CS2310 Computer Programming, (15-16, Sem. A)

Assignment 1

Due: Week 10, 6/11/2015, 12:00pm (No late submission will be accepted)

> ***Important Notes:***
> *Plagiarism is strictly prohibited in this course. Cases detected by the PASS system (programs with highly similarity) must be reported to the CS department and subjects to punishment. Last year, 29 cases were found and submitted.*

1. Background

ASCII art is a form of computer art that constructs from printable characters defined by the ASCII standard, e.g. letters, number and symbols, usually with a fixed-width font such as Courier. Basic on the shape and density of different characters, different pattern and object can be presented with interesting visual effect. The following is an example of ASCII art with a Fog, Angel, Christmas tree and glass ball. Letter can be type directly (like the one shown below) or using multiple characters to define the shape.

```
**************************************************
}   Dear Student,          (*)                   {
{                                    /\   (.)    }
}      Merry Christmas!              \/          {
{                                    **          }
}    @..@                           AAAA        {
{   (\--/)                  (^)     AoAAoA       }
}  (.>__<.)                 <__>   A~A~o~oA     }
{  ^^^  ^^^          Alan             M          {
}_____________________________________________________}
```

As the Christmas is coming, you decide to use your programming skill in C++ to generate an e-card to you friend. To make it more easy to debug and display, the card size should be 70 characters in width and less than 50 characters in height. The detail requirement is listed in section 2.

2. Functional Requirements

The ASCII art should:

1. be 70x 50 characters at most
2. contain at least three items that common find in Christmas decoration
3. contain at least three pattern / items are generated by nest for-loop
4. allow user to input the name of target receiver and additional greeting message

3. Program Input and Output:

The program will read two lines of text from console, the first line is the receiver of the e-card and the second one is the additional greeting message. E.g.

Input:

```
Peter
See you soon
```

Output:

```
**************************************************
}   Dear Peter ,          (*)                    {
{                                    *    (.)    }
}      Merry Christmas!              |           {
{                 See you Soon      M            }
}    @..@                          AAA           {
{   (\--/)                  (^)    AoAoA          }
}  (.>__<.)                <__>  A~A~A~A         }
{  ^^^  ^^^          Alan          M              {
}__________________________________________________}
```

5. Marking

The mark of assignment is based on the level of achievement as following:

1. Functionality: Meet the functional requirements (Listed in session 2). 40%
2. Creativity: The design and layout of your Christmas card. 20%
3. Efficiency: Properly use of programming skill in generating the ASCII arts. 20%
4. Flexibility and Scalability: able to add items, customize the card by user input (20%)

6. Submission

a) Program source must be submitted to the PASS on or before the deadline.

b) Hard-copy of the screen capture (print screen) with your student ID should be submitted during your tutorial on week 10. The tutor will validate your program output and may ask you to modify the program to generate a new output at that time. To facilitate marking, please attend the registered tutorial on that week.

- Students in need may visit the ***Programming Clinic***, which is a Q&A helpdesk service by senior students. For information, let's refer to: http://courses.cs.cityu.edu.hk/clinic