



MonsterWorldGame101.cpp

VariousMonsters101.h

Monster101.h

Canvas101.h

Matrix101.h

MonsterWorld101.h

Week10_Homework1

Monster

```
1 #pragma once
2 #include "Canvas101.h"
3 #define DIM 40
4
5 class Monster
6 {
7 public:
8     string name, icon;
9     int x, y, nItem;
10
11     void clip(int maxx, int maxy) {
12         if (x < 0) x = 0;
13         if (x >= maxx) x = maxx - 1;
14         if (y < 0) y = 0;
15         if (y >= maxy) y = maxy - 1;
16     }
17
18     void eat(int** map) {
19         if (map[y][x] == 1)
20         {
21             map[y][x] = 0;
22             nItem++;
23         }
24     }
25
26     public:
27     Monster(string n = "나괴물", string i = "%", int px = 0, int py = 0)
28         : name(n), icon(i), x(px), y(py), nItem(0) {}
29     virtual ~Monster() { cout << "\t" << name << icon << "를러갑니다~~~\n"; }
30
31     void draw(Canvas& canvas) { canvas.draw(x, y, icon); }
32     virtual void move(int** map, int maxx, int maxy) {
33         switch (rand() % 8)
34         {
35             case 0: y--; break;
36             case 1: x++; y--; break;
37             case 2: x++; break;
38             case 3: x++; y++; break;
39             case 4: y++; break;
40             case 5: x--; y++; break;
41             case 6: x--; break;
42             case 7: x--; y--; break;
43         }
44         clip(maxx, maxy);
45         eat(map);
46     }
47
48     void print() { cout << "\t" << name << icon << ":" << nItem << endl; }
```

C:\Users\User\source\repos\Week10_Homework1\Wx64\Debug\Week10_Homework1.exe

[Monster World (Dynamic World)]

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전체 이동 횟수 = 348

남은 아이템 수 = 2

허접한 좀비 § :31

뱀파이어 쥘 ★ :24

어쩌다 귀신 ♥ :57

못먹어도 고 ↔ :9

못먹어서로 ↓ :5

MonsterWorldGame101.cpp

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Week10_Homework1

Monster

```
34 case 1: x++; y--; break;
35 case 2: x++; break;
36 case 3: x++; y++; break;
37 case 4: y++; break;
38 case 5: x--; y++; break;
39 case 6: x--; break;
40 case 7: x--; y--; break;
41 }
42 clip(maxx, maxy);
43 eat(map);
44
45 void print() { cout << "\t" << name << icon << ":" << nItem << endl; }
```

Microsoft Visual Studio Debug Console

[Monster World (Dynamic World)]

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♥

전체 이동 횟수 = 478

남은 아이템 수 = 0

허접한 좀비 § :32

뱀파이어 쥘 ★ :24

어쩌다 귀신 ♥ :58

못먹어도 고 ↔ :9

못먹어서로 ↓ :5

-----게임 종료-----

Zombie 허접한 좀비 § 물러갑니다~~~

Vampire 뱀파이어 쥘 ★ 물러갑니다~~~

KGhost 어쩌다 귀신 ♥ 물러갑니다~~~

Jangshi 못먹어도 고 ↔ 물러갑니다~~~

Jangshi 못먹어서로 ↓ 물러갑니다~~~

C:\Users\User\source\repos\Week10_Homework1\Wx64\Debug\Week10_Homework1.exe (process finished)

Press any key to close this window . . .

MonsterWorldGame101.cpp

VariousMonsters101.h

Monster101.h

Canvas101.h

Matrix101.h

MonsterWorld101.h

Week10_Homework1

Canvas

```
1 #pragma once
2 #include <iostream>
3 #include <string>
4 #define MAXLINES 100
5 using namespace std;
6
7 class Canvas
8 {
9     string line[MAXLINES];
10     int xMax, yMax;
11 public:
12     Canvas(int nx = 10, int ny = 10) : xMax(nx), yMax(ny) {
13         for (int y = 0; y < yMax; y++)
14             line[y] = string(xMax * 2, ' ');
15     }
16
17     void draw(int x, int y, string val) {
18         if (x >= 0 && y >= 0 && x < xMax && y < yMax)
19             line[y].replace(x * 2, 2, val);
20     }
21
22     void clear(string val = " ") {
23         for (int y = 0; y < yMax; y++)
24             for (int x = 0; x < xMax; x++)
25                 draw(x, y, val);
26     }
27
28     void print(const char* title = "<My Canvas>") {
29         system("cls");
30         cout << title << endl;
31         for (int y = 0; y < yMax; y++)
32             cout << line[y] << endl;
33     }
34 }
```

Ln: 32

Ch: 3

TABS

CRLF

MonsterWorldGame101.cppVariousMonsters101.hCanvas101.hMatrix101.hMonsterWorld101.h

