CDI college
business • technology • healthcare

Assignment 1

Python Coding Fundamentals (10%)

DUE DATE

Session 6

OBJECTIVE

- •   Install and configure Python
- •   Use the Python command line and integrated development environment to enter Python code.
- •   Use the Python syntax to read user input, process information and display output.
- •   Declare and initialize variables using the Python variable naming conventions and keywords.
- •   Describe different data types used with the Python programming language.

DESCRIPTION

This assignment requires you to complete a number of typical tasks that you would normally use Python to solve. Each task is typical situation that requires you to apply specific Python techniques and features. This is about functionality and not about design. The focus is to produce the desired functionality as described in the tasks and to use Python syntax and features covered up to this point in the course. These features include decision making, repetition, functions, and file access.

INSTRUCTIONS

1. Assume hot dogs come in packages of 10, and hotdog buns come in packages of 8. Write a program that calculates the number of packages of hot dogs and the number of packages of hot dog buns needed for a cookout, with minimum amount of leftovers. The program should ask the user for the number of people attending the cookout and the number of hot dogs each person will be given. The program should display the following details:
    - •   The minimum number of packages of hot dogs required.
    - •   The minimum number of packages of hot dog buns required
    - •   The number of hot dogs that will be left over
    - •   The number of hot dog buns that will be left over (10 Points)

2. Write a program that asks the user to enter the monthly costs for the following expenses incurred from operating his or her automobile: loan payment, insurance, gas, and maintenance. The program

should then display the total monthly costs for these expenses and the total annual costs for these expenses. (10 marks)

3. A painting company has determined that for every 112 square feet of wall space, one gallon of paint is required. The company charges $25.00 per hour for labour. Write a program that asks the user to enter the number of square feet of wall space to be painted and the price of the paint per gallon. The program should then display the following data.
   - The number of gallons of paint required
   - The cost of the paint
   - The hours of labour required to complete the job
   - The cost of the labour to complete the job
   - The total cost of the paint job.

   Assume that the program will run only once for each estimate. (10 marks)

4. A Personal Fitness tracker is a wearable device that tracks one's physical activity, calories burned, heart rate, sleeping patterns and so on. One common physical activity that is tracked is the number of steps that you take each day. The File named Steps.txt contains the number of steps that a user has made each day for an entire year (Jan 1 to Dec 31) Write a program that reads the file, then displays the average number of steps taken for each month. Assume the data is from a year that is not a leap year, therefore, February has 28 days. The program should then count the number of days in the year that the user has made 10,000 steps or more and display the number of days with 10000 or more steps. (10 marks)

SUBMISSION INSTRUCTIONS

Your assignment must include the following:

   - All source code, as well as all other files required for the proper functioning of your programs.
   - Place all files in a single folder
   - Zip your folder into a single file and follow the naming convention described below.

Work must be submitted in the correct file type and be properly labelled as per the College naming convention:
NAME_COURSE_ASSIGNMENT. E.g. XuXiaLing_FM50D_A01.

GRADING CRITERIA

Assignment Value: **10%**

Grading Criteria	Grading
Hot Dogs: Program should prompt for the people attending and how many hot	/10

dogs each person gets Program should accurately display the four items required.	
Automobile operation costs: 　　Program should display the total monthly costs for these expenses. 　　Program should display the total annual costs for these expenses.	/10
Paint estimator: 　　Program should display all 5 values properly labeled with the correct value.	/10
Steps: 　　Program should display 12 values (12 monthly averages as a Month name and value pair AND the number of days of >10000 steps).	/10
TOTAL	**/40**

RUBRIC

Using the rubric template below, choose approximately four to six different components relevant to the assignment. The number of components chosen will be dependant upon the complexity of the assignment. Fill in the relevant criteria and make sure the progression between levels is clear and measurable.

[Type of Assignment (Research Project, Presentation, Report, etc.)]				
Levels of Achievement				
Criteria	**Insufficient**	**Acceptable**	**Good**	**Excellent**
Assignment Component	Describe the qualities of an assignment that insufficiently meets this component criteria.	Describe the qualities of an assignment that adequately meets this component criteria.	Describe the qualities of an assignment that completely meets this component criteria.	Describe the qualities of an assignment that exceeds this component criteria.
E.g. Writing Conventions	Does not follow APA requirements; includes many grammar and spelling errors; citations are incorrect or absent	Inconsistent adherence to APA requirements; few grammar and spelling errors; sources are cited	Complete adherence to APA requirements; no grammar or spelling errors; sources are cited	Complete adherence to APA requirement; flawless language usage; citations are complete and correctly formatted
E.g. Logic & Organization/ Structure	Thesis is absent or unclear; poor organization of argument; introduction and conclusion are absent or unclear	Thesis is provided; argument is adequately organized; paragraph transitions are unclear; introduction and conclusion are present	Thesis is clear; argument is organized and cohesive; paragraph transitions are good; introduction and conclusion are good	Thesis is strong and specific; argument is well-organized; transitions are smooth and effective; introduction and conclusion are strong

CA-PYTDE / Python Development

		Levels of Achievement			
Criteria	**Insufficient**	**Acceptable**	**Good**	**Excellent**
Additional Comments	Include any comments, constructive feedback, and/or praise that do not fit within the above categories.			

[Type of Assignment (Research Project, Presentation, Report, etc.)]