CG LAB 2

U18CO021: SAHIL BONDRE

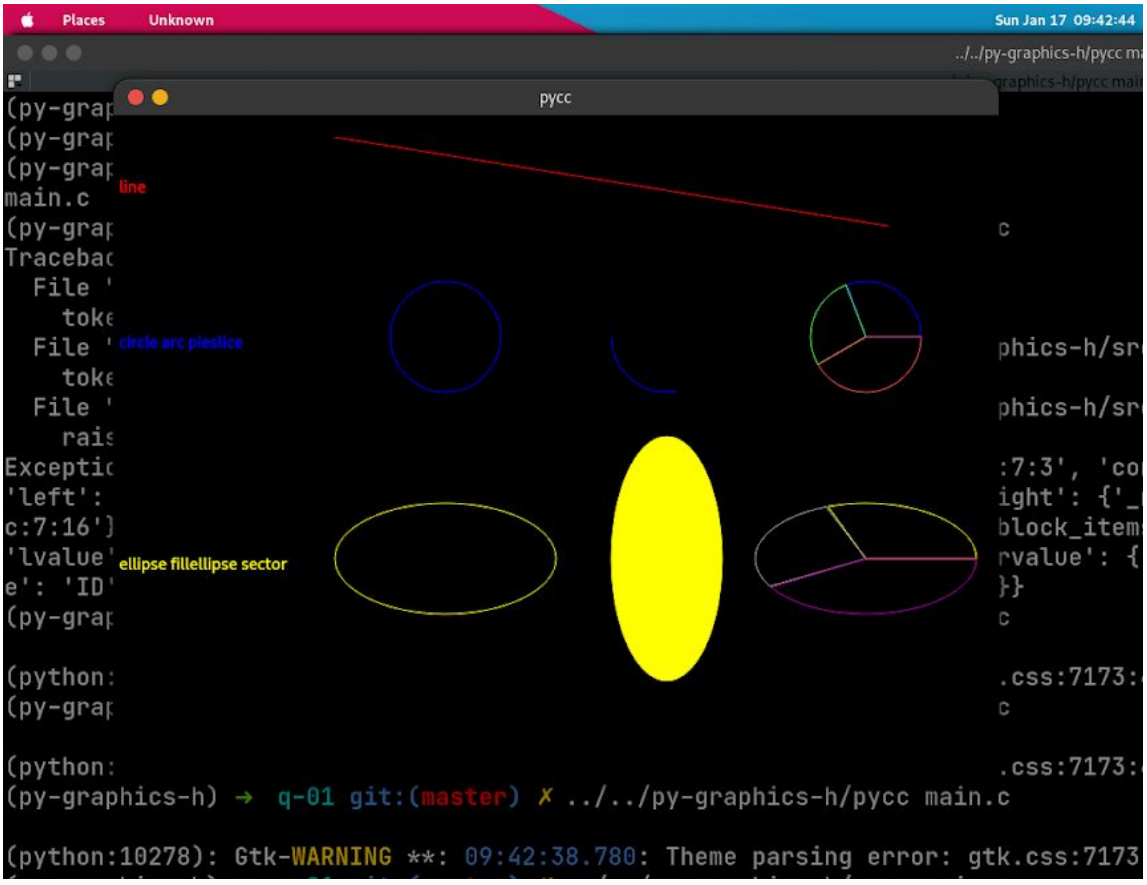
1. Explore different functions of graphics.h library

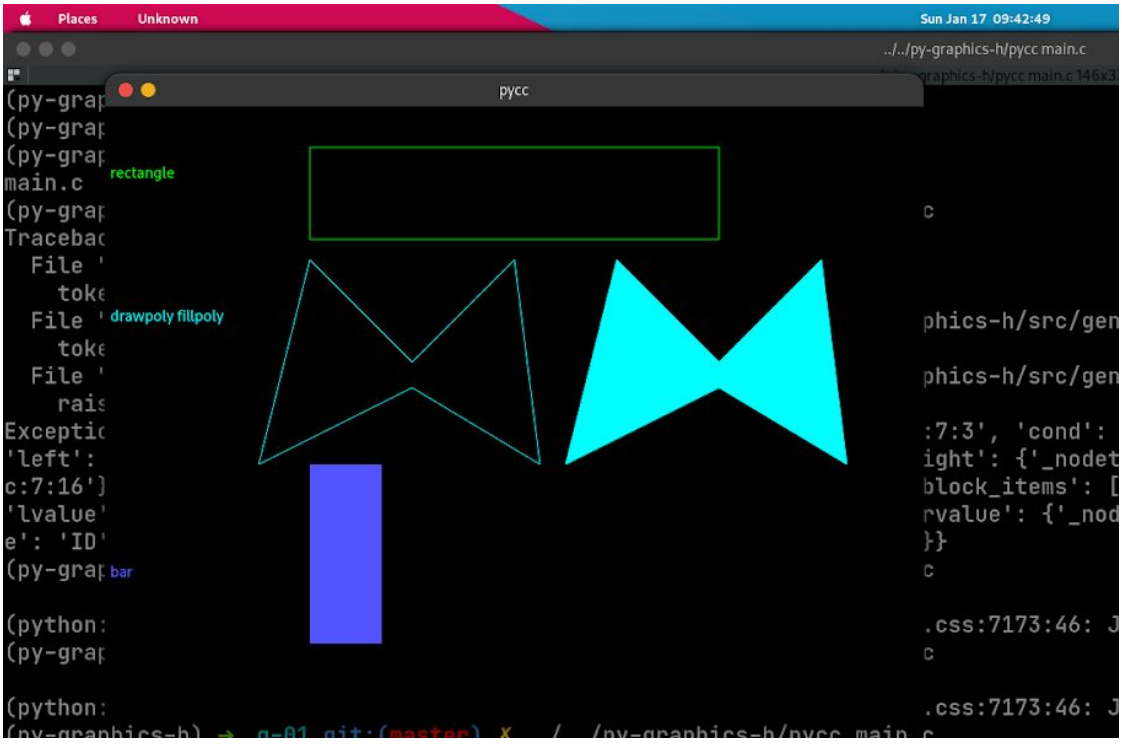
2. Write a program for the simulation of following functions:

initGraphics, arc, bar, circle, line, rectangle, ellipse, outtext, outtextxy, cleardevice, closegraph, drawpoly, ellipse, fillpoly, fillArc, fillRect, setFont, getFont, getarccoords, getbkcolor, getColor, setColor, pause, waitForClick, settextstyle, setlinestyle, setfillstyle, pieslice.

```c
#include "graphics.h"
#include <stdlib.h>

int main(int argc, char *argv[]) {
  int gdriver, gmode;
  int dppoints[14] = {200, 150, 300, 250, 400, 150, 425,
                      350, 300, 275, 150, 350, 200, 150};
  int fppoints[14] = {500, 150, 600, 250, 700, 150, 725,
                      350, 600, 275, 450, 350, 500, 150};
  gdriver = VGA;
  gmode = VGAMAX;
  initgraph(&gdriver, &gmode, "");
  printf("libgraph shapes and colors demo\n");

  setcolor(RED);
  setfontcolor(RED);
  outtextxy(5, 60, "line");
  line(200, 20, 700, 100);
  setcolor(BLUE);
  setfontcolor(BLUE);
  outtextxy(5, 200, "circle arc pieslice");
  circle(300, 200, 50);
  arc(500, 200, 180, 280, 50);
  pieslice(680, 200, 0, 110, 50);
  setcolor(LIGHTGREEN);
  pieslice(680, 200, 111, 210, 50);
  setcolor(LIGHTRED);
  pieslice(680, 200, 210, 360, 50);
```

```
  setcolor(YELLOW);
  setfontcolor(YELLOW);
  outtextxy(5, 400, "ellipse fillellipse sector");
  ellipse(300, 400, 0, 360, 100, 50);
  fillellipse(500, 400, 50, 110);
  sector(680, 400, 0, 110, 100, 50);
  setcolor(LIGHTGRAY);
  sector(680, 400, 111, 210, 100, 50);
  setcolor(MAGENTA);
  sector(680, 400, 211, 360, 100, 50);
  getch();
  cleardevice();
  setfontcolor(WHITE);
  printf("libgraph shapes and colors demo\n");
  setcolor(GREEN);
  setfontcolor(GREEN);
  outtextxy(5, 60, "rectangle");
  rectangle(200, 40, 600, 130);
  setcolor(CYAN);
  setfontcolor(CYAN);
  outtextxy(5, 200, "drawpoly fillpoly");
  drawpoly(7, dppoints);
  fillpoly(7, fppoints);
  setcolor(LIGHTBLUE);
  setfontcolor(LIGHTBLUE);
  outtextxy(5, 450, "bar");
  bar(200, 350, 270, 525);
  bar3d(500, 350, 570, 525, 30, 1);
  getch();

  closegraph();
  return (0);
}
```

