THE UNIVERSITY OF HONG KONG
COMP1117 Computer Programming
Assignment 2

Deadline: 5:00 pm, Oct. 14, 2017

1. [15%] Write a program **second.cpp** that reads three distinct integers and then prints the second largest number among them. Since the purpose of this question is to test your logical thinking ability, you can only use the following program statements or constructs in your program:
   - Declaration of variables,
   - `if-else` statement,
   - `cin` and `cout` statements,
   - `return` statement, and
   - the '`<`' relational operation.

   Sample runs:

   ```
   34 77 45
   45
   ```

   Input/Output format:
   <user input><space><user input><space><user input>
   <second largest number><newline>

2. [35%] Write a program **exchange.cpp**, which is a currency converter that converts different currencies into HKD. The program should input two integers, where the first integer indicates the currency to be converted to HKD, and the second integer gives the amount of money to be converted. The program can handle four different currencies, namely, CNY, JPY, GBP and USD, and the following table gives, for each of these four currencies, the integer code used to indicate that currency and the corresponding formula for conversion:

Currency	code	formula
CNY	0	100CNY = 118.99 HKD
JPY	1	100JPY = 7.02HKD
GBP	2	100GBP = 1058.09HKD
USD	3	100USD = 781.62HKD

The output amount of HKD should be of type double, and the program may use the default precision for outputting this double number.

Sample runs:

```
1 120
8.424 HKD
```

```
3 55
429.891 HKD
```

Input/Output format:

<user input><space><user input>

<your calculation output><space>HKD<newline>

3. [50%] Write a program **decryption.cpp** that (i) reads two encrypted positive real numbers, (ii) decrypts them into the corresponding real numbers and then (iii) prints the sum of them.

   The encryption is by mapping the numbers 0-9 to the first ten letters 'a'-'j', where 'a' is mapped to 0, 'b' is mapped to 1, ..., and 'j' is mapped to 9. The decimal point is left verbatim. For example, decrypting b.cde gives 1.234.

   These two numbers are separated by operator "+". There is an equal sign "=" after the second number, indicating the end of the input. You may assume that there is no space in the input, and you should use the default precision for outputting any double number.

Sample runs:

```
bbbb.cc+cc.bbbb=
1133.33
```

(Note: bbbb.cc = 1111.22, cc.bbbb = 22.1111)

```
he+d=
77
```

(Note: he = 74, d =3)

Input/Output format:

<encrypted positive real number> + <encrypted positive real number>=
<sum><newline>

Important Notes:

i. You must write your name and university number as part of the comments at the beginning of your program source code.
ii. Your programs must follow all the requirements mentioned in the specification.
iii. Your program must follow the formats of the sample input / output strictly.
iv. Your program should be properly indented and documented.
v. You should only submit source codes (*.cpp), not executables.
vi. You must use the program names as suggested in the specification, i.e., median.cpp, divisor.cpp, and exchange.cpp.
vii. Please make sure that your source code could be compiled in Code::Blocks environment (with the settings mentioned in workshop) before submission.

Handin:

Submit your programs electronically using the Moodle system under Assignments section, as done in Assignment 1. Late submission will NOT be accepted.