



INDIAN SCHOOL AL WADI AL KABIR

Class: IX	Department: Computer Science	Date:16-11-2025
Practical Worksheet No: 1	ARTIFICIAL INTELLIGENCE Chapter 5: Python Basics	

1	Print 5 lines about yourself using print() function.
	<u>Code</u> name=input("Enter your name:") Class=input("Enter your class:") roll=input("Enter your roll number:") school=input("Enter your school name:") place=input("Enter your location:") print("Your details are", name, Class, roll, school, place, sep="\n") <u>Output</u> Enter your name:Ajay Enter your class:IX Enter your roll number:22 Enter your school name:ISWk Enter your location:Wadi Kabir Your details are Ajay IX 22 ISWK Wadi Kabir
2	Write a program to show the arithmetic operations on two numbers.
	Code: x=int(input("enter the first number")) y=int(input("enter the second number")) #addition sum=x+y print("the sum of given two numbers is:",sum) #Subtraction diff=x-y print("the difference of given two numbers is:",diff) #multiplication

```
product=x*y
print("the product of given two numbers is:",product)
```

```
#division
quotient=x//y
print("the quotient is:",quotient)
remainder=x%y
print("the remainder is:",remainder)
div=x/y
print("the result of division with decimal places:",div)
```

Output:

```
enter the first number10
enter the second number3
the sum of given two numbers is: 13
the difference of given two numbers is: 7
the product of given two numbers is: 30
the quotient is: 3
the remainder is: 1
the result of division with decimal places: 3.3333333333333335
```

4 Write a program to calculate energy using this formula: $\text{energy} = PE + KE$

Code:

```
#To find Mechanical Energy of a Particle
g = 9.8
m = int(input("Enter Mass of an object(Kg): "))
h = int(input("Enter displacement of an object(m): "))
v = int(input("Enter velocity of an object(m/s): "))
P = m*g*h #Potential energy(P.E = mgh)
K = 0.5*m*v*v #Kinetic energy(K.E = 1/2mv^2)
M = P+K #To calculate Mechanical energy(M.E = P.E+K.E)
print("Potential Energy : ",P,"J")
print("Kinetic Energy : ",K,"J")
print("Total Mechanical Energy: ",M,"J")
```

Output:

```
Enter Mass of an object(Kg): 20
Enter displacement of an object(m): 5
Enter velocity of an object(m/s): 15
Potential Energy : 980.0 J
```

	Kinetic Energy : 2250.0 J Total Mechanical Energy: 3230.0 J
5	Write a program to calculate distance using this formula: $\text{distance} = ut + \frac{1}{2}at^2$
	<u>Code:</u> <pre> ini_vel=float(input("Enter the initial velocity in m/s: ")) acc=float(input("Enter the acceleration in m/s2: ")) time=float(input("Enter the time taken in seconds: ")) dist=(ini_vel*time)+(0.5*acc*time*time) print("The distance calculated is:",dist,"meters") </pre> <u>Output:</u> Enter the initial velocity in m/s: 3.5 Enter the acceleration in m/s2: 2.4 Enter the time taken in seconds: 10 The distance calculated is: 155.0 meters
6	Write a Python program to calculate the simple interest if principle amount=2000, rate of interest=4.5, Time period is 10 years.
	<pre> p = 2000 rate = 4.5 time = 10 # Calculate Simple Interest simple_interest = (p * rate * time) / 100 # Display result print("Simple Interest =", simple_interest) </pre> <u>Output:</u> Simple Interest = 900.0
7	Write a Python program to print the volume of a cylinder when radius and height of the cylinder is given by user.
	<pre> # Take input from user radius = float(input("Enter the radius of the cylinder in cm: ")) height = float(input("Enter the height of the cylinder in cm: ")) # Formula for volume of cylinder: $\pi r^2 h$ pi = 3.14159 volume = pi * radius * radius * height # Display the result </pre>

```
print("The volume(cm3) of the cylinder is:", volume)
```

Output

Enter the radius of the cylinder in cm: 5
Enter the height of the cylinder in cm: 15
The volume(cm3) of the cylinder is: 1178.09625

8 Write a Python program to calculate the average marks of 3 subjects

```
# Taking input from the user
mark1 = float(input("Enter marks of Subject 1: "))
mark2 = float(input("Enter marks of Subject 2: "))
mark3 = float(input("Enter marks of Subject 3: "))
```

```
# Calculating average
average = (mark1 + mark2 + mark3) / 3
```

```
# Displaying the result
print("The average marks are:", average)
```

Output

Enter marks of Subject 1: 45
Enter marks of Subject 2: 50
Enter marks of Subject 3: 49
The average marks are: 48.0

9 Write a Python program to compute the result when two numbers and one operator is given by user. (if...elif...else)

```
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
operator = input("Enter an operator (+, -, *, /, %): ")
```

```
# Perform operation based on operator
```

```
if operator == '+':
    result = num1 + num2
elif operator == '-':
    result = num1 - num2
elif operator == '*':
    result = num1 * num2
elif operator == '/':
    if num2 != 0:
        result = num1 / num2
```

```

else:
    result = "Error! Division by zero."
elif operator == '%':
    if num2 != 0:
        result = num1 % num2
    else:
        result = "Error! Division by zero."
else:
    result = "Invalid operator!"

```

```

# Display the result
print("Result:", result)

```

Output

```

Enter first number: 3
Enter second number: 12
Enter an operator (+, -, *, /, %): +
Result: 15.0

```

10 Write a program to check whether the number is positive or negative

Code:

```

x=int(input("enter the number to check"))
if x>0:
    print("the number is positive")
elif x<0:
    print("the number is negative")

else:
    print("the number is neither positive nor negative")

```

Output:

```

enter the number to check5
the number is positive

enter the number to check-15
the number is negative

enter the number to check0
the number is neither positive nor negative

```

11 Write a program to convert string datatype to integer datatype and float datatype

```
# Take input as string
string_num = input("Enter a number in string format: ")
```

```
# Convert to integer
int_num = int(string_num)
```

```
# Convert to float
float_num = float(string_num)
```

```
# Display the results
print("String as integer:", int_num)
print("String as float:", float_num)
```

Output

```
Enter a number in string format: 1101
```

```
String as integer: 1101
```

```
String as float: 1101.0
```