设计思路：
实现蛇、事物的显示，通过 draw 实现
实现蛇的增长，通过坐标增加，移动一个点，就将该店设为头，若该点为事物点，则不做操作，否则删除尾部。
实现蛇的方向，通过 KEYDOWN 的值
蛇的死亡：撞到墙或者自身
食物随机出现：时钟对象，random 模块
背景的实现：pygame.image.load(file_name)

```
import random
import pygame
import sys

from pygame.locals import *
snake_speed =15
windows_width = 800
windows_height = 600
cell_size = 20   #贪吃蛇身体方块大小

map_width=int(windows_width/cell_size)
map_height=int(windows_height/cell_size)

#定义颜色
white=(255,255,255)
black=(0,0,0)
gray = (230, 230, 230)
dark_gray = (40, 40, 40)
dark_green = (0, 155, 0)
green = (0, 255, 0)
red = (255, 0, 0)
blue = (0, 0, 255)
dark_blue =(0,0, 139)



#定义方向
UP=1
DOWN=2
LEFT=3
RIGHT=4

HEAD=0 #贪吃蛇头部下标
def main():
    pygame.init() #init
    snake_speed_clock=pygame.time.Clock()#创建 pygame 的时钟对象
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    screen=pygame.display.set_mode((windows_width,windows_height)) #创建屏幕
    screen.fill(white)
    pygame.display.set_caption('小王的超级贪吃蛇游戏') #设置标题
    show_start_info(screen) #欢迎信息
    while True:
        running_game(screen, snake_speed_clock)
        show_gameover_info(screen)



def running_game(screen,snake_speed_clock):
    startx=random.randint(3,map_width-8)
    starty=random.randint(3,map_height-8)    #randint(a,b)生成 a,b 之间的一个任意数
    snake_coords=[{"x":startx,'y':starty}, {'x': startx - 1, 'y': starty}, {'x': startx - 2, 'y': starty}]
    #初始身体坐标
    direction =RIGHT   #c 初始移动速度为 RIGHT
    food = get_random_location() #事物的随机位置
    background=pygame.image.load('beijing.jpeg').convert()
    while True:
        for event in pygame.event.get():
            if event.type ==QUIT:
                terminate()#用户按下关闭时，退出游戏
            elif event.type ==KEYDOWN:#按下键盘时
                if(event.key==K_LEFT or event.key == K_a)and direction!=RIGHT:
                    direction=LEFT
                elif(event.key==K_RIGHT or event.key == K_d)and direction!=LEFT:
                    direction=RIGHT
                elif(event.key==K_UP or event.key == K_w)and direction!=DOWN:
                    direction=UP
                elif(event.key==K_DOWN or event.key == K_s)and direction!=UP:
                    direction=DOWN
                elif event.key==K_ESCAPE:#键入 esc 退出
                    terminate()
        move_snake(direction,snake_coords)
        #移动蛇
        ret = snake_is_alive(snake_coords)
        if not ret :
            break       #蛇死了，游戏结束，下一轮
        snake_is_eat_food(snake_coords,food)
      #判断蛇是否吃到 food
        screen.blit(background,(0,0))
      #draw_grid(screen)
        draw_snake(screen,snake_coords)
        draw_food(screen,food)
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            draw_score(screen,len(snake_coords)-3)#初始长度 3
            pygame.display.update()
            snake_speed_clock.tick(snake_speed)#设置最高帧率为 snake_speed

def draw_food(screen,food):
    x=food['x']*cell_size
    y=food['y']*cell_size
    appleRect=pygame.Rect(x,y,cell_size,cell_size)
    pygame.draw.rect(screen,red,appleRect)
    appleinnerRect=pygame.Rect(x+3,y+3,cell_size-7,cell_size-7)
    pygame.draw.rect(screen,dark_green,appleinnerRect)

def draw_snake(screen,snake_coords):
    for coord in snake_coords:
        x=coord['x']*cell_size
        y=coord['y']*cell_size
        woemSegmentRect=pygame.Rect(x,y,cell_size,cell_size)
