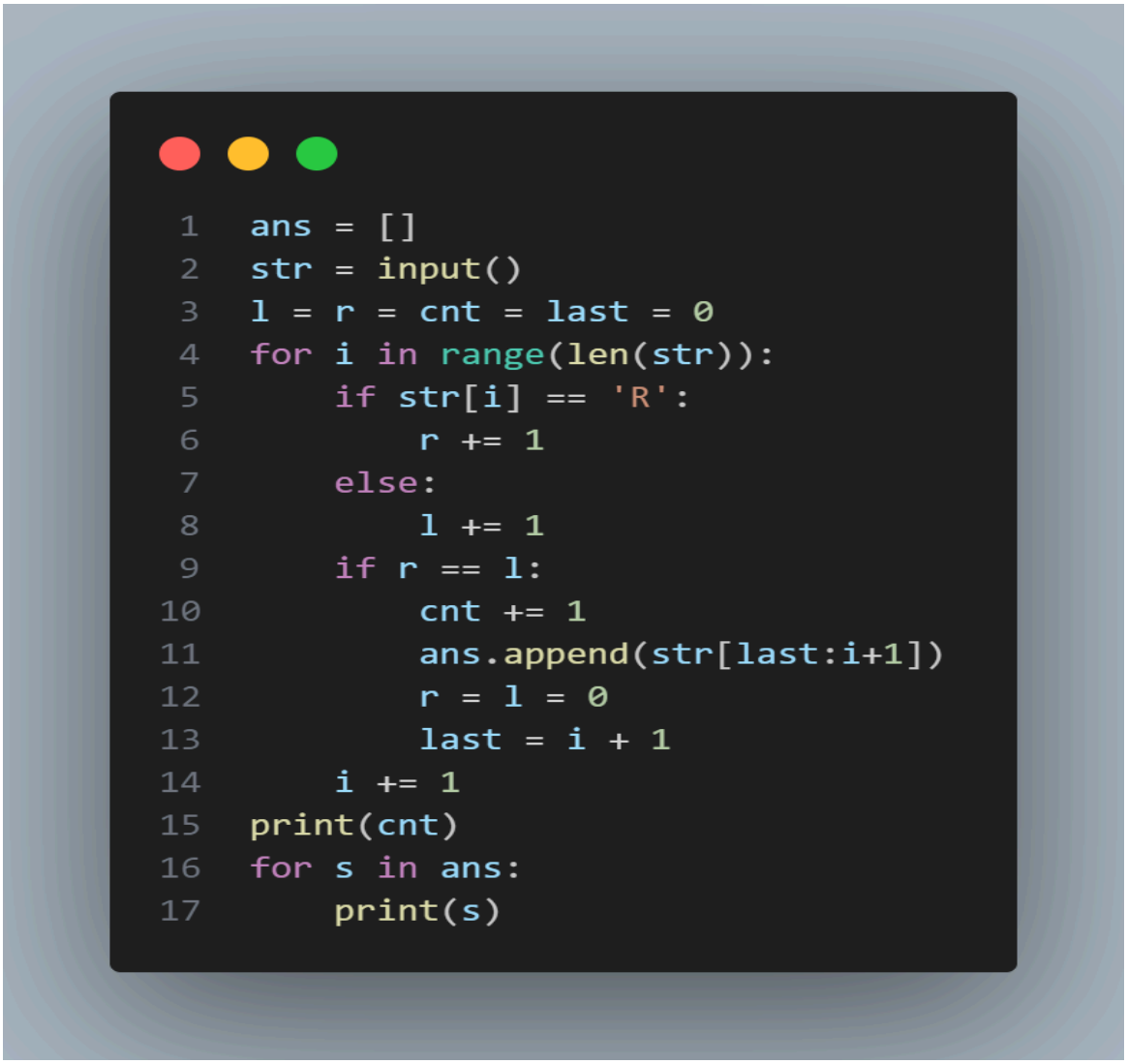
Python Assignment 01

Marks

Problem - 1

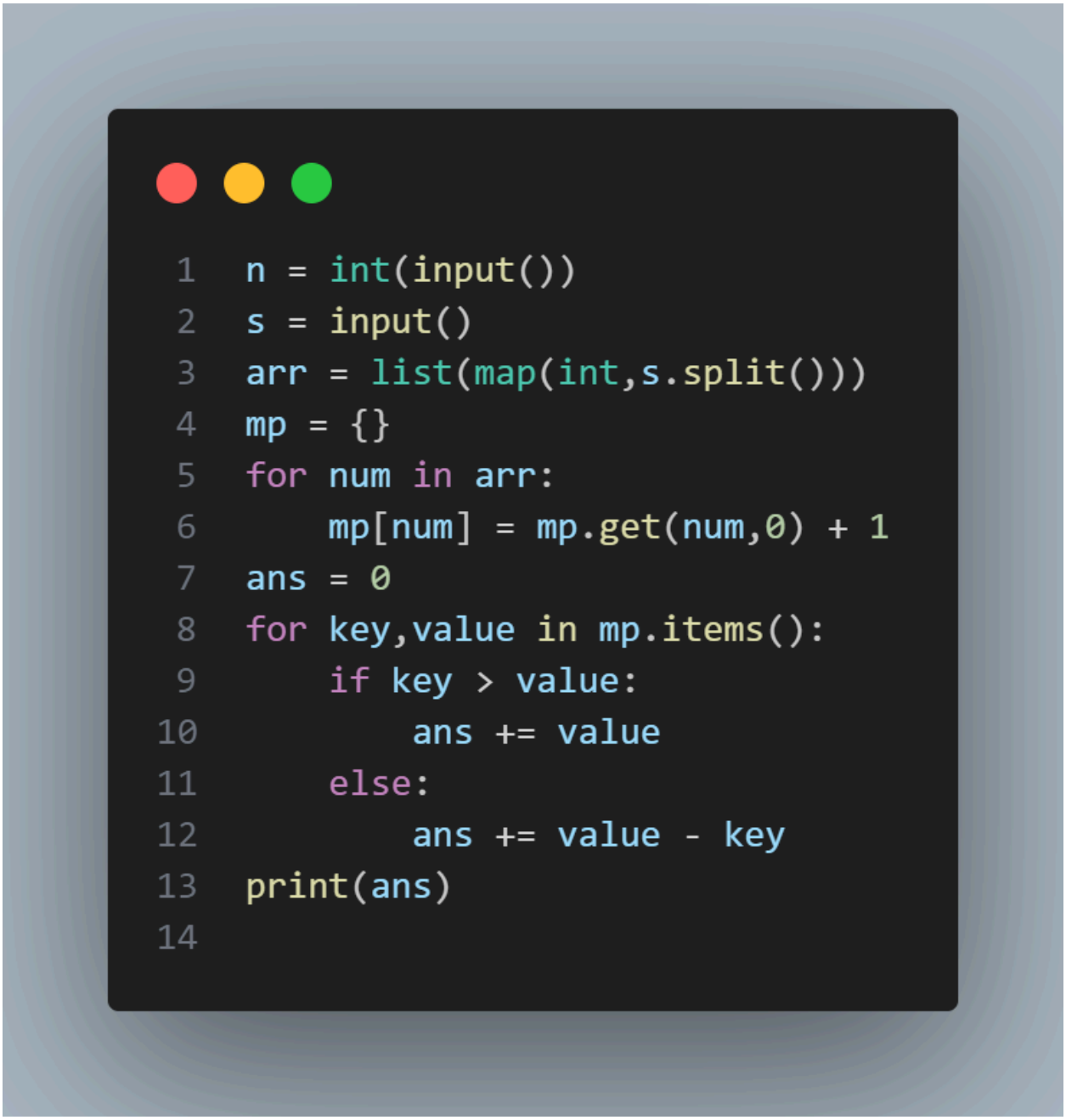
➔ Write Python program to solve Max Split 20



```python
ans = []
str = input()
l = r = cnt = last = 0
for i in range(len(str)):
    if str[i] == 'R':
        r += 1
    else:
        l += 1
    if r == l:
        cnt += 1
        ans.append(str[last:i+1])
        r = l = 0
        last = i + 1
    i += 1
print(cnt)
for s in ans:
    print(s)
```

