

**Assignment -1**  
Python Programming

Assignment Date	29 September 2022
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Maximum Marks	2 Marks

**Question-1:**

Write a Python program to replace a string "Python" with "Java" and "Java" with "Python" in a given string.

Solution:

```
print("Input a text with two words 'Python' and 'Java'")

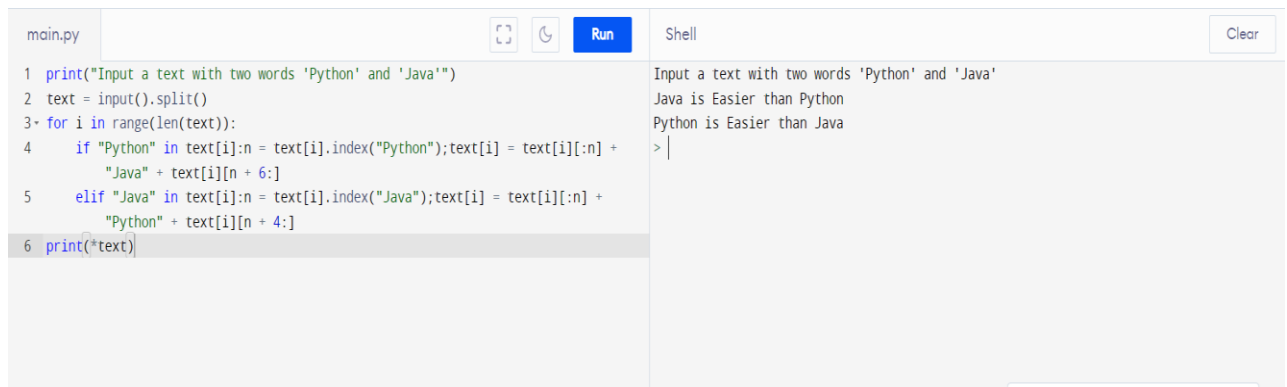
text = input().split()

for i in range(len(text)):

    if "Python" in text[i]:n = text[i].index("Python");text[i] = text[i][:n] + "Java" + text[i][n + 6:]

    elif "Java" in text[i]:n = text[i].index("Java");text[i] = text[i][:n] + "Python" + text[i][n + 4:]

print(*text)
```



The screenshot shows a Python IDE with a file named 'main.py'. The code in the editor is as follows:

```
1 print("Input a text with two words 'Python' and 'Java'")
2 text = input().split()
3 for i in range(len(text)):
4     if "Python" in text[i]:n = text[i].index("Python");text[i] = text[i][:n] +
      "Java" + text[i][n + 6:]
5     elif "Java" in text[i]:n = text[i].index("Java");text[i] = text[i][:n] +
      "Python" + text[i][n + 4:]
6 print(*text)
```

The 'Run' button is highlighted. The 'Shell' output area shows the following text:

```
Input a text with two words 'Python' and 'Java'
Java is Easier than Python
Python is Easier than Java
> |
```

**Question-2:**

Write a Python program to find the difference between the largest integer and the smallest integer which are created by 8 numbers from 0 to 9. The number that can be rearranged shall start with 0 as in 00135668.

Solution:

```
print("Input an integer created by 8 numbers from 0 to 9.:")
```

```

num = list(input())

print("Difference between the largest and the smallest integer from the given integer:")

print(int("".join(sorted(num,reverse=True))) - int("".join(sorted(num))))

```

Output;

main.py	Shell
<pre> 1 print("Input an integer created by 8 numbers from 0 to 9.:") 2 num = list(input()) 3 print("Difference between the largest and the smallest integer from the given   integer:") 4 print(int("".join(sorted(num,reverse=True))) - int("".join(sorted(num)))) </pre>	<pre> Input an integer created by 8 numbers from 0 to 9.: 97531864 Difference between the largest and the smallest integer from the given integer: 85308642 &gt;   </pre>

### Question-3:

Write a Python program to compute the sum of first n given prime numbers.

### Solution:

```

MAX = 105000

print("Input a number (n≤10000) to compute the sum:(0 to exit)")

is_prime = [True for _ in range(MAX)]

is_prime[0] = is_prime[1] = False

for i in range(2, int(MAX ** (1 / 2)) + 1):

    if is_prime[i]:

        for j in range(i ** 2, MAX, i):

            is_prime[j] = False

primes = [i for i in range(MAX) if is_prime[i]]

```

```
while True:
```

```
    n = int(input())
```



```
    if not n:
```

```
        break
```

```
    print("Sum of first",n,"prime numbers:")
```

```
    print(sum(primes[:n]))
```

#### Output:

main.py				Shell	
<pre>1 MAX = 105000 2 print("Input a number (n≤10000) to compute the sum:(0 to exit)") 3 is_prime = [True for _ in range(MAX)] 4 is_prime[0] = is_prime[1] = False 5 for i in range(2, int(MAX ** (1 / 2)) + 1): 6     if is_prime[i]: 7         for j in range(i ** 2, MAX, i): 8             is_prime[j] = False 9 primes = [i for i in range(MAX) if is_prime[i]] 10 while True: 11     n = int(input()) 12     if not n: 13         break 14     print("Sum of first",n,"prime numbers:") 15     print(sum(primes[:n]))</pre>				<pre>Input a number (n≤10000) to compute the sum:(0 to exit) 60 Sum of first 60 prime numbers: 7699</pre>	





#### Question-4:

Write a Python program to randomly generate a list with 10 even numbers between 1 and 100 inclusive.

Solution:

```
import random
print(random.sample([i for i in range(1,100) if i%2==0], 10))
```

#### Output:

main.py				Shell	
<pre>1 import random 2 print(random.sample([i for i in range(1,100) if i%2==0], 10))</pre>				<pre>[66, 74, 76, 38, 68, 52, 30, 64, 90, 58]</pre>	

### Question-5:

Write a Python program to count the number of prime numbers less than a given non-negative number.

### Solution:

```
def count_Primes_nums(n):  
    ctr = 0  
  
    for num in range(n):  
        if num <= 1:  
            continue  
        for i in range(2, num):  
            if (num % i) == 0:  
                break  
        else:  
            ctr += 1  
  
    return ctr  
  
print(count_Primes_nums(10))  
print(count_Primes_nums(100))
```

### Output:

main.py	Run	Shell
<pre>1 def count_Primes_nums(n): 2     ctr = 0 3 4     for num in range(n): 5         if num &lt;= 1: 6             continue 7         for i in range(2, num): 8             if (num % i) == 0: 9                 break 10        else: 11            ctr += 1 12 13    return ctr 14 15 print(count_Primes_nums(10)) 16 print(count_Primes_nums(100))</pre>		<pre>4 25 &gt; 25 25 &gt; 4 4 &gt; 60 60 &gt;</pre>