[CGameManager.h]

```
#pragma once

class CSceneState;

#define g_pGameManager CGameManager::GetInstance()

enum SceneType : int
{
	eMainScene, eGameScene, ePauseScene, eEndScene
};

class CGameManager
{
private:
	CSceneState* m_nowScene;
	CGameManager() { }

public:
	static CGameManager* GetInstance();
	virtual ~CGameManager();

	void CheckSceneChange(SceneType input);
	void CheckNullScene();

	void Destroy();
};
```

[CGameManager.cpp]

```
#include "GameManager.h"
#include "SceneState.h"
#include "State.h"

CGameManager * CGameManager::GetInstance()
{
	static CGameManager instance;
	return &instance;
}

CGameManager::~CGameManager() { }

void CGameManager::CheckSceneChange(SceneType input)
{
	// >> 1
	CheckNullScene();
	m_nowScene = CSceneState::SetScene(input);
	m_nowScene->PrintState();
```

```
        // // >> 2
        // switch (input)
        // {
        //      case eMainScene:
        //      {
        //              CheckNullScene();
        //              m_nowScene = new CMainState;
        //              m_nowScene->SetNowScene();
        //      }
        //      break;
        //
        //      case eGameScene:
        //      {
        //              CheckNullScene();
        //              m_nowScene = new CGameState;
        //              m_nowScene->SetNowScene();
        //      }
        //      break;
        //
        //      case ePauseScene:
        //      {
        //              CheckNullScene();
        //              m_nowScene = new CPauseState;
        //              m_nowScene->SetNowScene();
        //      }
        //      break;
        //
        //      case eEndScene:
        //      {
        //              CheckNullScene();
        //              m_nowScene = new CEndState;
        //              m_nowScene->SetNowScene();
        //      }
        //      break;
        // }
}

void CGameManager::CheckNullScene()
{
        if (m_nowScene != NULL)
                delete m_nowScene;
}

void CGameManager::Destroy()
{
        if (m_nowScene)
                delete m_nowScene;
}
```

```
}
```

[SceneState.h]

```
#pragma once
#include "GameManager.h"

class CSceneState
{
protected:
        CSceneState() { }

public:
        static CSceneState* GetInstance();
        static CSceneState* SetScene(SceneType type);
        virtual ~CSceneState() { }
        virtual void SetNowScene() { }
        virtual void PrintState() { }};
```

[SceneState.cpp]

```
#include "SceneState.h"
#include "State.h"

CSceneState * CSceneState::GetInstance()
{
        static CSceneState instance;
        return &instance;
}

CSceneState* CSceneState::SetScene(SceneType type)
{
        switch (type)
        {
        case eMainScene:
                return new CMainState();
                break;

        case eGameScene:
                return new CGameState();
                break;

        case ePauseScene:
                return new CPauseState();
                break;

        case eEndScene:
                return new CEndState();
                break;
        }
}
```

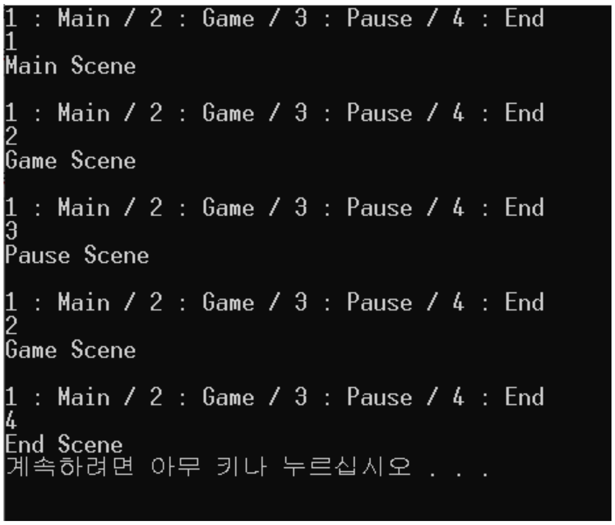
[State.h]

```
#pragma once

#include <iostream>

#include "SceneState.h"

using namespace std;

class CMainState : public CSceneState
{
public:
       CMainState() { }
       ~CMainState() { }
       void SetNowScene() override { PrintState(); }
       void PrintState() override { cout << "Main Scene" << endl; }
};

class CGameState : public CSceneState
{
public:
       CGameState() { }
       ~CGameState() { }
       void SetNowScene() override { PrintState(); }
       void PrintState() override { cout << "Game Scene" << endl; }
};

class CPauseState : public CSceneState
{
public:
       CPauseState() { }
       ~CPauseState() { }
       void SetNowScene() override { PrintState(); }
       void PrintState() override { cout << "Pause Scene" << endl; }
};

class CEndState : public CSceneState
{
public:
       CEndState() { }
       ~CEndState() { }
       void SetNowScene() override { PrintState(); }
       void PrintState() override { cout << "End Scene" << endl; }
};
```

[main.cpp]

```
#include <iostream>
#include <string>
#include <stdlib.h>
#include <crtdbg.h>
#include "GameManager.h"

using namespace std;

int main()
{
        _CrtSetDbgFlag(_CRTDBG_ALLOC_MEM_DF || _CRTDBG_LEAK_CHECK_DF);
        // _CrtSetBreakAlloc(147); // string
        char input;

        while (true)
        {
                cout << "1 : Main / 2 : Game / 3 : Pause / 4 : End" << endl;
                cin >> input;

                if (input == '1')
                        g_pGameManager->CheckSceneChange(eMainScene);
                if (input == '2')
                        g_pGameManager->CheckSceneChange(eGameScene);
                if (input == '3')
                        g_pGameManager->CheckSceneChange(ePauseScene);
                if (input == '4')
                {
                        g_pGameManager->CheckSceneChange(eEndScene);
                        break;
                }

                cout << endl;
        }

        g_pGameManager->Destroy();
        _CrtDumpMemoryLeaks();

        return 0;
}
```

[실행화면]



```
1 : Main / 2 : Game / 3 : Pause / 4 : End
1
Main Scene

1 : Main / 2 : Game / 3 : Pause / 4 : End
2
Game Scene

1 : Main / 2 : Game / 3 : Pause / 4 : End
3
Pause Scene

1 : Main / 2 : Game / 3 : Pause / 4 : End
2
Game Scene

1 : Main / 2 : Game / 3 : Pause / 4 : End
4
End Scene
계속하려면 아무 키나 누르십시오 . . .
```