BEFORE STARTING!

Manage your time: you can do everything in 2 days, or follow the plan day by day.
But: don't do everything at the last minute!

Think by yourself: don't ask the answer to other students
Your facilitator is here to answer your questions – **not the students!**

Read the **instructions**!
Also **read** the **examples**, they will help you to understand what we ask you to do

MONDAY

MONDAY EXERCICE 1

WHAT YOUR PROGRAMM SHALL DO
- Enter 1 number (numberOfValues) in the console • CONSOLE : console shall display : "Number of values:" - Enter < numberOfValues> values in the console • CONSOLE : console shall display for each value I to enter : "Values <i>:" • ERRORS : The value must be greater than 0 o If not: the console shall display: "Value must be greater than 0!" o And value shall be entered again -Print the **number** of **value 10** found among the entered values: • CONSOLE : The console shall display : "The number of 10 is: <you result>"

EXAMPLES	
INPUT	EXPLANATION
>Number of value: 4 >Value 1: 4 >Value 2: 45 >Value 3: 10 >Value 4: 7 >The number of 10 is : 1	Here we enter 4 value Only 1 is equal to 10 So we print 1
>Number of value: 4 >Value 1: -4 >Value shall be great than 0! >Value 1: 11 >Value 2: 10 >Value 3: -10 >Value shall be great than 0! >Value 3: 8 >Value 4: 7 >The number of 10 is : 1	OK in this example we make 2 mistakes: - We enter value1 with -4 so we need to enter it again - We enter value3 with -10 so we need to enter it again At the end we have the 4 values : 11, 10, 8, 7 At the result is 1, since we have only one 10 is this list

CAN I HAVE SOME HELP?
For this exercise, you can see we focus on 2 points - How to display some clear messages on console - How to manage errors when value are not correct

CORRECTION

```
numberOfValue = int(input("Number of value:  "))
```

```
nubmerOf10 = 0
for index in range(numberOfValue):
    value = int(input("Value " + str(index+1) + ": "))

    while value < 0:
        print("Value shall be great than 0!")
        value = int(input("Value " + str(index+1) + ": "))

    if value == 10:
        nubmerOf10 = nubmerOf10 + 1

print("The number of 10 is " + str(nubmerOf10))
```

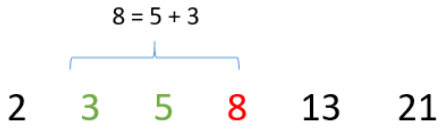
MONDAY EXERCICE 2

WHAT YOUR PROGRAMM SHALL DO
- Enter 1 number (numberOfValues) in the console • CONSOLE: The console shall display: "Number of values:" - Enter < numberOfValues> values in the console -Print "GOOD LIST" if all numbers are the list (expect the 2 first ones) are equal to the sum of the 2 previous one -Otherwise print:" BAD LIST" - print also "BAD LIST" if numberOfValues < 3

Example!! Let's take the following list of numbers: 2, 3, 5, 8, 13, 21

- First we check 5 is equal to 3 (value n-1) + 2 (value n-2)

- Then we check 8 is equal to 5 (value n-1) + 3 (value n-2)



- And so on, till the end of the list
- Here we will print GOOD LIST

EXAMPLES	
INPUT	EXPLANATION
Number of values: 6 8 3 11 14 25 39 GOOD LIST	11 = 3 + 8 14 = 11 + 3 25 = 14 + 11 39 = 25 + 14 So the list is correct
Number of values: 5 2 4 6 13 19 BAD LIST	6 = 4 + 2 13 **=!** 6 + 4 (not correct in here) 19 = 13 + 6 So the list is not correct
Number of values: 2 235 71 BAD LIST	We enter only 2 numbers

CORRECTION

```
numberOfValue = int(input("Number of value:  "))

value0 = 0
value1 = 0
isListValid = True
for index in range(numberOfValue):
    value2 = int(input())

    if index > 1 and not(value2 == value1 + value0):
        isListValid = False

    if index > 0:
        value0 = value1

    value1 = value2

if isListValid and numberOfValue > 2:
    print("GOOD LIST")
else:
    print("BAD LIST")
```

TUESDAY

WHAT YOUR PROGRAMM SHALL DO
- Enter 1 number (numberOfValues) in the console • CONSOLE: The console shall display: "Number of values:" • ERRORS: The number of values must be at least 4 ○ If not: the console shall display: "We need minimum 4 values" ○ And value shall be entered again - Enter < numberOfValues> values in the console If the list contains **3 consecutive numbers of the same value:** - CONSOLE: print: Found at: x, y, z *(x, y, z are the indexes of each value)* Otherwise (if 3 consecutive numbers are not found) - CONSOLE: print: Not found!

