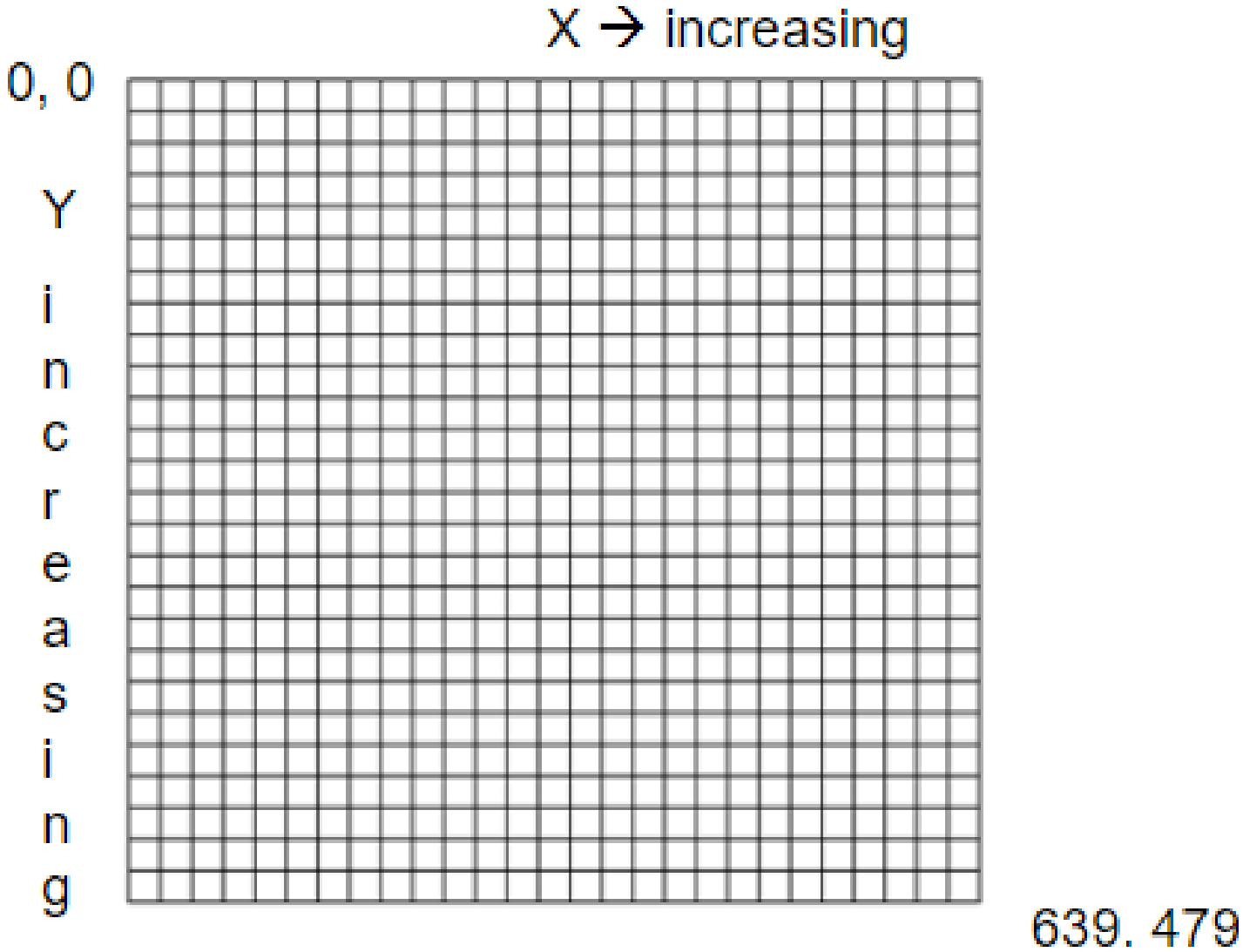
Section 1

Computer Graphics

Layout of graphics window



Initgraph()

- Library → `#include<graphics.h>`
- **General Form:**

```
int gdriver = DETECT, gmode, errorcode;
void initgraph(int *graphdriver, int *graphmode, char *pathtodriver);
```

Initgraph() → putting the system into graphics mode.

