

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

1 Write a program to add, multiply and divide two integers and float numbers.

INPUT:

"""

1. Write a program to add, multiply and divide two integers and float numbers.

```
Name : Akshit Trivedi      Roll No.: 40
Class : MCA sem-1         Year : 2021-22
"""
```

```
print("Program to add, multiply and divide two integers and float
numbers.")
```

```
ch = input("Enter 1 for Integer and 2 for Float: ")
```

```
if ch=='1':
    num1 = int(input("Enter First Float Number: "))
    num2 = int(input("Enter Second Float Number: "))
    print("\nAddition is: ",num1+num2)
    print("Multiplication is: ",num1*num2)
    print("Division is: ",num1/num2)
```

```
elif ch=='2':
    num1 = float(input("Enter First Float Number: "))
    num2 = float(input("Enter Second Float Number: "))
    print("\nAddition is: ",float(num1+num2))
    print("Multiplication is: ",float(num1*num2))
    print("Division is: ",float(num1/num2))
```

```
else:
    print("Invalid Choice: ")
```

OUTPUT:

Program to add, multiply and divide two integers and float numbers.

Enter 1 for Integer and 2 for Float: 1

Enter First Float Number: 5

Enter Second Float Number: 5

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

Addition is: 10
Multiplication is: 25
Division is: 1.0

Program to add, multiply and divide two integers and float numbers.

Enter 1 for Integer and 2 for Float: 2

Enter First Float Number: 5.85

Enter Second Float Number: 6.99

Addition is: 12.84
Multiplication is: 40.8915
Division is: 0.8369098712446351

2 Write a program to check whether the entered number is even or odd.

INPUT:

"""

2. Write a program to check whether the entered number is even or odd.

Name : Akshit Trivedi Roll No.: 40
Class : MCA sem-1 Year : 2021-22
"""

```
num=int(input("Enter Number: "))

if(num%2==0):
    print("{0} is an Even Number".format(num))

else:
    print("{0} is an Odd Number".format(num))
```

OUTPUT:

Enter Number: 50
50 is an Even Number

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

3 Write a program to tell if a year is a leap year Or Not.

INPUT:

"""

3. Write a program to tell if a year is a leap year Or Not.

```
Name : Akshit Trivedi      Roll No.: 40
Class : MCA sem-1         Year   : 2021-22
"""
```

```
year=int(input("Enter Year to check: "))

if(year%4==0):
    if(year%100==0):
        if(year%400==0):
            print("{0} is a leap year".format(year))
        else:
            print("{0} is not a leap year".format(year))
    else:
        print("{0} is a leap year".format(year))
else:
    print("{0} is not a leap year".format(year))
```

OUTPUT:

```
Enter Year to check: 2021
2021 is not a leap year
```

```
Enter Year to check: 1984
1984 is a leap year
```

4 Write a program to determine the maximum of 3 numbers.

INPUT:

"""

4. Write a program to determine the maximum of 3 numbers.

```
Name : Akshit Trivedi      Roll No.: 40
Class : MCA sem-1         Year   : 2021-22
"""
```

```
num1=float(input("Enter Num1: "))
num2=float(input("Enter Num2: "))
num3=float(input("Enter Num3: "))
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
if(num1>=num2) and (num1>=num3):
    print("\n{0} is the Greatest of all Numbers.".format(num1))
elif(num2>=num3) and (num2>=num1):
    print("\n{0} is the Greatest of all Numbers.".format(num2))
else:
    print("\n{0} is the Greatest of all Numbers.".format(num3))
```

OUTPUT:

Enter Num1: 50.65

Enter Num2: 65.88

Enter Num3: 66.78

66.78 is the Greatest of all Numbers.

