Develop a simple reflex agent program in Python for the **vacuum-cleaner world problem**. Your agent must defines following things

- States
- Goal State
- Goal Test
- Actions
- Transition Mode
- Path Cost

Some Pre-defined (Model) Knowledge for agent

- **Actions** : Only 0 or 1 where 0 means CLEAN and 1 means DIRTY
- **States :** Your agent have only 3 states (A/B/C)
- **Goal state:** {“A” : 0 , “B” : 0 , “C “: 0}
- **States Sequence :** A , B and C are rooms Connected in following order : A→B and B→C
- **Path Cost :** +1 for every Action (Either from dirt to clean OR moving from one room to another)

Inputs of Agent

1. Enter LOCATION (Initial Vaccum placement) A/B/C in captial letters.
2. Enter Status of Current Location 0/1 accordingly.
3. Vacuum Cleaner senses the status of the other rooms before performing any action, also known as Environment sensing. So Give Status of other rooms as input. (0/1)

Output of agent

For each possible initial state(as input), the program returns a sequence of actions that leads to the goal state, along with the path cost.

```
admins@ali-raza:~/Documents/Spring 2021/AI/Lab 3$ python3 Solution.py
Enter Location of Vacuum(A/B): A
Enter status of A (0/1): 1
Enter status of other room (0/1): 1
Goal State Required : {'A': '0', 'B': '0'}
Vacuum is placed in Location A
Location A is Dirty.
Cost for CLEANING A: 1
Location A has been Cleaned.
Location B is Dirty.
Moving right to the Location B.
COST for moving RIGHT: 1
COST for SUCK: 1
Location B has been Cleaned.
GOAL STATE:
{'A': '0', 'B': '0'}
Performance Measurement: 3
admins@ali-raza:~/Documents/Spring 2021/AI/Lab 3$ python3 Solution.py
Enter Location of Vacuum(A/B): B
Enter status of B (0/1): 1
Enter status of other room (0/1): 0
Goal State Required : {'A': '0', 'B': '0'}
Vacuum is placed in location B
Location B is Dirty.
COST for CLEANING 1
Location B has been Cleaned.
GOAL STATE:
{'A': '0', 'B': '0'}
Performance Measurement: 1
admins@ali-raza:~/Documents/Spring 2021/AI/Lab 3$
```

Example Output of 2 State Vaccum World Model