

EN 001203 Computer Programming

L001: Warm Up Exercises 2

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Submission: <https://autolab.en.kku.ac.th>

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- * Submit an answer to a question with a file with `txt` extension. E.g., an answer for Q1 should be submitted in a text file “Q1.txt”

- * Submit a program to a (programming) problem with a file with `cpp` extension. E.g., a program for P2 should be named “P2.cpp”

- * All answers and programs must be packaged together in a tar file.

Windows: use tar utilities, e.g., 7-zip, PeaZip.

Mac: there usually is a tar utility, e.g., `tar -cvf myfiles.tar *` on terminal.

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Q1. What are the most valued characters in Eastern philosophy? Answer each a line and have them in order.

[Hint: they are compassion and wisdom.]

Q2. What is the name of a program generally used to manage processes, memories, and I/O?

[Hint: it is the operating system (OS).]

Q3. What is the name of a program to compile our program (source) file into a machine code?

[Hint: compiler.]

Q4. Write a command line of the GNU C++ compiler to compile `test.cpp` and have its output named `test.exe`.

[Hint: `g++ test.cpp -o test.exe`]

Q5. What is a program providing facilities (including a text editor, a compiler, and output terminal) to a computer programmer for software development?

[Hint: [integrated development environment](#)]

P6. Write a program to get two numbers from a user and add them together and print out the result.

[Hint: "a + b" is a string, while a + b is an expression.]

Example:

```
=====
```

a: **24**

b: **8**

a + b = 32

```
=====
```

A ***bold-italic*** font indicates what a user might type in. An *italic* is what the program reflects from what a user typed in.

! Noting that, a font effect using above is to emphasize the input and its corresponding effect. The program is not expected to produce any of these font effects. See Figure 1 along.

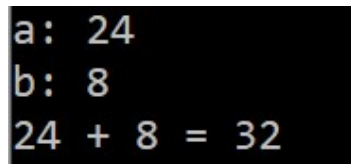


Figure 1

P7. Write a program to get two numbers from a user, then minus the second term out of the first one, and print out the result.

Example:

```
=====
```

a: **24**

b: **8**

a - b = 16

=====

P8. Write a program to get two numbers from a user and print out their product.

Example:

=====

a: **24**

b: **8**

a * b = 192

=====

P9. Write a program to get two numbers from a user and print out the quotient of dividing the first term by the second.

Examples:

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a: **24**

b: **8**

a / b = 3

=====

a: **28**

b: **8**

a / b = 3

=====

a: **31**

b: **8**

a / b = 3

=====

a: **32**

b: **8**

a / b = 4

! Notice that, it gives out the quotient, not a fraction or a decimal number.

P10. Fuel efficiency (revisited). Write a program to estimate fuel efficiencies (in km/ℓ). The program asks a user for the distance (in km) traveled and the amount of gasoline the vehicle consumed (in ℓ).

[Hint: don't forget to have computation in float-point-operation mode. Check out `4 / 3` vs `4.0 / 3.0` and see keyword `float`.]

Example:

distance: **700**

gasoline: **50**

fuel efficiency = 14 km/l.

distance: **725**

gasoline: **50**

fuel efficiency = 14.5 km/l.

distance: **355**

gasoline: **50**

fuel efficiency = 7.1 km/l.
