



INSTITUT DE TECHNOLOGIE DU CAMBODGE

***ASSIGNMENT TP1  
ALGORITHM AND PROGRAMMING***

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***GROUP: I3-GIC(C)***

***YEAR 2021-2022***

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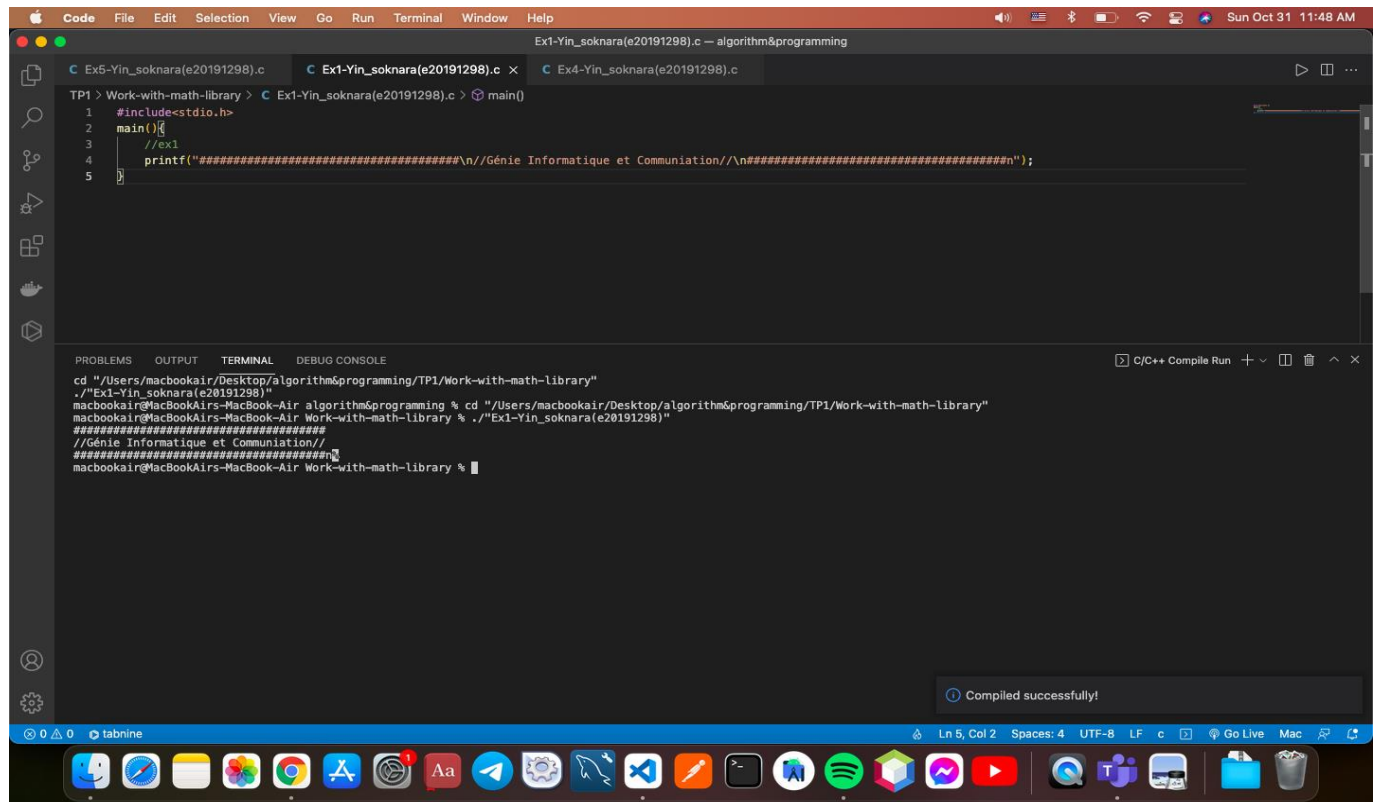
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Ex1:



The screenshot shows a Visual Studio Code editor window with a C++ file named `Ex1-Yin_soknara(e20191298).c`. The code is as follows:

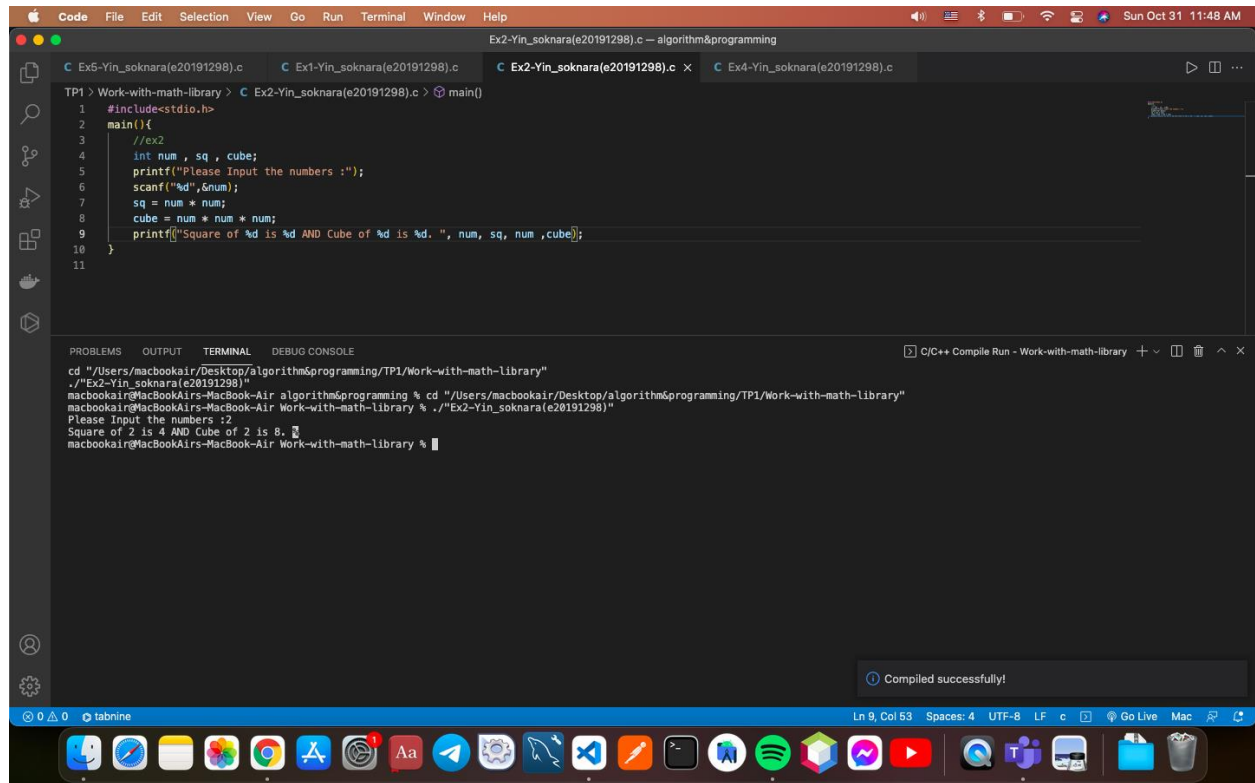
```
1 #include<stdio.h>
2 main()
3 {
4     //ex1
5     printf("#####\n//Génie Informatique et Communion//\n#####");
}
```

The terminal output shows the following commands and results:

```
cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
./"Ex1-Yin_soknara(e20191298)"
macbookair@MacBook-Air algorithm&programming % cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
macbookair@MacBook-Air Work-with-math-library % ./"Ex1-Yin_soknara(e20191298)"
#####
//Génie Informatique et Communion//
#####
macbookair@MacBook-Air Work-with-math-library %
```

A status bar at the bottom right indicates "Compiled successfully!". The macOS dock is visible at the bottom of the screen.