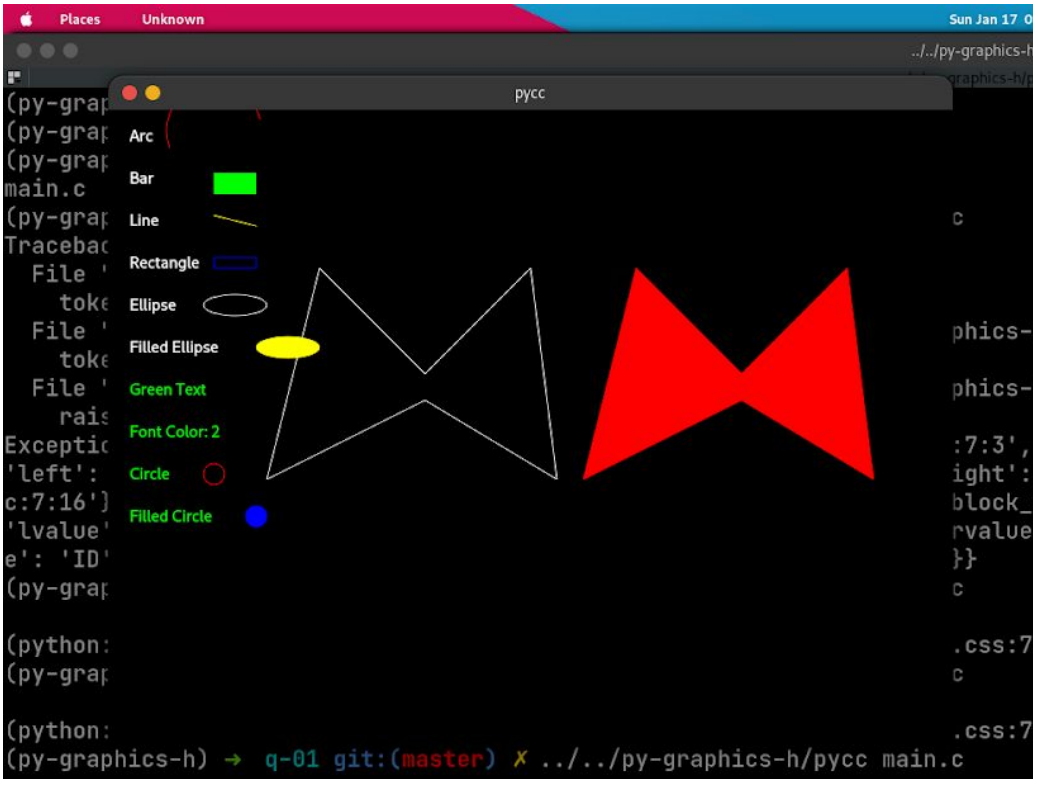





```
#include "graphics.h"
#include <stdio.h>
```

