# **EXERCICE** 1

* Input one word in the console
* Display the number of a and the number of b that the word contains.

***Examples***

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| adada | A:3, B: 0 |
| aaaaa | A:5, B: 0 |
| abbba | A:2, B: 3 |

**Q1** – What will be the **result** for these outputs?

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| aabaa | A:4 ,B:1 |
| bbccb | A:0,B:3 |
| dcaeb | A:1,B:1 |

**Q2** – **Analyze the symbols** you need to solve this problem.

|  |  |  |
| --- | --- | --- |
| Element | Do you need it? | For what? |
| Action | Yes, i do | Cound text of letter”a” and “b” |
| Decision | Yes, I do | To check the .condition have letter”a”and”b”or not |
| Repeat | Yes, i do | I want to loop of text |
| Input / Output | Yes, I need | 1. Input the text 2. Desplay the nb of a and b |

**Q3** – From the following code, which block is used?

Input/ output

Decision

Action

word = input()

index = 0

nb\_a = 0

nb\_b = 0

while index < len(word):

if word[index] == "a":

nb\_a += 1

if word[index] == "b":

nb\_b += 1

index += 1

print("A:", nb\_a, "B:", nb\_b)

**Q4** – Used this code to create his **flowchart**.

Index=0

word[index]==”a”

Yes

nb\_a,b=0

start

END

index<len(word)

word[index]==”b”

Print(“A:”,nb\_a,”B:”,nb\_b)

index+=1

Nb\_b+=1

Nb\_a+=1

Word=input()

# **EXERCICE** 2

* Input 2 words in the console
* IF both words contain the same **number of “a”** display THE SAME otherwise display NOT THE SAME

***Examples***

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| dadada  aaa | THE SAME |
| aaaa  aa | NOT THE SAME |
| a  bbbbbbba | THE SAME |

**Q1** – What will be the **results** for those inputs?

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| aa  baa | The same |
| bb  cc | Not the same |
| abba  baab | The same |

**Q2** – Create **flowchart** to solve this problem.

**Q3** – **Implement it**.

Text1=input()

Text2=input()

Count1=0

Count2=0

For i in range(len(text1):

If text1[i]==”a”:

Count1+=1

For n in range(len(text2):

If text2[i]==”a”:

Count2+=1

If count1==count2:

Print(The same)

Else :

Print(Not the same)

# EXERCICE 3

* Input a text in the console.
* Print the number of points related to this word, following the below rules.

|  |  |
| --- | --- |
| **IF THE WORD CONTAINS** | **THEN THE POINTS ARE** |
| **One** ‘*A’* **or more** | 10 points |
| **One ‘***B’* **or more** | 20 points |

* Note: you can cumulate the rules: if you have some “A” and some “B” it will be 10+20 = 30 points!
* If no rules match, then the result is 0 points.

***Examples***

|  |  |
| --- | --- |
| **INPUT** | **OUTPUT** |
| KKK | 0 |
| BCA | 30  *Because we found 1 ‘B’ and 1 ‘A’: 10 + 20* |
| MMBBR | 20  Because we found ’B’ |
| MAARTDAC | 10  Because we found’A’ |
| AABBBB | 30  Because we found’A’and ‘B’:10+20 |
| C | 0  Because we don’t have ‘A’ or ‘B’ |

**Q1** – What will be the **results** for those inputs?

|  |  |
| --- | --- |
| INPUT | OUTPUT |
| DADADA | 10 |
| ACAAAB | 30 |
| AAAAAA | 10 |
| QWERTY | 0 |

**Q2** – **Fill up the gap** on this flowchart.

Set POINT\_A to 0

Word[i]==”a”

Len(word)

Get *WORD*

Yes

Set POINT\_B to 0

No

Done

Set POINT\_A to 10

start

If AND

Yes

Set POINT\_B to 20

No

Display POINT\_A + POINT\_B

END

**Q3** – Implement it and test it with the inputs of the first question.

EXERCICE 4

* Execute mentally the below code and write, for each step of execution the value of each variable.
* If the variable is not defined yet, write “?”

a = "roman"

b = a[2]

c = a + b

a = c[-1]

|  |  |  |  |
| --- | --- | --- | --- |
| STEP | A | B | C |
| 1 | 4 |  |  |
| 2 |  | 8 |  |
| 3 |  |  | 10 |
| 4 | 9 |  |  |