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Assigment 2

To substitute 𝑁*N* with the number of cashiers, 𝑅*R* with the number of users, and 𝑇*T* with 24 hours in the formula 𝑃=𝑁×𝑅×𝑇*P*=*N*×*R*×*T*, let's break down the two scenarios:

**Left Scenario (Self-Checkout Lanes)**

* **Number of cashiers 𝑁*N***: 1 cashier
* **Number of users 𝑅*R***: 4 users (one user per self-checkout lane)
* **Time 𝑇*T***: 24 hours

The total power consumption for the left scenario is: 𝑃left=𝑁×𝑅×𝑇=1×4×24=96 watt-hours*P*left​=*N*×*R*×*T*=1×4×24=96 watt-hours

**Right Scenario (Individual Checkout Lanes)**

* **Number of cashiers 𝑁*N***: 4 cashiers
* **Number of users 𝑅*R***: 4 users (one user per checkout lane)
* **Time 𝑇*T***: 24 hours

The total power consumption for the right scenario is: 𝑃right=𝑁×𝑅×𝑇=4×4×24=384 watt-hours*P*right​=*N*×*R*×*T*=4×4×24=384 watt-hours

**Comparison**

By comparing the two scenarios, we see the power consumption:

* **Left Scenario (Self-Checkout Lanes)**: 96 watt-hours
* **Right Scenario (Individual Checkout Lanes)**: 384 watt-hours

Python code

#Assignment 2

N\_left = 1  # Number of cashiers in the left

R\_left = 4  # Number of users in the left

T = 24  # Time in hours

N\_right = 4  # Number of cashiers in the right

R\_right = 4  # Number of users in the right

# Calculation power consumption for both scenarios

P\_left = N\_left \* R\_left \* T

P\_right = N\_right \* R\_right \* T

print(f"Power consumption for the left scenario (self-checkout lanes): {P\_left} watt-hours")

print(f"Power consumption for the right scenario (individual checkout lanes): {P\_right} watt-hours")