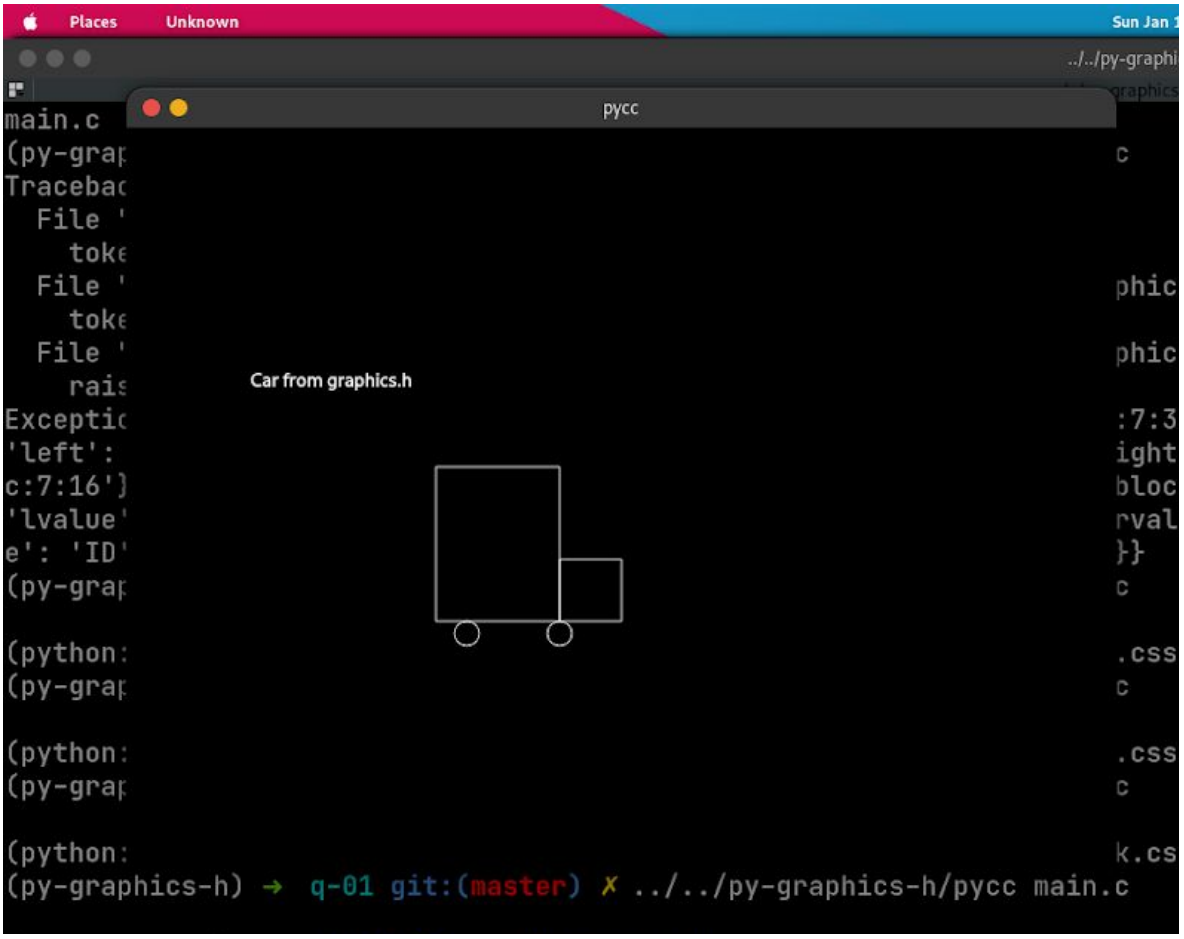
```
int main(int argc, char const *argv[]) {
  int gdriver = DETECT;
  int gmode = VGAMAX;
  int x = 20;
  int y = 20;
  int incr_y = 40;
  int dppoints[14] = {200, 150, 300, 250, 400, 150, 425,
                      350, 300, 275, 150, 350, 200, 150};
  int fppoints[14] = {500, 150, 600, 250, 700, 150, 725,
                      350, 600, 275, 450, 350, 500, 150};

  initgraph(&gdriver, &gmode, "");

  outtextxy(x, y, "Arc");
  setcolor(RED);
  arc(x + 80, y, 15, 200, 45);
  y += incr_y;

  outtextxy(x, y, "Bar");
  setcolor(GREEN);
  bar(x + 80, y, x + 120, y + 20);
  y += incr_y;

  setcolor(YELLOW);
  outtextxy(x, y, "Line");
  line(x + 80, y, x + 120, y + 10);
  y += incr_y;

  setcolor(BLUE);
  outtextxy(x, y, "Rectangle");
  rectangle(x + 80, y, x + 120, y + 10);
  y += incr_y;

  setcolor(WHITE);
  outtextxy(x, y, "Ellipse");
  ellipse(x + 100, y + 5, 0, 360, 30, 10);
  y += incr_y;

  drawpoly(7, dppoints);
  setcolor(RED);
  fillpoly(7, fppoints);

  setcolor(YELLOW);
  outtextxy(x, y, "Filled Ellipse");
  fillellipse(x + 150, y + 5, 30, 10);
  y += incr_y;
```

```
  setfontcolor(GREEN);
  outtextxy(x, y, "Green Text");
  y += incr_y;

  int font_color = getfontcolor();
  char buf[100];
  snprintf(buf, 100, "Font Color: %d", font_color);
  outtextxy(x, y, buf);
  y += incr_y;

  outtextxy(x, y, "Circle");
  setcolor(RED);
  circle(x + 80, y + 5, 10);
  y += incr_y;

  outtextxy(x, y, "Filled Circle");
  setcolor(BLUE);
  fillellipse(x + 120, y + 5, 10, 10);
  y += incr_y;

  getchar();
  closegraph();
  return 0;
}
```



