

# FORTRAN

## 1. Addition program

```
!addition program

program addition

implicit none

INTEGER::x,y,z

print *, 'Enter the value of x and y'

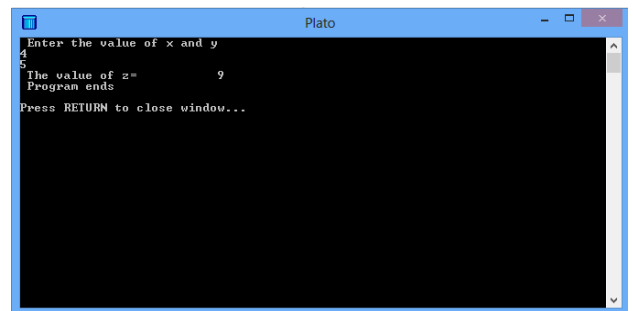
read *,x,y

z=x+y

print *, 'The value of z=',z

print *, 'Program ends'

end program addition
```



```
Plato
Enter the value of x and y
4
5
The value of z= 9
Program ends
Press RETURN to close window...
```

## 2. if, else if and else

```
program check

implicit none

integer::x

read *,x

if(x<0) then

    print *, 'Negative Number'

    print *, 'x=',x

else if(x==0) then

    print *, 'x=',x

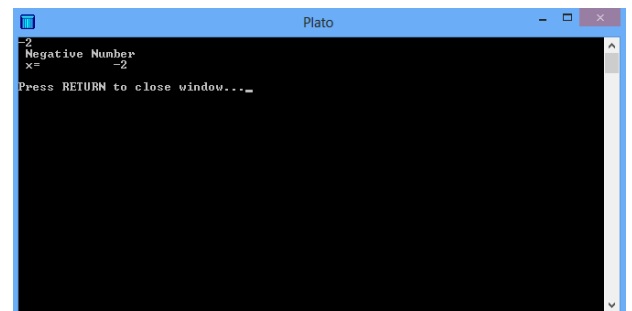
else

    print *, 'Positive Number'

    print *, 'x=',x

end if

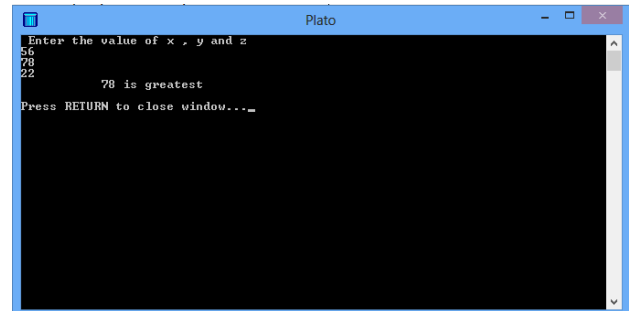
end program check
```



```
Plato
-2
Negative Number
x=-2
Press RETURN to close window...
```

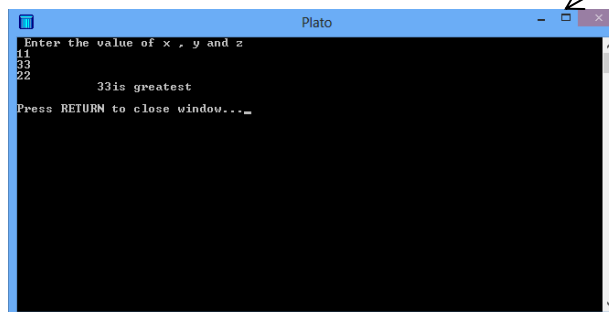
## 3. Nested if else

```
program greatest
implicit none
integer::x,y,z
print *, 'Enter the value of x , y and z'
read *,x,y,z
if(x>y) then
  if(x>z) then
    print *,x, 'is greatest'
  else
    print *,z, 'is greatest'
  end if
else
  if(y>z) then
    print *,y, 'is greatest'
  else
    print *,z, 'is greatest'
  end if
end if
end program greatest
```



```
Plato
Enter the value of x , y and z
56
78
22
78 is greatest
Press RETURN to close window...
```

## 4. .and. in fortran

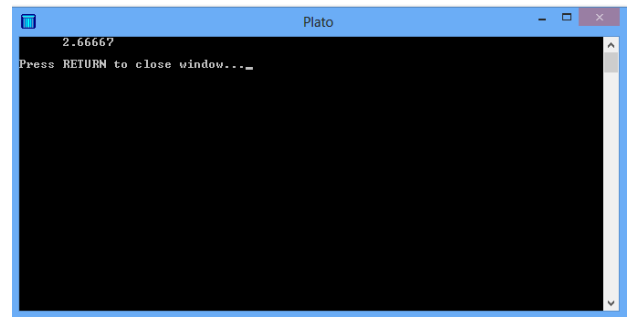


```
Plato
Enter the value of x , y and z
11
33
22
33 is greatest
Press RETURN to close window...
```

```
program greatest
implicit none
integer::x,y,z
print *, 'Enter the value of x , y and z'
read *,x,y,z
if(x>y.and.x>z) then
  print *,x, 'is greatest'
end if
if(y>x.and.y>z) then
  print *,y, 'is greatest'
end if
if(z>x.and.z>y) then
  print *,z, 'is greatest'
end if
if(x==y.and.x==z) then
  print *, 'Equal Number'
end if
end program greatest
```

