

INTERNSHIP TASKS

Day 3: EXERCISE – 3

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Course : Python

Org : IGIAT – VSKP

Date : 20-03-2024

#Task 1 : Declare your age as integer variable

```
age = int(20);
```

#Task 2 : Declare your height as a float variable

```
height = float(152.3);
```

#Task 3 : Declare a variable that store a complex number

```
complex_value = complex(9 + 1j);
```

#Task 4

```
print("\nTask 4 : Write a script that prompts the user to enter base & height of the triangle and calculate the area of triangle");
```

```
triangle_base = float(input("Enter base: "));
```

```
triangle_height = float(input("Enter height: "));
```

```
triangle_area = 0.5 * triangle_base * triangle_height;
```

```
print("The Area of the triangle: ", triangle_area);
```

```
print("\n");
```

#Task 5

```
print("\nTask 5 : Write a script that prompts the user to enter side a, b and c of the triangle. Calculate the perimeter of the triangle.");
```

```
side_a = float(input("Enter side a: "));
```

```
side_b = float(input("Enter side b: "));
```

```
side_c = float(input("Enter side c: "));
```

```
triangle_perimeter = side_a + side_b + side_c;
```

```
print("The Perimeter of the triangle is : ", triangle_perimeter);
```

```
print("\n");
```

#Task 6

```
print("\nTask 6 : Get Length and Width of a rectangle using prompt. Calculate its area and perimeter");
```

```
rectangle_length = float(input("Enter length: "));
```

```
rectangle_width = float(input("Enter width: "));
```

```
rectangle_area = rectangle_length * rectangle_width;
```

```
rectangle_perimeter = 2 * (rectangle_length + rectangle_width);
```

```
print("The Area of rectangle : ", rectangle_area);
```

```
print("The Perimeter of rectangle : ", rectangle_perimeter);
```

```
print("\n");
```

#Task 7

```
import math as m;
```

```
print("\nTask 7 : Get Radius of a circle using prompt. Calculate its area and circumference");
```

```
circle_radius = float(input("Enter radius: "));
```

```
circle_area = m.pi * (circle_radius ** 2);
```

```
circle_circumference = 2 * m.pi * circle_radius;
```

```
print("The Area of circle : ", circle_area);
```

```
print("The Circumference of circle : ", circle_circumference);
```

```
print("\n");
```

#Task 8

```
print("\nTask 8 : Calculate the slope, x-intercept and y-intercept of  $y = 2x - 2$ ");
# From  $y = ax + b$ 
a, b = 2, -2;
slope_1 = a;
x_intercept = -b/a;
y_intercept = b;
print("The Slope : ", slope_1);
print("The x-intercept : ", x_intercept);
print("The y-intercept : ", y_intercept);
print("\n");
```

#Task 9

```
print("\nTask 9 : Find the slope and euclidean distance between point (2, 2) and point (6, 10)");
x1, x2 = 2, 6;
y1, y2 = 2, 10;
slope_2 = (y2-y1)/(x2-x1);
euclid_distance = m.sqrt(m.pow((x2-x1), 2) + m.pow((y2-y1), 2));
print("The Slope : ", slope_2);
print("The Euclid Distance : ", euclid_distance);
print("\n");
```

#Task 10

```
print("\nTask 10 : Compare the slopes in Task 8 and 9");
print("Slope in Task 8 as m1: ", slope_1);
print("Slope in Task 9 as m2: ", slope_2);
print("m1 > m2 : ", (slope_1 > slope_2), "and, m2 > m1 : ", (slope_2 > slope_1));
print("\n");
```

#Task 11

```
print("\nTask 11 : Calculate the value of y ( $y = x^2 + 6x + 9$ ). Try to use different x values\nfigure out at what x value y is going to be 0.");
x = int(input("Enter the value of x : "));
y = (x**2) + (6*x) + 9;
print("The value of y : ", y);

print("\nUsing different values from -20 to +20 to find out at what x value y is going to be 0.");
x = -20;
i = 1;
while(x <= 20):
    y = (x**2) + (6*x) + 9;
    if(y == 0):
        print(f"{i}. Y is 0 if X is {x}");
        i += 1;
    x += 1;
print("\n");
```

