Python Lab
Assignment -1
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Q.1)Write a Python program to get the Python version you are using.

Ans.:

```
import sys
print(sys.version)
```

```
● ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/p
  ython3 /Users/ponk6745/Desktop/vscode/python/hello.py
  3.12.1 (v3.12.1:2305ca5144, Dec  7 2023, 17:23:38) [Clang 13.0.0 (clang-1300.0.29.30)]
○ ponk6745@Shreyaans-MacBook-Air python %
```

Q.2)Write a Python program to list all the keywords in Python.

Ans.:

```
import keyword
print("The list of keywords is : ")
print(keyword.kwlist)
```

```
● ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
  The list of keywords is :
  ['False', 'None', 'True', 'and', 'as', 'assert', 'async', 'await', 'break', 'class', 'continue', 'def', 'del', 'elif'
  , 'else', 'except', 'finally', 'for', 'from', 'global', 'if', 'import', 'in', 'is', 'lambda', 'nonlocal', 'not', 'or'
  , 'pass', 'raise', 'return', 'try', 'while', 'with', 'yield']
○ ponk6745@Shreyaans-MacBook-Air python %
```

Q.3)Create a program that asks the user to enter their name and their age. Print out a message addressed to them that tells them the year that they will turn 100 years old.

Ans.:

```
name=input("Enter your name:")
age=int(input("Enter your age:"))
print(f"You, {name} will turn 100 years in {2024+100-age}.")
```

```
● ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
  Enter your name:Shreyaan
  Enter your age:19
  You, Shreyaan will turn 100 years in 2105.
○ ponk6745@Shreyaans-MacBook-Air python %
```

Q.4)Write a Python program which accepts the radius of a circle from the user and compute the area.(Hint: import math and use math.pi)

Ans.:

```python
import math
radius=float(input("Enter radius of the circle:"))
print(f"The area of the circle is: {math.pi*radius*radius}.")
```

```
● ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
  Enter radius of the circle:5
  The area of the circle is: 78.53981633974483.
○ ponk6745@Shreyaans-MacBook-Air python %
```

Q.5)Ask the user for a number. Depending on whether the number is even or odd, print out an appropriate message to the user.

Ans.:

```python
num=int(input("Enter a number:"))
if num % 2 ==0:
    print("Number is even")
else:
    print("Number is odd")
```

```
● ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
  Enter a number:13
  Number is odd
● ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
  Enter a number:16
  Number is even
○ ponk6745@Shreyaans-MacBook-Air python %
```

Q.6)Check whether the 0.1+ 0.2 =0.3 holds true in Python? If not find the ways to make it true.

When writing normally with the following code:
Code:

```
if 0.1+0.2==0.3:
    print("true")
else:
    print("false")
```

The output is this:

```
ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
false
ponk6745@Shreyaans-MacBook-Air python % []
```

To fix it, we import Decimal from decimal and use it as follows and we get the desired output:

```
from decimal import *
getcontext().prec = 6
print("This is one of the ways to fix it. Now it shows:")
if Decimal("0.1")+Decimal("0.2")==Decimal("0.3"):
    print("true")
else:
    print("false")
```

```
ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
This is one of the ways to fix it. Now it shows:
true
ponk6745@Shreyaans-MacBook-Air python % []
```

Q.7)Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.

Ans.:

```
a=input("Enter the first string:")
b=input("Enter the second string:")
a1=b[:2]+a[2:]
b2=a[:2]+b[2:]
ans=a1+" "+b2
print(f"The new string after performing all above operations
is:{ans}")
```

```
ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
Enter the first string:Wollo
Enter the second string:Herld
The new string after performing all above operations is:Hello World
ponk6745@Shreyaans-MacBook-Air python % []
```

Q.8)Ask the user for a string containing lowercase letters, uppercase letters, digits or underscores or combinations of all. Write a Python program to check whether the string is a valid identifier.

Ans.:

```python
import keyword
str=input("Enter a string containing lowercase letters,
uppercase letters, digits or underscores or combinations of
all:")
if str.isidentifier() and not(keyword.iskeyword(str)):
 print("It is a valid identifier")
else:
 print("It is not a valid identifier")
```

```
ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
Enter a string containing lowercase letters, uppercase letters, digits or underscores or combinations of all:
It is a valid identifier
ponk6745@Shreyaans-MacBook-Air python % []
```

Q.9)Write a Python program to change a given string to a new string where the first and last chars have been exchanged.

Ans.:

```python
str=input("Enter a string:")
string=str[-1]+str[1:-1]+str[0]
print(f"The modified string is:{string}")
```

```
ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
Enter a string:laptop
The modified string is:paptol
ponk6745@Shreyaans-MacBook-Air python % []
```

Q.10)Write a Python script that takes input from the user and displays that input back in upper and lower cases.

Ans.:

```python
str=input("Enter a string:")
print(f"The string converted to uppercase:{str.upper()}")
```

```python
print(f"The string converted to lowercase:{str.lower()}")
```

```
ponk6745@Shreyaans-MacBook-Air python % /usr/local/bin/python3 /Users/ponk6745/Desktop/vscode/python/hello.py
Enter a string:ShReYaAn
The string converted to uppercase:SHREYAAN
The string converted to lowercase:shreyaan
ponk6745@Shreyaans-MacBook-Air python % 
```