6. Write the python program for Vacuum Cleaner problem

**AIM :** program for Vacuum Cleaner problem

**ALGORITHM :**

1. Initialize the vacuum cleaner's current location, as well as the cleanliness status of locations A and B.
2. Start the cleaning loop until both locations are clean.
3. If the current location is A, check if it's dirty, clean it if needed, then move to location B.
4. If the current location is B, check if it's dirty, clean it if needed, then move to location A.
5. Repeat steps 3-4 until both locations are clean.
6. Print the final state of both locations and indicate that cleaning is complete.

**PROGRAM :**

class VacuumCleaner:

def \_\_init\_\_(self):

self.location\_A = "dirty"

self.location\_B = "dirty"

self.current\_location = "A"

def clean(self, location):

if location == "A":

self.location\_A = "clean"

elif location == "B":

self.location\_B = "clean"

def move(self, new\_location):

self.current\_location = new\_location

def is\_dirty(self, location):

if location == "A":

return self.location\_A == "dirty"

elif location == "B":

return self.location\_B == "dirty"

def run(self):

print("Initial State:")

print(f"Location A: {self.location\_A}")

print(f"Location B: {self.location\_B}")

while self.is\_dirty("A") or self.is\_dirty("B"):

if self.current\_location == "A":

if self.is\_dirty("A"):

self.clean("A")

print("Cleaning at location A")

self.move("B")

print("Moving to location B")

else:

if self.is\_dirty("B"):

self.clean("B")

print("Cleaning at location B")

self.move("A")

print("Moving to location A")

print("Final State:")

print(f"Location A: {self.location\_A}")

print(f"Location B: {self.location\_B}")

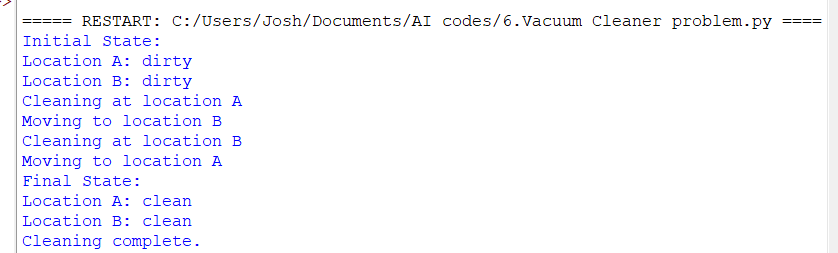
print("Cleaning complete.")

if \_\_name\_\_ == "\_\_main\_\_":

vacuum = VacuumCleaner()

vacuum.run()

**OUT PUT :**

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