        pygame.draw.rect(screen,dark_blue,woemSegmentRect)
        woeminnerSegmentRect=pygame.Rect(x+4,y+4,cell_size-8,cell_size-8)
        pygame.draw.rect(screen,blue,woeminnerSegmentRect)

#画网格
#def draw_grid(screen):
def move_snake(direction,snake_coords):
    if direction ==UP:
        newHead={'x': snake_coords[HEAD]['x'], 'y': snake_coords[HEAD]['y'] - 1}
    elif direction == DOWN:
        newHead = {'x': snake_coords[HEAD]['x'], 'y': snake_coords[HEAD]['y'] + 1}
    elif direction == LEFT:
        newHead = {'x': snake_coords[HEAD]['x'] - 1, 'y': snake_coords[HEAD]['y']}
    elif direction == RIGHT:
        newHead = {'x': snake_coords[HEAD]['x'] + 1, 'y': snake_coords[HEAD]['y']}
    snake_coords.insert(0,newHead)#插入头

def snake_is_alive(snake_coords):
    tag=True
    if snake_coords[HEAD]['x'] == -1 or snake_coords[HEAD]['x'] == map_width or
snake_coords[HEAD]['y'] == -1 or \
            snake_coords[HEAD]['y'] == map_height:
        tag = False  # 蛇碰壁啦
    for snake_body in snake_coords[1:]:
        if snake_body['x'] == snake_coords[HEAD]['x'] and snake_body['y'] ==
snake_coords[HEAD]['y']:
            tag = False # 蛇碰到自己身体啦
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    return tag
def snake_is_eat_food(snake_coords,food):
    if snake_coords[HEAD]['x'] == food['x'] and snake_coords[HEAD]['y'] == food['y']:
        food['x'] = random.randint(0, map_width - 1)
        food['y'] = random.randint(0, map_height - 1) #  实物位置重新设置
    else:
        del snake_coords[-1]   #  如果没有吃到实物，就向前移动，那么尾部一格删掉
#食物随机生成
def get_random_location():
    return {'x': random.randint(0, map_width - 1), 'y': random.randint(0, map_height - 1)}
#开始信息
def show_start_info(screen):
    font = pygame.font.Font('myfont.ttf',40)
    tip = font.render('按任意键开始游戏!',True,(0,0,0))
    tip1 = font.render('小王的贪吃蛇', True, (0, 0, 0))
    gamestart =pygame.image.load('start.tif')
    screen.blit(gamestart,(60,30))
    screen.blit(tip,(250,550))
    screen.blit(tip1, (280, 480))
    pygame.display.update()
    while True:
        for event in pygame.event.get():
            if event.type==QUIT:
                terminate()
            elif event.type ==K_ESCAPE:
                terminate()
            elif event.type==KEYDOWN:
                return
#结束信息
def show_gameover_info(screen):
    font=pygame.font.Font('myfont.ttf',40)
    tip = font.render('按 Q 或 ESC 退出游戏，按任意键重新开始游戏！',True,(65,105,225))
    gameover =pygame.image.load('gameover.png')
    screen.blit(gameover,(100,100))
    screen.blit(tip,(80,450))
    pygame.display.update()
    while True:
        for event in pygame.event.get():
            if event.type == QUIT:
                terminate()   #  终止程序
            elif event.type == KEYDOWN:
                if event.key == K_ESCAPE or event.key == K_q:   #  终止程序
                    terminate()   #  终止程序
                else:
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                                return    # 结束此函数，重新开始游戏
def draw_score(screen,score):
    font = pygame.font.Font('myfont.ttf', 30)
    scoreSurf = font.render('得分: %s' % score, True, green)
    scoreRect = scoreSurf.get_rect()
    scoreRect.topleft = (windows_width - 120, 10)
    screen.blit(scoreSurf, scoreRect)

#程序终止
def terminate():
    pygame.quit()
    sys.exit()

main()
```