

CSCI114 - Lab 6
File Name: YourName_Lab_6.cpp

You are invited by the Ministry of Education to design a system to test the skill of students on doing some simple arithmetic. The system generates at least 5 and not more than 10 questions; and displays three different types of arithmetic expressions of operations plus, minus and times randomly. The system marks and displays the scores at the end of the test and also some relevant messages.

Upon running the program, you will see the following interaction:

```
Welcome to arithmetic test
You have to do 7 questions
Good Luck

Question 1: 7 * 5 = ?
Your answer: 12
wrong

Question 2: 8 - 6 = ?
Your answer: 2
ok

Question 3: 4 - 2 = ?
Your answer: 2
ok

Question 4: 4 - 4 = ?
Your answer: 8
wrong

Question 5: 4 + 7 = ?
Your answer: 11
ok

Question 6: 1 - 9 = ?
Your answer: -8
ok

Question 7: 1 - 4 = ?
Your answer: -3
ok

Your score: 5 / 7
Marks = 71.4%
You passed the test
Please improve it
```

You can see in the above screen, the system generates 7 questions, and student who enters to the system provides the answers to each of the questions. The system marks the questions and displays the score at the end of the session.

The system print out the following messages according to marks

Less than 50% – **You failed the test. Please work hard**
50% and above and less than 80% – **You passes the test. Please improve it**
80% and above and less than 100% – **Well done, keep it up.**
100% - **Excellent.**

In your design, you should have the following functions;

```
// This function generates and return two non-zero single digits integer
void generate2Digits (int&, int&);
```

```
// This function generates and returns one of the three operations +, - or *
void generateOperation (char&);
```

```
// This function prints out the expression, see the format in the above black window  
void printExpression (int, int, char);
```

```
// This function returns the results of an arithmetic expression  
int result (int, int, char);
```

```
// This function print out the following messages according to the number of correct answers  
// You also pass in the no of questions in order to compute the marks in percentage  
void printMessage (int, int);
```