Ex2:



The screenshot shows a macOS desktop with the Visual Studio Code editor open. The editor window has a title bar that reads "Ex2-Yin\_soknara(e20191298).c — algorithm&programming". The code editor displays a C program with the following content:

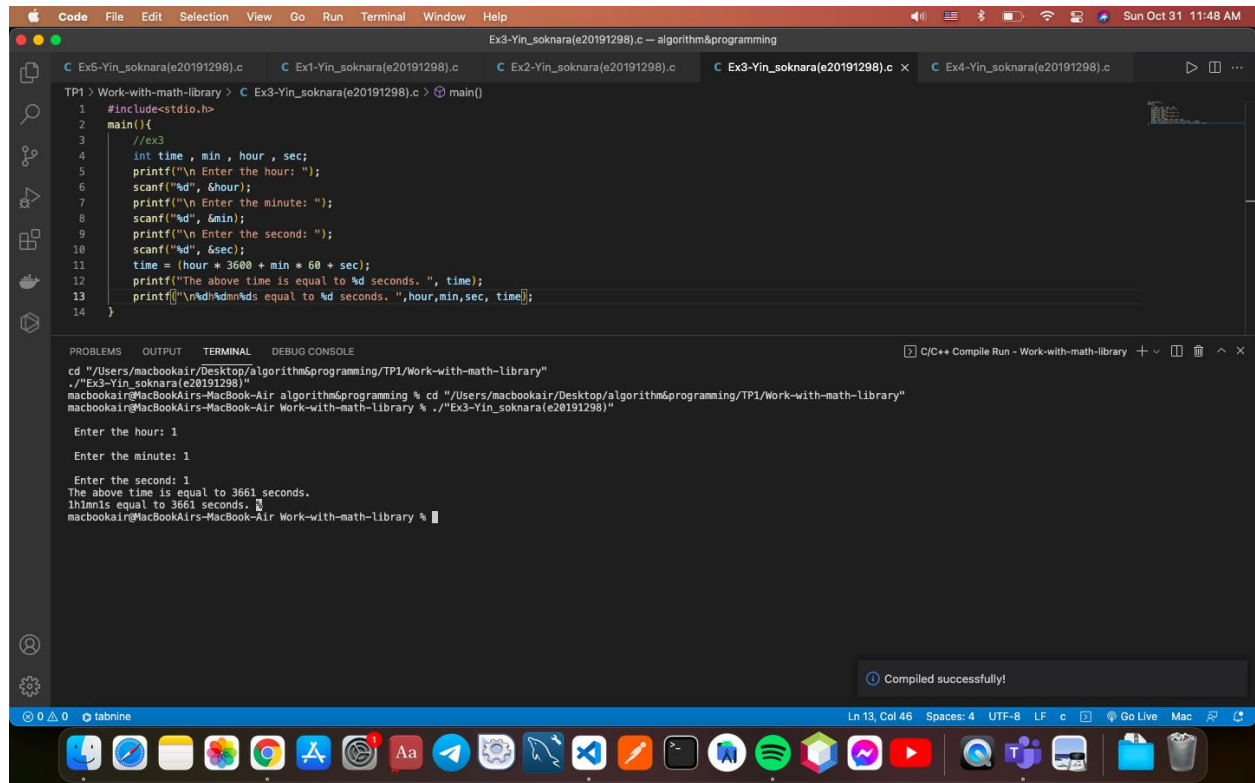
```
1 #include<stdio.h>
2 main(){
3     //ex2
4     int num , sq , cube;
5     printf("Please Input the numbers :");
6     scanf("%d",&num);
7     sq = num * num;
8     cube = num * num * num;
9     printf("Square of %d is %d AND Cube of %d is %d. ", num, sq, num ,cube);
10 }
11
```

Below the code editor, the TERMINAL panel is active, showing the following commands and output:

```
cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
./"Ex2-Yin_soknara(e20191298)"
macbookair@MacBookAirs-MacBook-Air algorithm&programming % cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
macbookair@MacBookAirs-MacBook-Air Work-with-math-library % ./"Ex2-Yin_soknara(e20191298)"
Please Input the numbers :2
Square of 2 is 4 AND Cube of 2 is 8.
macbookair@MacBookAirs-MacBook-Air Work-with-math-library %
```

A status bar at the bottom of the terminal panel indicates "Compiled successfully!". The macOS dock is visible at the bottom of the screen, containing various application icons.

