

Tutorial 3 Simple programs and operators

You're required to test your **program in Q.2** using PASS. Yet instead of writing Q2 directly, you may wish to work on Q.1 first and enhance the program step-by-step.

1) Write a program, **convertTime.cpp**, that reads in the number of seconds and converts it to minutes and seconds. A sample output of your program is as follows.

```
Please enter the number of seconds: 5000
5000 second(s) = 83 minute(s) 20 second(s)
```

Hint: use combinations of integer division (/) and modulus (remainder) operator (%)

Hint2: Think of the followings: Given the number 12

- What's the divisor you use to extract the tenth place (i.e. 1)?
- How can you extract the unit place using modulus (i.e. 2)?

Check the correctness of your program with different input, e.g. 0, 5, 65, 120, 5000, ... Suggest at least 6 test cases to test your program.

2) Extend the program in Q.1 such that the program converts the input to hours, minutes and seconds. A sample output of your program is as follows.

```
Please enter the number of seconds: 5000
5000 second(s) = 1 hour(s) 23 minute(s) 20 second(s)
```

Hint3: Comparing part 1) and 2), the second field is identical and therefore requires no change. All you need to do is to break down 83 minutes to 1 hour and 23 minutes. Again, this could be done with division (/) and modulus operator (%)

NOTE:

- In the above sample output, the input entered by the user is highlighted by underline. It is not part of the output from the program.
- Your program MUST follow the EXACT input/output format specified above, or else your program may not pass the test cases even if your calculation is correct. ("Format" refers to: Spacing, new lines, letter case and punctuations.)