l");
 for (color=1; color<=maxcolor; color++) /* display the default colors */
 {
 setcolor(color);
 sprintf(msg, "Color: %d", color);
 outtextxy((getmaxx()/2)-50, y, msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 y += height;
 }
 getch();
 for (color=1; color<=maxcolor; color++) /* red out the colors one by one */
 {
 setpalette(color, RED);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 }
closegraph();
return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#define BUFSIZE 1000 /* internal graphics buffer size */

int main()
 {
 int gd=DETECT,gm,i,error;
 int x, y, oldsize;
 char msg[80];
 oldsize = setgraphbufsize(BUFSIZE);
/* Set size of internal graphics buffer before calling initgraph*/
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 x = getmaxx() / 2;
 y = getmaxy() / 2;
 sprintf(msg, "Graphics buffer size: %d", BUFSIZE);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(x, y-25, msg);
 sprintf(msg, "Old graphics buffer size: %d", oldsize);
 outtextxy(x, y+2*textheight("l"), msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
```

```
#include<conio.h>
#include<graphics.h>
/* the names of the fill styles supported */
char *fname[] = { "EMPTY_FILL", "SOLID_FILL", "LINE_FILL",
"LTSLASH_FILL", "SLASH_FILL", "BKSLASH_FILL",
"LTBKSLASH_FILL","HATCH_FILL", "XHATCH_FILL",
"INTERLEAVE_FILL", "WIDE_DOT_FILL",
"CLOSE_DOT_FILL", "USER_FILL" };
int main()
 {
 int gd=DETECT,gm,error,i;
 int style, midx, midy;

 char stylestr[40];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 midx = getmaxx() / 2;
 midy = getmaxy() / 2;
 for (style = EMPTY_FILL; style < USER_FILL; style++)
 {
 setfillstyle(style, getmaxcolor()); /* select the fill style */
 strcpy(stylestr, fname[style]); /* convert style into a string */
 /* fill a bar */
 bar3d(midx-125, midy-125, midx+10, midy, 10, 10);
 outtextxy(midx+10, midy, stylestr);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 cleardevice();
 }
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,left, top, right, bottom;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();

 exit(1);
 }
 setbkcolor(BLUE);
 left = getmaxx() / 2 -200;
 top = getmaxy() / 2 - 200;
 right = getmaxx() / 2 + 200;
 bottom = getmaxy() / 2 + 200;
 rectangle(left,top,right,bottom); /* draw a rectangle */
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error, midx, midy, i;
 int stangle = 0, endangle = 270, xrad = 200, yrad = 150;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 midx = getmaxx() / 2;
 midy = getmaxy() / 2;
 for (i=EMPTY_FILL; i
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,low, high;
 char moderange[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 getmoderange(gd, &low, &high); /* get the mode range for this driver */
 sprintf(moderange, "This driver supports modes %d..%d", low, high);
/* convert mode range info. into strings */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2, getmaxy() / 2, moderange);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char palettesize[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();

 exit(1);
 }
 setbkcolor(BLUE);
 sprintf(palettesize, "The palette has %d modifiable entries.",getpalettesize());
/* convert palette size info into string */
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 outtextxy(getmaxx() / 2, getmaxy() / 2, palettesize);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,i,j = 10,height;
 struct palettetype pal;
 char palettesize[80], paletteval[20];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 getpalette(&pal); /* grab a copy of the palette */
 sprintf(palettesize, "The palette has %d modifiable entries.",pal.size);
 /* convert palette info into strings */
 outtextxy(getmaxx()/2-175, j, palettesize);
 if (pal.size != 0)
 {
 height = textheight("1");
 j += 2*height;
 outtextxy(getmaxx()/2-125, j, "Here are the current values:");
 j += 2*height;
 for (i=0; i
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
char *clip[] = { "OFF", "ON" };
int main()
 {
 int gd=DETECT,gm,error, midx, midy, ht;
 struct viewporttype viewinfo;
 char topstr[80], botstr[80], clipstr[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 midx = getmaxx() / 2;
 midy = getmaxy() / 2;
 getviewsettings(&viewinfo); /* get information about current viewport */
 sprintf(topstr, "(%d, %d) is the upper left viewport corner.",viewinfo.left, viewinfo.
 sprintf(botstr, "(%d, %d) is the lower right viewport corner.",viewinfo.right, viewinf
 sprintf(clipstr, "Clipping is turned %s.", clip[viewinfo.clip]);
 settextjustify(CENTER_TEXT, CENTER_TEXT);
 ht = textheight("W");
 outtextxy(midx, midy, topstr);
 outtextxy(midx, midy+2*ht, botstr);
 outtextxy(midx, midy+4*ht, clipstr);
 outtextxy(getmaxx()-150,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,i;
 char msg[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 moveto(getmaxx() / 2, getmaxy() / 2); /* move to the screen center point */
 sprintf(msg, "<-(%d, %d) is the here.", getx(), gety());
 outtext(msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char msg[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();

 exit(1);
 }
 setbkcolor(BLUE);
 moveto(getmaxx() / 2-100, getmaxy() / 2+25); /* move to the screen center point */
 sprintf(msg, "<-(%d, %d) is the here.", getx(), gety());
 outtext(msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setlinestyle(DOTTED_LINE, 0, 3);
 rectangle(10, 10, getmaxx()-10,getmaxy()-10);
 outtextxy(getmaxx()/2-100, getmaxx()/3, "Before default values are restored.");
 outtextxy(getmaxx()-250,getmaxy()-30,"www.CProgrammingExpert.com");
 getch();
 graphdefaults(); /* restore default values for everything */
 cleardevice();
 rectangle(10, 10, getmaxx()-10,getmaxy()-10);
 /* output rectangle with default settings */
 outtextxy(getmaxx()/2-100, getmaxy()/3, "After restoring default values.");
 outtextxy(getmaxx()-250,getmaxy()-30,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;

