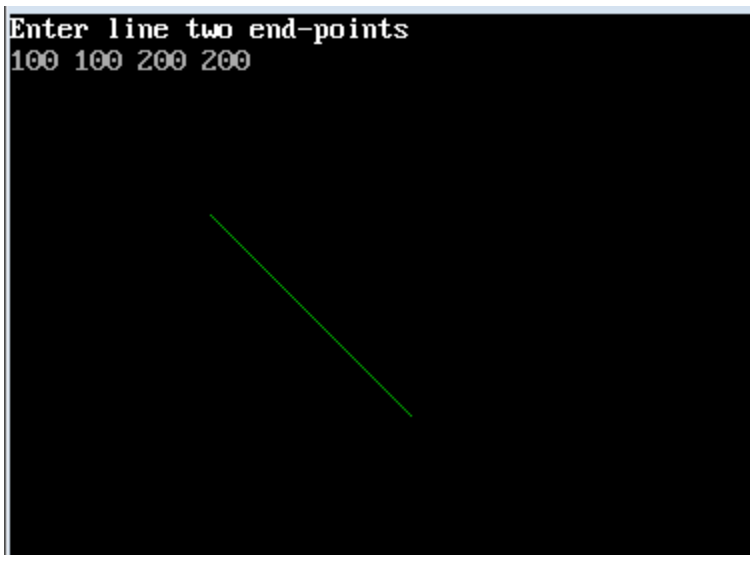
Bresenham's line drawing algorithm for positive slope less than or equal to 1.

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
void main()          // line with positive slope less than or equal to 1
{
int gd=DETECT,gm,x,y,dx,dy,p,x0,y0,x1,y1;
initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
printf("Enter line two end-points\n");
scanf("%d %d %d %d",&x0,&y0,&x1,&y1);
dx=x1-x0;
dy=y1-y0;
x=x0;
y=y0;
putpixel(x0,y0,GREEN);
p=2*dy-dx;
for(int i=0;i<dx;i++)
{
if(p<0)
{
x=x+1;
y=y;
putpixel(x,y,GREEN);
p=p+2*dy;
```

```
}
else
{
x=x+1;
y=y+1;
putpixel(x,y,GREEN);
p=p+2*dy-2*dx;


}


}
getch();
closegraph();
}
```

Output:

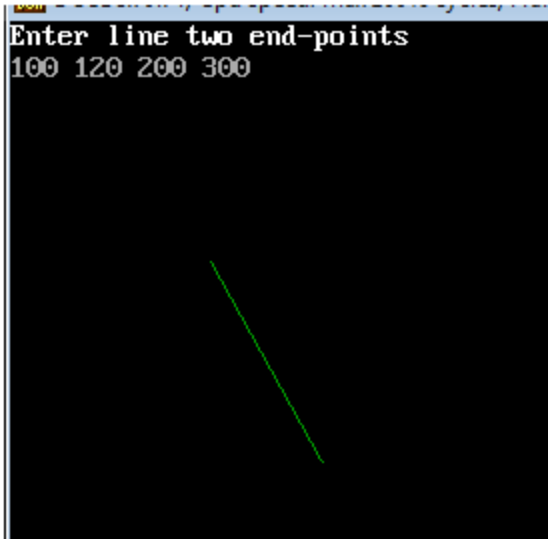


Bresenhams line drawing algorithm for positive slope greater than 1

```
#include<stdio.h>
#include<conio.h>
#include<graphics.h>
void main()          // line with positive slope greater than  1
{
int gd=DETECT,gm,x,y,dx,dy,p,x0,y0,x1,y1;
initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
printf("Enter line two end-points\n");
scanf("%d %d %d %d",&x0,&y0,&x1,&y1);
dx=x1-x0;
dy=y1-y0;
x=x0;
y=y0;
putpixel(x0,y0,GREEN);
p=2*dx-dy;
for(int i=0;i<dx;i++)
{
if(p<0)
{
x=x;
y=y+1;
putpixel(x,y,GREEN);
p=p+2*dx;
```

```
}
else
{
x=x+1;
y=y+1;
putpixel(x,y,GREEN);
p=p+2*dx-2*dy;

}

}
getch();
closegraph();
}
```

Output:



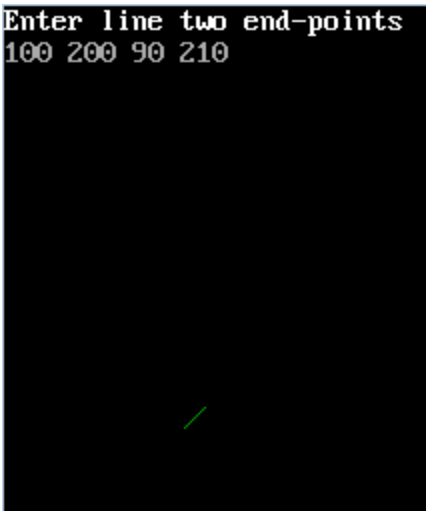

Line with negative slope less than or equal to 1

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
#include<graphics.h>
void main()          // line with negative slope less than or equal to 1
{
int gd=DETECT,gm,x,y,dx,dy,p,x0,y0,x1,y1;
initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
printf("Enter line two end-points\n");
scanf("%d %d %d %d",&x0,&y0,&x1,&y1);
dx=abs(x1-x0);
dy=abs(y1-y0);
x=x0;
```

```
y=y0;
putpixel(x0,y0,GREEN);
p=2*dy-dx;
for(int i=0;i<dx;i++)
{
if(p<0)
{
x=x-1;
y=y;
putpixel(x,y,GREEN);
p=p+2*dy;

}
else
{
x=x-1;
y=y+1;
putpixel(x,y,GREEN);
p=p+2*dy-2*dx;

}

}
getch();
closegraph();
```

}

Output:




Bresenhams line drawing algorithm with negative slope greater than 1

```
#include<stdio.h>
#include<conio.h>
#include<math.h>
#include<graphics.h>
void main()          // line with negative slope less than or equal to 1
{
int gd=DETECT,gm,x,y,dx,dy,p,x0,y0,x1,y1;
initgraph(&gd,&gm,"C:\\TURBOC3\\BGI");
printf("Enter line two end-points\n");
scanf("%d %d %d %d",&x0,&y0,&x1,&y1);
dx=abs(x1-x0);
dy=abs(y1-y0);
x=x0;
y=y0;
```

```
putpixel(x0,y0,GREEN);
p=2*dy-dx;
for(int i=0;i<dx;i++)
{
if(p<0)
{
x=x-1;
y=y;
putpixel(x,y,GREEN);
p=p+2*dy;

}
else
{
x=x-1;
y=y+1;
putpixel(x,y,GREEN);
p=p+2*dy-2*dx;

}

}
getch();
closegraph();
}
```

Output: