Module 4: Critical Thinking

Rainfall

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CSC500 – Principals of Programming

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February 9, 2022

**Source Code:**

#!/usr/bin/env python3

import calendar

def main():

num\_of\_years = ask\_for\_number("int", "How many years of rainfall data do you have?\n")

year = 1

months\_in\_year = 12

total\_inches\_of\_rainfall = 0

while year <= num\_of\_years:

month = 1

while month <= months\_in\_year:

cmd\_text = "How much rain occurred in " + calendar.month\_name[month] + " of year " + str(year) + "?\n"

inches\_of\_rainfall = ask\_for\_number("float", cmd\_text)

total\_inches\_of\_rainfall += inches\_of\_rainfall

month += 1

year += 1

total\_months = num\_of\_years \* months\_in\_year

average\_rainfall = total\_inches\_of\_rainfall / total\_months

print("The total number of months of rainfall data provided is", total\_months)

print("The total inches of rainfall is", round(total\_inches\_of\_rainfall, 2))

print("The average amount of rainfall per month is", round(average\_rainfall, 2))

pass

def ask\_for\_number(number\_type, text):

not\_number = True

while not\_number:

res = input(text)

try:

if number\_type == "int":

return int(res)

elif number\_type == "float":

return float(res)

except ValueError:

not\_number = True

if number\_type == "int":

print("Please provide an integer as your response.\n")

elif number\_type == "float":

print("Please provide a float as your response.\n")

if \_\_name\_\_ == '\_\_main\_\_' : main()

**Successful Execution – 1 year of data:**

Text

Description automatically generated

**Successful Execution – 2 years of data:**

**A screenshot of a computer

Description automatically generated with medium confidence**