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Contents

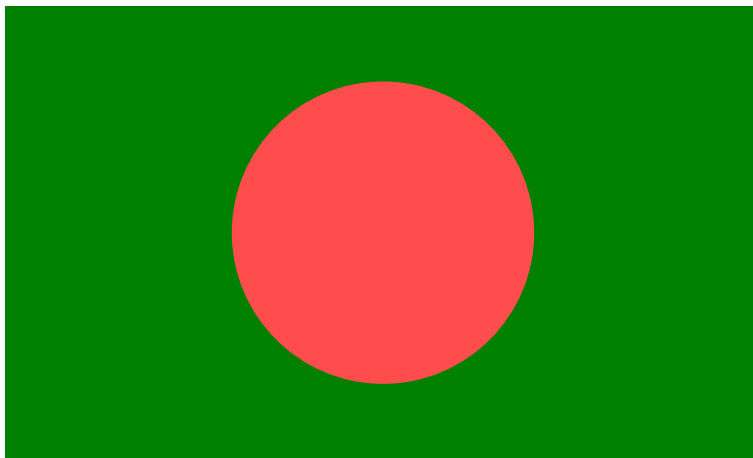
1	Draw National Flag	2
2	Illustrate Shape Overlapping	3
3	Your Name moving on screen Animation	4
4	Realistic Starfield Animation	5

1 Draw National Flag

Python Code

```
1 import matplotlib.pyplot as plt
2
3 # Create figure and axis
4 fig, ax = plt.subplots()
5
6 # Draw green rectangle (flag background)
7 ax.add_patch(plt.Rectangle((0, 0), 10, 6, color='#006a4e'))
8     # green
9
10 # Draw red circle (centered slightly to the left)
11 #ax.add_patch(plt.Circle((4.5, 3), 2, color='#f42a41')) #
12     red
13 ax.add_patch(plt.Circle((5, 3), 2, color='#f42a41'))
14
15 # Set limits and turn off axes
16 ax.set_xlim(0, 10)
17 ax.set_ylim(0, 6)
18 ax.set_aspect('equal')
19 plt.axis('off')
20
21 # Show flag
22 plt.show()
```

Flag Output



2 Illustrate Shape Overlapping

Python Code

```
1 import turtle
2
3 # Set up the screen
4 screen = turtle.Screen()
5 screen.bgcolor("white")
6
7 # Create a turtle
8 pen = turtle.Turtle()
9 pen.speed(3)
10
11 pen.penup()
12 pen.goto(0, 0)
13 pen.pendown()
14 pen.color("blue")
15 pen.begin_fill()
16 pen.circle(50)
17 pen.end_fill()
18
19
20 pen.penup()
21 pen.goto(-60, -60)
22 pen.pendown()
23 pen.color("green")
24 pen.begin_fill()
25 for _ in range(4):
26     pen.forward(120)
27     pen.left(90)
28 pen.end_fill()
29
30 pen.penup()
31 pen.goto(0, -120)
32 pen.pendown()
33 pen.color("magenta")
34 pen.begin_fill()
35 pen.circle(50)
36 pen.end_fill()
37
38 pen.hideturtle()
39 screen.mainloop()
```

