



Artificial Intelligence

Lab 08 Tasks

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Batch: BSCS-6th semester

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Task1.

Solution:

```
def traffic_light_agent(color): 1 usage
    if color == "red":
        return "Stop"
    elif color == "yellow":
        return "Slow down"
    elif color == "green":
        return "Move"
    else:
        return "Invalid color"

lights = ["red", "yellow", "green", "blue"]
for light in lights:
    💡 print(f"Light: {light.capitalize()} → Action: {traffic_light_agent(light)}")
```

```
Light: Red → Action: Stop
Light: Yellow → Action: Slow down
Light: Green → Action: Move
Light: Blue → Action: Invalid color
```

Task2.

Solution:

```
def automatic_door(person, time, auth=False): 1 usage
    if time == "night" and not auth:
        return "Closed"
    💡 return "Open" if person else "Closed"

for test in [(True, "day"), (False, "day"), (True, "night"), (False, "night"), (True, "night", True)]:
    print(automatic_door(*test))
```

```
C:\Users\user\PycharmProjects
Open
Closed
Closed
Closed
Open
```

Task3.

Solution:

```
import random
def vacuum_cleaner(): 1 usage
    rooms = {"A": random.randint(a: 0, b: 1), "B": random.randint(a: 0, b: 1), "C": random.randint(a: 0, b: 1), "D": random.randint(a: 0, b: 1)}

    for room, state in rooms.items():
        print(f"Room {room}: {'Dirty' if state else 'Clean'} → {'Cleaning' if state else 'Already clean'}")
        rooms[room] = 0 # Clean the room

    print("All rooms are now clean!")
vacuum_cleaner()
```

```
C:\Users\user\PycharmProjects\P
Room A: Clean → Already clean
Room B: Clean → Already clean
Room C: Clean → Already clean
Room D: Clean → Already clean
All rooms are now clean!
```

