#base on size of the product ,checking the quality of the product

import random

# Define acceptable range for product size (e.g., in mm)

MIN\_SIZE = 9.5

MAX\_SIZE = 10.5

# Simulate measuring 20 manufactured items

def simulate\_quality\_control():

passed = 0

failed = 0

results = []

print("Quality Control Report:")

print("-" \* 30)

for i in range(1, 21):

# Simulate actual size between 9.0 and 11.0 mm

size = round(random.uniform(9.0, 11.0), 2)

# Check if the size is within acceptable range

if MIN\_SIZE <= size <= MAX\_SIZE:

status = "PASS"

passed += 1

else:

status = "FAIL"

failed += 1

results.append((i, size, status))

print(f"Item {i:02}: Size = {size} mm -> {status}")

print("-" \* 30)

print(f"Total Passed: {passed}")

print(f"Total Failed: {failed}")

print("-" \* 30)

return results

# Run the simulation

simulate\_quality\_control()