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Question 1

Define an algorithm.

An algorithm is step-by-step sequence of precise instructions that must terminate and describes how the data is to be processed to produce the desired outputs. The instructions may be expressed in a human language

Question 2

Define a flowchart.

Use standardized symbols to show the steps the computer needs to take to accomplish the program's objective.

Question 3

Define a pseudocode.

Use English-like phrases to describe the processing process. It is not standardized since every programmer has his or her own way of planning the algorithm.

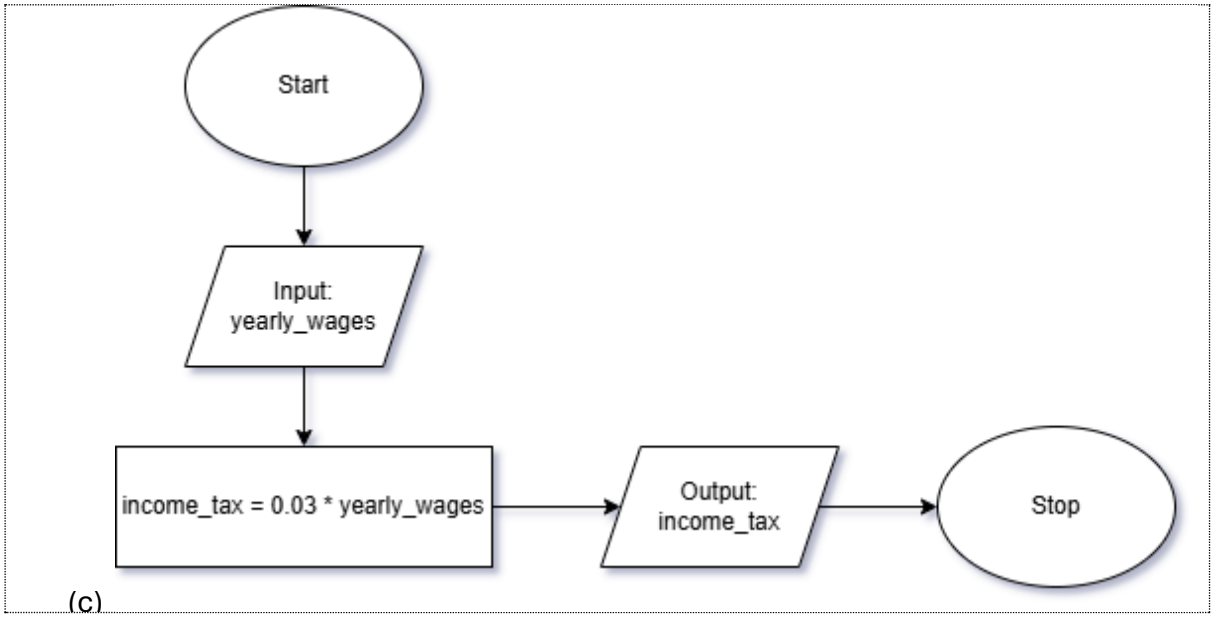
Question 4

Ammar lives in Shah Alam that charges 3% income tax on yearly wages. He wants you to write a program that will display the income tax.

(a) Identify the input, process and output for the program.
(b) Write a pseudocode for the program.
(c) Draw a flowchart for the program.

(a) Input: Yearly Wages
Process: Income Tax = 0.03 * Yearly Wages
Output: Income Tax

(b) 1. Start
2. Read: Yearly Wages
3. Calculate: Income Tax = 0.03 * Yearly Wages
4. Write: Income Tax
5. Stop

