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1 # Pygame configuration module
2
3 # Define color constants
4 WHITE = (255, 255, 255)
5 BLACK = (0, 0, 0)
6 BLUE = (0, 0, 255)
7 GREEN = (0, 255, 0)
8 BROWN = (139, 69, 19)
9 YELLOW = (255, 255, 0)
10 RED = (255, 0, 0)
11 PURPLE = (191, 64, 191)
12
13 # Game window dimensions
14 WINDOW_WIDTH = 800
15 WINDOW_HEIGHT = 600
16
17 # Window title (caption)
18 # Update the window title as needed
19 TITLE = "Pygame Shapes Using Dictionaries"
20
21 # Frame rate (frames per second)
22 FPS = 60
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```
1 # External module containing functions for drawing various shapes
2 # shapes.py
3
4 import pygame
5
6 def draw_circle(screen, shape):
7     pygame.draw.circle(screen, shape['color'], shape['position'], shape['
radius'])
8
9 def draw_rect(screen, shape):
10     pygame.draw.rect(screen, shape['color'], (shape['position'][0], shape['
position'][1], shape['width'], shape['height']))
11
12 def draw_line(screen, shape):
13     pygame.draw.line(screen, shape['color'], shape['start_pos'], shape['
end_pos'], shape['width'])
14
15
```

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1 # Pygame game template
2
3 import pygame
4 import sys
5 import config # Import the config module
6 import random
7 import shapes # Import the shapes module
8
9 def init_game():
10     pygame.init()
11     screen = pygame.display.set_mode((config.WINDOW_WIDTH,
12 config.WINDOW_HEIGHT)) # Use constants from config
13     pygame.display.set_caption(config.TITLE)
14     return screen
15
16 def handle_events():
17     for event in pygame.event.get():
18         if event.type == pygame.QUIT:
19             return False
20         elif event.type == pygame.KEYDOWN:
21             if event.key == pygame.K_ESCAPE:
22                 return False
23             return True
24
25 def main():
26     screen = init_game()
27     clock = pygame.time.Clock() # Initialize the clock object
28
29     shapes_list = [] # List to hold shapes
30
31     running = True
32     while running:
33         running = handle_events()
34         screen.fill(config.WHITE) # Use color from config
35
36         # Generate a random number to represent the various shapes
37         shape_type = random.randrange(3)
38
39         # Create a new shape and add it to the list
40         if shape_type == 0:
41             # Circle: (type, color, position, radius)
42             new_shape = {
43                 'type': 'circle',
44                 'color': (random.randrange(255), random.randrange(255),
45 random.randrange(255)),
46                 'position': (random.randrange(config.WINDOW_WIDTH),
47 random.randrange(config.WINDOW_HEIGHT)),
48                 'radius': 50

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46         }
47     elif shape_type == 1:
48         # Rectangle: (type, color, position, width, height)
49         new_shape = {
50             'type': 'rectangle',
51             'color': (random.randrange(255), random.randrange(255),
random.randrange(255)),
52             'position': (random.randrange(config.WINDOW_WIDTH - 100),
random.randrange(config.WINDOW_HEIGHT - 100)),
53             'width': 100,
54             'height': 100
55         }
56     elif shape_type == 2:
57         # Line: (type, color, start_pos, end_pos, width)
58         new_shape = {
59             'type': 'line',
60             'color': (random.randrange(255), random.randrange(255),
random.randrange(255)),
61             'start_pos': (random.randrange(config.WINDOW_WIDTH),
random.randrange(config.WINDOW_HEIGHT)),
62             'end_pos': (random.randrange(config.WINDOW_WIDTH),
random.randrange(config.WINDOW_HEIGHT)),
63             'width': 10
64         }
65
66     # Add the new shape to the list
67     shapes_list.append(new_shape)
68
69     # Draw all shapes from the list using the appropriate function from
the shapes module
70     for shape in shapes_list:
71         if shape['type'] == 'circle':
72             shapes.draw_circle(screen, shape)
73         elif shape['type'] == 'rectangle':
74             shapes.draw_rect(screen, shape)
75         elif shape['type'] == 'line':
76             shapes.draw_line(screen, shape)
77
78     # UPDATE the screen with what we've drawn
79     pygame.display.flip()
80
81     # Limit frame rate to certain number of frames per second (FPS)
82     clock.tick(config.FPS)
83
84     pygame.quit()
85     sys.exit()
86
87 if __name__ == "__main__":
88     main()

```

