# Find outputs (Home work)

x = 25

y = F'{x}'

print(y) #25

print(type(y)) # class str

x = 10.8

y = F'{x}'

print(y) # 10.8

print(type(y)) # class str

x = [10,20,30,40]

y = F'{x}'

print(y) # [10,20,30,40,]

print(type(y)) # class str

#Find outputs (Home work)

a , b , c = 25 , 10.8 , 'Hyd'

print(F'{a} \t {b} \t {c}') # 25 10.8 Hyd

print(F'a = {a} \t b = {b} \t c = {c}') # a =25 b =10.8 c =Hyd

print(F'{a=} \t {b=} \t {c=}') a =25 b =10.8 c = ‘Hyd’

print(F'{a:} \t {b:} \t {c:}') 25 10.8 Hyd

print('a = {a} \t b = {b} \t c = {c}') a = {a} b = {b} c = {c}

print(F'a = a \t b = b \t c = c') a = a b = b c=c

print(F'{x =} \t {y =} \t {z =}')# error

# Find outputs (Home work)

x = 25

print(F'{x}') # 25

print(F'{{x}}') # {x}

print(F'{{{x}}}') # {25}

print(F'{{{{x}}}}') # {{x}}

print(F'{{{{{x}}}}}') # {{25}}

print(F'{{{{{{x}}}}}}')#{{{25}}}

print(F'{{{{{{{x}}}}}}}') # {{{{25}}}}

print(F'{{{{{{{{x}}}}}}}}') #{{{{{25}}}}}

1) What is printed when 'x' is in even number of braces ? ---> 'x' itself

2) What is printed when 'x' is in odd number of braces ? ---> Value of 'x' in the form of string

3) How many braces are printed in the output ? ---> Number of braces // 2

Write a program to determine sum , difference , product , quotient , largest and smallest of two numbers.

Also find remainder, sqrt of first input , power, gcd and factorial of first input

Hint: Use F string to print results

Let inputs be 10 and 7,

What is the sum ? ---> 17

What is the difference ? ---> 3

What is the product ? ---> 70

What is the quotient ? ---> 1.42

What is the remainder ? ---> 3

What is the largest number ? ---> 10

What is the smallest number ? ---> 7

What is the sqrt of 1st input ? ---> 3.16

What is the result of power? ---> 10000000

What is the gcd of 2 numbers ? ---> 1

What is the factorial of 1st input ? ---> 10!

Enter 1st integer number : 10

Enter 2nd integer number : 7

10 + 7 = 17

10 - 7 = 3

10 \* 7 = 70

10 / 7 = 1.4285714285714286

10 % 7 = 3

max(10 , 7) = 10

min(10 , 7) = 7

10 ^ 7 = 10000000

sqrt(10) = 3.1622776601683795

gcd(10 , 7) = 1

fact(10) = 3628800

Write a program to swap values of any two objects in a single statement without using 3rd object

Let 'x' be 25 and 'y' be 'Hyd'

What are 'x' and 'y' after swap ? ---> Hyd and 25

Hint: Swap references but not objects

Enter 1st input : 25

Enter 2nd input : Hyd

Before swap : x='25' y='Hyd'

After swap : x='Hyd' y='25'

Write a program to determine largest of three inputs without using max() function

1) What is the output if inputs are 10 , 20 and 15 ? ---> 20

2) What is the output if inputs are 35.8 , 42.8 and 27.9 ? ---> 42.8

3) What is the output if inputs are 'RAMA' , 'RAKESH' and 'RAJESH' ? ---> 'RAMA'

4) What is the output if inputs are [10 , 20 , 15 , 18] , [10 , 20 , 32, 19] and [10 , 20 , 25, 17] ? ---> [10 , 20 , 32 , 19]