Closegraph()

- **Closegraph()** deallocates all memory allocated by the graphics system, then restores the screen to the mode it was in before you called initgraph.

getmaxx() & getmaxy()

- **getmaxx** returns the maximum x value for the current graphics mode.
- **getmaxy** returns the maximum y value for the current graphics mode.
- If we want something centered in the window:

```
int x = getmaxx() / 2;
int y = getmaxy() / 2;
```

setcolor()

- setcolor sets the current drawing color
- **General Form:**

```
void setcolor(int color);
```

Name	Value
BLACK	0
BLUE	1
GREEN	2
CYAN	3
RED	4
MAGENTA	5
BROWN	6
LIGHTGRAY	7
DARKGRAY	8
LIGHTBLUE	9
LIGHTGREEN	10
LIGHTCYAN	11
LIGHTRED	12
LIGHTMAGENTA	13
YELLOW	14
WHITE	15

Settextstyle()

- **settextstyle** sets the text font, the direction in which text is displayed, and the size of the characters.
- **General Form:**

```
void settextstyle(int font, int direction,int charsize);
```

direction: Font directions supported are horizontal Text and vertical text (rotated 90 degrees counterclockwise)

Name	Value
DEFAULT_FONT	0
TRIPLEX_FONT	1
SMALL_FONT	2
SANS_SERIF_FONT	3
GOTHIC_FONT	4
SCRIPT_FONT	5
SIMPLEX_FONT	6
TRIPLEX_SCR_FONT	7
COMPLEX_FONT	8
EUROPEAN_FONT	9
BOLD_FONT	10

outtextxy()

- **outtextxy** displays a text string in the viewport at the given position (x, y)
- **General Form:**

```
void outtextxy(int x, int y, char *textstring);
```

Setfillstyle()

- **Setfillstyle** setfillstyle sets the current fill pattern and fill color.
- **General Form:**

```
void setfillstyle(int pattern, int color);
```

Patterns	
EMPTY_FILL	LTBKSLASH_FILL
SOLID_FILL	HATCH_FILL
LINE_FILL	XHATCH_FILL
LTSLASH_FILL	INTERLEAVE_FILL
SLASH_FILL	WIDE_DOT_FILL
BKSLASH_FILL	CLOSE_DOT_FILL

floodfill()

- **Floodfill** fills an enclosed area on bitmap devices. (x,y) is a "seed point" within the enclosed area to be filled. The area bounded by the color border is flooded with the current fill pattern and fill color.
- **General Form:**

```
void floodfill(int x, int y, int border);
```

Line()

- **Line** draws a line in the current color, using the current line style and thickness between the two points specified, (x1,y1) and (x2,y2)
- **General Form:**

```
void line(int x1, int y1, int x2, int y2);
```

Circle()

- **Circle** draws a circle in the current drawing color with its center at (x,y) and the radius given by radius.
- **General Form:**

```
void circle(int x, int y, int radius);
```

rectangle()

- **rectangle** draws a rectangle in the current line style, thickness, and drawing color.(left,top) is the upper left corner of the rectangle, and (right,bottom) is its lower right corner.
- **General Form:**

```
void rectangle(int left, int top, int right, int bottom);
```

drawpoly()

- **Drawpoly** drawpoly draws a polygon with numpoints points, using the current line style and color.
- **General Form:**

