

# Solution Review: Calculate Hours, Minutes, and Seconds

Let's see the detailed solution review of the challenge given in the previous lesson.

## We'll cover the following ^

- Solution
- Explanation

## Solution #

```
#include <iostream>
using namespace std;

int main() {
    // Initialize a variable total_seconds
    int total_seconds = 3870;
    // Prints value of total_seconds
    cout << "total_seconds = " << total_seconds << endl;
    // Declares variable
    int hours, minutes, seconds;
    // Convert seconds in hours and store the output in hours variable
    hours = total_seconds/3600;
    cout << "Time in hours, minutes and seconds = ";
    // Prints value of hours
    cout << hours << "h :";
    // Store the remaining seconds in total_seconds
    total_seconds = total_seconds % 3600;
    // Convert seconds in minutes and store the output in minutes variable
    minutes = total_seconds/60;
    // Prints value of minutes
    cout << minutes << "m :";
    // Store the remaining seconds in seconds variable
    seconds = total_seconds % 60;
    cout << seconds << "s";

}
```



## Explanation #

**Line No. 6:** Initializes a variable `total_seconds` to `3870`. We have to convert the

seconds into the number of hours, minutes, and seconds in it.

**Line No. 12:** We know that:

$$1 \text{ hour} = 3600 \text{ seconds}$$

$$1 \text{ second} = 1/3600 \text{ hour}$$

Therefore, we divide the `total_seconds` by `3600` to get the number of hours and store the output in `hours` variable.

$$\text{hours} = 3870 / 3600 = 1$$

**Line No. 17:** Now, we have to find the minutes. But, first, find the remaining seconds.

$$\text{total\_seconds} = \text{total\_seconds} \% 3600$$

The line divides the `total_seconds` by `3600` and then stores the remainder in `total_seconds`.

$$\text{total\_seconds} = 3870 \% 3600 = 270$$

**Line No. 19:** For the `minutes`, divide the remaining seconds by `60`.

$$1 \text{ second} = 1/60 \text{ minutes}$$

$$\text{minutes} = 270 / 60 = 4$$

**Line No. 23:** Now, find the remaining seconds.

$$\text{seconds} = 270 \% 60 = 30$$

🎉 Tada! We have just written a program to convert the time in seconds to the total number of hours, minutes, and seconds. Great job!

Let's solve another interesting challenge in the upcoming lesson.