2023 Unit 1 Numbers and number operations

```
In [ ]:  print('hello world')
         #write a program that stores a number in a variable, and then print the number
         #write a program that adds to numbers that are stored in variables.
         #write a program that asks for your favourite number and prints result.
         #Modify program to add the number to itself and show result.
         #remember input, process and output
```

```
In [ ]:  #this code will add two numbers
         #input
         num_1=345
         num_2=987
         #processing
         total=num_1+num_2
         #output
         print('Numbers: ', num_1, num_2)
         print('Total: :', total)
```

Problem: Add two numbers and show the result

```
In [ ]:  #adding a comment would help
         #input
         my_tax=12354.45
         your_tax=99.87
         #processing
         total=my_tax+your_tax
         #output
         print('Total :', total)
```

Ask for input and show output and add comments (integers and floats)

```
In [ ]:  #this program add the number of masks
         #input
         num_1=int(input('Please a first number: '))
         num_2=int(input('Please a second number: '))
         #processing
         total=num_1+num_2
         #output
         print('Total :', total)
```

A problem that is more detailed, with comments, input, process and output

```
In [ ]:  #This is comment
         num_1=int(input('Please enter the number of learners in Grade 1 : '))
         num_2=int(input('Please enter the number of learners in Grade 2 : '))
         #this is the processing
         total= num_1+num_2
         #this is the output
         print('Total learners : ', total)
```

Changing from adding to other operations (meaningful names)

```
In [ ]:  #How many pencils does each learner receive?
         #This is the input
         a=int(input('Please enter the number of pencils issued to the school : '))
         b=int(input('Please enter the number of learners in the school: '))
         #this is the processing
         each=a//b
         remain=a%b
         #this is the output
         print('Pencils per learner :', each)
         print('Remainder :', remain)
```

Changing multiple. Change the data type?

```
In [ ]:  #calculate the area of a rectangle
         #input
         length=int(input('Please enter the length of the rectangle: '))
         breadth=float(input('Please enter the breadth of the rectangle: '))
         #process
         area=length*breadth
         #output
         print('The area in square meters is:', area)
```

```
In [ ]:  #calcuate the area of a triangle.
         #ask the user for input values
         base=int(input('Please enter the base length (m): '))
         height=int(input('Please enter the height (m): '))
         area=0.5*base*height
         print('Area is (in square meters) : ', area)
```

Add the marks that you received for 4 assignments, and calcuate the average value

In [ ]:

Using a number to a power

In [ ]:
```
a=2
b=5
thepower=a**b
print(thepower)
```

Use the radius of a wheel to calcuate the circumference of the wheel

In [ ]:

Calculate the speed. Ask for user input in km and hours. Format the output in km/h to two decimal values.

In [ ]:

Determine the data type of a variable. Ask for user input for integer, float and string.

In [ ]:
```
a=21
print(type(a))
```

In [ ]: