1. Write a program in Python to accept First Name and Last Name from the user. Display "Good Day" wish combined with the First Name and Last Name.
Sample output:
```
Enter First Name: Aradhya
Enter Last Name: Sengupta
Good Day Aradhya Sengupta
```

2. Write a program in python to accept Length (in inches of type float) and Breadth (in inches of type float) of a Rectangle.
Find and display (a) Area of the rectangle and (b) Perimeter of the rectangle.

3. Write a Python program to convert degree to radian.
Note : The radian is the standard unit of angular measure, used in many areas of mathematics. An angle's measurement in radians is numerically equal to the length of a corresponding arc of a unit circle; one radian is just under 57.3 degrees (when the arc length is equal to the radius).
Sample output:
```
Input degrees: 45
In Radians: 0.7857142857142857
```

4. Write a Python program to convert radians to degrees.
Sample Output:
```
Input radians: 2
In Degree    : 114.54545454545455
```

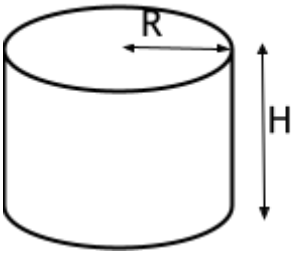
5. Write a Python program to calculate the area of a trapezoid.
Note : A trapezoid is a quadrilateral with two sides parallel. The trapezoid is equivalent to the British definition of the trapezium. An isosceles trapezoid is a trapezoid in which the base angles are equal.(Area= $\frac{1}{2}h(a+b)$, where h is the height and a ,b are length of parallel sides)
Sample Output:
```
Height of trapezoid: 10
Top Width          : 12
Bottom Width       : 18
Area is            : 150.0
```

6. Write a Python program to calculate the area of a parallelogram.
Note : A parallelogram is a quadrilateral with opposite sides parallel (and therefore opposite angles equal). A quadrilateral with equal sides is called a rhombus, and a parallelogram whose angles are all right angles is called a rectangle.
Sample Output:
```
Length of base             : 9
Height of parallelogram    : 7
Expected Output: Area is   : 63.0
```

7. Write a Python program to calculate volume ($\pi r^2 h$) and surface area ($2\pi rh+2\pi r^2$) of a Cylindrical Oil Container.
Also
   (i) Calculate the price of painting this Cylindrical Oil Container, if the price for painting is Rs. 530 per square meter.
   (ii) Maximum cost of Petrol, that can be stored in the cylindrical container, if the price of petrol is Rs. 73 per litre . [Remember 1 mtr cube = 1000 litre]

Sample Output:

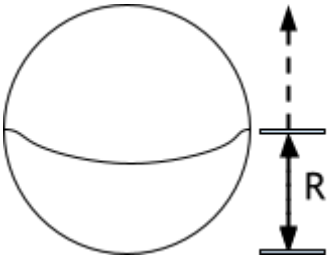
```
Height [in meters]: 5
Radius [in meters]: 3
Volume :  141.42857142857142 [meter cube]
Volume [Rounded to Decimals]: 141.43
Surface Area is:  150.85714285714286 [mtr sq]
Surface Area [Rounded to 2 Decimals]:150.86
Painting Charges [Rs.]: 79955.8
Cost of Petrol   [Rs.]: 10324390.0
```



8. Write a Python program to calculate volume and area of a sphere. (Area= $4\pi r^2$), (Volume= $4/3\pi r^3$)

Sample Output:

```
Radius of sphere:   5
Surface Area:  314.2857142857143
Volume      :  523.8095238095237
```



9. Write a program in to accept Qty of Fuel (in Litre) and Distance travelled (in KM) from the user, calculate and display the Average of the Vehicle (i.e. KM per Litre).

10. Write a program in to accept Marks of 5 subjects (each out of 100), calculate and display
(a) Total Marks obtained (b) Average Marks

11. Write a program to allocate and display Block and Floor No on the basis of Customer Number. Assuming there are 10 Blocks ('A' to 'J') with 5 floors (0 to 4) each and allocated to customers sequentially as per their Customer Number. For example: Customer no 1 gets [Block A Floor 0], Customer no 3 gets [Block A Floor 2], Customer no 7 gets [Block B Floor 1]

Note: This program has to be done only using arithmetic operations and type conversions (i.e., with out use of if-else)

Hint: ASCII codes for 'A','B'.. are 65,66,... & chr(65) in python is 'A'