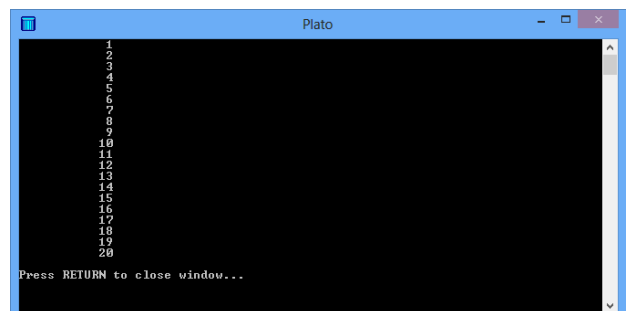
## 5. Simple Arithmetic

```
program calculate
implicit none
real::x=2,y
integer::i=2
y=x*((2.0**i)/3)
print *,y
end program calculate
```



## 6. do loop

```
program loops
implicit none
integer ::i
do i=1,20
  print *,i
end do
end program loops
```



## 7. Nested do loop

```
program loops
implicit none
integer ::i,j
do i=1,2
  do j=1,3
    print *,i+j
  end do
end do
end program loops
```



## 8. Array

```

program average

implicit none

real,dimension(10)::x

real::sum=0,avg

integer::i

print *, 'enter 10 numbers'

do i=1,10

    read *,x(i)

    sum=sum+x(i)

end do

avg=sum/10

print *, 'Average=',avg

print *, 'Numbers are',x

end program average
    
```

```

program matrixmul

implicit none

integer,dimension(3,3) :: x,y,z

integer :: i,j,k

do i=1,3

    do j=1,3

        read *,x(i,j)

    end do

end do

do i=1,3

    do j=1,3

        read *,y(i,j)

    end do

end do

do i=1,3

    do j=1,3

        z(i,j)=0

        do k=1,3

            z(i,j)=z(i,j)+x(i,k)*y(k,j)

        end do

    end do

end do

do i=1,3

    do j=1,3

        print *,z(i,j)

    end do

end do

end program matrixmul
    
```

## 9. Matrix multiplication

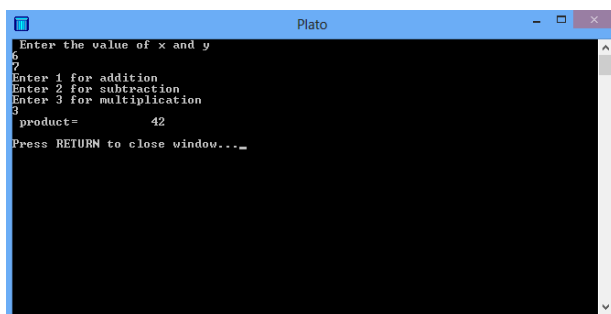
## 10. Formatted O/P using write(\*,label)

```
program formatop
implicit none
real::y
integer::x
character::z*20
x=512
y=3.5
z='programming'
write(*,1) x
1 format(1i10)
write(*,2) y
2 format(1f10.2)
write(*,3) z
3 format(1a7)
end program formatop
```



```
512
3.50
programming
Press RETURN to close window...
```

## 11. Calculated goto/computed goto.

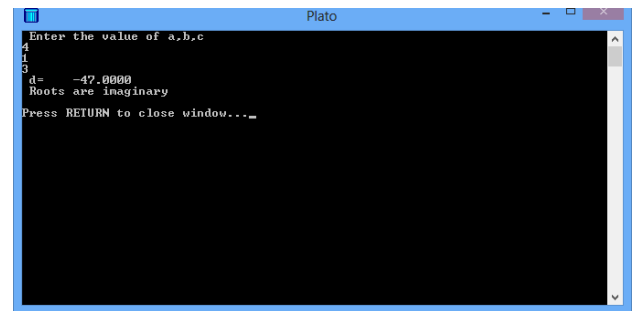


```
Enter the value of x and y
6
7
Enter 1 for addition
Enter 2 for subtraction
Enter 3 for multiplication
3
product=42
Press RETURN to close window...
```

```
program calcgoto
implicit none
integer::x,y,z,i
print *, 'Enter the value of x and y'
read *,x,y
print 1, 'Enter 1 for addition', 'Enter 2 for subtraction', 'Enter 3 for multiplication'
1 format(1a)
read *,i
goto (20,30,40) i
20      z=x+y
        print *, 'sum=',z
        go to 55
30      z=x-y
        print *, 'difference=',z
        go to 55
40      z=x*y
        print *, 'product=',z
55 stop
end program calcgoto
```

