

The Puzzle

The user wants to enter a certain number of seconds.

They want it converted to the equivalent number of Hours Minutes and Seconds.

	A	B	C
1	Seconds		Time
2	1250		00:00:20:50
3	230901		02:16:08:21
4	256		00:00:04:16
5	4509		00:01:15:09
6	623097		07:05:04:57
7	20054		00:05:34:14
8	70452		00:19:34:12

Abstraction

We want to develop an algorithm that can extract the whole number of hours contained within the number of seconds to be converted.

Once we have extracted all those hours, the remaining seconds must be converted.

So in a similar way, we need to extract the whole number of minutes contained within the remaining number of seconds.

The method of extraction follows the same pattern in each case.

Writing your Thinking

Take 5 minutes to think about how you tackled this problem.

- **Did you use pen and paper to help visualise possible solutions?**
- **Did you break it down to a smaller problem such as 65s or 134s to verify your method?**
- **Did you look for patterns in order to make it easier to solve?**
- **Did you try different scenarios to verify your solution worked?**

Using Think-Pair-Share-Square (TPSS), go through how you and your partner were thinking about how to solve the problem.

Pseudo-Code

#Initialisation

ask the user for the number of seconds to convert;

#find the whole number of hours in the total number of seconds

number of Hours = user's number of Seconds FLOOR DIV 3600;

remaining Seconds = user's number of Seconds MOD 3600;

#find the whole number of minutes in the remaining seconds

number of Minutes = remaining Seconds FLOOR DIV 60;

remaining Seconds = remaining Seconds MOD 60;

number of Seconds = remaining Seconds;

#report to the user

output the total number of seconds and the conversion to HMS

The reverse program

Can you write a program which takes the Hours Minutes and Seconds from the user and converts to total number of seconds?

Use one program's output to verify the correct functionality of the other.

What would a single program that can do both conversions look like?