# Compound Interest Calculator Pseudocode

FUNCTION main

CREATE application

CALL run function on application

END FUNCTION

CLASS application

MEMBER VARIABLES

Terminal Width

Running Boolean

Array of previous reports

FUNCTIONS

FUNCTION run

SET Running Boolean to true

WHILE Running

CALL readReportParameters STORE VALUE AS report parameters

PRINT “Press any key to continue…”

WAIT for user input

CREATE report without monthly deposit using report parameters

CREATE report with monthly deposit using report parameters

CLEAR SCREEN

PRINT both reports

PRINT “Press any key to calculate new values…”

WAIT for user input

CLEAR SCREEN

END LOOP

END FUNCTION

FUNCTION readReportParameters

PRINT “Data Input” header

READ initial investment

VALIDATE initial investment

READ monthly deposit

VALIDATE monthly deposit

READ Annual Interest

VALIDATE Annual Interest

READ Number of Years

VALIDATE Number of Years

RETURN INPUT

END FUNCTION

END CLASS

CLASS Report

MEMBER VARIABLES

Array of Report Rows

Report Title

CONSTRUCTOR FUNCTION

PARAMETERS: Report Parameters, Title

FOR iterator 0 to Number of years \* 12

CREATE Report Row using previous month closing value, monthly deposit, and annual interest / 12

ADD new row to array

END LOOP

END FUNCTION

FUNCTION printYearly

PRINT Report Header using Title

DECLARE Interest Earned This Year and SET to 0

FOR iterator 0 to length of Rows array – 1 AS Current Month

Add Current Month’s interest earned to Interest Earned This Year

IF Current Month iterator is not 0 and Current Month Iterator % 12 is 11 (Last month of the year)

SET Report Year to Current Month Iterator + 1

PRINT Report Year

PRINT Current Month End Balance

PRINT Interest Earned This Year

SET Interest Earned This Year to 0

END IF

END LOOP

END FUNCTION

END CLASS

CLASS Report Row (Immutable Pure Data Class)

MEMBER VARIABLES

Month number

Opening Amount

Deposited Amount

Total Amount

Interest Earned This Month

Closing Balance

CONSTRUCTOR FUNCTION

PARAMETERS: month number, opening amount, deposited amount, monthly interest

SET Month Number

SET Opening Amount

SET Deposited Amount

SET Total Amount to Opening Amount + Deposited Amount

SET Interest Earned This Month to Total Amount \* monthly interest

SET Closing Balance to Total Amount + Interest Earned This Month

END FUNCTION

END CLASS

DATA STRUCTURE Report Parameters

MEMBER VARIABLES:

Initial Investment

Monthly Deposit

Annual Interest

Number Of Months

END STRUCTURE