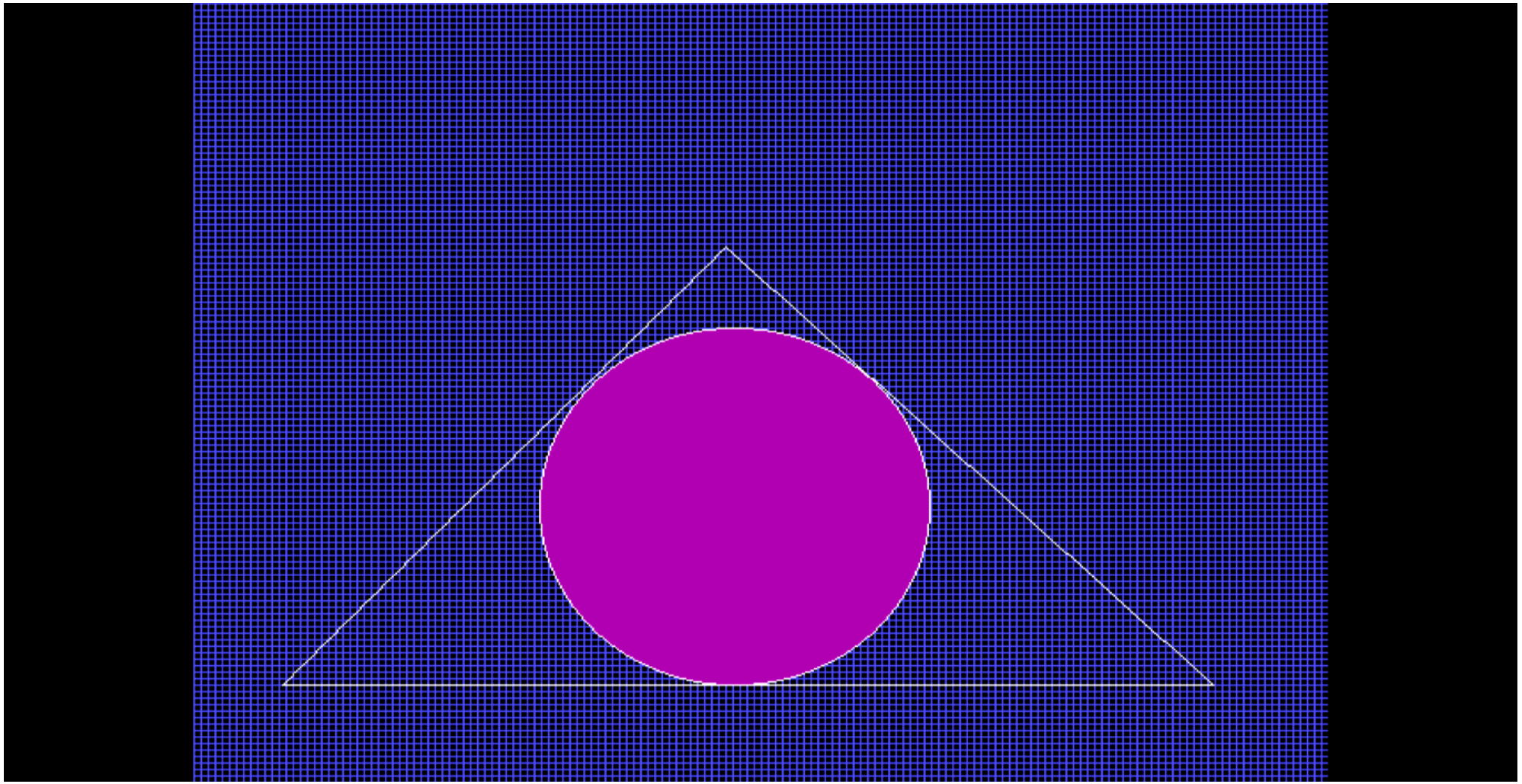
```
void drawpoly(int numpoints, int *polypoints);
```

pieslice()

- **Pieslice** pieslice draws and fills a pie slice centered at (x,y) with a radius given by radius. The slice travels from stangle to endangle.
- **General Form:**