}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#define NONSENSE -50
int main()
 {
 int gd=NONSENSE,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error: %s\n", grapherrormsg(error));
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 rectangle(10, 10, getmaxx()-10,getmaxy()-10);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
#define ARROW_SIZE 10
void draw_arrow(int x, int y);
int main()
 {
 int gd=DETECT,gm,error,i;
 void *arrow;
 int x, y, maxx;
 unsigned int size;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 maxx = getmaxx();
 x = 0;
 y = getmaxy() / 2;
 draw_arrow(x, y); /* draw the image to be grabbed */
 size = imagesize(x, y-ARROW_SIZE, x+(4*ARROW_SIZE), y+ARROW_SIZE);
 /* calculate the size of the image */
 arrow = malloc(size); /* allocate memory to hold the image */
 getimage(x, y-ARROW_SIZE, x+(4*ARROW_SIZE), y+ARROW_SIZE, arrow);
 /* grab the image */
 while (!kbhit()) /* repeat until a key is pressed */
 {
 putimage(x, y-ARROW_SIZE, arrow, XOR_PUT); /* erase old image */
 x += ARROW_SIZE;
 if (x >= maxx)
 x = 0;
 putimage(x, y-ARROW_SIZE, arrow, XOR_PUT); /* plot new image */
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 }
 free(arrow);
 closegraph();
 return 0;
}


void draw_arrow(int x, int y)
 {
 moveto(x, y); /* draw an arrow on the screen */
 linerel(4*ARROW_SIZE, 0);
 linerel(-2*ARROW_SIZE, -1*ARROW_SIZE);
 linerel(0, 2*ARROW_SIZE);
 linerel(2*ARROW_SIZE, -1*ARROW_SIZE);
 }
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error;
 char message[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 moveto(100,100); /* move the CP to location (100,100) */
 sprintf(message, " (%d, %d)", getx(), gety());
/* create and output a message at (100,100) */
 outtextxy(100,100, message);
 linerel(200, 200);
 /* draw line to a point a relative distance away from current CP*/
 sprintf(message, " (%d, %d)", getx(), gety());
 /* create and output a message at CP */
 outtext(message);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()

 {
 int gd=DETECT,gm,error;
 char msg[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 moveto(100, 100); /* move the CP to location (100,100) */
 sprintf(msg, " (%d, %d)", getx(), gety()); /* create and output a message at (100,100)
 outtextxy(100,100, msg);
 lineto(200, 200); /* draw a line to (100,100) */
 sprintf(msg, " (%d, %d)", getx(), gety()); /* create and output a message at CP */
 outtext(msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
/* moverel example */
int main()
 {
 int gd=DETECT,gm,error;
 char msg[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 moveto(100,100);
 putpixel(getx(), gety(), getmaxcolor()); /* plot a pixel at the CP */
 sprintf(msg, " (%d, %d)", getx(), gety());
 outtextxy(100,100, msg);
 moverel(200, 200);
 putpixel(getx(), gety(), getmaxcolor()); /* plot a pixel at the CP */
 sprintf(msg, " (%d, %d)", getx(), gety());
/* create and output a message at CP */
 outtext(msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,i;
 char msg[80];
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 moveto(100,100);
 putpixel(getx(), gety(), getmaxcolor());
 sprintf(msg, " (%d, %d)", getx(), gety());
 outtextxy(100,100, msg);
 moveto(200,200);
 putpixel(getx(), gety(), getmaxcolor());
 sprintf(msg, " (%d, %d)", getx(), gety());
 outtext(msg);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();

 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
int main()
 {
 int gd=DETECT,gm,error,stangle = 45, endangle = 135, radius = 200;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 setfillstyle(EMPTY_FILL, getmaxcolor()); /* set fill style and draw a pie slice */
 pieslice(getmaxx() / 2, getmaxy() / 2, stangle, endangle, radius);
 outtextxy(getmaxx()-250,getmaxy()-20,"www.CProgrammingExpert.com");
 getch();
 closegraph();
 return 0;
}
```

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
//outtext
int main()
 {
 int gd=DETECT,gm,error;
 initgraph(&gd,&gm,"f:\\tc\\bgi");
 error = graphresult();
 if (error != grOk)
 {
 printf("Graphics error occurred");
 printf("Press any key to halt:");
 getch();
 exit(1);
 }
 setbkcolor(BLUE);
 for (i=SOLID_FILL; i
```