ASSIGNMENT 1 PROGRAMMING TECHNIQUE 1 (SECJ1013)

SECTION 07, SEM 1 (2024/2025)

Type of calculator: Percent Off Calculator

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Percent Off Calculator

Please provide two values below to calculate.

Modify the values and click the Calculate button to use

Original price	$39.99
Percent off	15 %
Final price	$
Saved	$

Has stackable additional discount?

(•) No ( ) Yes

Calculate Clear

A percent off of a product or service is a common discount format. A percent off of a product means that the price of the product is reduced by that percent. For example, given a product that costs $279, 20% off of that product would mean subtracting 20% of the original price from the original price. For example:

$$20\% \text{ of } \$279 = 0.20 \times 279 = \$55.80$$

$$\$279 - \$55.80 = \$223.20$$

You would therefore be saving $55.80 on the purchase for a final price of $223.20.

For this calculator, a "stackable additional discount" means getting a further percent off of a product after a discount is applied. Using the same example, assume that the 20% discount is a discount applied by the store to the product. If you have a coupon for another 15% off, the 15% off would then be applied to the discounted price of $223.20. It is not a total of 35% off of the original price. It is less:

$$15\% \text{ of } \$223.20 = \$33.48$$

$$\$223.20 - \$33.48 = \$189.72$$

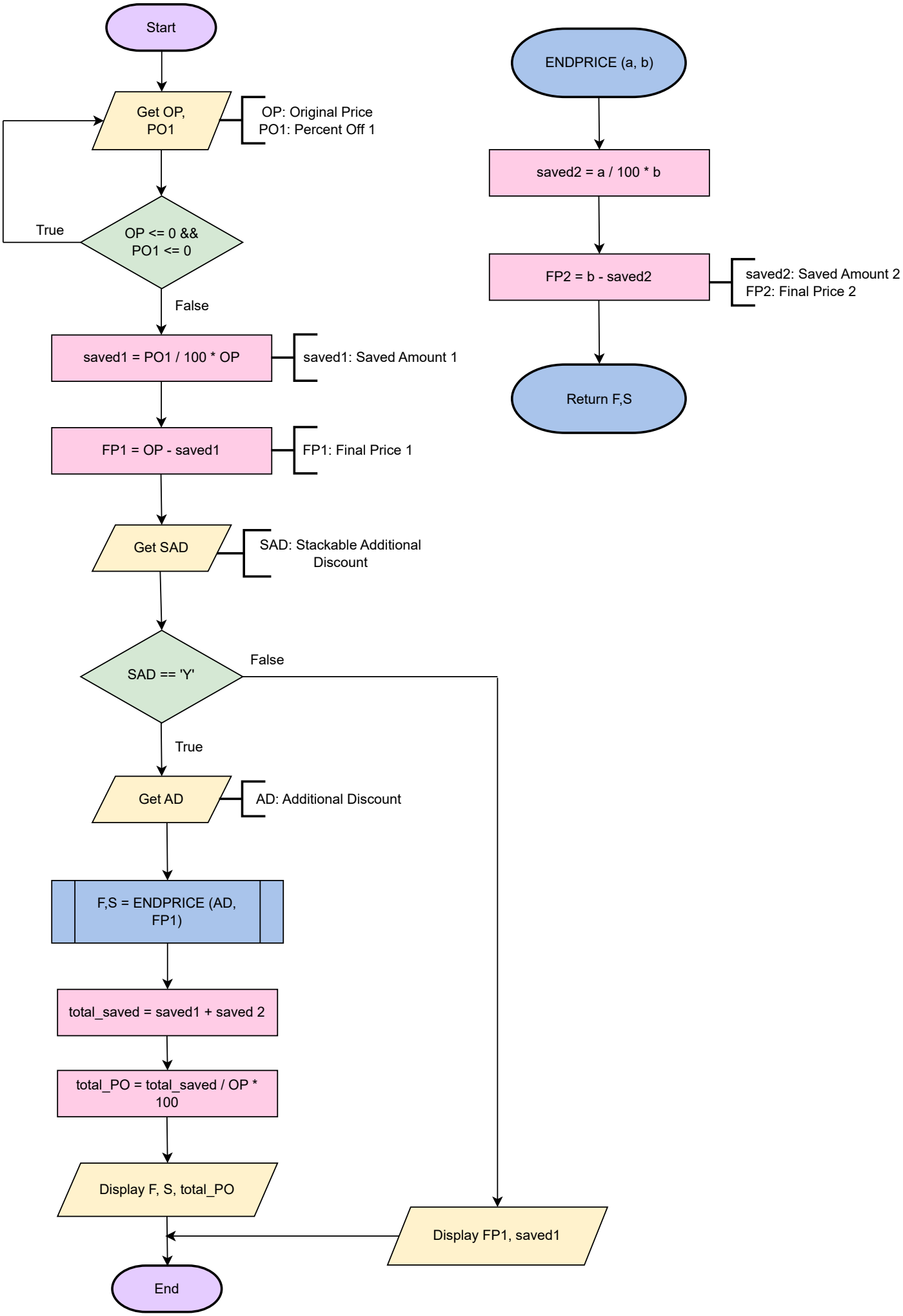
Thus, with a 20% discount off of $279, and an additional 15% off of that discounted price, you would end up saving a total of:

$$\$55.80 + \$33.48 = \$89.28$$

This equates to a 32% discount, rather than a 35% discount, and this calculation is how the calculator is intended to be used. As an example, to more efficiently compute the discount described above:

$$\text{Final price} = (0.80 \times 279) \times 0.85 = \$189.72$$

This is because 80% of the original price is the same as subtracting 20% of the original price from the original price. The same is true for 85% and 15% case applied to the discounted price.


Start
Get OP, PO1
OP: Original Price
PO1: Percent Off 1
True
OP <= 0 && PO1 <= 0
False
saved1 = PO1 / 100 * OP
saved1: Saved Amount 1
FP1 = OP - saved1
FP1: Final Price 1
Get SAD
SAD: Stackable Additional Discount
SAD == 'Y'
False
True
Get AD
AD: Additional Discount
F,S = ENDPRICE (AD, FP1)
total_saved = saved1 + saved 2
total_PO = total_saved / OP * 100
Display F, S, total_PO
Display FP1, saved1
End
ENDPRICE (a, b)
saved2 = a / 100 * b
FP2 = b - saved2
saved2: Saved Amount 2
FP2: Final Price 2
Return F,S