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Problem Statement

You have been hired by Mr. Babbage to write a program to assist in the day-to-day operations of the produce stall. The program should prompt the user to input the number of cabbages purchased by a customer. Assume that the customer pays for the cabbages using a single guinea coin. The program should then display (1) the number of cabbages purchased, (2) the total cost of the cabbages in pence, (3) the change in pence, and (4) the change in pounds, shillings and pence.

ANALYSIS

IPO CHART

Variable	Type	Input	Processing	Output
number_of_cabbages	Integer	X		X
pence_spent	Integer		X	X
change_in_pences	Integer		X	X
change_in_shillings	Integer		X	X
change_in_pounds	Integer		X	X

FORMULAS:

pence_spent ← number_of_cabbbages x 2
total_pence_change ← 252 – pence_spent
change_in_pounds ← [total_pence_change / 240]
change_in_shillings ← [(total_pence_change MOD 240) / 12]
change_in_pences ← (total_pence_change MOD 240) MOD 12

TEST DATA

#	number_of_cabbages	pence_spent	total_pence_change	Change(£-s-d)
1	12	24	228	£0-19s-0d
2	78	156	96	£0-8s-0d
3	45	90	162	£0-13s-6d
4	6	12	240	£1-0s-0d
5	125	250	2	£0-0s-2d

DESIGN (PSEUDOCODE)

Declare number_of_cabbages, pence_spent, change_in_pences, change_in_shillings, change_in_pounds As Integer
Write "Enter the number of cabbages purchased"
Input number_of_cabbages
Set pence_spent ← number_of_cabbbages x 2

Set total_pence_change ← 252 – pence_spent
Set change_in_shillings ← [(total_pence_change MOD 240) / 12]
Set change_in_pences ← (total_pence_change MOD 240) MOD 12
Write “Number of cabbages purchased: “ + number_of_cabbbages
Write “The total cost of the cabbages in pence: ” + pence_spent
Write “The change in pence: ” + total_pence_change
Write “Change: ” + “£” + change_in_pounds + ” – “ + change_in_shillings + ”s” + ” - ” + change_in_pences + ”d”