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1 !PROBLEM 9 (optional)
2 !Debasis Buxy
3 !PRN: 22020004154
4 !to convert a number in base A to a number in decimal(base 10)
5 !and also to a number in base B
6 program CONVERTOR
7     implicit none
8     integer :: M, N, A, B, I, J, TEMP, S = 0
9     character(100) :: C
10    integer, dimension(100) :: X
11
12    write(*,*) "Enter a number: "
13    read(*,*) C !copy entire line
14    write(*,*) "Enter base of the number: "
15    read(*,*) A
16    write(*,*) "Enter new base: "
17    read(*,*) B
18
19    N = len_trim(C) !length of string ignoring blank spaces
20    !convert number in base A to decimal
21    do I=1,N
22        TEMP = ichar(C(I:I)) !character at the ith location
23        if (TEMP >= 48 .and. TEMP <= 57) then ! if number
24            S = S*A+TEMP-48
25        else if (TEMP >= 65 .and. TEMP <= 90) then ! if uppercase letter
26            S = S*A+TEMP-55
27        else if (TEMP >= 97 .and. TEMP <= 122) then ! if lowercase letter
28            S = S*A+TEMP-87
29        else
30            write(*,*) "Invalid input!"
31        end if
32    end do
33
34    !convert number in decimal to base B
35    I = 1
36    M = S
37    do
38        X(I) = mod(M,B)
39        M = M/B
40        if (M == 0) then
41            exit
42        else
43            I = I+1
44        end if
45    end do
46
47    write(*,*) "Equivalent number in base 10 : "
48    write(*,120) S
49    write(*,*) "Equivalent number in the new base : "
50    do J = I, 1, -1
51        if (X(J) < 10) then
52            write(*,100,advance='no') X(J)
53        else
54            write(*,110,advance='no') char(55+X(J))
55        end if
56    end do
57
58 100 format(i1)
59 110 format(a1)
60 120 format(i0)

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61 | end program CONVERTOR
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