5 Write a program to accept number of days and print year, month and remaining days.

INPUT:

"""

5. Write a program to accept number of days and print year, month and remaining days.

Name : Akshit Trivedi	Roll No.: 40
Class : MCA sem-1	Year : 2021-22

"""

```
days=int(input("Enter Days: "))

years = (days // 365)
months = (days - years * 365) // 30
rem_days = (days - years * 365 - months * 30)

print("Years:",years)
print("Months:",months)
print("Days:",rem_days)
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

OUTPUT:

Enter Days: 1234
Years: 3
Months: 4
Days: 19

6 Write a program to swap the values of two variables.

INPUT:

"""

6. Write a program to swap the values of two variables.

Name : Akshit Trivedi Roll No.: 40
Class : MCA sem-1 Year : 2021-22
"""

```
num1=float(input("Enter Value of 1st Number: "))  
num2=float(input("Enter Value of 2nd Number: "))
```

```
print("\n\nValue Before Swapping: ")  
print("\nValue of 1st Number: ",num1)  
print("Value of 2nd Number: ",num2)
```

```
num1,num2=num2,num1
```

```
print("\n\nValue After Swapping: ")  
print("\nValue of 1st Number: ",num1)  
print("Value of 2nd Number: ",num2)
```

OUTPUT:

Enter Value of 1st Number: 10.20

Enter Value of 2nd Number: 20.10

Value Before Swapping:

Value of 1st Number: 10.2
Value of 2nd Number: 20.1

Value After Swapping:

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

Value of 1st Number: 20.1

Value of 2nd Number: 10.2

7 Admission to a professional course is subject to the following conditions :

marks in mathematics ≥ 60

marks in physics ≥ 50

marks in chemistry ≥ 40

total in all three subjects ≥ 200 or

total in mathematics and physics ≥ 150

given the marks in the three subjects , write a program to process the applications to list an eligible candidate.

INPUT:

"""

7. Admission to a professional course is subject to the following conditions :

(a) marks in mathematics ≥ 60

(b) marks in physics ≥ 50

(c) marks in chemistry ≥ 40

(d) total in all three subjects ≥ 200

or

total in mathematics and physics ≥ 150

given the marks in the three subjects , write a program to process the applications to list an eligible candidate.

Name : Akshit Trivedi

Roll No.: 40

Class : MCA sem-1

Year : 2021-22

"""

```
math=int(input("Enter Marks of Mathematics: "))
```

```
phy=int(input("Enter Marks of Physics: "))
```

```
chem=int(input("Enter Marks of Chemistry: "))
```

```
tot=math+phy+chem
```

```
pm=phy+math
```

```
if(math>=60 and phy>=50 and chem>=40 and (tot>=200 or pm>=150)):
```

```
    print("\nStudent is Eligible")
```

```
else:
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
print("Student is not Eligible")
```

OUTPUT:

```
Enter Marks of Mathematics: 75
```

```
Enter Marks of Physics: 80
```

```
Enter Marks of Chemistry: 85
```

```
Student is Eligible
```

```
Enter Marks of Mathematics: 65
```

```
Enter Marks of Physics: 45
```

```
Enter Marks of Chemistry: 55
```

```
Student is not Eligible
```

8 Write a program that reads the percentage obtained by the students and determines and prints the class obtained by the student as per the following rules

Percentage

Class

0- 39

Fail

40 - 59

Second class

60 - 79

First class

80 - 100

Distinction

INPUT:

```
"""
```

8. Write a program that reads the percentage obtained by the students and determines and prints the class obtained by the student as per the following rules

Percentage	Class
0 - 39	Fail
40 - 59	Second class
60 - 79	First class

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

80 - 100 Distinction

Name : Akshit Trivedi
Class : MCA sem-1
"""

Roll No.: 40
Year : 2021-22

```
name=input("Enter Your Name: ")
per=int(input("Enter your Percentage: "))

if(per>=0 and per<=39):
    print("Student {name} is Fail. Better Luck Next Time!".format(name=name))
elif(per>=40 and per<=59):
    print("Student {name} has got Second Class.".format(name=name))
elif(per>=60 and per<=79):
    print("Student {name} has got First Class.".format(name=name))
elif(per>=80 and per<=100):
    print("Student {name} has got Distinction.".format(name=name))
```

OUTPUT:

Enter Your Name: Akshit Trivedi

Enter your Percentage: 80
Student Akshit Trivedi has got Distinction.

9 Write a program to calculate the average of a set of n given numbers.

INPUT:

"""

9. Write a program to calculate the average of a set of n given numbers.

Name : Akshit Trivedi
Class : MCA sem-1
"""

Roll No.: 40
Year : 2021-22

```
avg=0
n=int(input("How many Elements do you want to Enter: "))

for i in range(n):
    num=int(input("Enter the Value for Element {0}: ".format(i+1)))
    avg=avg+num;
```


PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
print("\nThe Average of {0} Numbers is: {1}".format(n,avg/n))
```

OUTPUT:

How many Elements do you want to Enter: 2

Enter the Value for Element 1: 5

Enter the Value for Element 2: 10

The Average of 2 Numbers is: 7.5

10 Write a program to calculate the area of circle/rectangle/triangle.

C indicate circle ,

R indicate rectangle,

T indicate triangle.

use symbolic constant to define the value of pie.

INPUT:

```
"""
```

```
10. Write a program to calculate the area of circle/rectangle/triangle.
```

```
    C indicate circle ,
```

```
    R indicate rectangle,
```

```
    T indicate triangle.
```

```
use symbolic constant to define the value of pie.
```

```
Name : Akshit Trivedi
```

```
Roll No.: 40
```

```
Class : MCA sem-1
```

```
Year : 2021-22
```

```
"""
```

```
PI=3.14
```

```
print("\n Enter C for Circle")
```

```
print("\n Enter R for Ractangle")
```

```
print("\n Enter T for Triangle")
```

```
ch = input("Enter your Choice : ")
```

```
if(ch == 'C' or ch == 'c'):
```

```
    r = int(input("Enter Radius of Circle : "))
```

```
    area = PI * r * r;
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
print("\nArea of Circle : ",area)

elif (ch == 'R' or ch == 'r'):
    w = int(input("Enter Width of rectangle : "))
    h = int(input("Enter Height of rectangle : "))
    area = w * h;
    print("\nArea of Rectangle : ",area)

elif(ch == 'T' or ch == 't'):
    b = int(input("Enter Base of triangle : "))
    h = int(input("Enter Height of triangle : "))
    area = (h * b)/2;
    print("\nArea of Triangle : ",area)

else:
    print("Invalid Choice!!! Please Try Again.")
```

OUTPUT:

```
Enter C for Circle

Enter R for Ractangle

Enter T for Triangle

Enter your Choice : c

Enter Radius of Circle : 12

Area of Circle : 452.15999999999997
```

11 Write a program that accept basic, HRA, and DA from the user and calculate total salary.

INPUT:

```
"""
11. Write a program that accept basic, HRA, and DA from the user and
calculate total salary.
```

```
Name : Akshit Trivedi          Roll No.: 40
Class : MCA sem-1             Year : 2021-22
"""
```

```
basic =int(input(" Enter Basic Salary : "))
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
p_hra =float(input(" Enter HRA in Percentage (%) : "))
p_da =float(input(" Enter DA in Percentage (%) : "))

hra = (basic * p_hra)/100
da = (basic * p_da)/100

gs = basic + hra + da

print(" \nGross Salary is: { {0:.2f} ₹".format(gs));
```

OUTPUT:

```
Enter Basic Salary : 10578.95

Enter HRA in Percentage (%) : 4.59

Enter DA in Percentage (%) : 6.74

Gross Salary is: 11777.55 ₹
```

12(1). Generate the following pattern:

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

INPUT:

```
"""
```

```
12(1). Generate the following pattern:
```

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

```
Name : Akshit Trivedi      Roll No.: 40
Class : MCA sem-1          Year : 2021-22
"""
```

```
for i in range(0,5):
    for j in range(0,5):
        print("*",end=" ")
    print()
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

OUTPUT:

```
* * * * *
* * * * *
* * * * *
* * * * *
* * * * *
```

12(2). Generate the following pattern:

```
  *
 * *
* * *
* * * *
* * * * *
```

INPUT:

```
"""
```

12(2). Generate the following pattern:

```
  *
 * *
* * *
* * * *
* * * * *
```

Name : Akshit Trivedi

Roll No.: 40

Class : MCA sem-1

Year : 2021-22

```
"""
```

```
for i in range(0,5):
    for j in range(0,i+1):
        print("*",end=" ")
    print()
```

OUTPUT:

```
*
* *
* * *
* * * *
* * * * *
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

12(3). Generate the following pattern:

```
* * * * *
* * * *
* * *
* *
*
```

INPUT:

```
"""
```

12(3). Generate the following pattern:

```
* * * * *
* * * *
* * *
* *
*
```

```
Name : Akshit Trivedi
Class : MCA sem-1
```

```
Roll No.: 40
Year : 2021-22
```

```
"""
```

```
for i in range(5,0,-1):
    for j in range(0,i):
        print("*",end=" ")
    print()
```