12. Write a program to calculate total collection of a PARKING area on the basis of the number of vehicles under each category entered by the user. Per vehicle amounts for each type of vehicle is as follows: Bus Rs. 100 SUV Rs.40 CAR Rs.30 Two-Wheeler Rs.10

Sample Output:

```
Number of Buses         : 10
Number of SUVs          : 20
Number of Cars          : 45
Number of Two-Wheelers  : 120
Collection for Buses        : 1000
Collection for SUVs         : 800
Collection for Cars         : 1350
Collection for Two-Wheelers: 1200
Total Collection            : 4350
```

13. Write a program to accept Basic Salary (Basic) of employee from user and calculate the following:
(a) Dearness Allowance (**DA**) as 30% of **Basic**
(b) House Rent Allowance (**HRA**) as 25% of **Basic**

(c) Income Tax (**IT**) as 10% of Basic if **Basic**<50000 and 20% of **Basic** if **Basic**>=50000
(d) Total Salary (**TSAL**) as **BASIC+DA+HRA**
(e) Salary in hand (**SALH**) as **TSAL-IT**

14. Write a program to accept marks of English (ENG), marks of Maths (MAT), marks of Science (SCI) each out of 100, calculate and display the following:
(a) Total Marks (**TOT**) as **ENG+MAT+SCI**
(b) Percentage of Marks (**PER**) as **TOT/3**
(c) Display Grade as 'A' if **PER>50** 'B' if PER>0 and 'C' if PER=0
[without using if_else command]

15. Write a program to accept the age of the individual and display a message "Allowed to get a license to Drive" if Age entered by the user >=18 else display a message "Wait for x years to get a Driving License". Here, x to be replaced with **18-Age** years.

16. Write a program to accept the grade of a student out of 'A' to 'F' from the user and display the range of marks on the screen as per the following table using if else.

Grade	**Marks Range**
A	**100-90**
B	**89-75**
C	**74-60**
D	**59-45**
E	**44-33**
F	**32-0**

17. Write a program to accept marks of a student out of 100, find and display Grades 'A' to 'F' as per the following grade table using if else.

Marks Range	**Grade**
100 -90	**A**
89.9-75	**B**
74.9-60	**C**
59.9-45	**D**
44.9-33	**E**
32.9-0	**F**

18. Write a program to make a calculator application with the following operations:
(a) Accept values of two real numbers
(b) Accept arithmetic operation to be performed out of '+','-','*','/','%'
(c) Perform the desired arithmetic operation on two real number and display the result of operation as selected by the user

19. Write a program to display the Floor for the various items in a SHOPPING MALL on the basis of Age and Gender entered by user as per the following table:

Age	**Gender**	**Floor**
>=60	M	7
>=20 and <60	M	6
>=10 and <20	M	5
<10	M	4
>=58	F	3
>=18 and <58	F	2
>=10 and <18	F	1

<10	F	0

Sample Output 1:

```
Age         : 45
Gender      : F
Floor       : 2
```

Sample Output 2:

```
Age         : 18
Gender      : M
Floor       : 5
```

20. Write a program to accept runs of three consecutive cricket matches, find and display the highest and lowest runs.

Sample Output:

```
Match 1 Runs: 320
Match 2 Runs: 210
Match 3 Runs: 275
Highest Runs: 320 Lowest Runs : 210
```

21. Write a program to display the BLOCK of buildings in school allocated for a particular group of students as per their class and stream entered by the user.

Class	Stream	Block
11	'S'	F Block
11	'C'	E Block
11	'H'	D Block
12	'S'	C Block
12	'C'	B Block
12	'H'	A Block

Sample Output:

```
Enter Class     : 11
Enter Stream    : H
Block           : D Block
```

General Instructions:

i. Type the solutions of all the problems using **Python** Language on **Python IDLE** or **colab.research.google.com**

ii. Type in the following on top of each of your program as comment lines

```
# ------------------------------------------------------------#
# List-Program No     : L1-P1
# Developed By        : Jhilmil Roy
# Date                : 22-April-2024
# ------------------------------------------------------------#
```

iii. On successful execution with meaningful data, **copy** and **paste** the sample output at the bottom of the program as comment lines.

iv. **"Turn in"** the softcopy of the programs as a single document in response to this assignment submission with each program on separate pages. Once verified by the teacher, take out a hardcopy of **each program on separate pages** from the printer and get them signed by the respective computer teacher. Add all the printouts in the practical file and get the Index entry also signed.

v. Recommended Font, "**Courier New**", Style "**Bold**" Size "**10**" for all programs with single line spacing. Default indentation **2 Character** only.