## Ex3:



```
Code File Edit Selection View Go Run Terminal Window Help
Ex3-Yin_soknara(e20191298).c — algorithm&programming
C Ex5-Yin_soknara(e20191298).c C Ex1-Yin_soknara(e20191298).c C Ex2-Yin_soknara(e20191298).c C Ex3-Yin_soknara(e20191298).c X C Ex4-Yin_soknara(e20191298).c
TP1 > Work-with-math-library > C Ex3-Yin_soknara(e20191298).c > main()
1 #include<stdio.h>
2 main(){
3     //ex3
4     int time , min , hour , sec;
5     printf("\n Enter the hour: ");
6     scanf("%d", &hour);
7     printf("\n Enter the minute: ");
8     scanf("%d", &min);
9     printf("\n Enter the second: ");
10    scanf("%d", &sec);
11    time = (hour * 3600 + min * 60 + sec);
12    printf("The above time is equal to %d seconds. ", time);
13    printf("\n%d hours equal to %d seconds. ",hour,min,sec, time);
14 }
```

PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE C/C++ Compile Run - Work-with-math-library + - [ ] [X] [^] [v] [x]

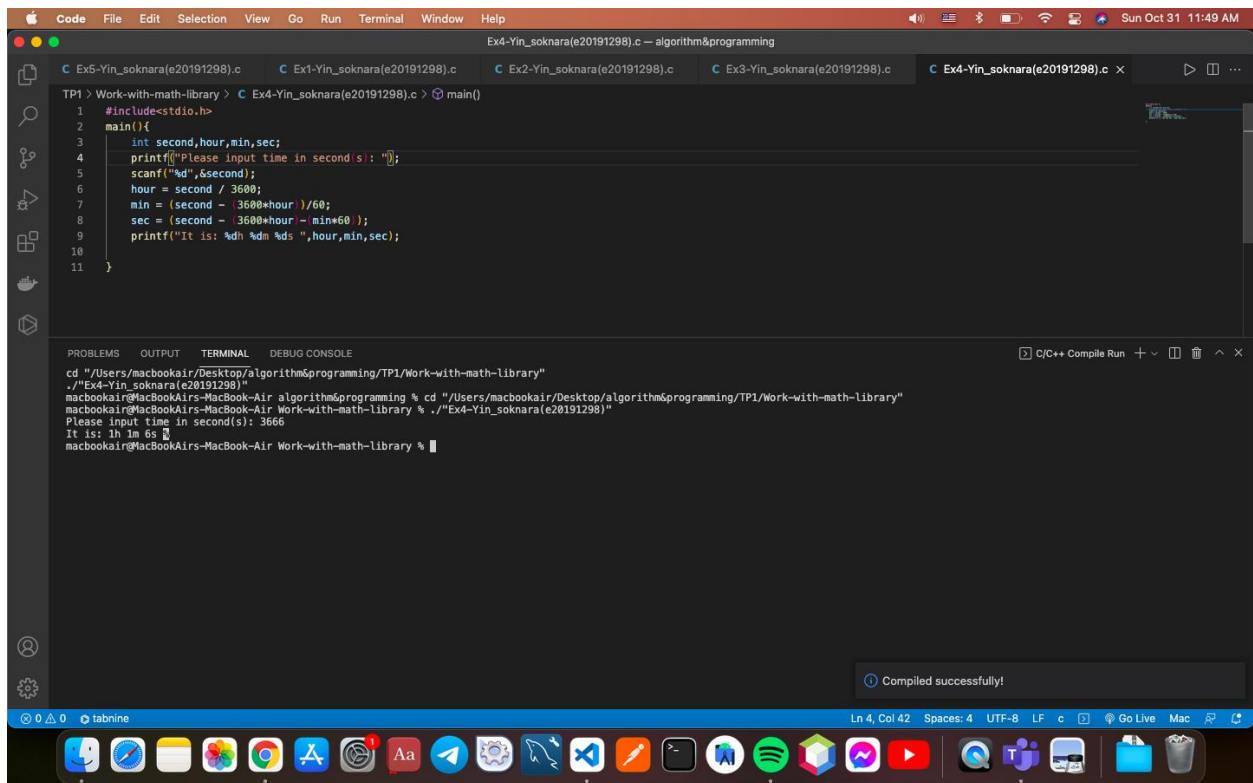
```
cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
./"Ex3-Yin_soknara(e20191298)"
macbookair@MacBookAirs-MacBook-Air algorithm&programming % cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
macbookair@MacBookAirs-MacBook-Air Work-with-math-library % ./"Ex3-Yin_soknara(e20191298)"

Enter the hour: 1
Enter the minute: 1
Enter the second: 1
The above time is equal to 3661 seconds.
1h1m1s equal to 3661 seconds.
macbookair@MacBookAirs-MacBook-Air Work-with-math-library %
```