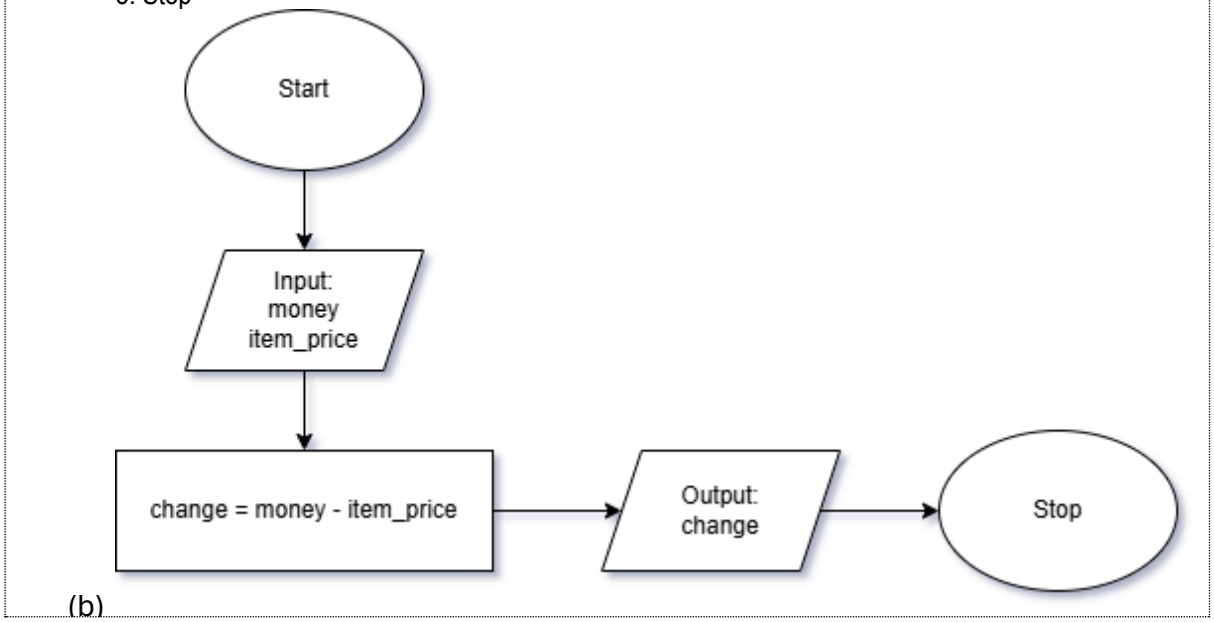


(c)

Question 5

(a) Write a pseudocode to calculate the change given back to the customer for the price of item bought at the supermarket.
(b) Draw a flowchart based on problem in (a).

(a) 1. Start
2. Read: Item Price, Money
3. Calculate: Change = Money - Item Price
4. Write: Change
5. Stop



(b)

Question 6

Task:
Convert weight in kilograms to its equivalent unit in pound and display it.

Hint:

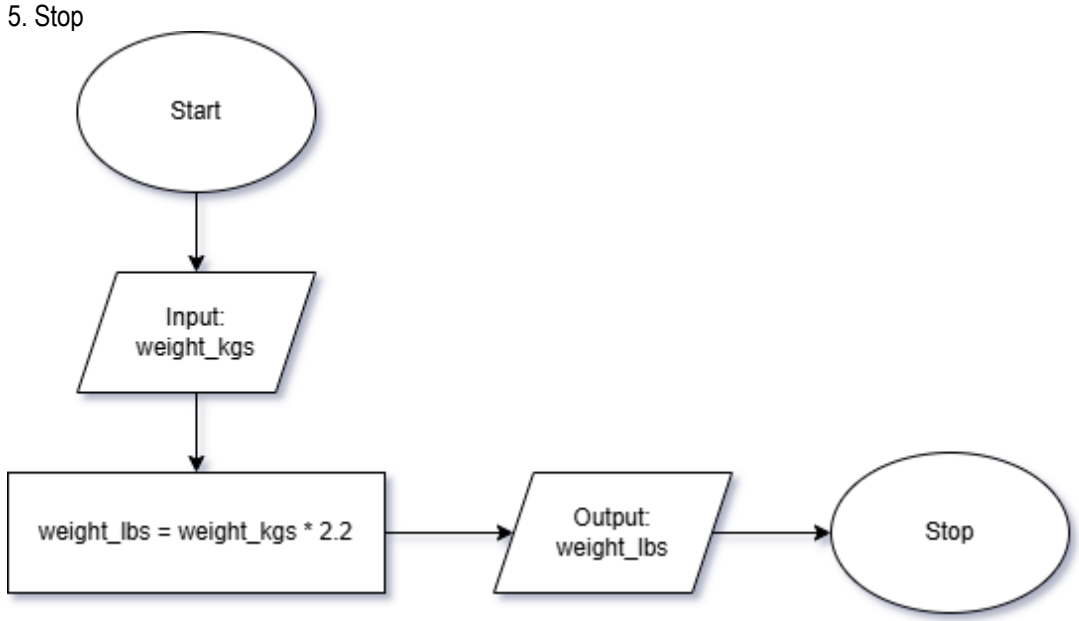
1 kg = 2.2 lbs

(a) Define the input, process and output of this task.
(b) Write a pseudocode of this task.
(c) Draw a flowchart of this task.

(a) Input: Weight in kilograms
Process: Weight in pounds = Weight in kilograms * 2.2
Output: Weight in pounds

(b) 1. Start
2. Read: weight_kgs
3. Calculate: weight_lbs = weight_kgs * 2.2
4. Write: weight_lbs
5. Stop

(c)