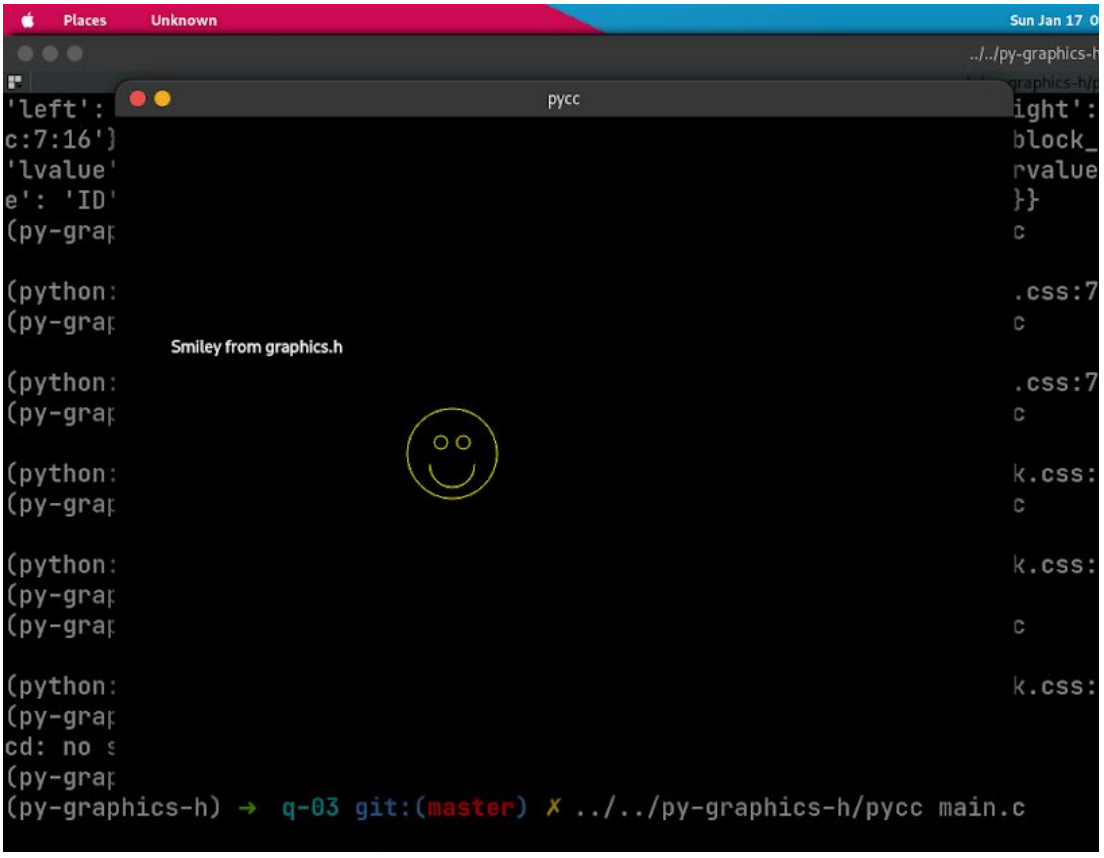
3. Write a program to design a car using predefined functions of graphics.h.

```c
#include "graphics.h"
#include <stdlib.h>

int main() {
  int graphicdriver = DETECT, graphicmode = VGAMAX;
  initgraph(&graphicdriver, &graphicmode, "");
  outtextxy(100, 100 + 100, "Car from graphics.h");

  rectangle(350, 275, 250, 400);
  rectangle(350, 350, 400, 400);
  circle(350, 410, 10);
  circle(275, 410, 10);
  getch();
  return 0;
}
```



