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CS-210

Professor Noss

**Project Two Pseudocode**

**main.cpp pseudocode**

**START**

**// Function to run a test case**

**DEFINE FUNCTION runTest(initial, monthly, interest, years)**

**CREATE InvestmentCalculator object with parameters initial, monthly, interest, years**

**CALL DisplayResults on the InvestmentCalculator object**

**PRINT separator line**

**END FUNCTION**

**DECLARE variables initial, monthly, interest, years**

**PRINT "Welcome to the Investment Calculator"**

**PROMPT user to enter Initial Investment Amount**

**STORE user input in initial**

**PROMPT user to enter Monthly Deposit**

**STORE user input in monthly**

**PROMPT user to enter Annual Interest**

**STORE user input in interest**

**PROMPT user to enter Number of Years**

**STORE user input in years**

**CREATE InvestmentCalculator object with initial, monthly, interest, years**

**CALL DisplayResults on the InvestmentCalculator object**

**END**

**InvestmentCalculator.h pseudocode**

**// Class definition**

**CLASS InvestmentCalculator**

**// Private attributes**

**DECLARE initial\_investment**

**DECLARE monthly\_deposit**

**DECLARE annual\_interest**

**DECLARE number\_of\_years**

**// Public methods**

**PUBLIC CONSTRUCTOR(initial, monthly, interest, years)**

**METHOD CalculateWithoutDeposits()**

**METHOD CalculateWithDeposits()**

**METHOD DisplayResults()**

**END CLASS**

**InvestmentCalculator.cpp pseudocode**

**// Constructor to initialize attributes**

**FUNCTION InvestmentCalculator.CONSTRUCTOR(initial, monthly, interest, years)**

**SET initial\_investment to initial**

**SET monthly\_deposit to monthly**

**SET annual\_interest to interest**

**SET number\_of\_years to years**

**END FUNCTION**

**// Calculate and display balance without monthly deposits**

**FUNCTION InvestmentCalculator.CalculateWithoutDeposits()**

**INITIALIZE balance with initial\_investment**

**PRINT header for the table**

**FOR each year from 1 to number\_of\_years**

**CALCULATE interest**

**ADD interest to balance**

**PRINT year, balance, interest**

**END FOR**

**END FUNCTION**

**// Calculate and display balance with monthly deposits**

**FUNCTION InvestmentCalculator.CalculateWithDeposits()**

**INITIALIZE balance with initial\_investment**

**PRINT header for the table**

**FOR each year from 1 to number\_of\_years**

**INITIALIZE total\_interest to 0**

**FOR each month from 1 to 12**

**ADD monthly\_deposit to balance**

**CALCULATE interest**

**ADD interest to balance**

**ADD interest to total\_interest**

**END FOR**

**PRINT year, balance, total\_interest**

**END FOR**

**END FUNCTION**

**// Display results for both scenarios**

**FUNCTION InvestmentCalculator.DisplayResults()**

**PRINT "Balance and Interest Without Additional Monthly Deposits"**

**CALL CalculateWithoutDeposits()**

**PRINT empty line**

**PRINT "Balance and Interest With Additional Monthly Deposits"**

**CALL CalculateWithDeposits()**

**END FUNCTION**