5) Inputs can be integers , floats , strings and so on

6) Use nested ternary operator

Enter 1st input : 10

Enter 2nd input : 20

Enter 3rd input : 15.8

Largest Input : 20

Write a program to print '>' if 1st input > 2nd input,

'<' if 1st input < 2nd input and

'=' if inputs are same

1) What is the result if inputs are 10 and 20 ? ---> <

2) What is the result if inputs are 70 and 60 ? ---> >

3) What is the result if inputs are 25 and 25 ? ---> =

4) Inputs can be integers , floats , strings and so on

5) Use ternary operator

Enter 1st input : 10

Enter 2nd input : 20

Result : <

Write a program to print 1 if input is +ve , -1 if input is -ve and 0 if input is 0

1) What is the result if input is -25 ? ---> -1

2) What is the result if input is 75 ? ---> 1

3) What is the result if input is 0 ? ---> 0

4) Use nested ternary operator

Enter any number : -25

Result : -1

Write a program to test input is even number or odd number

1) What is an even number ? ---> Divisible by 2

2) What is an odd number ? ---> Not divisible by 2

3) Use ternary operator

Enter any +ve integer : 45

Odd number

(Home work)

Write a program to determine area and perimeter of rectangle

1) What are the inputs ? ---> length and breadth

2) What are the outputs ? ---> area and perimeter

3) What is the area of rectangle ? ---> length \* breadth

4) What is the perimeter of rectangle ? ---> 2 \* (length + breadth)

(Home work)

Write a program to determine volume of a sphere

1) What is the input ? ---> radius

2) What is the output ? ---> volume

3) What is the volume of sphere ? ---> 4 / 3 \* pi \* r ^ 3

'''

(Home work)

Write a program to determine simple interest and compound interest

1) What are the inputs ? ---> principle , time and rate of interest

2) What are the outputs ? ---> Simple interest and compound interest

3) What is simple interest formula ? ---> ptr / 100

4) What is compound interest formula ? ---> p \* (1 + r / 100) ^ t - p

# Homework: Calculate Simple and Compound Interest

# Input: principal, time, rate

p = float(input("Enter the principal amount: "))

t = float(input("Enter the time (in years): "))

r = float(input("Enter the rate of interest (in %): "))

# Simple Interest formula: (p \* t \* r) / 100

si = (p \* t \* r) / 100

# Compound Interest formula: p \* (1 + r/100)^t - p

ci = p \* ((1 + r / 100) \*\* t) - p

# Output: Simple and Compound Interest

print("\nSimple Interest:", (si, 2))

print("Compound Interest:", (ci, 2))

(Home work)

Write a program to swap values of two objects using 3rd object

Let x = 10 and y = 25

What are the values of x and y after swap ? ---> x = 25 and y = 10

# Homework: Swap using third object

x = 10

y = 25

print("Before swap:")

print("x =", x)

print("y =", y)

# Swapping using third variable

temp = x

x = y

y = temp

print("After swap:")

print("x =", x) # x = 25

print("y =", y) # y = 10

(Home work)

Write a program to swap values of two objects without using 3rd object

Hint: One addition and two subtractions

x = 25

y = 10

# Homework:

x = 25

y = 10

print("Before swap:")

print("x =", x)

print("y =", y)

# Swap logic

x = x + y # x = 25 + 10 = 35

y = x - y # y = 35 - 10 = 25

x = x - y # x = 35 - 25 = 10

print("After swap:")

print("x =", x) # x = 10

print("y =", y) # y = 25

(Home work)

Write a program to swap values of two objects without using 3rd object

Hint: One multiplication and two divisions

x = -200

y = 100

# Homework:

x = -200

y = 100

print("Before swap:")

print("x =", x)

print("y =", y)

# Swap using one multiplication and two divisions

x = x \* y # x = -200 \* 100 = -20000

y = x // y # y = -20000 // 100 = -200

x = x // y # x = -20000 // -200 = 100

print("After swap:") #

print("x =", x) #x = 100

print("y =", y) # y = -200