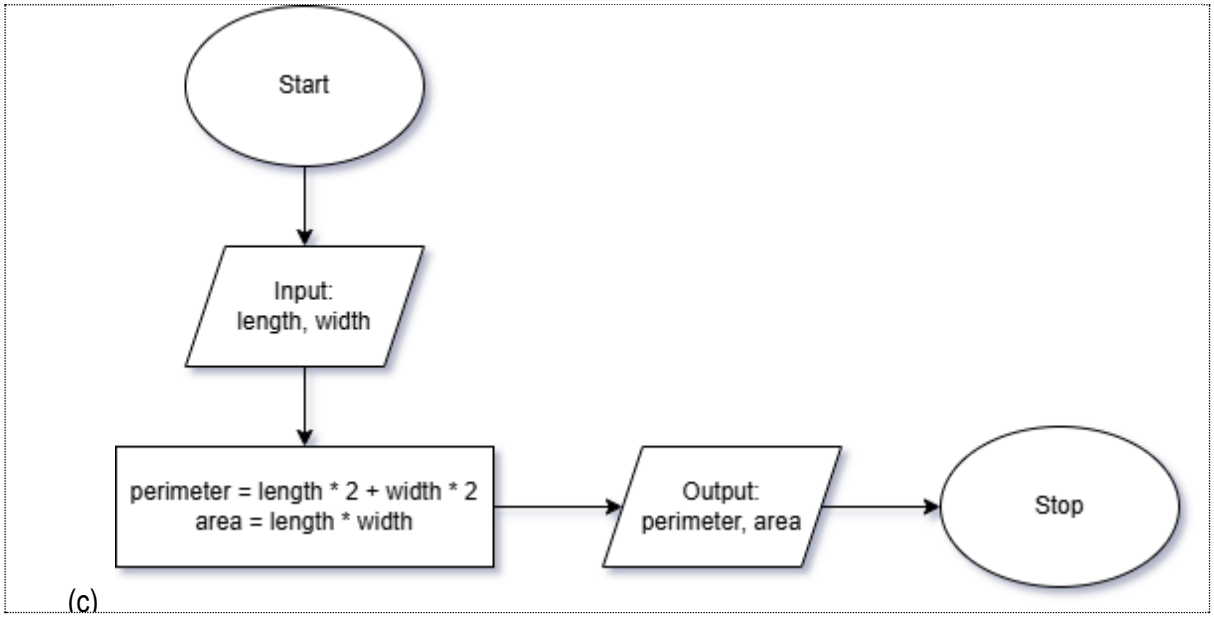
Question 7

Task:
Calculate the perimeter and area of a rectangle. Then, display the perimeter and area of a rectangle.

(a) Define the input, process and output of this task.
(b) Write a pseudocode of this task.
(c) Draw a flowchart of this task.

(a) Input: Length, Width
Process: Perimeter = Length * 2 + Width * 2, Area = Length * Width
Output: Perimeter, Area

(b) 1. Start
2. Read: length, width
3. Calculate: perimeter = length * 2 + width * 2, area = length * width
4. Write: perimeter, area
5. Stop



(c)

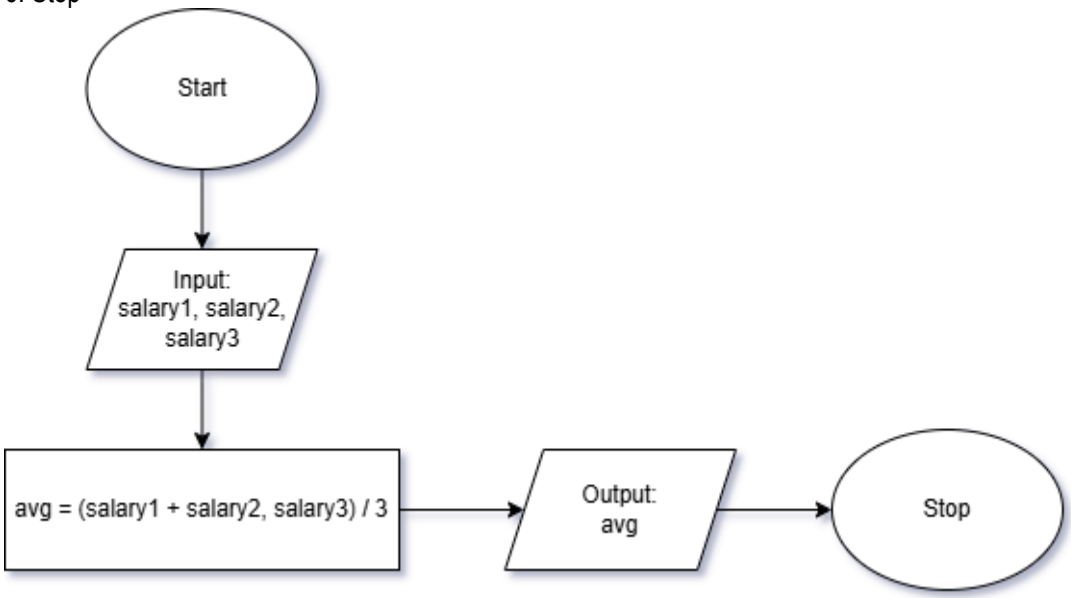
Question 8

Task:
Calculate and display an average salary of three employees.

(a) Define the input, process and output of this task.
(b) Write a pseudocode of this task.
(c) Draw a flowchart of this task.

(a) Input: Salary of three employees
Process: Average salary of three employees = (Sum of the salary of three employees) / 3
Output: Average salary of three employees

(b) 1. Start
2. Read: salary1, salary2, salary3
4. Calculate: avg = (salary1 + salary2 + salary3) / 3
5. Write: avg
6. Stop



(c)