Example: 2, **4, 4, 4**, 5, 21

- We have 3 times the value 4 in this list
  - The first 4 is at index 1
- We will print: Found at: 1, 2, 3

EXAMPLES	
CONSOLE	EXPLANATION

>Number of values: 6 >1 >4 >8 >8 >8 >2 >Found at: 2, 3, 4	At index 2, 3, 4 we have the same value So we print: Found at: 2,3,4
>Number of values: 3 >We need minimum 4 values >Number of values: 4 >41 >41 >41 >6 >Found at: 0, 1, 2	We chose to enter 3 numbers, but under than 4 numbers we have to print this error: "We need minimum 4 numbers" We have to enter again, this time we chose to enter 4 numbers, so no error and we can enter 4 numbers At index 0, 1, 2 we have the same value So we print: Found at: 0, 1, 2
>Number of values: 5 >1 >4 >18 >8 >61 > Not found!	We don't found 3 consecutive numbers

CAN I HAVE SOME HELP?
Here you need to find a way to "remember" some previous values. What elements can we use to stock values? Var…. Also be careful about when do you start to compare the values: first iteration? Second iteration? Third iteration?

CORRECTION

```
numberOfValue = int(input("Number of value:  "))

while numberOfValue < 4:
    print("We need minimum 4 values")
    numberOfValue = int(input("Number of value:  "))

value0 = 0
value1 = 0
isListValid = True

found = False
index0 = 0
index1 = 0
index2 = 0
for index in range(numberOfValue):
    value2 = int(input())
```

```
    if index > 1 and value2 == value1 and value1 == value0:
        if not found:
            found = True
            index2 = index
            index1 = index-1
            index0 = index - 2

    if index > 0:
        value0 = value1

    value1 = value2

if found:
    print("Found at: " + str(index0) + ", " +
          str(index1) + ", " + str(index2))
else:
    print("Not found!")
```

WEDNESDAY

WHAT YOUR PROGRAMM SHALL DO
- Enter 1 number (numberOfValues) in the console • CONSOLE: The console shall display: “Number of values:” Print the size of the longest consecutive series of numbers.

Example: 4, 4, 4, 1, 1, 1, 1, 1, 5, 5

- We print 5, because the longest chain of same numbers contain 5 repetitions of “1”

EXAMPLES	
CONSOLE	EXPLANATION
>Number of values: 10 >4 >4 >4 >1 >1 >8 >7 >7 >7 >6 > Longest series: 3	We enter: 3 times “4” 2 times “1” 1 time “8” 3 times “7” 1 time “6” So the longest consecutive series get 3 numbers
>Number of values: 1 >6 > Longest series: 1	We enter: 1 time “6” So the longest consecutive series get 1 number

CAN I HAVE SOME HELP?

Create variables to store all the important values.

CORRECTION

```
numberOfValue = int(input("Number of value:  "))

currentChainValue = 0
currentChainSize = 0
maxChainSize = 0

for index in range(numberOfValue):
    value = int(input())

    if index == 0:
        currentChainValue = value
        currentChainSize = 1
    else:
        if value == currentChainValue:
            currentChainSize = currentChainSize + 1
        else:
            currentChainSize = 1
            currentChainValue = value

    if currentChainSize > maxChainSize:
        maxChainSize = currentChainSize

print("result is :" + str(maxChainSize))
```

THURSDAY

THURSDAY – EXERCICE 1

WHAT YOUR PROGRAMM SHALL DO
- Enter 1 string (word) in the console Rule to check : • The characters must be alternately “a” and “b” • You can finish by “a” or “b” -Print “GOOD” if the string respect this rule -Otherwise print:” BAD”

EXAMPLES	
CONSOLE	EXPLANATION
>Your word: abb > BAD	We don’t respect the rule : • At index 2, we have a “b”, but we were expecting “a”
>Your word: ababab > GOOD	We respect the rule • We alternate “a” and “b” and we finish by “b”
>Your word: ababa > GOOD	We respect the rule • We alternate “a” and “b” and we finish by “a”