## 12. Arithmetic if

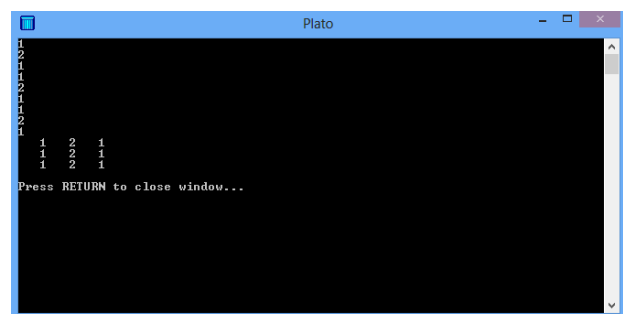
```
program arrif
implicit none
real::b,a,c,d
print *, 'Enter the value of a,b,c'
read *,a,b,c
d=(b**2)-(4*a*c)
print *, 'd=',d
if(d) 1,2,3
1 print *, 'Roots are imaginary'
    goto 55
2 print *, 'Roots are Real and equal'
    goto 55
3 print *, 'Roots are real and unequal'
55 stop
end program arrif
```



```
Plato
Enter the value of a,b,c
4
1
3
d= -47.0000
Roots are imaginary
Press RETURN to close window...
```

## 13. Print matrix using implied do

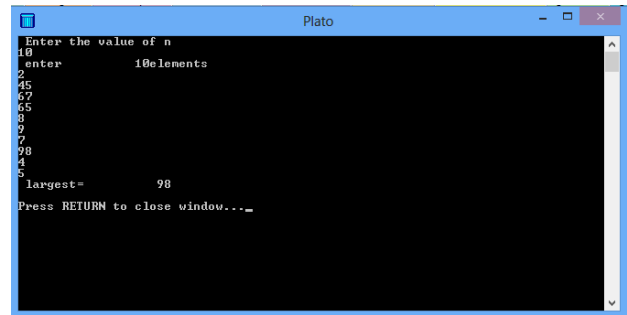
```
program displaymat
implicit none
integer,dimension(3,3) :: x
integer :: i,j
do i=1,3
  do j=1,3
    read *,x(i,j)
  end do
end do
do i=1,3
  print 2, (x(i,j),j=1,3)
end do
2 format(3i4)
end program displaymat
```



```
Plato
1 2 1
1 2 1
1 2 1
Press RETURN to close window...
```

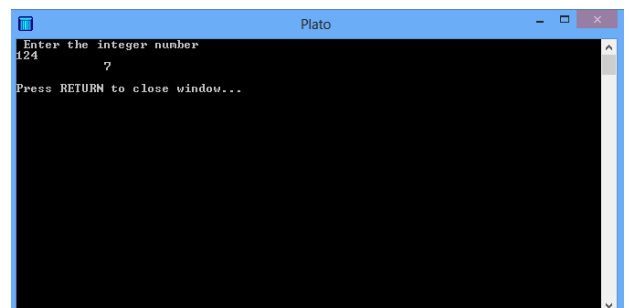
## 14. Largest in Array

```
program greatestarray
implicit none
integer::largest,i,n
integer,dimension(100)::y
print *, 'Enter the value of n'
read *,n
print *, 'enter',n,'elements'
do i=1,n
    read *,y(i)
end do
largest=y(1)
do i=2,n
    if(y(i)>largest) largest=y(i)
end do
print *, 'largest=',largest
end program greatestarray
```



## 15. Sum of digits

```
program digitsaddition
implicit none
integer::n,sum=0,rem
print *, 'Enter the integer number'
read *,n
do while(n>0)
    rem=mod(n,10)
    sum=sum+rem
    n=n/10
end do
print *,sum
end program digitsaddition
```



## 16. Sorting 10 numbers:

```
program sort
implicit none
integer ::i,j,temp
integer,dimension(10)::x
print *, 'Enter 10 numbers'

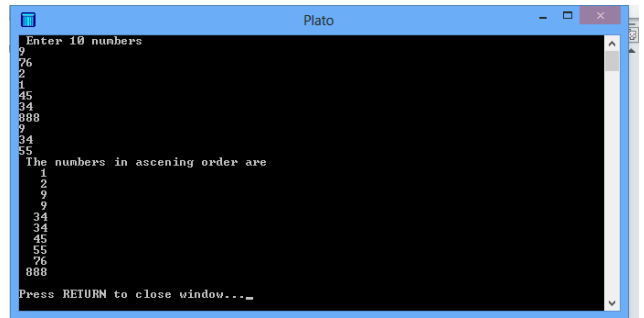
do i=1,10
    read *,x(i)
end do

do i=1,9
    do j=i+1,10
        if(x(i)>x(j)) then
            temp=x(i)
            x(i)=x(j)
            x(j)=temp
        end if
    end do
end do

print *, 'The numbers in ascening order are '

do i=1,10
    print 1,x(i)
end do

1 format(1i4)
end program sort
```





17. program pi[pi=4(1-1/3+1/5-1/7+1/9-.....)]

```
program pi
implicit none
integer:: i,j
real::sum,ans,k
k=1
sum=0.0
j=1
do i=1,25
    sum=sum+k/j
    k=-1*k
    j=j+2
end do
Ans=4*sum
print *,Ans
end program pi
```

