Phase 5

```
Import time
Import random
Import os

# Simulated traffic data (vehicles per lane)
Lanes = {
  “North”: 0,
  “South”: 0,
  “East”: 0,
  “West”: 0
}

Def generate_traffic():
  For lane in lanes:
    Lanes[lane] = random.randint(0, 20)  # Simulate vehicle count

Def decide_signal():
  Max_traffic = max(lanes, key=lanes.get)
  Return max_traffic

Def display_status(active_signal):
  Os.system(‘cls’ if os.name == ‘nt’ else ‘clear’)
  Print(“\n=== Real-Time Traffic Flow Optimization ===\n”)
  For lane, count in lanes.items():
```

```
        Status = “GREEN” if lane == active_signal else “RED”
        Print(f”{lane} Lane: {count} vehicles → Signal: {status}”)
    Print(f”\n[AI Decision: Giving GREEN to {active_signal} lane]”)
    Print(“Screenshot this output for your documentation.\n”)

# Simulate 5 cycles of real-time optimization
For cycle in range(5):
    Generate_traffic()
    Signal = decide_signal()
    Display_status(signal)
    Time.sleep(5)  # Wait to simulate real-time
```