Evaluacion 1

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1 Actividad 1: Esfera

```
program esfera


  implicit none

  integer :: ierr
  character(1) :: yn
  real :: radius, area, volumen
  real, parameter :: pi = 3.141592653589793

  interactive_loop: do


    write (*,*) 'Declare el radio de la esfera'
    read (*,*,iostat=ierr) radius

    if (ierr /= 0) then
      write(*,*) 'Error, entrada invalida'
      cycle interactive_loop
    end if


    area = 4 * pi * radius * radius
    volumen = 4 * pi * radius**3 / 3


    write (*,'(1x,a7,f14.2,5x,a7,f14.2,5x,a9,f14.2)') &
      'radius=',radius,'area=',area, 'volumen=',volumen

    yn = ' '
    yn_loop: do
      write(*,*) 'Perform another calculation? s[n]'
      read(*,'(a1)') yn
      if (yn=='s' .or. yn=='S') exit yn_loop
      if (yn=='n' .or. yn=='N' .or. yn==' ') exit interactive_loop
    end do yn_loop

  end do interactive_loop

end program esfera
```

2 Actividad 2: Medias

```
program summation
implicit none
integer :: suma, a, conta
real :: aritme, armoni, sumarmo, fa, fc, fs

print*, "Este programa realiza las medias de una sumatoria, cuando quiera aplaste 0 para
open(unit=10, file="SumData.DAT", status='unknown')

suma = 0
conta = 0
sumarmo = 0

do
 print*, "De numero:"
 read*, a
 if (a == 0) then
  exit
 else
suma = suma + a
conta = conta + 1
fa = float(a)
fa = 1/fa
sumarmo = sumarmo + fa

 end if
 write(10,*) a
end do
fs = float(suma)
fc = float(conta)
aritme = fs / fc
armoni = fc / sumarmo


print*, "Sumatoria =", suma
write(10,*) "Sumatoria =", suma
write(10,*)' '
print*, "Media aritmetica =", aritme
write(10,*) "Media aritmetica =", aritme
write(10,*) ' '
print*, "Media armonica =", armoni
write(10,*) "Media armonica =", armoni
write(10,*) ' '
```

```
close(10)

end
```

3 Actividad 3: Pi

```
program serie
 implicit none
integer :: i
real :: n, suma, iteracion, pi

  pi = 1
  iteracion = 1
 write(*,*) 'El valor de pi/4 segun las repeticiones:'
     do i=1, 50
     iteracion = iteracion * (-1)
     n = 2 * i + 1
     n = 1 / n
     n = n * (iteracion)
     pi = pi + n
if (i.EQ.10) then
write(*,*) ' '
write(*,*) '10:', pi
        end if

if (i.EQ.20) then
write(*,*) ' '
write(*,*) '20:', pi
        end if

if (i.EQ.30) then
write(*,*) ' '
write(*,*) '30:', pi
        end if

if (i.EQ.40) then
write(*,*) ' '
write(*,*) '40:', pi
        end if

if (i.EQ.50) then
write(*,*) ' '
write(*,*) '50:', pi
        end if
```

```
end do

end program serie
```