

## Chapter 0      Introduction to HKOI and C language

HKOI Stands for Hong Kong Olympiad in Informatics.

It is a competition held in Oct, Nov or Dec every year.

The competition aims at testing your programming skills and problem-solving skills.

Strong student will be selected as the representative of Hong Kong to participate in the National Olympiad in Informatics (NOI) and International Olympiad in Informatics (IOI).

The programming language tested in the Heat Event is either Pascal or C.

For Final Event, C++ can be used as well.

For details, please visit <http://www.hkoi.org>

### C language:

With this language and its set of instructions, we can control the computer to do what we want. For example, ask the computer to compute some big number like  $12345^{6789}$ , which cannot be done by usual calculator and hand-calculation.

*Reference Link:*

1: <http://www.cs.ntu.edu.au/sit/resources/cprogram/default.htm>

2: <http://www.deakin.edu.au/~agoodman/tutorial/813.html>

Some example of instructions:

<code>printf("%d",5*5+7*7*7*7);</code>	Ask the computer to evaluate $5^2 + 7^4$ and display it.
<code>int answer = 13*14*15;</code>	Store the value of $13 \times 14 \times 15$ to a location called answer
<code>int x = answer + 1;</code>	Store to x the result of adding 1 to the value at answer.
<code>printf("%d", x);</code>	Display the value at x to the screen.
<code>printf("%s", "Welcome");</code>	Display the word Welcome to the screen.

Guess the meaning and the result of the following instructions: (It is very similar to maths)

<code>int k = sqrt(9);</code>	
<code>int answer = 1+2*3-6/3;</code>	
<code>int x = (answer+1)*2;</code>	
<code>printf("%d", x);</code>	
<code>printf("%s", "answer");</code>	

As if you were writing English, when a sentence ends you must put a full-stop after.

Similarly, for **C language**, you must put a semi-colon (;) at the end of each instruction.

Before proceeding to the next chapter, make sure you have Dev-C++ 5.0 beta.

If not, download from <http://www.bloodshed.net/dev/devcpp.html> and install it.

\*This is a TRAINING COURSE, NOT a teaching class.\*

\*ALL materials are presented VERY FAST, you MUST work hard at home to catch up.\*

\*If you find misunderstanding or confusion, don't hesitate to raise questions at class.\*

\*Make notes whenever you think is necessary, it is impossible to type down all details.\*