CORRECTION

```
word = input("Your word:")

# We check the characters
isValidCharacters = True
for index in range(len(word)):
    character = word[index]
    if index % 2 == 0 and character != "a":
        isValidCharacters = False

    if index % 2 == 1 and character != "b":
        isValidCharacters = False

if isValidCharacters:
    print("GOOD")
else:
    print("BAD")
```

THURSDAY – EXERCICE 2

WHAT YOUR PROGRAMM SHALL DO
- Enter 1 string (word) in the console Rule to check : • The characters must be alternately “a” and “b” • You cannot finish by character “a” -Print “GOOD” if the string respect this rule -Otherwise print:” BAD”

EXAMPLES	
CONSOLE	EXPLANATION
>Your word: abb > BAD	We don’t respect the rule : • At index 2, we have a “b”, but we were expecting “a”
>Your word: abababb > GOOD	We respect the rule
>Your word: ababa > BAD	We don’t respect the rule : • We cannot finish by character “a”

CORRECTION

```
word = input("Your word:")

# We check the characters
isValidCharacters = True
for index in range(len(word)):
    character = word[index]
    if index % 2 == 0 and character != "a":
        isValidCharacters = False

    if index % 2 == 1 and character != "b":
        isValidCharacters = False

# We check the size >= 2 and even size
size = len(word)
isValidSize = size >= 2 and (size % 2 == 0)

if isValidCharacters and isValidSize:
    print("GOOD")
else:
    print("BAD")
```

FRIDAY

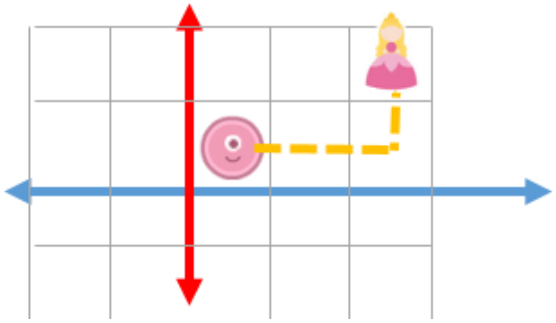
Game: Help Balook need to save the princess!!

- Princess is always at position (2, 1): Look at the images below…
- Balook start the game at position (0, 0)
- The player needs to enter the list of move actions
- The player wins if the list of move action brings Balook to the princess

> RRU

>Princess is saved !

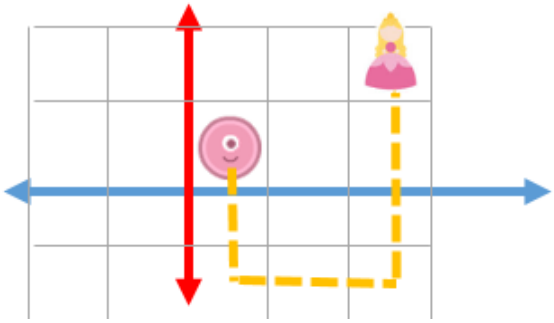
Because RIGHT + RIGHT + UP
will bring BALOOK to the princess



> DDRRUUU

>Princess is saved !

Because this path will also
will bring BALOOK to the princess



WHAT YOUR PROGRAMM SHALL DO
- Enter one string (the actions): which shall contain only: L, R, U, D - Regarding each letter of this string, move the position of Balook -Print "WIN" if Balook stop on the princess cell (x=2, y=1): -Otherwise print:" LOOSE"

EXAMPLES	
CONSOLE	EXPLANATION
>Actions : LDL >LOOSE	We entered 2 LEFT and 1 DOWN - X : 0 -1 -1 = -2 - Y : 0 - 1 = -1 So the position at the end is (-2, -1) It's not the position of the princess, so we print "LOOSE"
>Action : URR >WIN	We entered 1 UP and 2RIGHT - X : 0 + 1 + 1 = 2 - Y : 0 + 1 = 1 So the position at the end is (2, 1) It's the position of the princess, so we print "WIN"

CORRECTION

```
actionsString = input("Actions:")

x = 0
y = 0
for index in range(len(actionsString)):
    action = actionsString[index]

    if action == "R":
        x = x + 1
    elif action == "L":
        x = x - 1
    elif action == "U":
        y = y + 1
    elif action == "D":
        y = y - 1

princessSave = x == 2 and y == 1
if princessSave:
    print("WIN")
else:
    print("LOOSE")
```