

a) vacuum cleaner

```
def vacuum_world():
    goal_state = {'A': '0', 'B': '0'}
    cost = 0
    location_input = input("Enter location A or B")
    status_input = input("Enter status of location - input")
    status_input = input("Enter status of other room")
    print("Initial location condition + original state")
    if location_input == 'A':
        print("Vacuum is placed in location A")
        if status_input == '1':
            print("Location A is dirty")
            goal_state['A'] = '0'
            cost += 1
            print("cost for cleaning A" + str(cost))
            print("Moving right to location B")
        else:
            print("Location A has been cleaned")
    else:
        print("Vacuum is placed in location B")
        print("Location B is dirty")
        print("Moving right to location A")
        cost += 1
        print("cost of moving right" + str(cost))
    goal_state['B'] = '0'
    print("cost for sucking - " + str(cost))
    print("Location B has been cleaned")
```