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CSMY 141

Computer Science 1

Exercise – Practice with Algorithms

*1) Calculate and display the current age of a person when they celebrate their birthday in 2021.*

*Do not worry about their exact date of birth. This is simply calculating their age on their exact*

*birthday, whenever that is.*

1. Data Defined/Stored(as integers):
   1. ‘Current Year’ = 2021
   2. Input from User: ‘Birth Year’
   3. ‘Current Age’
2. Prompt User to Input their year of birth and store as ‘Birth Year’
3. Store ‘Current Age’ using equation:***‘Current Age’ = ‘Current Year’ – ‘Birth Year’***
4. Display Current Age in 2021 on their birthday

(eg. “On your birthday in 2021 you will be ‘Current Age’ years old.”)

*4) After the user inputs their total salary for the year in your choice of currency, calculate and*

*display the average salary per month.*

1. Data Defined/Stored:
   1. Input from user: ‘Total Salary in USD’ (floating [double])
   2. ‘Average Salary in USD’ (floating [double])
   3. ‘Months Worked’ (integer) *// NOTE: If we are assuming they worked the whole year then we set this as ‘12’*
2. Prompt User to input their Total Salary and store as ‘Total Salary in USD’
3. Prompt User to input the months they worked and store as ‘Months Worked’ *//NOTE: Do not prompt for this if we are assuming a full work year.*
4. Store ‘Average Salary in USD’ using equation:

***‘Average Salary in USD’ = ‘Total Salary in USD’ / ‘Months Worked’***

1. Display Average Salary

(eg. “Your average salary per month was $‘Average Salary in USD’ for the year.“)

*5) After the user inputs the cost of an item and the tax rate; calculate and display the total tax*

*of the item. NOTE: think about the tax rate; how do you want the user to enter in the tax rate?*

1. Data/Variables Stored:
   1. Input from user: ‘Tax Rate as Percent’ (floating [double])
   2. Input from user: ‘Cost of Item’ (floating [double])
   3. ‘Total Tax’ (floating [double])
   4. ‘Tax Rate as Decimal’ (floating [double])
2. Prompt user to enter the Tax Rate in Percentage form and store as ‘Tax Rate as Percent’
3. Prompt user to enter the cost of the item in USD and store as ‘Cost of Item’
4. Store ‘Tax Rate as Decimal’ using the equation:

***‘Tax Rate as Decimal’ = ‘Tax Rate as Percent’ /100***

1. Store “Total Tax’ using the equation:

***‘Total Tax” = ‘Cost of Item’ \* ‘Tax Rate as Percent’***

1. Display ‘Total Tax’

(eg. The total tax for your item costing $’Cost of Item’ is $’Total Tax’)