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Problem Statement

Case Study Title: Temperature Monitoring System

1. Build a Python code to display messages according to the temperature received from an assumed IoT system.

2. Accept max and min limit temperature.

3. Generate random values for temperature at every 2 second interval.

4. Compare with the limits to display appropriate value.

PYTHON CODE

```
import random
import time


# Accept min and max temperature limits from user
min_temp = float(input("Enter minimum temperature limit: "))
max_temp = float(input("Enter maximum temperature limit: "))
print("\nStarting Temperature Monitoring System...\n")
while True:
    # Generate random temperature (simulate IoT sensor)
    current_temp = round(random.uniform(-10, 50), 2)
    print(f"Current Temperature: {current_temp} °C")
    # Compare with limits
    if current_temp < min_temp:
        print("ALERT: Temperature is BELOW minimum limit!\n")
    elif current_temp > max_temp:
        print("ALERT: Temperature is ABOVE maximum limit!\n")
    else:
        print("Temperature is within safe range.\n")
    # Wait for 2 seconds
    time.sleep(2)
```