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CSC-500 Principles of Programming

Module 5 Critical Thinking Assignment

**Pseudocode**

**Part 1**

1. Start Program
2. Prompt for User Input
   1. Ask the user to enter the number of years for which they want to calculate average rainfall.
3. Initialize Variables
   1. Set a variable to keep track of the total inches of rainfall, starting at zero.
   2. Set a variable to count the total number of months, starting at zero.
4. List of Months
   1. Create a list that includes the names of each month from January to December.
5. Outer Loop: For Each Year
   1. Repeat the following steps once for each year specified by the user.
6. Inner Loop: For Each Month
   1. For each month in the list of months:
      1. Ask the user to enter the rainfall in inches for the specific month of the current year.
      2. Add this rainfall amount to the total rainfall.
      3. Increase the month counter by one.
7. Calculate Average Rainfall
   1. After all years and months have been processed, calculate the average rainfall by dividing the total rainfall by the total number of months counted.
8. Display Results
   1. Display the total number of months.
   2. Display the total inches of rainfall.
   3. Display the average rainfall per month, formatted to two decimal places for readability.
9. End Program

**Part 2**

1. Prompt the user to enter the number of books purchased this month.
2. Store the user's input as an integer in the variable "books".
3. If the number of books is less than 2:
   1. Set "points" to 0
4. Else if the number of books is between 2 and 3 (inclusive):
   1. Set "points" to 5
5. Else if the number of books is between 4 and 5 (inclusive):
   1. Set "points" to 15
6. Else if the number of books is between 6 and 7 (inclusive):
   1. Set "points" to 30
7. Else (if the number of books is 8 or more):
   1. Set "points" to 60
8. Display the message "Points Awarded:" followed by the value of "points".

**Source Code**

**Part 1**

years = int(input('Enter number of years: '))

count\_month = 0

total\_rainfall = 0

months = ['January', 'February', 'March', 'April', 'May', 'June', 'July', 'August', 'September', 'October', 'November', 'December']

for year in range(years):

for month in range(12):

monthly\_rain = int(input('Enter inches of rainfall for Year {} {}: '.format(year + 1, months[month])))

total\_rainfall += monthly\_rain

count\_month += 1

print() # New line after each year for readability

avg\_rainfall = total\_rainfall / count\_month

print('\nNumber of months: {}'.format(count\_month))

print('Total rainfall: {} inches'.format(total\_rainfall))

print('Average rainfall per month: {:.2f} inches\n'.format(avg\_rainfall))

**Part 2**

books = int(input('Enter number of books purchased this month: '))

if books < 2:

points = 0

elif 4 > books >= 2:

points = 5

elif 6 > books >= 4:

points = 15

elif 8 > books >= 6:

points = 30

else:

points = 60

print('Points Awarded: {}'.format(points))

**Image of Successful Execution**

**Part 1**

**A screen shot of a computer

Description automatically generated**

A black background with white text

Description automatically generated

**Part 2**

A screenshot of a computer program

Description automatically generated

**GIT Repository**

<https://github.com/samilcase/CSC-500-Assignments>