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! Program Name : Comm.f90
!
! Programmer:      Dulal Kar
! Submitted by:    Dulal Kar
! Compiler:        ELF90 version 4.0
! Date:           February 24, 1999
!
! Description:     This program reads in the transaction
!                  number, the type of transaction,
!                  the place of transaction, and
!                  the transaction amount
!                  and then computes
!                  the commission
!                  according to the following table:
!
!                  Transaction      Place of      Commission Rate
!                  Type              Transaction
!                  -----
!                  1                1              5.5%
!                  1                2              3.8%
!                  1                3              4.5%
!                  2                1              6%
!                  2                2              4.4%
!                  2                3              5.6%
!                  -----
!
! Input:           Trans.dat file containing transaction number,
!                  transaction type, transaction place, and transaction
!                  amount for all transactions
!
! Output:          The program outputs transaction number, transaction
!                  amount, and commission for each transaction
!-----

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PROGRAM calc_commission
  IMPLICIT NONE

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! Declare all constants
  REAL, PARAMETER :: rate_1_1=0.055, rate_1_2=0.038, rate_1_3=0.045
  REAL, PARAMETER :: rate_2_1=0.06, rate_2_2=0.044, rate_2_3=0.056

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! Declare variables
  INTEGER :: trans_number, trans_type, trans_place
  REAL :: trans_amount, commission
  INTEGER :: ios

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! Open input file
  OPEN (9, FILE="trans.dat", STATUS="OLD", IOSTAT=ios)
  IF (.NOT.(ios == 0)) THEN
    WRITE (*,*) "*** Cannot open input file ***"
    STOP
  END IF

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! Open output file
OPEN (10, FILE="report3.dat", STATUS="REPLACE", IOSTAT=ios)
IF (.NOT.(ios == 0)) THEN
    WRITE (*,*) "**** Cannot open output file ****"
    STOP
END IF

! Read first data set
READ(9,*,IOSTAT=ios) trans_number, trans_type, &
    trans_place, trans_amount

! Read and process data sets successively for all employees
! until to the end of input file
DO
    IF (ios < 0) EXIT      ! Exit if no more data in input file
    IF (trans_type == 1) THEN
        IF (trans_place == 1) THEN
            commission = rate_1_1 * trans_amount
        ELSE IF (trans_place == 2) THEN
            commission = rate_1_2 * trans_amount
        ELSE IF (trans_place == 3) THEN
            commission = rate_1_3 * trans_amount
        ELSE
            WRITE (*,*) "**** Wrong code for transaction place ****"
        END IF
    ELSE IF (trans_type == 2) THEN
        IF (trans_place == 1) THEN
            commission = rate_2_1 * trans_amount
        ELSE IF (trans_place == 2) THEN
            commission = rate_2_2 * trans_amount
        ELSE IF (trans_place == 3) THEN
            commission = rate_2_3 * trans_amount
        ELSE
            WRITE (*,*) "**** Wrong code for transaction place ****"
        END IF
    ELSE
        WRITE (*,*) "**** Wrong transaction type ****"
    END IF

    WRITE (10, 50) trans_number, trans_amount, commission

    READ (9, *, IOSTAT=ios) trans_number, trans_type, &
        trans_place, trans_amount
END DO

close (9)
close (10)
STOP
50 FORMAT (I10, 2F10.2)
END PROGRAM calc_commission

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