

```

1  //SHREYAS SAWANT D7A 55
2  //Implement Bresenham Line Drawing Algorithm(Thick/Dashed/Dotted)
3
4  #include "graphics.h"
5  #include "conio.h"
6  int main()
7  {
8      int gm,gd=DETECT,x1,y1,x2,y2,a;
9      printf("Enter initial x and y coordinates: ");
10     scanf("%d%d",&x1,&y1);
11     printf("Enter final x and y coordinates: ");
12     scanf("%d%d",&x2,&y2);
13     printf("\n1.Thick\n2.Dashed\n3.Dotted\n");
14     scanf("%d",&a);
15     int xn=abs(x2-x1),yn=abs(y2-y1);
16     int p=2*yn-xn;int i=0,x,y;
17     initgraph(&gd,&gm,(char*)"");int m=xn-1;
18
19     switch(a)
20     {
21     case 1:
22     {
23         int sx= x2<x1?-1:1;
24         int sy=y2<y1?-1:1;
25         if(xn==0)
26         {
27             for(int i=0;i<abs(yn-1);i++)
28             {
29                 if(p<0)
30                 {
31                     p=p+2*xn;
32                     y1+=sy;
33                     putpixel(x1,y1,15);
34                 }
35                 else
36                 {
37                     p=p+2*xn-2*yn;
38                     x1+=sx;
39                     y1+=sy;
40                     putpixel(x1,y1,15);
41                 }
42             }
43         }
44         else
45         {
46             for(int i=0;i<abs(xn-1);i++)
47             {
48                 if(p<0)
49                 {
50                     p=p+2*yn;
51                     x1+=sx;
52                     putpixel(x1,y1,15);
53                 }
54                 else
55                 {
56                     p=p+2*yn-2*xn;
57                     x1+=sx;
58                     y1+=sy;
59                     putpixel(x1,y1,15);
60                 }
61             }
62         }
63         break;
64     }
65
66     case 2:
67     {
68         int k=0;
69         int sx= x2<x1?-1:1;
70         int sy=y2<y1?-1:1;
71         if(xn==0)
72         {
73             while(y1!=y2)
74             {
75                 k++;
76                 if(k>20&&k<=25)
77                 {
78                     if(k==25)
79                     {
80                         k=0;
81                         if(p<0)
82                         {
83                             p=p+2*xn;
84

```

```

85         x1+=sx;
86     }
87     y1+=sy;
88     putpixel(x1,y1,0);
89 }
90 else
91 {
92     if (p<0)
93     {
94         p=p+2*xn;
95     }
96     else
97     {
98         p=p+2*xn-2*yn;
99         x1+=sx;
100     }
101     y1+=sy;
102
103     putpixel(x1,y1,15);
104 }
105
106 }
107
108
109 else
110 {
111     while (x1!=x2)
112     {
113         k++;
114         if (k>20&& k<=25)
115         {
116             if (k==25)
117             {
118                 k=0;
119                 if (p<0)
120                 {
121                     p=p+2*yn;
122                 }
123                 else
124                 {
125                     p=p+2*yn-2*xn;
126                     y1+=sy;
127                 }
128                 x1+=sx;
129                 putpixel(x1,y1,0);
130             }
131             else
132             {
133                 if (p<0)
134                 {
135                     p=p+2*yn;
136                 }
137                 else
138                 {
139                     p=p+2*yn-2*xn;
140                     y1+=sy;
141                 }
142                 x1+=sx;
143                 putpixel(x1,y1,15);
144             }
145         }
146     }
147
148     break;
149 }
150
151 case 3:
152 {
153     int sx= x2<x1?-2:2;
154     int sy=y2<y1?-2:2;
155     int k=0;
156     if (xn==0)
157     {
158         while (y1!=y2)
159         {
160             if (p<0)
161             {
162                 p=p+2*xn;
163             }
164             else
165             {
166                 p=p+2*xn-2*yn;
167                 x1+=sx;
168                 y1+=sy;
169                 putpixel(x1,y1,15);
170             }
171         }
172     }
173     else
174     {

```

```

169         while (x1!=x2)
170         {
171             if (p<0)
172             {
173                 p=p+2*yn;
174             }
175             else
176             {
177                 p=p+2*yn-2*xn;
178                 y1+=sy; }
179                 x1+=sx;
180                 putpixel(x1,y1,15);
181             }
182         }
183         break;
184     }
185
186 }
187 getch();
188 closegraph();
189 restorecrtmode();
190 }
191