Problem - 2

➔ Write Python program to solve Good Sequence 20



```python
n = int(input())
s = input()
arr = list(map(int,s.split()))
mp = {}
for num in arr:
    mp[num] = mp.get(num,0) + 1
ans = 0
for key,value in mp.items():
    if key > value:
        ans += value
    else:
        ans += value - key
print(ans)

```

Problem - 3

a

➔ Write the difference between List and Dictionary of Python. 10

The difference between List and Dictionary of python is given below:

List	Dictionary
A list is a ordered collection of any kind of elements.	A Dictionary is a unordered collection of key-value pairs
Elements accessed through index	Accessed by key
Integer indexing starting from 0	Keys of any immutable data type.
Elements are enclosed in [ ] brackets.	key-value pairs are enclosed in { } curly braces.
It is a sequence of homogeneous data.	key, value can be either homogeneous or non-homogeneous
Example: [1,2,3,4,5,6,7,8]	{'a': 1, 'b': 1 ; 'c': 4

b

➔ Write about *args and **kwargs of Python with proper examples. 10

In Python, *args and **kwargs are special syntax used in function definitions to handle variable-length argument lists.Both allows us to pass an arbitrary number of arguments to a function.

***args:** The *args parameter in a function definition allows us to pass a variable number of positional arguments.Inside the function, *args collects all the positional arguments passed to the function into a tuple.

```
def add(*args):
    total = 0
    for num in args:
        total += num
    return total

print(add(1, 2, 3))  # Output: 6
```

****kwargs:** The **kwargs parameter in a function definition allows you to pass a variable number of keyword arguments.Inside the function, **kwargs collects all the keyword arguments passed to the function into a dictionary where the keys are the argument names and the values are the corresponding values.

```
def person(**kwargs):
    for key, value in kwargs.items():
        print(f"{key}: {value}")

greet(name="Alice", age=30)  # Output: name: Alice, age: 30
```

Problem - 4

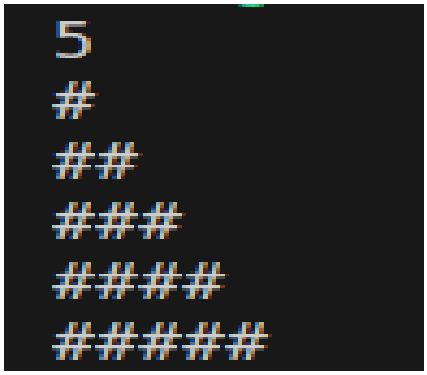
➔ Write Python program to solve Minimize Number

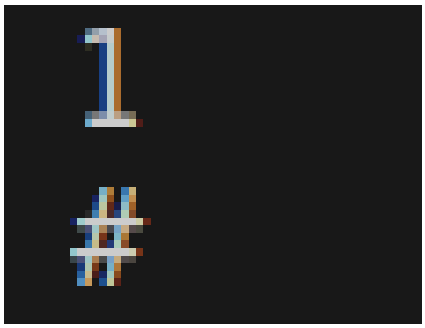
```python
n = int(input())
s = input()
arr = list(map(int,s.split()))
ans = 0
while all(num % 2 == 0 for num in arr) and all(num != 0 for num in arr):
    ans += 1
    for i in range(n):
        arr[i] //= 2
print(ans)
```

Problem - 5

➔ Take a number from the user and draw a pyramid using PyAutoGUI 20

Sample :






```python
import pyautogui
from time import sleep

def pyramid(n):
    for i in range(n):
        for j in range(0,i + 1,1):
            pyautogui.write('#',interval=0.1)
        pyautogui.press('enter')

n = int(input())
sleep(4)
pyramid(n)


```