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Курс «Парадигмы и конструкции языков программирования»
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Текст программ.

good_snake.py:

```
import pygame
from random import randrange

RES = 600
SIZE = 50

x, y = randrange(SIZE, RES - SIZE, SIZE), randrange(SIZE, RES - SIZE, SIZE)
apple = randrange(SIZE, RES - SIZE, SIZE), randrange(SIZE, RES - SIZE, SIZE)
length = 1
snake = [(x, y)]
dx, dy = 0, 0
fps = 60
dirs = {'W': True, 'S': True, 'A': True, 'D': True, }
score = 0
speed_count, snake_speed = 0, 10

pygame.init()
surface = pygame.display.set_mode([RES, RES])
clock = pygame.time.Clock()
font_score = pygame.font.SysFont('Arial', 26, bold=True)
font_end = pygame.font.SysFont('Arial', 66, bold=True)
#img = pygame.image.load('1.jpg').convert()

def close_game():
    for event in pygame.event.get():
        if event.type == pygame.QUIT:
            exit()

while True:
    #surface.blit(img, (0, 0))
    surface.fill('Black')
    [pygame.draw.rect(surface, pygame.Color('green'), (i, j, SIZE - 1, SIZE - 1))
    for i, j in snake]
    pygame.draw.rect(surface, pygame.Color('red'), (*apple, SIZE, SIZE))
    render_score = font_score.render(f'SCORE: {score}', 1,
    pygame.Color('orange'))
    surface.blit(render_score, (5, 5))
    speed_count += 0.5
    if not speed_count % snake_speed:
        x += dx * SIZE
        y += dy * SIZE
        snake.append((x, y))
        snake = snake[-length:]
    # eating food
    if snake[-1] == apple:
        apple = randrange(SIZE, RES - SIZE, SIZE), randrange(SIZE, RES - SIZE,
SIZE)
        length += 1
```

```

        score += 1
        snake_speed -= 1
        snake_speed = max(snake_speed, 4)
        if x < 0 or x > RES - SIZE or y < 0 or y > RES - SIZE or len(snake) !=
len(set(snake)):
            while True:
                render_end = font_end.render('GAME OVER', 1, pygame.Color('White'))
                surface.blit(render_end, (20, 100))
                render_res = font_end.render('To restart press R', 1,
pygame.Color('Blue'))
                surface.blit(render_res, (20, 200))
                render_res = font_end.render('Thank you!', 1, pygame.Color('Red'))
                surface.blit(render_res, (20, 300))
                pygame.display.flip()
                clock.tick(fps)
                close_game()
                key = pygame.key.get_pressed()
                if key[pygame.K_r]:
                    x, y = randrange(SIZE, RES - SIZE, SIZE), randrange(SIZE, RES -
SIZE, SIZE)
                    apple = randrange(SIZE, RES - SIZE, SIZE), randrange(SIZE, RES -
SIZE, SIZE)
                    length = 1
                    snake = [(x, y)]
                    dx, dy = 0, 0
                    fps = 60
                    dirs = {'W': True, 'S': True, 'A': True, 'D': True, }
                    score = 0
                    speed_count, snake_speed = 0, 10
                    break

pygame.display.flip()
clock.tick(fps)
close_game()
key = pygame.key.get_pressed()
if key[pygame.K_w]:
    if dirs['W']:
        dx, dy = 0, -1
        dirs = {'W': True, 'S': False, 'A': True, 'D': True, }
elif key[pygame.K_s]:
    if dirs['S']:
        dx, dy = 0, 1
        dirs = {'W': False, 'S': True, 'A': True, 'D': True, }
elif key[pygame.K_a]:
    if dirs['A']:
        dx, dy = -1, 0
        dirs = {'W': True, 'S': True, 'A': True, 'D': False, }
elif key[pygame.K_d]:
    if dirs['D']:
        dx, dy = 1, 0

```

```
dirs = {'W': True, 'S': True, 'A': False, 'D': True, }
```

Примеры работы.