```

"C:\Users\user\Desktop\SHREYAS\SEM II\Bresenham.exe"

Enter initial x and y coordinates: 100 200

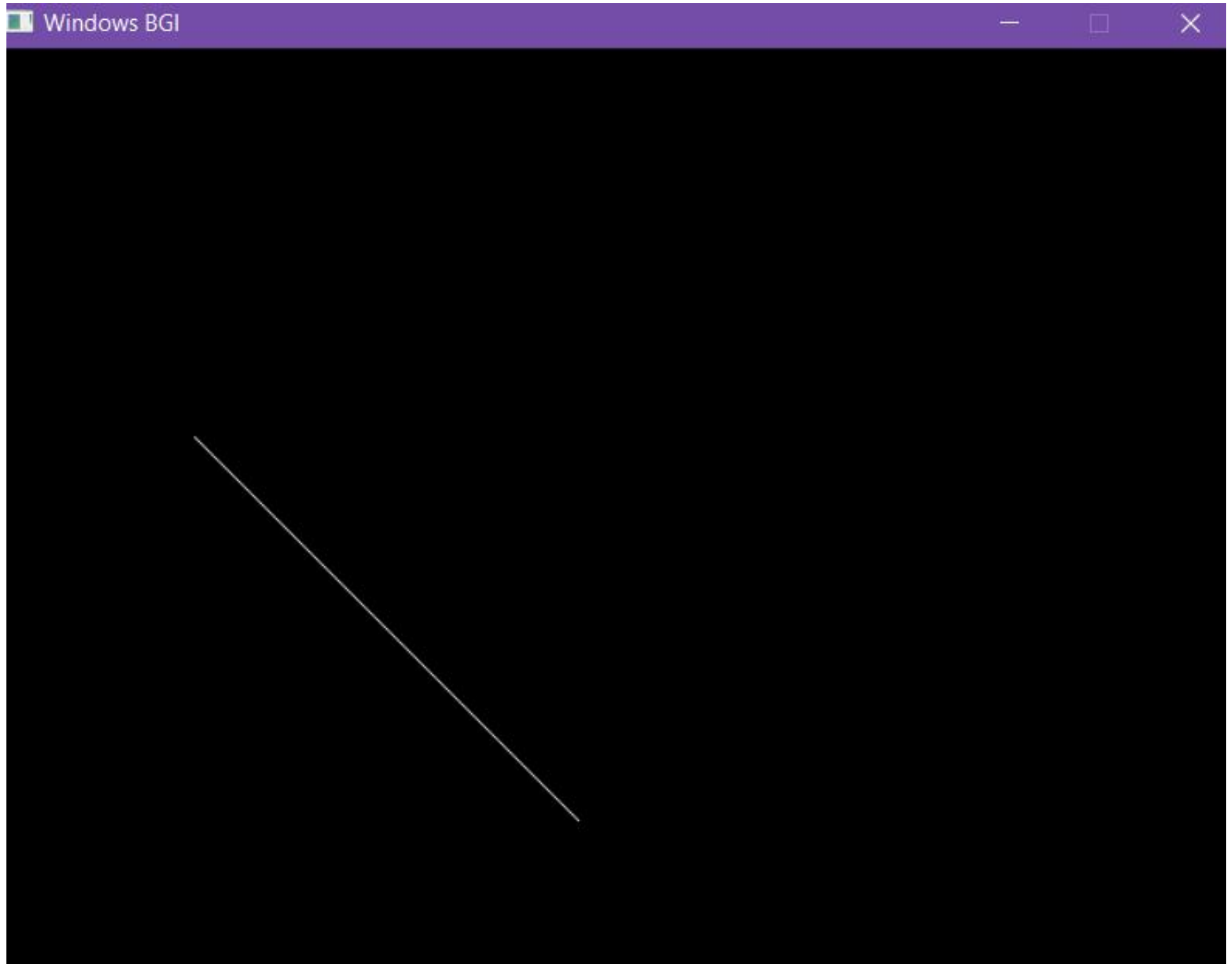
Enter final x and y coordinates: 300 400

1.Thick

2.Dashed

3.Dotted

1



"C:\Users\user\Desktop\SHREYAS\SEM II\Bresenham.exe"

