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def run_simulation(env: EnvParams, policy: PolicyParams, simulation: SimulationParams): # George Fakidis *
    grid = GridWorld(env)
    Q = np.zeros((grid._params.grid_width, grid._params.grid_height, 4))
    alpha = policy.alpha
    gamma = policy.gamma
    stats = EpisodeDurationOverTimeMetric()
    for episode in range(simulation.simulated_episodes):
        S = simulation.starting_tile
        A = get_action_from_q(policy, S, Q)
        is_terminal = False
        timesteps = 0
        while not is_terminal:
            S_prime, is_terminal = grid.next_state_from_with_step(S, direction(A))
            R = grid.reward_of_position(S_prime)
            A_prime = get_action_from_q(policy, S_prime, Q)
            print_action(A_prime)
            Q[S.x, S.y, A] = Q[S.x, S.y, A] + alpha * (R + gamma * Q[S_prime.x, S_prime.y, A_prime] - Q[S.x, S.y, A])
            S = S_prime
            A = A_prime
            timesteps += 1
            if timesteps > simulation.max_episode_length:
                is_terminal = True
        print("Reached destination in ", timesteps, "steps")
        stats.observe(timesteps, episode)

stats.plot()

```