Week10_Homework1Matrix

1#pragma once

2#include <iostream>

3#include <iomanip>

4using namespace std;

5

6class Matrix

7{

8int rows, cols;

9int** mat;

10public:

11Matrix(int r = 0, int c = 0) : rows(r), cols(c), mat(NULL) {

12mat = new int* [rows];

13for (int i = 0; i < rows; i++) mat[i] = new int[cols];

14}

15~Matrix() {

16if (mat != NULL)

17{

18for (int i = 0; i < rows; i++)

19delete[] mat[i];

20delete[] mat;

21}

22

23int& elem(int x, int y) { return mat[y][x]; }

24int Rows() { return rows; }

25int Cols() { return cols; }

26int** Data() { return mat; }

27void print(const char* str = "Mat") {

28cout << str << " " << rows << "x" << cols << endl;

29for (int i = 0; i < rows; i++)

30{

31for (int j = 0; j < cols; j++)

32cout << setw(4) << mat[i][j];

33cout << "\n";

34}

35}

36

37void setRand(int val = 100) {

38if (mat != NULL)

39{

40for (int i = 0; i < rows; i++)

41for (int j = 0; j < cols; j++)

42mat[i][j] = (rand() % val);

43}

44};

79 %

No issues found

Ln: 44Ch: 3TABS

CRLF

MonsterWorldGame101.cppVariousMonsters101.hMonster101.hCanvas101.hMatrix101.hMonsterWorld101.h

Week10_Homework1Matrix

34}

35}

36void setRand(int val = 100) {

37if (mat != NULL)

38{

39for (int i = 0; i < rows; i++)

40for (int j = 0; j < cols; j++)

41mat[i][j] = (rand() % val);

42}

43}

44};

79 %

No issues found

Ln: 14Ch: 3Col: 6TABS

CRLF

MonsterWorldGame101.cppVariousMonsters101.hMonster101.hCanvas101.hMatrix101.hMonsterWorld101.h

Week10_Homework1MonsterWorld

1#pragma once

2#include "Canvas101.h"

3#include "Monster101.h"

4#include "Matrix101.h"

5#include <Windows.h>

6#define MAXMONS 8

7

8class MonsterWorld

9{

10Matrix world;

11int xMax, yMax, nMon, nMove;

12Monster* pMon[MAXMONS];

13Canvas canvas;

14

15int& Map(int x, int y) { return world.elem(x, y); }

16bool isDone() { return countItems() == 0; }

17int countItems() {

18int nItems = 0;

19for (int y = 0; y < yMax; y++)

20for (int x = 0; x < xMax; x++)

21if (Map(x, y) > 0) nItems++;

22return nItems;

23}

24void print() {

25canvas.clear(" ");

26for (int y = 0; y < yMax; y++)

27for (int x = 0; x < xMax; x++)

28if (Map(x, y) > 0) canvas.draw(x, y, "■");

29for (int i = 0; i < nMon; i++)

30pMon[i] -> draw(canvas);

31canvas.print("[Monster World (Dynamic World)]");

32

33cerr << " 전체 이동 횟수 = " << nMove << endl;

34cerr << " 남은 아이템 수 = " << countItems() << endl;

35for (int i = 0; i < nMon; i++) pMon[i] -> print();

79 %

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Ln: 49Ch: 36Col: 39TABS

CRLF

MonsterWorldGame101.cppVariousMonsters101.hMonster101.hCanvas101.hMatrix101.hMonsterWorld101.h

Week10_Homework1MonsterWorld

```
34     cerr << " 남은 아이템 수 = " << countItems() << endl;
35     for (int i = 0; i < nMon; i++) pMon[i]->print();
36 }
37 public:
38     MonsterWorld(int w, int h) : world(h, w), canvas(w, h), xMax(w), yMax(h) {
39         nMon = 0;
40         nMove = 0;
41         for (int y = 0; y < yMax; y++)
42             for (int x = 0; x < xMax; x++) Map(x, y) = 1;
43     }
44     ~MonsterWorld() {
45         for (int i = 0; i < nMon; i++)
46             delete pMon[i];
47     }
48     void add(Monster* m) { if (nMon < MAXMONS) pMon[nMon++] = m; }
49     void play(int maxwalk, int wait) {
50         print();
51         cerr << " 엔터를 누르세요...";
52         getchar();
53         for (int i = 0; i < maxwalk; i++)
54             {
55                 for (int k = 0; k < nMon; k++)
56                     pMon[k]->move(world.Data(), xMax, yMax);
57                 nMove++;
58                 print();
59                 if (isDone()) break;
60                 Sleep(wait);
61             }
62     }
63 };
```

79 % 0 1 ↕ ⏪ ⏩ Ln: 13 Ch: 16 Col: 19 TABS CRLF