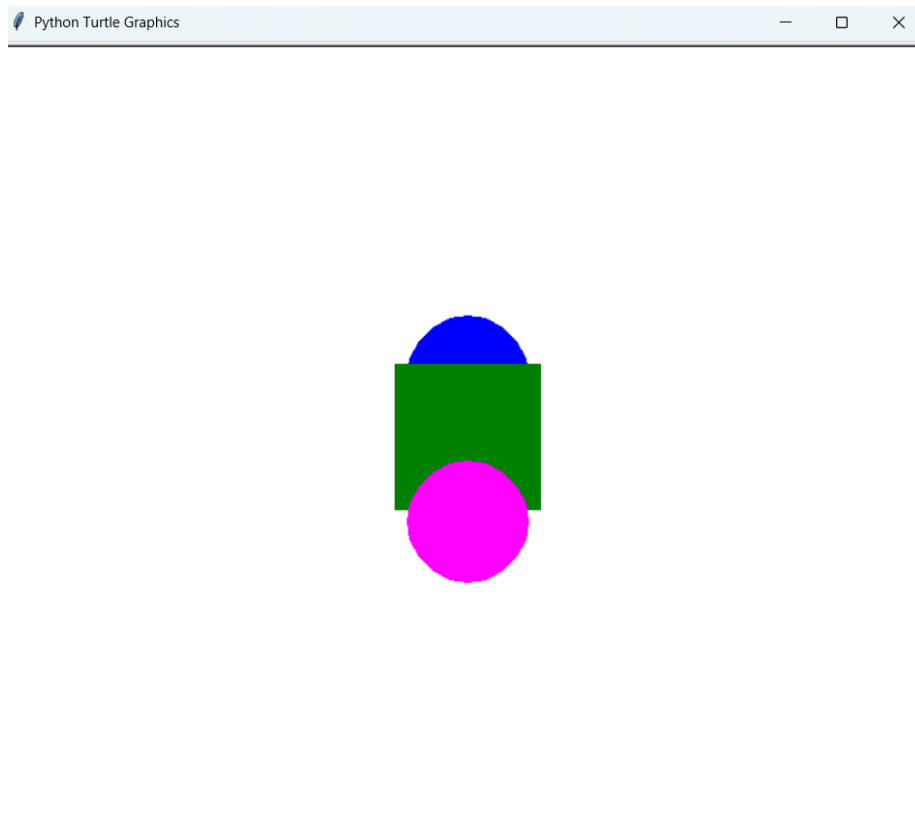


Figure 1: Shape Overlapping

Output:

3 Your Name moving on screen Animation

Python Code

```
1 import turtle
2 import time
3
4 t = turtle.Turtle()
5 t.hideturtle()
6 t.penup()
7 t.color("blue")
8
9 screen = turtle.Screen()
10 screen.bgcolor("white")
11 screen.tracer(0)
```

```

12
13 x = -300
14
15 while True:
16     t.clear()
17     t.goto(x, 0)
18     t.write("Reyal", font=("Arial", 24, "bold"))
19     x += 2
20     if x > 300:
21         x = -300
22     screen.update()
23     time.sleep(0.01)

```

Name animation Output:

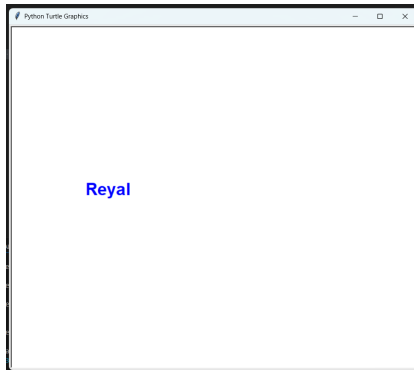


Figure 2: Initial Frame

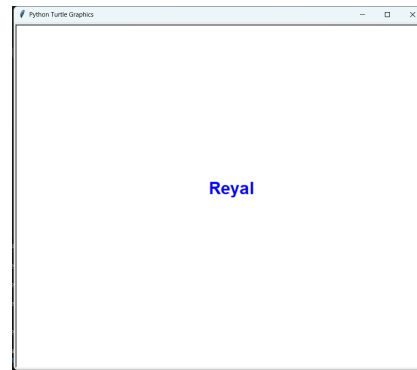


Figure 3: Moving Frame

4 Realistic Starfield Animation

Python Code

```

1 import turtle
2 import random
3 import math
4
5 # Setup screen
6 screen = turtle.Screen()
7 screen.bgcolor("black")
8 screen.title("Realistic Starfield View")
9 screen.setup(width=800, height=600)
10 screen.tracer(0)
11