#Task 12

```
print("\nTask 12 : Find the length \'python\' and \'dragon\' and make a falsy comparision statement");
print("Length of \'python\' : ", len("python"));
print("Length of \'dragon\' : ", len("dragon"));
print("Falsy Statement : \n\'python\' == \'dragon\' : ", ("python" == "dragon"));
print("\n");
```

#Task 13

```
print("\nTask 13: Use \'and\' operator to check if \'on\' is found in both \'python\' and \'dragon\'");
is_python = "on" in "python";
is_dragon = "on" in "dragon";
print("Answer: ", ("on" in "python") and ("on" in "dragon"));
print("\n");
```

#Task 14

```
print("\nTask 14: \'I hope this course is not full of jargon\'. Use \'in\' operator to check if \'jargon\' is in the sentence");
print("Answer: ", ("jargon" in "I hope this course is not full of jargon"));
print("\n");
```

#Task 15

```
print("\nTask 15: There is no \'on\' in both \'dragon\' and \'python\'");
print("Result : ", (("on" not in "dragon") and ("on" not in "python")));
print("\n");
```

#Task 16

```
print("\nTask 16 : Find the length of the text \'python\' and convert the value to float and convert it to string.");
len_python = len("python");
print("The length of Python : ", len_python , " type : ", type(len_python));
len_python = float(len_python);
print("The length of Python : ", len_python , " type : ", type(len_python));
len_python = str(len_python);
print("The length of Python : ", len_python , " type : ", type(len_python));
print("\n");
```

#Task 17

```
print("\nTask 17 : How do you check if a number is even or not using python?");
number = int(input("Enter the number : "));
if(number%2 == 0):
    print(f"The number - {number} is EVEN");
else:
    print(f"The number - {number} is ODD");
print("\n");
```

#Task 18

```
print("\nTask 18 : Check if the floor division of 7 by 3 is equal to the \"int\" converted value of 2.7");
if(7//3 == int(2.7)):
    print("Yes! Floor Division of 7 by 3 is equal to \'int\' converted value of 2.7");
else:
    print("No! Floor Division of 7 by 3 is equal to \'int\' converted value of 2.7");
print("\n");
```

#Task 19

```
print("\nTask 19 : Check if type of \'10\' is equal to type of 10");
if(type(\'10\') == type(10)):
    print("Yes! The Data types are same!");
else:
    print("No! The Data types are not same!");
print("\n");
```

#Task 20

```
print("\nTask 20 : Check if int(9.8) is equal to 10");
if(int(9.8) == 10):
    print("Yes! int(9.8) is equal to 10");
else:
    print("No! int(9.8) is not equal to 10");
print("\n");
```

#Task 21

```
print("\nTask 21: Write a script that prompts the user to enter hours and rate per hour calculate pay of the person?");
hours = int(input("Enter hours : "));
rate_per_hour = int(input("Enter rate per hour : "));
weekly_earning = hours * rate_per_hour;
print("Your weekly earning is ", weekly_earning);
print("\n");
```

#Task 22

```
print("\nTask 22: Write a script that prompts the user to enter number of years. Calculate the number of seconds a person can live. Assume a person can live hundred years");
years_you_lived = int(input("Enter number of years you have lived : "));
if(years_you_lived >= 101):
    print("Average person lives maximum upto 100 years! so please enter valid value");
else:
    seconds_you_lived = years_you_lived * 365 * 24 * 60 * 60;
    print("You have lived for ", seconds_you_lived , " seconds.");
print("\n");
```

