**Final LAb**

**Python**

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**Question:**

**Code:**

import math

rain\_data = []

no\_of\_days = 14

def percentage\_of(number, perc):

    return perc \* number / 100

def calculate\_mean(rain\_data):

    sum = 0

    for x in rain\_data:

        sum = sum + x

    return sum / no\_of\_days

def calculate\_STD(rain\_data):

    mean = calculate\_mean(rain\_data)

    sum = 0

    for x in rain\_data:

        temp = (x - mean) \*\* 2

        sum = sum + temp

    answer = sum / no\_of\_days

    return math.sqrt(answer)

def find\_max(rain\_data):

    counter = 0

    days = []

    for temp in rain\_data:

        counter = counter + 1

        if temp == max(rain\_data):

            days.append(counter)

    return days

def find\_min(rain\_data):

    counter = 0

    days = []

    for temp in rain\_data:

        counter = counter + 1

        if temp == min(rain\_data):

            days.append(counter)

    return days

for temp in range(1, no\_of\_days + 1):

    x = 0

    if temp == 1:

        x = input("Enter the amonut of rainfall that occured  on the 1st day: ")

    elif temp == 2:

        x = input("Enter the amonut of rainfall that occured  on the 2nd day: ")

    else:

        x = input("Enter the amonut of rainfall that occured  on the " + str(temp) + "th day: ")

    x = int(x)

    rain\_data.append(x)

maximum = find\_max(rain\_data)

minimum = find\_min(rain\_data)

print("Days with maximum rainfall:")

for temp in maximum:

    print(temp)

print("Days with minimum rainfall:")

for temp in minimum:

    print(temp)

mean = calculate\_mean(rain\_data)

std = calculate\_STD(rain\_data)

print("Mean of data:" + str(mean))

print("Standard deviation of data:" + str(std))

bad\_monsoon = []

normal\_monsoon = []

average\_monsoon = []

good\_monsoon = []

flood = []

misc = []

counter = 0

for x in rain\_data:

    counter = counter + 1

    if x < percentage\_of(mean, 10):

        bad\_monsoon.append(counter)

    elif x < percentage\_of(mean, 15):

        normal\_monsoon.append(counter)

    elif percentage\_of(mean, 20) < x < percentage\_of(x, 30):

        average\_monsoon.append(counter)

    elif x < percentage\_of(mean, 50):

        good\_monsoon.append(counter)

    elif x > percentage\_of(mean, 50):

        flood.append(counter)

    else:

        misc.append(counter)

print("Days on which bad monsoon occurred(<10%):")

for x in bad\_monsoon:

    print(x)

print("---------------------------------------------------")

print("Days on which normal monsoon occurred(10%<x<15%):")

for x in normal\_monsoon:

    print(x)

print("---------------------------------------------------")

print("Days on which average monsoon occurred(15%<x<20%):")

for x in average\_monsoon:

    print(x)

print("---------------------------------------------------")

print("Days on which good monsoon occurred(30%<x<50%):")

for x in good\_monsoon:

    print(x)

print("---------------------------------------------------")

print("Days on which flood occurred(x>50%):")

for x in flood:

    print(x)

print("---------------------------------------------------")

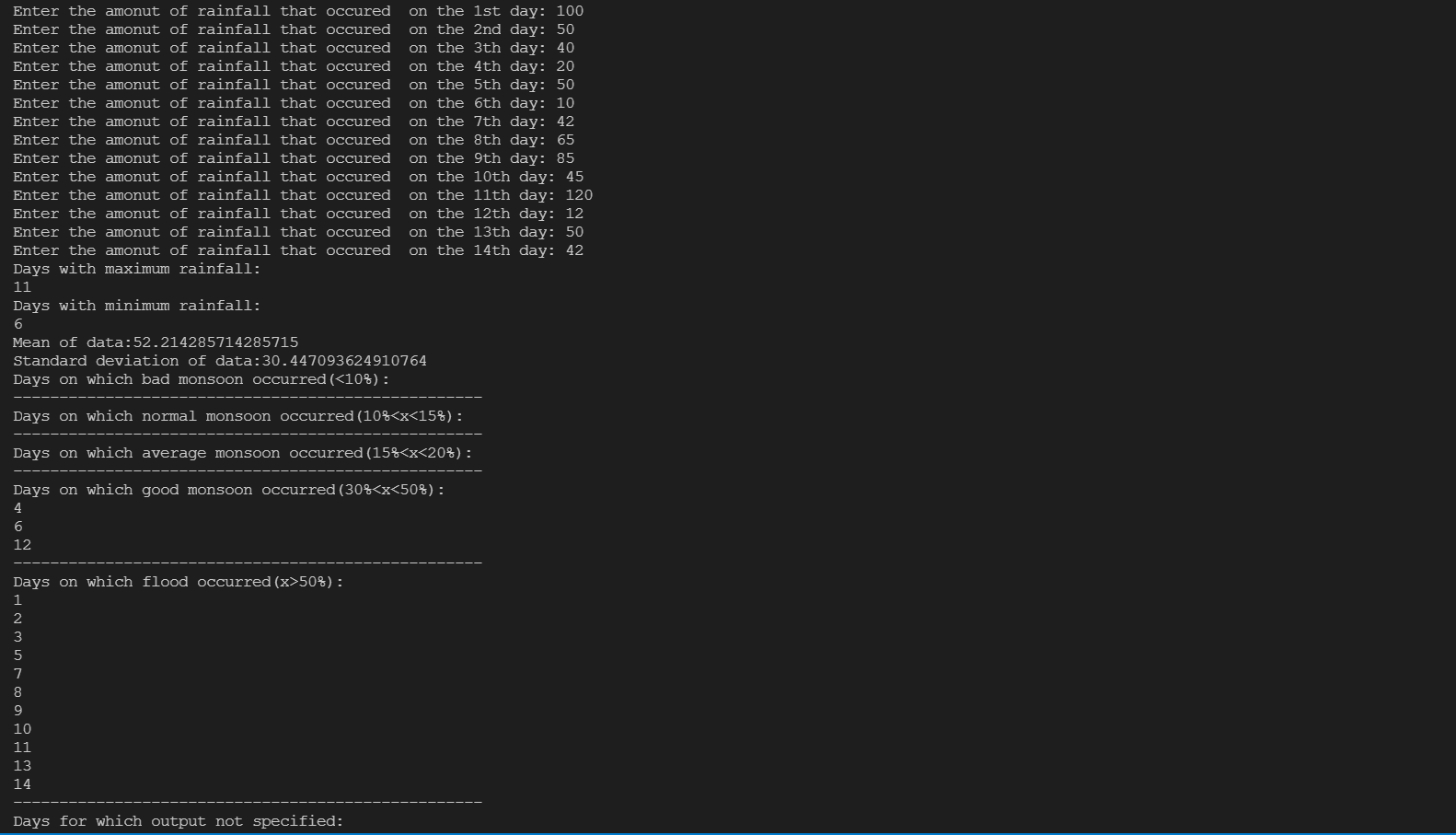
print("Days for which output not specified:")

for x in misc:

    print(x)

print("---------------------------------------------------")

**Output:**

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