Liz Crittenden

Final Project CSC 223

.h file:

1 #ifndef H\_Game  
 2 #define H\_Game  
 3   
 4 class Game{  
 5 private:  
 6 int x;  
 7 int y;  
 8   
 9 public:  
10 Game();  
11 Game(int, int);  
12 void setX(int);  
13 void setY(int);  
14 int getX();  
15 int getY();  
16 void advance(char);  
17 static void fill(char[][10], int);  
18 static void show(char[][10], int);  
19 };  
20 #endif

Imp file:

1 #include <iostream>  
 2 #include "Game.h"  
 3 #include <cstdlib>  
 4 #include <ctime>  
 5   
 6 using namespace std;  
 7   
 8 Game::Game(){  
 9 x = 0;  
10 y = 0;  
11 }  
12   
13 Game::Game(int newX, int newY){  
14 x = newX;  
15 y = newY;  
16 }  
17   
18 void Game::setX(int newX){  
19 x = newX;  
20 }  
21   
22 void Game::setY(int newY){  
23 y = newY;  
24 }  
25   
26 int Game::getX(){  
27 return x;  
28 }  
29   
30 int Game::getY(){  
31 return y;  
32 }  
33   
34 void Game::advance(char choice){  
35 char left = 'l';  
36 char right = 'r';  
37 char forward = 'f';  
38 char back = 'b';  
39   
40 if(choice == left)  
41 if(y-1 < 0)  
42 cout << "You cannot move off the board." << endl;  
43 else  
44 y = y-1;  
45 else if(choice == right)  
46 if(y+1 > 9)  
47 cout << "You cannot move off the board." << endl;  
48 else  
49 y = y +1;  
50 else if(choice == forward)  
51 if(x + 1 > 6)  
52 cout << "You cannot move off the board." << endl;   
53 else  
54 x = x +1;  
55 else if(choice == back)  
56 if(x -1 < 0)  
57 cout << "You cannot move off the board." << endl;   
58 else   
59 x = x -1;  
60 }  
61   
62 void Game::fill(char board[][10], int SIZE){  
63 for(int i = 0; i < 7; i++){  
64 for (int j = 0; j < 10; j++){  
65 board[i][j] = '.';  
66 }  
67 }  
68 }  
69   
70 void Game::show(char board[][10], int SIZE){  
71 for(int i = 0; i < 7; i++){  
72 for (int j = 0; j < 10; j++){  
73 cout << board[i][j];  
74 }  
75 cout << endl;  
76 }  
77 }

Main:

1 //Liz Crittenden  
 2 //Final Project   
 3   
 4 #include "Game.h"  
 5 #include <iostream>  
 6 #include <ctime>  
 7 #include <cstdlib>  
 8   
 9 int randNumX();  
 10 int randNumY();  
 11   
 12 using namespace std;  
 13   
 14 int main(){  
 15 const int SIZE = 7;  
 16 const int PLAYERX = 0; //Sets player and treasure position to the same starting point each game  
 17 const int PLAYERY = 4;  
 18 const int TREASUREX = 6;  
 19 const int TREASUREY = 9;  
 20 char board[7][10]; //Sets board size  
 21 bool flag = true;  
 22 char menu;  
 23 char move;  
 24 char sentinel = 'n';  
 25 srand(time(0));  
 26 while(menu != sentinel){  
 27 flag = true;  
 28 cout << "Welcome to the game! Avoid the traps to make it safely to the treasure, which is marked on \nthe board with a letter X. Look out for monsters, marked with a letter M!" << endl;  
 29 Game player(PLAYERX, PLAYERY); //Create player and treasure objects  
 30 Game treasure(TREASUREX, TREASUREY);  
 31 Game trap1(randNumX(), randNumY()); //Create trap objects placed in random postions  
 32 Game trap2(randNumX(), randNumY());   
 33 Game trap3(randNumX(), randNumY());   
 34 Game monster1(randNumX(), randNumY()); //Create monster objects placed in random positions  
 35 Game monster2(randNumX(), randNumY());  
 36 Game monster3(randNumX(), randNumY());  
 37 Game::fill(board, SIZE); //Fill blank spaces on board with dots  
 38 board[player.getX()][player.getY()] = 'P'; //Mark player and treasure positions  
 39 board[treasure.getX()][treasure.getY()] = 'X';  
 40 board[trap1.getX()][trap1.getY()] = 'T'; //Mark trap positions  
 41 board[trap2.getX()][trap2.getY()] = 'T';  
 42 board[trap3.getX()][trap3.getY()] = 'T';  
 43 board[monster1.getX()][monster1.getY()] = 'M'; //Mark monster positions  
 44 board[monster2.getX()][monster2.getY()] = 'M';  
 45 board[monster3.getX()][monster3.getY()] = 'M';  
 46 Game::show(board, SIZE); //Display board  
 47 cout << "Enter l for left, r for right, f for forward and b for backwards." << endl;  
 48 while(flag){  
 49 board[player.getX()][player.getY()] = '.'; //Change player and monster positions to dots  
 50 board[monster1.getX()][monster1.getY()] = '.';  
 51 board[monster2.getX()][monster2.getY()] = '.';  
 52 board[monster3.getX()][monster3.getY()] = '.';  
 53 board[trap1.getX()][trap1.getY()] = 'T'; //Keep trap positions marked with T's  
 54 board[trap2.getX()][trap2.getY()] = 'T';  
 55 board[trap3.getX()][trap3.getY()] = 'T';  
 56 cout << "Your move." << endl;  
 57 cin >> move;  
 58 player.advance(move); //Move the player  
 59 board[player.getX()][player.getY()] = 'P'; //Mark player's new position with P  
 60 monster1.setX(randNumX()); //Change the monster's positions to three new spots  
 61 monster1.setY(randNumY());  
 62 monster2.setX(randNumX());  
 63 monster2.setY(randNumY());  
 64 monster3.setX(randNumX());  
 65 monster3.setY(randNumY());  
 66 board[monster1.getX()][monster1.getY()] = 'M'; //Mark monster positons with M's  
 67 board[monster2.getX()][monster2.getY()] = 'M';  
 68 board[monster3.getX()][monster3.getY()] = 'M';  
 69 if((player.getX()==trap1.getX() && player.getY() == trap1.getY()) || (player.getX() == trap2.getX() && player.getY() == trap2.getY()) || (player.getX() == trap3.getX() && player.getY() == trap3.getY())){  
 70 flag = false;  
 71 cout << "You hit a trap. You lose! Would you like to play again? Enter y for yes and n for no." << endl;  
 72 cin >> menu;   
 73 } else if((player.getX()==monster1.getX() && player.getY() == monster1.getY()) || (player.getX() == monster2.getX() && player.getY() == monster2.getY())){  
 74 flag = false;  
 75 cout << "You got eaten by a monster. You lose! Would you like to play again? Enter y for yes and n for no." << endl;  
 76 cin >> menu;  
 77 } else if(player.getX() == treasure.getX() && player.getY() == treasure.getY()){  
 78 flag = false;  
 79 cout << "~~~~~~~\*\*\*\*\*\* You Won! \*\*\*\*\*\*\*~~~~~~~~~\nWould you like to play again? Enter y for yes and n for no." << endl;  
 80 cin >> menu;  
 81 } else {  
 82 Game::show(board, SIZE); //If game isn't over, display the board  
 83 }  
 84 }  
 85 if(menu == sentinel)  
 86 cout <<"Thanks for playing! Goodbye." << endl;  
 87 }  
 88 return 0;  
 89 }  
 90   
 91 int randNumX(){  
 92 int num;  
 93 num = rand() % 6;  
 94 return num;  
 95 }  
 96   
 97 int randNumY(){  
 98 int num;  
 99 num = rand() % 9;  
100 return num;  
101 }