#Task 23

```
print("\nTask 23: Write a python script that displays given table in 3.Operators.pptx ");
i = 1;
while(i <= 5):
    j = 1;
    print(i, end = " ");
    print("1", end=" ");
    while(j <= 3):
        print(i**j, end=" ");
        j+=1;
    print("\n");
    i+=1;
print("\n");
```

Output:

```
exercise.py bash day_3 X
@DevaManikantaSala → .../codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_3 $ python exercise.py

Task 4 : Write a script that prompts the user to enter base & height of the triangle and calculate the area of triangle

Enter base: 4
Enter height: 5
The Area of the triangle: 10.0

Task 5 : Write a script that prompts the user to enter side a, b and c of the triangle. Calculate the perimeter of the triangle.

Enter side a: 5
Enter side b: 4
Enter side c: 3
The Perimeter of the triangle is : 12.0

Task 6 : Get Length and Width of a rectangle using prompt. Calculate its area and perimeter

Enter length: 4
Enter width: 3
The Area of rectangle : 12.0
The Perimeter of rectangle : 14.0

Task 7 : Get Radius of a circle using prompt. Calculate its area and circumference
Enter radius: 8
The Area of circle : 201.06192982974676
The Circumference of circle : 50.26548245743669
codespaces: potential copybara 0 0 6
```

Task 8 : Calculate the slope, x-intercept and y-intercept of $y = 2x - 2$

The Slope : 2

The x-intercept : 1.0

The y-intercept : -2

Task 9 : Find the slope and euclidean distance between point (2, 2) and point (6, 10)

The Slope : 2.0

The Euclid Distance : 8.94427190999916

Task 10 : Compare the slopes in Task 8 and 9

Slope in Task 8 as m1: 2

Slope in Task 9 as m2: 2.0

m1 > m2 : False and,

m2 > m1 : False

Task 11 : Calculate the value of y ($y = x^2 + 6x + 9$). Try to use different x values figure out at what x value y is going to be 0.

Enter the value of x : 9

The value of y : 144

Using different values from -20 to +20 to find out at what x value y is going to be 0.

1. Y is 0 if X is -3

Task 12 : Find the length 'python' and 'dragon' and make a falsy comparison statement

Length of 'python' : 6

Length of 'dragon' : 6

Falsy Statement :

'python' == 'dragon' : False

Task 13: Use 'and' operator to check if "on" is found in both "python" and "dragon"

Answer: True

Task 14: "I hope this course is not full of jargon". Use 'in' operator to check if "jargon" is in the sentence

Answer : True

Task 15: There is no "on" in both "dragon" and "python"

Result : False

Task 16 : Find the length of the text 'python' and convert the value to float and convert it to string.

The length of Python : 6 type : <class 'int'>

The length of Python : 6.0 type : <class 'float'>

The length of Python : 6.0 type : <class 'str'>

Task 17 : How do you check if a number is even or not using python?

Enter the number : 5

The number - 5 is ODD

```
exercise.py bash day_3 X
Task 18 : Check if the floor division of 7 by 3 is equal to the "int" converted value of 2.7
Yes! Floor Division of 7 by 3 is equal to 'int' converted value of 2.7

Task 19 : Check if type of '10' is equal to type of 10
No! The Data types are not same!

Task 20 : Check if int(9.8) is equal to 10
No! int(9.8) is not equal to 10

Task 21: Write a script that prompts the user to enter hours and rate per hour calculate pay of the person?
Enter hours : 12
Enter rate per hour : 10
Your weekly earning is 120

Task 22: Write a script that prompts the user to enter number of years. Calculate the number of seconds a person can live. Assume a person can live hundred years
Enter number of years you have lived : 20
You have lived for 630720000 seconds.

Task 23: Write a python script that displays given table in 3.0operators.pptx
1 1 1 1 1
2 1 2 4 8
3 1 3 9 27
4 1 4 16 64
5 1 5 25 125

@DevaManikantaSala →.../codespaces-blank/IGIAT Internship Python Tasks/30DaysOfPython/day_3 $
spaces: potential capybara 0 0 0 6
```