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1 !PROBLEM 10(optional)
2 !Debasis Buxy
3 !PRN: 22020004154
4 !14/7/21
5 !to construct a polynomial using Horner's method
6 program HORNERSMETHOD
7     implicit none
8     integer :: X, C, N, I
9     integer, dimension(0:10) :: A
10
11     write(*,*) "Enter the degree of polynomial(N<10):"
12     read(*,*) N
13     write(*,130) "Enter coefficients a0 to a",N,":"
14     read(*,*) (A(I), I=0,N)
15     write(*,*) "Enter the value of x:"
16     read(*,*) X
17
18     write(*,120,advance="no") "F(x) = "
19     do I=N,0,-1
20         write(*,110,advance="no") A(I)," x^",I
21         if (I /= 0) then
22             write(*,120,advance="no") " + "
23         else
24             write(*,*)
25         end if
26     end do
27
28     C = A(N)
29     do I = N-1, 0, -1
30         C = C*X + A(I)
31     end do
32
33     write(*,100) "F(",X,") = ",C
34
35 100 format(A,i0,A,i0)
36 110 format(i0,A,i0)
37 120 format(A)
38 130 format(A,i0,A)
39 end program HORNERSMETHOD

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