Compiled successfully!

Ln 13, Col 46 Spaces: 4 UTF-8 LF c Go Live Mac

Ex4:



The image shows a Visual Studio Code window with a C program in the editor and its execution in the terminal. The program converts a total number of seconds into hours, minutes, and seconds. The terminal shows the command to run the program, the input '3666', and the output 'It is: 1h 1m 6s'.

```
1 #include<stdio.h>
2 main(){
3     int second, hour, min, sec;
4     printf("Please input time in second(s): ");
5     scanf("%d", &second);
6     hour = second / 3600;
7     min = (second - 3600*hour)/60;
8     sec = (second - 3600*hour - min*60);
9     printf("It is: %dh %dm %ds ", hour, min, sec);
10 }
11
```

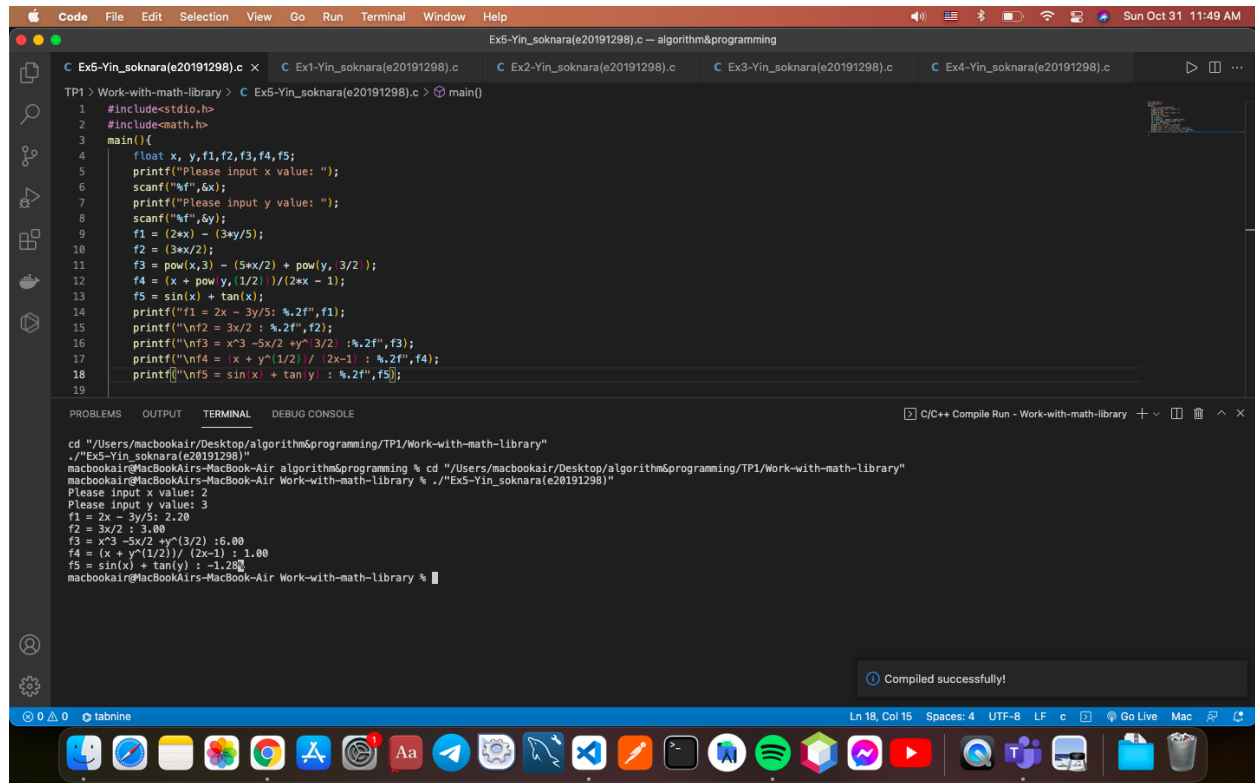
PROBLEMS OUTPUT TERMINAL DEBUG CONSOLE

```
cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
./"Ex4-Yin_soknara(e20191298)"
macbookair@MacBookAirs-MacBook-Air algorithm&programming % cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
macbookair@MacBookAirs-MacBook-Air Work-with-math-library % ./"Ex4-Yin_soknara(e20191298)"
Please input time in second(s): 3666
It is: 1h 1m 6s
macbookair@MacBookAirs-MacBook-Air Work-with-math-library %
```