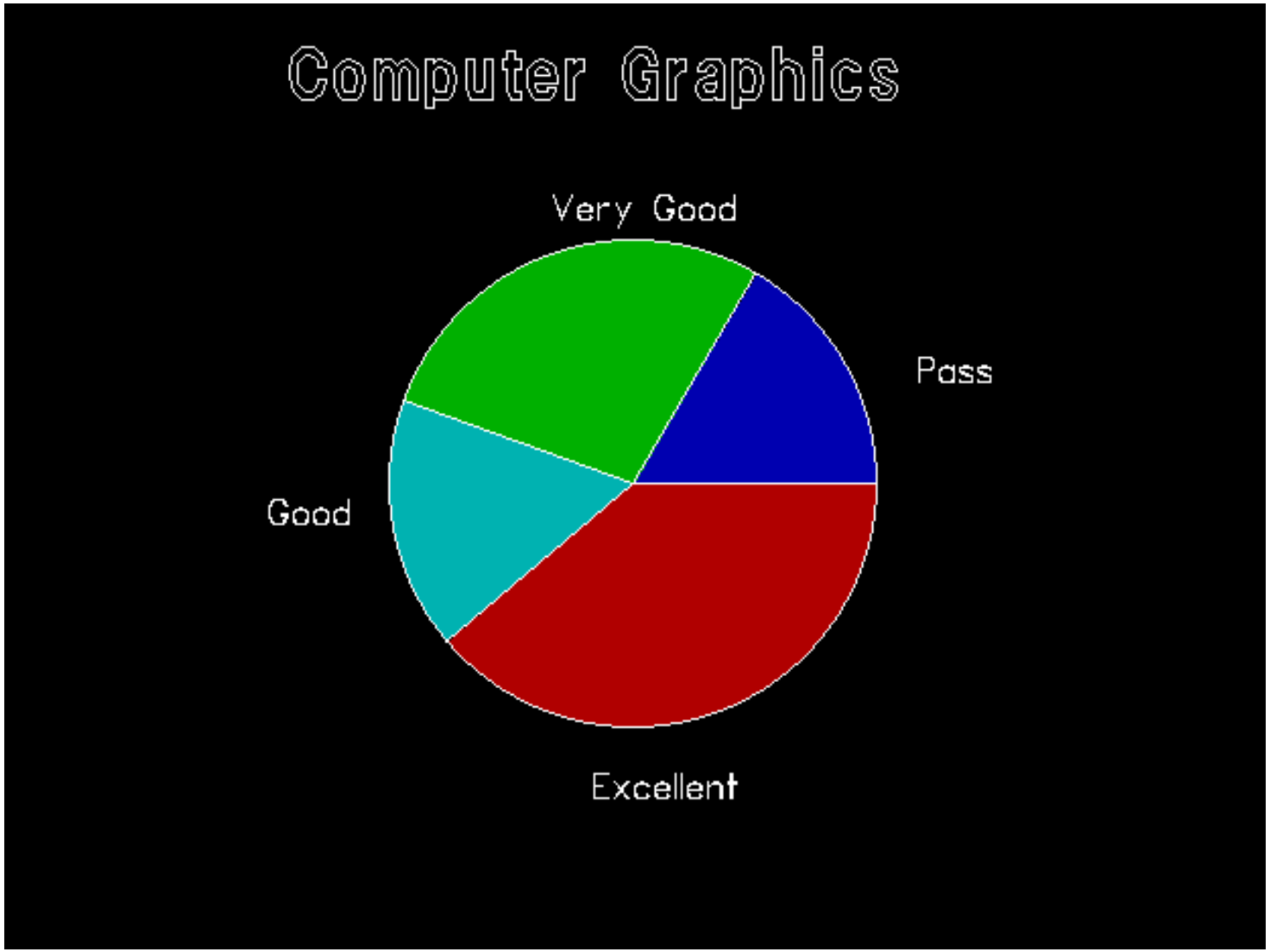
```
void pieslice(int x, int y, int stangle, int endangle, int radius);
```

