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**5-3 Project Banking: Pseudocode**

**MAIN.CPP**

START

Display Data Input Format

Wait for user to press Enter to continue

Initialize variables for initial investment, monthly deposit, annual interest, and years

Prompt user to enter initial investment amount and store in variable

Prompt user to enter monthly deposit amount and store in variable

Prompt user to enter annual interest rate and store in variable

Prompt user to enter number of years and store in variable

Create an instance of InvestmentAccount with the entered values

Call method to display year-end data without additional monthly deposits

Call method to display year-end data with additional monthly deposits

Call method to display investment growth table

Wait for user to press Enter to continue

END

**INVESTMENTBANKING.CPP**

INCLUDE "InvestmentAccount.h"

INCLUDE <iomanip>

INCLUDE <iostream>

USING NAMESPACE std

CONSTRUCTOR InvestmentAccount WITH PARAMETERS (initInv, monDep, AnuInt, years)

ASSIGN initialInvestment TO initInv

ASSIGN monthlyDeposit TO monDep

ASSIGN annualInterest TO AnuInt

ASSIGN years TO years

METHOD displayYearEndData

SET totalAm TO initialInvestment

SET intAmt TO 0

OUTPUT HEADER FOR YEAR-END BALANCE AND INTEREST WITHOUT ADDITIONAL DEPOSITS

FOR EACH year FROM 0 TO years

CALCULATE intAmt AS (totalAm \* annualInterest / 100)

ADD intAmt TO totalAm

OUTPUT year, year-end balance, and year-end interest

METHOD displayYearEndDataWithMonthlyDeposits

SET totalAm TO initialInvestment

SET intAmt TO 0

SET yearTotInt TO 0

OUTPUT HEADER FOR YEAR-END BALANCE AND INTEREST WITH ADDITIONAL DEPOSITS

FOR EACH year FROM 0 TO years

FOR EACH month FROM 0 TO 11

CALCULATE intAmt AS ((totalAm + monthlyDeposit) \* (annualInterest / 100) / 12)

ADD intAmt TO yearTotInt

ADD (monthlyDeposit + intAmt) TO totalAm

ENDFOR

OUTPUT year, year-end balance, and year-end interest

METHOD displayInvestmentGrowthTable

SET totalAm TO initialInvestment

SET intAmt TO 0

SET months TO (years \* 12)

OUTPUT HEADER FOR MONTHLY GROWTH TABLE

FOR EACH month FROM 1 TO months

CALCULATE intAmt AS ((totalAm + monthlyDeposit) \* (annualInterest / 100) / 12)

ADD intAmt TO totalAm

ADD monthlyDeposit TO totalAm

CALCULATE openingAmount, total, closingBalance

OUTPUT month, opening amount, deposited amount, total amount, interest amount, and closing balance

**INVESTMENTBANKING.H**

DEFINE CLASS InvestmentAccount

PRIVATE VARIABLES

initialInvestment: float

monthlyDeposit: float

annualInterest: float

years: float

CONSTRUCTOR InvestmentAccount(initInv: float, monDep: float, AnuInt: float, years: float)

SET initialInvestment TO initInv

SET monthlyDeposit TO monDep

SET annualInterest TO AnuInt

SET years TO years

PUBLIC METHODS

displayYearEndData(): void

FOR each year in years

CALCULATE interest amount based on annual interest rate

UPDATE total amount with interest

OUTPUT year, year-end balance, and year-end interest

displayYearEndDataWithMonthlyDeposits(): void

FOR each year in years

FOR each month in 12

CALCULATE interest amount based on monthly interest rate

UPDATE yearly interest total with calculated interest

UPDATE total amount with monthly deposit and interest

ENDFOR

OUTPUT year, year-end balance, and year-end interest

displayInvestmentGrowthTable(): void

FOR each month in total months (years \* 12)

CALCULATE interest amount based on monthly interest rate

UPDATE total amount with interest and monthly deposit

CALCULATE opening amount, total amount, closing balance

OUTPUT month, opening amount, deposited amount, total amount, interest amount, and closing balance