```

```

12 # Star class for 3D movement
13 class Star:
14     def __init__(self):
15         self.reset()
16
17     def reset(self):
18         self.x = random.uniform(-400, 400)
19         self.y = random.uniform(-300, 300)
20         self.z = random.uniform(1, 800)
21         self.pz = self.z
22         self.color = random.choice(["white", "lightblue", "
23                                     yellow", "lightgray"])
24
25     def update(self, speed):
26         self.pz = self.z
27         self.z -= speed
28         if self.z <= 1:
29             self.reset()
30
31     def draw(self, t):
32         # Convert 3D to 2D perspective
33         sx = int(self.x / self.z * 800)
34         sy = int(self.y / self.z * 800)
35         px = int(self.x / self.pz * 800)
36         py = int(self.y / self.pz * 800)
37
38         # Calculate star size
39         size = max(1, int((800 - self.z) / 100))
40
41         # Draw star trail
42         t.pencolor(self.color)
43         t.pensize(size / 2)
44         t.goto(px, py)
45         t.pendown()
46         t.goto(sx, sy)
47         t.penup()
48
49 # Turtle setup
50 t = turtle.Turtle()
51 t.hideturtle()
52 t.penup()
53 t.speed(0)
54
55 # Create starfield
56 stars = [Star() for _ in range(150)]
57
58 # Animation loop
59 while True:
60     t.clear()
61     for star in stars:

```

```
61         star.update(speed=10)
62         star.draw(t)
63     screen.update()
```

Output:

The following image depicts a realistic starfield view, simulating a cosmic scene with stars, galaxies, and nebulae in a deep space environment.

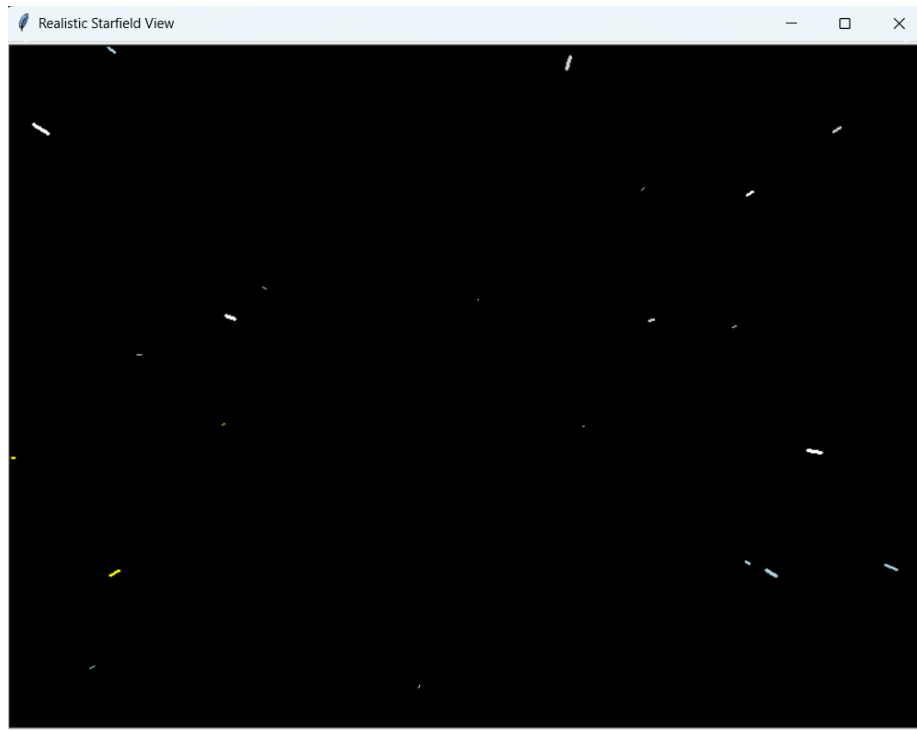


Figure 4: Realistic Starfield View: A simulation of the cosmos with stars, galaxies, and nebulae.