Draw this shape



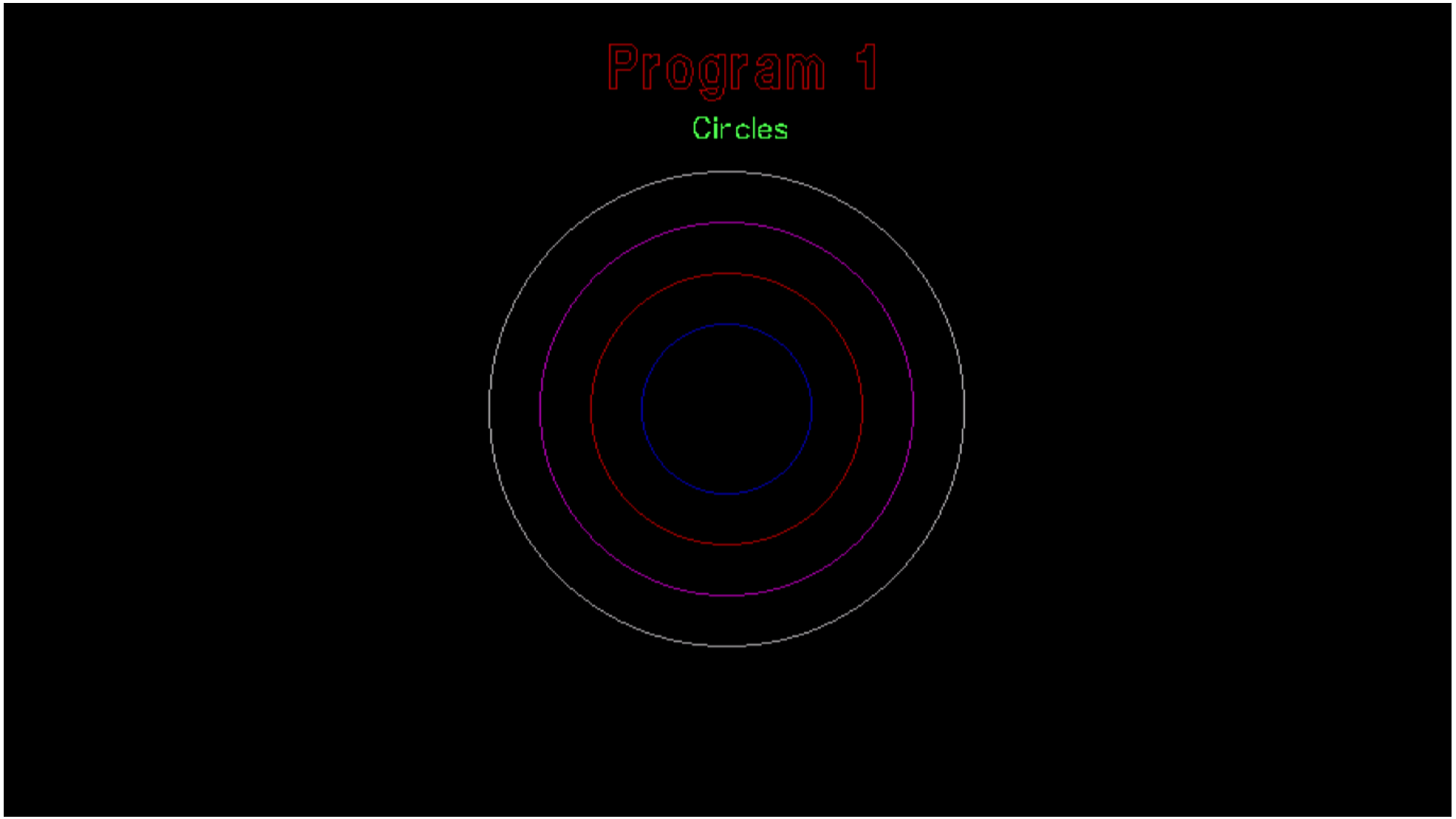
```
#include<graphics.h>
#include<conio.h>
void main()
{
int gdriver = DETECT, gmode, errorcode;
initgraph(&gdriver, &gmode, "c:\\tc\\bgi");
setfillstyle(7, 9);
floodfill(300, 150, 15);
line(300, 150, 50, 420);
line(300, 150, 575, 420);
line(50, 420, 575, 420);
setfillstyle(SOLID_FILL, 5);
circle(305, 310, 110);
floodfill(305, 310, WHITE);
getch();
closegraph();
}
```

Draw this shape



```
#include<graphics.h>
#include<conio.h>
void main()
{ int gdriver = DETECT, gmode, errorcode;
initgraph(&gdriver, &gmode, "C:\\TC\\BGI");
settextstyle(BOLD_FONT, HORIZ_DIR, 2);
outtextxy(150, 10, "Computer Graphics");
int x = getmaxx() / 2;
int y = getmaxy() / 2;
settextstyle(SANS_SERIF_FONT, HORIZ_DIR, 1);
setfillstyle(SOLID_FILL, 1);
pieslice(x, y, 0, 60, 120);
outtextxy(460, 170, "Pass");
setfillstyle(SOLID_FILL, 2);
pieslice(x, y, 60, 160, 120);
outtextxy(280, 90, "Very Good");
setfillstyle(SOLID_FILL, 3);
pieslice(x, y, 160, 220, 120);
outtextxy(140, 240, "Good");
setfillstyle(SOLID_FILL, 4);
pieslice(x, y, 220, 360, 120);
outtextxy(300, 375, "Excellent");
getch();
closegraph(); }
```

Draw this shape (sheet)



Draw this shape (sheet)