
# programming

*With python*
*(Lab - 1)*

# Exmaple 1

- Hello World & Running Python

# </>01. Hello world program

- First step in Python.
- Using print() function.
- Running a text output.

```
# show massage to the user “hello world!!”
print("hello world!!")
```

# Exmaple 2

- Add Two Numbers

# </>02. Add Two Numbers

- Reading User Inputs.
- Converting to Float.
- Mathematical Addition.

```
# Read two numbers from user
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
# Addition operation
sum_result = num1 + num2
# Display result
print("The sum is:", sum_result)
```

# Exmaple 3

- Add Two Numbers

# </>03. Calculate Circle Area

- Using Constant PI.
- Circle Area Formula.
- Square operation.

```
# Constant PI
PI = 3.14159

# Read radius from user
radius = float(input("Enter circle radius: "))

# Calculate area
area = PI * radius * radius

# Display result
print("Circle area is:", area)
```

# Exmaple 4

- Calculate Average of Four Grades

# 04. Calculate Average of Four Grades

- Handling 4 Variables.
- Cumulative Sum.
- Average Calculation.

```
# Read grades from user
grade1 = float(input("Enter grade 1: "))
grade2 = float(input("Enter grade 2: "))
grade3 = float(input("Enter grade 3: "))
grade4 = float(input("Enter grade 4: "))

# Calculate sum
total = grade1 + grade2 + grade3 + grade4

# Calculate average
average = total / 4

# Display results
print("Total:", total)
print("Average:", average)
```

# Exmaple 5

- Convert Meters to Centimeters

# </>05. Convert Meters to Centimeters

- Fixed Conversion Factor.
- Meters to Centimeters.
- Scalar multiplication.

```
# Constant (conversion factor)
 CM_PER_METER = 100
 # Read value in meters from user
 value_in_meters = float(input("Enter value in
meters:      "))
 # Convert to centimeters
 value_in_cm = value_in_meters *
CM_PER_METER
 # Display result
 print("Value in centimeters:", value_in_cm)
```

# Exercises:

**1- Change the (hello world program) to output the two lines?**

```
Hello, programmers!
we are learn python
```

**2- write a python program to calculate the area of a Rectangle, and take width and length from the user (Area of a rectangle = width * length)**

**3- write program to calculate age from birth date from user input**

**4- Write a program in python that converts from miles to kilometers. Your program should have a reasonable prompt for the user to enter a number of miles. Hint: There are 1.609 kilometers to the mile**

# Thank you