Enter initial x and y coordinates: 50 50

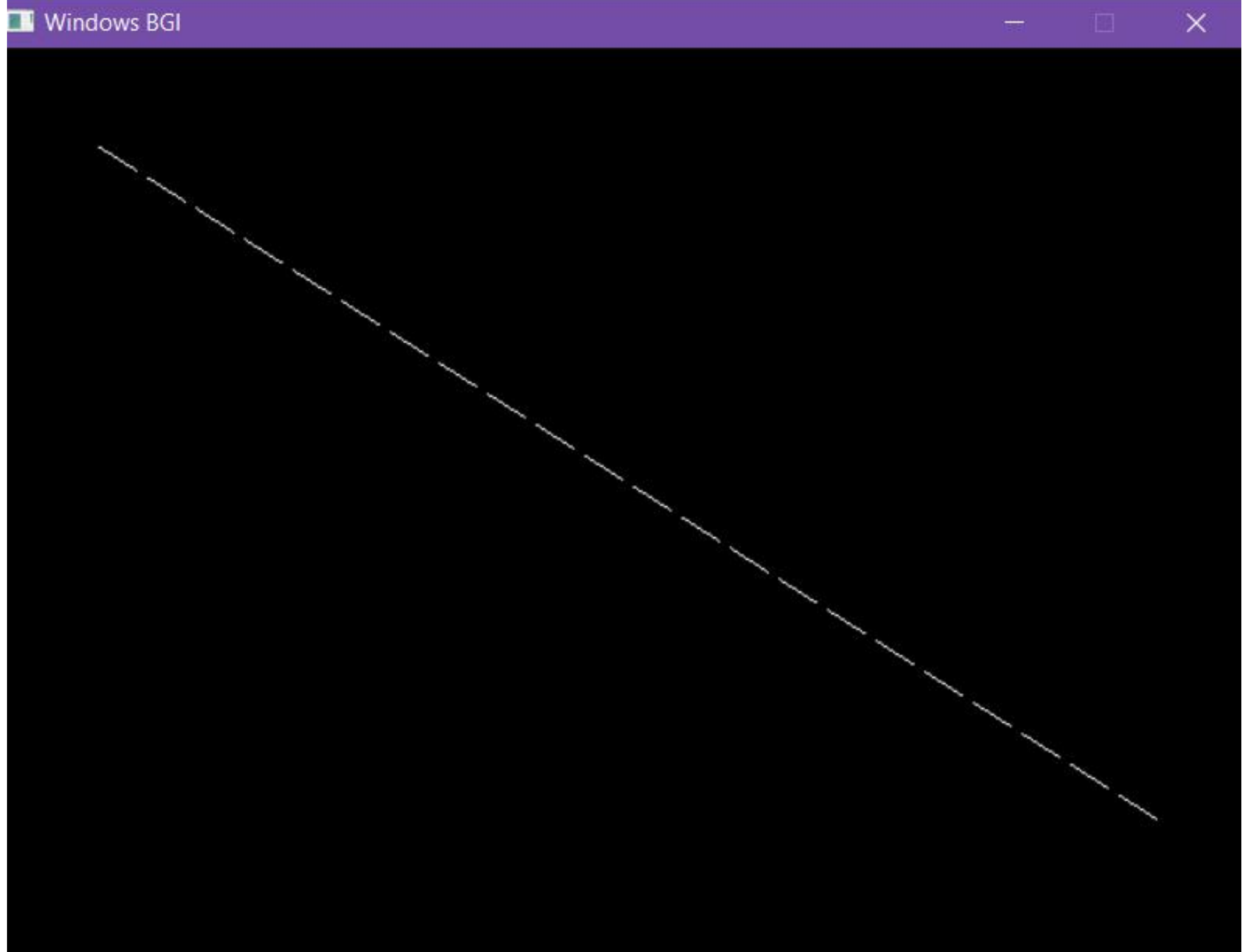
Enter final x and y coordinates: 600 400

1.Thick

2.Dashed

3.Dotted

2



"C:\Users\user\Desktop\SHREYAS\SEM II\Bresenham.exe"

Enter initial x and y coordinates: 100 100

Enter final x and y coordinates: 300 300

- 1.Thick
  - 2.Dashed
  - 3.Dotted
- 3



