Massey University

159.234 Assignment 1 part 1

Deadline:	**Anytime before: Sunday 15 March 2015, time due 12:00 (noon)**
Evaluation:	10 marks – which is 5% of your final grade
Late Submission:	**0.5 mark deduction per hour (or fraction of hour) it is late**
Purpose:	Practice with C++ classes

You will program a game, named "Finding Peeta" based on Hunger Games[1]. Name your program a1.cpp.

The game: The player must help Katniss to find Peeta. But the evil Mutt, a hound-like fearsome creature, is looking to catch and kill both Katniss and Peeta! This is a race against the "clock", as the player has only a limited number of moves for Katniss!

Here is an example of the running program.

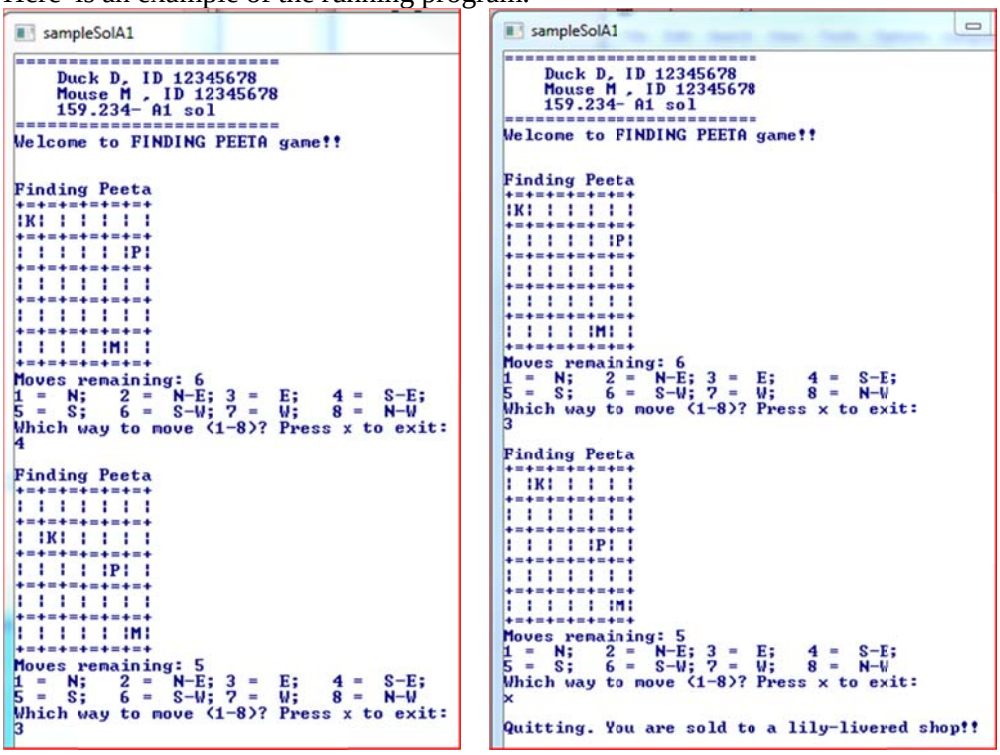

Fig 1-expected output

Katniss begins her quest from the top-left corner of the board (represented with a "K"). She must find Peeta (represented with a "P") who, unfortunately, does not know she is looking for him. He starts from a random location and wanders at random. The evil Mutt (represented by an "M") also starts from a random location and moves at random, ready to kill Katniss and Peeta.

In every step, the user should enter a number from 1 to 8 to move Katniss left, right, up,

[1] See http://en.wikipedia.org/wiki/The_Hunger_Games_(film)

down, or diagonally (e.g., 1 means move up (north, or N), 2 means move above-to-the-right (north–east, or N-E) and so on... clockwise). For each move of Katniss, Peeta and Mutt move one square in a random direction (but never off the board). Peeta can only move in diagonal directions (not left, right, up, or down). Mutt can only move left, right, up, and down (not diagonally).

If Katniss or Peeta ends up in the same square with Mutt, the player loses.

If Katniss reaches Peeta, the player wins.

If Katniss tries to move off the board, she falls into the space and the game ends with the player losing the game..

The player can also press `x` to exit the program.
In the example above, Katniss has 6 moves[i] in which to find Peeta. After each move, display the number of remaining moves. If the moves remaining reaches zero, display GAME OVER!, and the player loses.

Important.

1. Note that your program should first display information about **all authors** of the assignment solution.
2. You should use classes in your program, The one for Katniss, for example, should be like:

```
class Katniss{
  public:
    // only methods here…
  private:
    int row;
    int col;
    //more variables or methods here if needed
};
```

where `row` and `col` keep track of Katniss' location on the board.

Hand-in: Submit your completed **a1.cpp** file using 159.234-Stream

Miscellaneous:

1. Programs that do not compile in the lab, using gcc, get 0 marks.
2. Marks will be allocated for: correctness, completeness, clear and simple design, use of C++ constructs, documentation, and clear output.
3. Using goto, global variables, **C++ tools/constructs that were not presented in lectures** or C- like I/O constructs (i.e printf, fprintf, scanf, FILE*, etc) is not allowed and it will be penalized by marks deduction. **Only const global variables are allowed.**
4. When working in teams (at most two students per team), send one solution file per team.
5. The assignment will be previewed on Wednesday lecture before it's due.
6. A sample solution will be discussed on Monday's lecture immediately after the due time.

If you have any questions about this assignment, please ask the lecturer before its due time!

[i] The program should work with other numbers too