Laboratory 2
Data Structures and Algorithms
Classes and Objects
5 August , 2015
Due: **August 12, 2015**

Question 1 Write a C++ program that takes all the lines input to standard input and writes them to standard output in reverse order. That is, each line is output in the correct order, but the ordering of the lines is reversed. Your program should terminate input when it reads "EXIT".

```
Sample I/O 1:
Input:    Once upon a midnight dreary, while I pondered, weak and weary,
          Over many a quaint and curious volume of forgotten lore
          While I nodded, nearly napping, suddenly there came a tapping,
          As of some one gently rapping, rapping at my chamber door.
          "'Tis some visiter," I muttered, "tapping at my chamber door
          Only this and nothing more."
          EXIT

Output:   Only this and nothing more."
          "'Tis some visiter," I muttered, "tapping at my chamber door
          As of some one gently rapping, rapping at my chamber door.
          While I nodded, nearly napping, suddenly there came a tapping,
          Over many a quaint and curious volume of forgotten lore
          Once upon a midnight dreary, while I pondered, weak and weary,

Sample I/O 2:
Input:    Shall I compare thee to a summer's day?
          Thou art more lovely and more temperate:
          Rough winds do shake the darling buds of May,
          And summer's lease hath all too short a date:
          Sometime too hot the eye of heaven shines,
          And often is his gold complexion dimm'd;
          And every fair from fair sometime declines,
          By chance or nature's changing course untrimm'd;
          But thy eternal summer shall not fade
          Nor lose possession of that fair thou owest;
          Nor shall Death brag thou wander'st in his shade,
          When in eternal lines to time thou growest:
          So long as men can breathe or eyes can see,
          So long lives this and this gives life to thee.
```

```
            EXIT

Output:    So long lives this, and this gives life to thee.
           So long as men can breathe, or eyes can see,
           When in eternal lines to Time thou grow'st.
           Nor shall death brag thou wand'rest in his shade,
           Nor lose possession of that fair thou ow'st,
           But thy eternal summer shall not fade,
           By chance, or nature's changing course, untrimmed;
           And every fair from fair sometime declines,
           And often is his gold complexion dimmed;
           Sometime too hot the eye of heaven shines,
           And summer's lease hath all too short a date.
           Rough winds do shake the darling buds of May,
           Thou art more lovely and more temperate.
           Shall I compare thee to a summer's day?
```

Question 2 Implement the methods of the class Monster below.

```cpp
1  #include <iostream>
2  #include <string>
3  using namespace std;
4  class Monster{
5    public:
6          Monster(const string& n="Fred",int h=300, int a=50, int d=80);
7          ~Monster();
8          void setName(string n);
9          void setHealth(int h);
10         void setAttack(int a);
11         void setDefense(int d);
12         string getName();
13         int getHealth();
14         int getAttack();
15         int getDefense();
16   private:
17     string name;
18         int health;
19         int attack;
20         int defense;
21 };
```

Overload the << operator so that when you cout a *pointer to a Monster object* it will output in the form: {<**name**>, <**health**>, <**attack**>, <**defense**>}. The main function should have the following statements **only**.

```cpp
1  int main(void){
2          Monster* m1 = new Monster("Ritso", 3000, 60, 100);
3          cout << *m1 << endl; //{Ritso,3000,60,100}
4  }
```