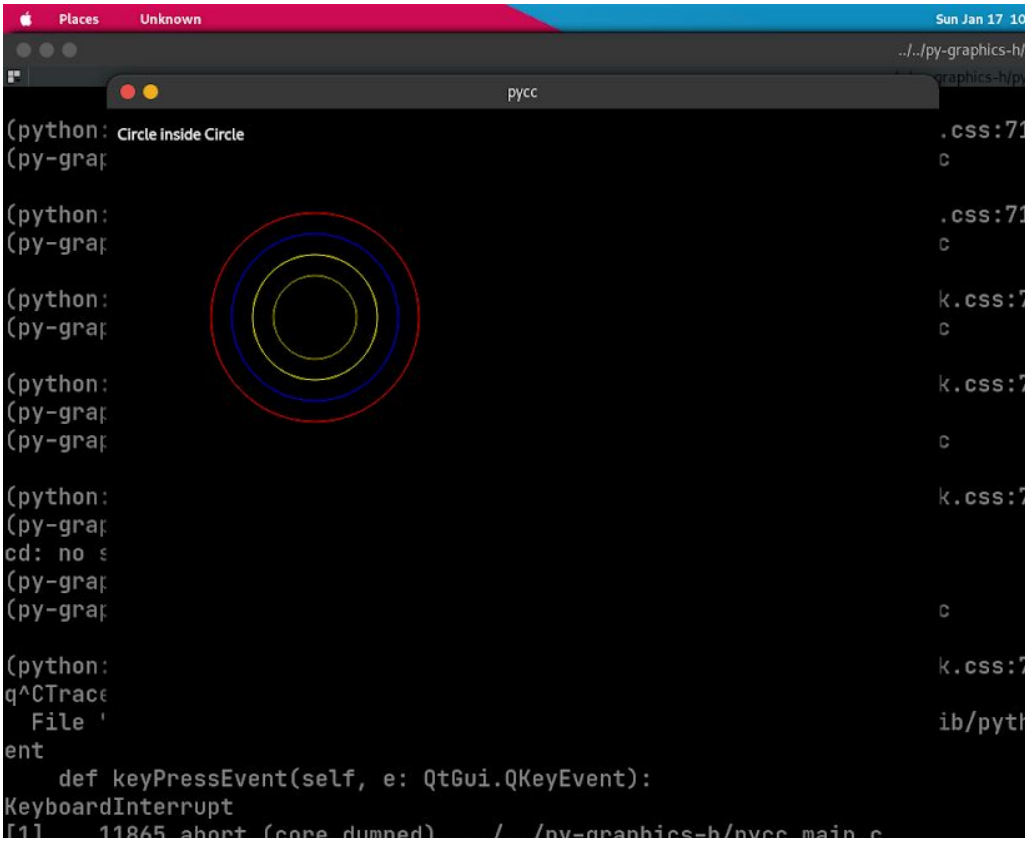
4. Write a program to design a smiley face using graphics.h functions.

```c
#include "graphics.h"
#include <stdio.h>

int main() {
  int gr = DETECT, gm = VGAMAX;
  initgraph(&gr, &gm, "");
  // Printing message for user
  outtextxy(50, 200, "Smiley from graphics.h");
  // for head
  setcolor(YELLOW);
  circle(300, 300, 40);
  // for left eye
  circle(290, 290, 6);
  // for right eye
  circle(310, 290, 6);
  // for smiley lips
  arc(300, 310, 360, 180, 20);
  getch();
  return 0;
}
```



