Level : 1st year of Mathematics
module: ADS1

Academic year:2023/2024
Chapter 1 : Introduction

Exercise series: Tutorial (TD) N°: 01

Exercise 1 :

Answer true or false:

1. *Microsoft* is a computer manufacturing company.
2. *Facebook* is made by a programming language.
3. Data and programs are stored in files.
4. We can design two different algorithms for the same problem.
5. I am a good programmer; so I can design an algorithm for any mathematical problem.
6. Hard is more important than soft.
7. If the algorithm is wrong, the result is wrong.
8. Algorithm testing is a very important phase in creating programs.
9. *Java* is a European social network.
10. The pseudo-code may vary slightly from one book (or teacher) to another.
11. There are algorithms that never end!
12. An algorithm can be written in Arabic.

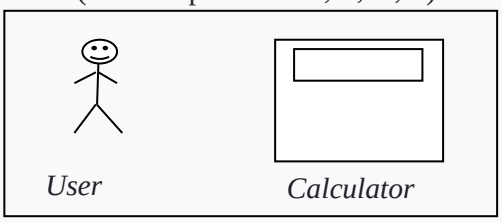
Exercise 2 :

Determine the inputs and outputs of the following algorithms by means of a diagram:

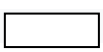
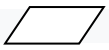
- Calculating a person's age.
- Getting a drink from a beverage vending machine.
- the sum of the digits of a number
- the binary representation of a decimal

Exercise 3 :

Consider the following diagram: which represents the elements participating in an arithmetic operation carried out using a calculator.(a basic operation : +, - , ÷ , ×)



1. Complete the diagram by indicating the interaction between the calculator and the user.
2. If we use the following graphic formalisms to represent the elements of this operation:

Calculation operation  Enter data  Result a display 

Give the steps of previous operation using these formalisms.

3. Change these steps in the following cases
   a. Do multiple operations but the calculator only does two operations at a time.
   b. The calculator performs several operations.

Practical Work (TP)

```
#include <stdio.h>
int main(){
printf("Welkome\n") ;
return 0;
}
```

c. 1 . Create a source file and enter the following program:
d. 2. Save the program under the name "*MyFirstProg*" and check the file extension.
e. 3. Compile the program.
f. 4. Correct (in the editor) any errors reported by the compiler.
g. 5. Repeat steps 3 and 4 until the compilation process has been successfully completed.
h. 6. Run the program.
i. 7. Writing "*Welkome*" instead of "*Welcome*". Is it a programming error? (correct it).
j. 8. Use the **copy-paste** technique to display the word "*Welcome*". 10 times.
k. 9. Use the "Replace" command (from the search menu) to display "*Hello*". instead of "*Welcome*".
l. 10. Run the program by double-clicking directly on the application file.
m. 11. Add the **getch**(); line before return 0; and redo 10 .