LAB 3L

Purpose

This exercise gives you practice with understanding the problem, creating proper expressions, and output formatting.

Problem

A) If P dollars (called the principal) is invested at 4% interest rate compunded annually, then the future value of the investment after n years is given by the formula:

$$\text{future value} = P\left(1 + \frac{r}{100}\right)^n.$$

Calculate future value of an investment after the user enters the principal, interst rate, and number of years.

B) The present value of f dollars at interest rate r% compounded annually for n years is the amount of money that must be invested now in order to grow to f dollars (called the future value) in n years where the interest rate is r% per year. The formula for present value is:

$$\text{present value} = \frac{f}{\left(1 + \frac{r}{100}\right)^n}.$$

Calculate the present value of an investment after the user enters the future value, interest rate, and number of years.

Input

A) Principal amount, Interest rate, Number of years
B) Future Value, Interest rate, Number of years

Output Formatting

The dollar amounts must be displayed with as a currency value, the interest rate should be displayed as a percentage and the number of years should be an integer.

Sample Program Run

The public folder for the lab has 2 samples showing you the inputs and output for 2 different program executions. Look at the samples to decide how the input (prompts) should be accepted from the user and the type of output desirable.

Grade Key (Part A and Part B are worth equal points)

Name, comments	5
Proper inputs and prompts	10
Expression value correct, result is accurate	40
Works correctly for various input values	15
Output formatting according to specification	30