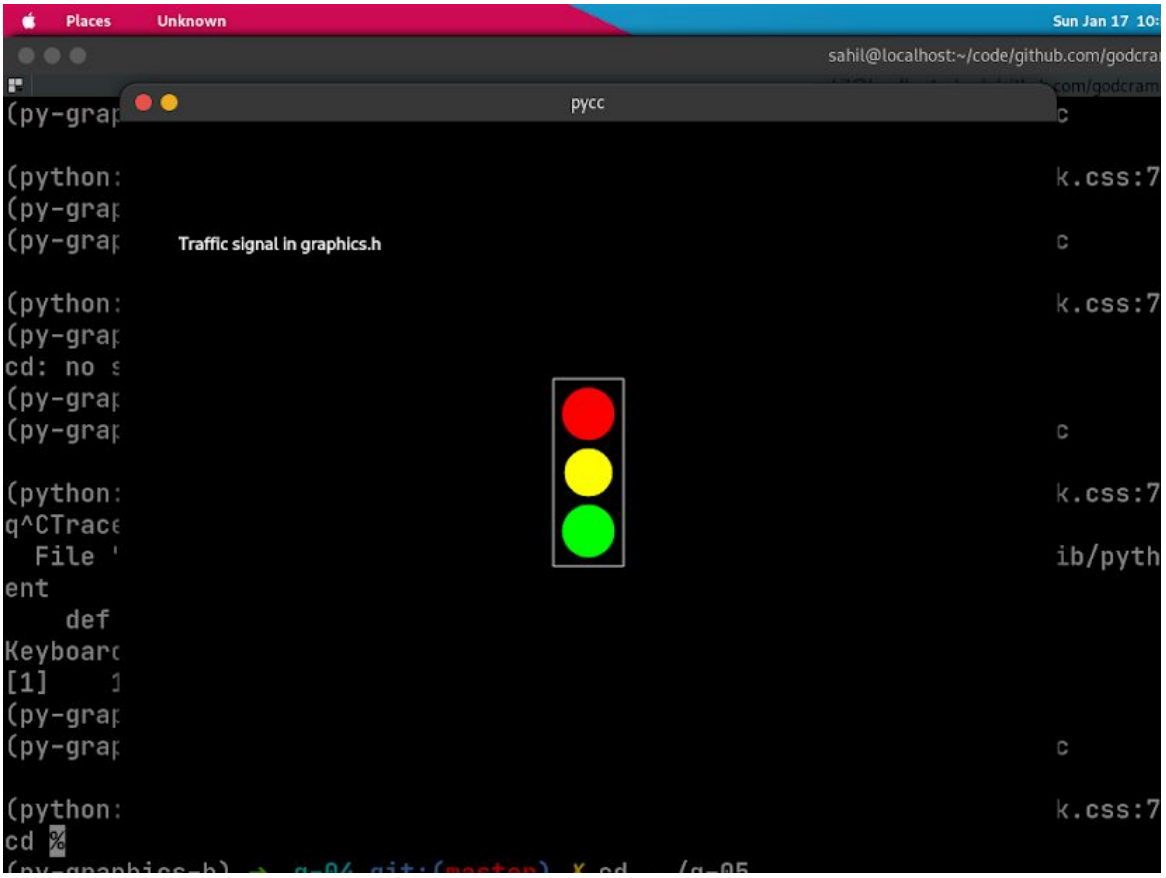
5. Write a program to create circles inside various circles using graphics.h functions.

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

int main() {
  int graphicdriver = DETECT, graphicmode = VGAMAX;
  initgraph(&graphicdriver, &graphicmode, "");
  outtextxy(10, 10 + 10, "Circle inside Circle");
  // creating circle inside circle
  setcolor(RED);
  circle(200, 200, 100);
  setcolor(BLUE);
  circle(200, 200, 80);
  setcolor(YELLOW);
  circle(200, 200, 60);
  setcolor(BROWN);
  circle(200, 200, 40);
  getch();
  return 0;
}
```



6. Write a program to design traffic signal using graphics.h functions.

```c
#include "graphics.h"
#include <stdio.h>

int main() {
  int graphicdriver = DETECT, graphicmode = VGAMAX;
  initgraph(&graphicdriver, &graphicmode, "");
  outtextxy(50, 50 + 50, "Traffic signal in graphics.h");
  // initilizing variables
  int middlex, middley;
  // getting middle x and y
  middlex = getmaxx() / 2;
  middley = getmaxy() / 2;
  // setting color as white for the outline
  setcolor(WHITE);
  rectangle(middlex - 30, middley - 80, middlex + 30, middley + 80);
  setcolor(RED);
  fillcircle(middlex, middley - 50, 22);
  // filling red color to signify stop sign
  floodfill(middlex, middley - 50, RED);
  // setting color as white for the outline
  setcolor(YELLOW);
  fillcircle(middlex, middley, 20);
  // filling yellow color to signify ready sign
  floodfill(middlex, middley, YELLOW);
  // setting white color for outline
  setcolor(GREEN);
  fillcircle(middlex, middley + 50, 22);
  // filling green color to signify go sign
  floodfill(middlex, middley + 50, GREEN);
  getch();
  return 0;
}
```


Places
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sahil@localhost:~/code/github.com/godcra
pycc
Traffic signal in graphics.h