Compiled successfully!

Ln 4, Col 42 Spaces: 4 UTF-8 LF c Go Live Mac

## Ex5:



The screenshot shows a Visual Studio Code window with a C++ file named `Ex5-Yin_soknara(e20191298).c`. The code defines a `main` function that takes user input for `x` and `y`, and calculates five mathematical expressions: `f1 = (2*x) - (3*y/5)`, `f2 = (3*x/2)`, `f3 = pow(x,3) - (5*x/2) + pow(y, 3/2)`, `f4 = (x + pow(y, 1/2)) / (2*x - 1)`, and `f5 = sin(x) + tan(x)`. The program uses `printf` to display the results with two decimal places.

```
1 #include<stdio.h>
2 #include<math.h>
3 main()
4 {
5     float x, y, f1, f2, f3, f4, f5;
6     printf("Please input x value: ");
7     scanf("%f", &x);
8     printf("Please input y value: ");
9     scanf("%f", &y);
10    f1 = (2*x) - (3*y/5);
11    f2 = (3*x/2);
12    f3 = pow(x,3) - (5*x/2) + pow(y, 3/2);
13    f4 = (x + pow(y, 1/2)) / (2*x - 1);
14    f5 = sin(x) + tan(x);
15    printf("f1 = 2x - 3y/5: %.2f", f1);
16    printf("\nf2 = 3x/2 : %.2f", f2);
17    printf("\nf3 = x^3 - 5x/2 + y^(3/2) : %.2f", f3);
18    printf("\nf4 = (x + y^(1/2)) / (2x-1) : %.2f", f4);
19    printf("\nf5 = sin(x) + tan(y) : %.2f", f5);
20 }
```

The terminal output shows the program's execution with the following results:

```
cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
./"Ex5-Yin_soknara(e20191298)"
macbookair@MacBookAirs-MacBook-Air algorithm&programming % cd "/Users/macbookair/Desktop/algorithm&programming/TP1/Work-with-math-library"
macbookair@MacBookAirs-MacBook-Air Work-with-math-library % ./"Ex5-Yin_soknara(e20191298)"
Please input x value: 2
Please input y value: 3
f1 = 2x - 3y/5: 2.20
f2 = 3x/2 : 3.00
f3 = x^3 - 5x/2 + y^(3/2) :6.00
f4 = (x + y^(1/2)) / (2x-1) : 1.00
f5 = sin(x) + tan(y) : -1.28
macbookair@MacBookAirs-MacBook-Air Work-with-math-library %
```

A notification at the bottom right of the terminal area states: "Compiled successfully!"