**Write the python program for Vacuum Cleaner problem**

**Program:**

# Simple Vacuum Cleaner Problem (2 rooms)

# Initial environment

# Example: {'A': 'Dirty', 'B': 'Clean'}

def vacuum\_cleaner(environment, location):

print(f"Initial State: {environment}, Agent in Room {location}")

score = 0 # Performance measure

if environment[location] == "Dirty":

print(f"Room {location} is Dirty. Cleaning...")

environment[location] = "Clean"

score += 1 # Clean earns score

# Move to the other room

next\_location = "B" if location == "A" else "A"

print(f"Moving to Room {next\_location}")

score -= 1 # Moving costs score

if environment[next\_location] == "Dirty":

print(f"Room {next\_location} is Dirty. Cleaning...")

environment[next\_location] = "Clean"

score += 1

print(f"Final State: {environment}")

print(f"Performance Score: {score}")

# Example run

environment = {'A': 'Dirty', 'B': 'Dirty'}

start\_location = 'A'

vacuum\_cleaner(environment, start\_location)