OUTPUT:

```
* * * * *
* * * *
* * *
* *
*
```

12(4). Generate the following pattern:

```
* * * * *
*       *
*       *
*       *
* * * * *
```

INPUT:

```
"""
```

12(4). Generate the following pattern:

```
* * * * *
*       *
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
*      *
*      *
* * * * *
```

```
Name : Akshit Trivedi      Roll No.: 40
Class : MCA sem-1          Year   : 2021-22
"""
```

```
for i in range(0,5):
    for j in range(0,5):
        if i==0 or i==4 or j==0 or j==4:
            print("*",end=" ")
        else:
            print(" ",end=" ")
    print()
```

OUTPUT:

```
* * * * *
*      *
*      *
*      *
*      *
* * * * *
```

12(5). Generate the following pattern:

```
* * * * *
 * * * *
  * * *
   * *
    *
     *
```

INPUT:

```
"""
12(5). Generate the following pattern:
* * * * *
 * * * *
  * * *
   * *
    *
     *
```

```
Name : Akshit Trivedi      Roll No.: 40
Class : MCA sem-1          Year   : 2021-22
"""
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

```
for i in range(0,5):
    for j in range(0,i+1):
        print(" ",end=" ")

    for k in range(0,5-i):
        print("*",end=" ")

    print()
```

OUTPUT:

```
* * * * *
* * * *
* * *
* *
*
```

12(6). Generate the following pattern:

```
5
54
543
5432
54321
```

INPUT:

```
"""
```

12(6). Generate the following pattern:

```
5
54
543
5432
54321
```

```
Name : Akshit Trivedi
Class : MCA sem-1
"""
```

```
Roll No.: 40
Year : 2021-22
```

```
for i in range(5,0,-1):
    for j in range(5,i-1,-1):
        print(j,end=" ")
    print()
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

OUTPUT:

5
5 4
5 4 3
5 4 3 2
5 4 3 2 1

12(7). Generate the following pattern:

1
22
333
4444
55555

INPUT:

"""

12(7). Generate the following pattern:

1
22
333
4444
55555

Name : Akshit Trivedi

Roll No.: 40

Class : MCA sem-1

Year : 2021-22

"""

```
for i in range(0,6,1):  
    for j in range(1,i+1,1):  
        print(i,end=" ")  
    print()
```

OUTPUT:

1
2 2
3 3 3
4 4 4 4
5 5 5 5 5

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

12(8). Generate the following pattern:

1
12
123
1234
12345

INPUT:

"""

12(8). Generate the following pattern:

1
12
123
1234
12345

Name : Akshit Trivedi
Class : MCA sem-1

Roll No.: 40
Year : 2021-22

"""

```
for i in range(0,6,1):  
    for j in range(1,i+1,1):  
        print(j,end=" ")  
    print()
```

OUTPUT:

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

12(9). Generate the following pattern:

1
232
34543
4567654
567898765
67890109876
7890123210987
890123454321098
90123456765432109

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

INPUT:

"""

12(9). Generate the following pattern:

```
1
232
34543
4567654
567898765
67890109876
7890123210987
890123454321098
90123456765432109
```

Name : Akshit Trivedi

Roll No.: 40

Class : MCA sem-1

Year : 2021-22

"""

```
x=0
for i in range(9):
    print(" "*(10-i),end="")
    for j in range(i+1):
        if (x==9):
            x=0
        else:
            x+=1
        print(x,end="")
    for j in range(i):
        if (x==0):
            x=9
        else:
            x-=1
        print(x,end="")
    print("")
```

OUTPUT:

```
1
232
34543
4567654
567898765
67890109876
7890123210987
890123454321098
90123456765432109
```

PYTHON ASSIGNMENT-1

Roll No: 40
Class: MCA-1

Name: Akshit Trivedi
Year: 2021-22

12(10). Generate the following pattern:

12345
1234
123
12
1

INPUT:

"""

12(10). Generate the following pattern:

12345
1234
123
12
1

Name : Akshit Trivedi

Roll No.: 40

Class : MCA sem-1

Year : 2021-22

"""

```
for i in range(6,1,-1):
    for j in range(1,i):
        print(j,end=" ")
    print()
```

OUTPUT:

1 2 3 4 5
1 2 3 4
1 2 3
1 2
1