|  |  |
| --- | --- |
| sym01_s | **윈도우프로그래밍**  **LAB 10** |
| **분반** | **001** |
| **학번** | **2010044** |
| **이름** | **박진희** |

**# 실습 문제 1**

#1 DrawingView.h / DrawingView.cpp 프로그램 소스 및 설명 (추가 및 수정한 부분에 대한 설명)

|  |
| --- |
| DrawingView.h |
| // DrawingView.h : interface of the CDrawingView class  //  #pragma once  class CDrawingView : public CView  {  protected: // create from serialization only  CDrawingView() noexcept;  DECLARE\_DYNCREATE(CDrawingView)  // Attributes  public:  CDrawingDoc\* GetDocument() const;  private:  그려지는 정사각형 크기  int w;  // Operations  public:  // Overrides  public:  virtual void OnDraw(CDC\* pDC); // overridden to draw this view  virtual BOOL PreCreateWindow(CREATESTRUCT& cs);  protected:  virtual BOOL OnPreparePrinting(CPrintInfo\* pInfo);  virtual void OnBeginPrinting(CDC\* pDC, CPrintInfo\* pInfo);  virtual void OnEndPrinting(CDC\* pDC, CPrintInfo\* pInfo);  // Implementation  public:  virtual ~CDrawingView();  #ifdef \_DEBUG  virtual void AssertValid() const;  virtual void Dump(CDumpContext& dc) const;  #endif  protected:  // Generated message map functions  protected:  DECLARE\_MESSAGE\_MAP()  public:  afx\_msg void OnMouseMove(UINT nFlags, CPoint point);  afx\_msg void OnOptionSize();  virtual void OnUpdate(CView\* /\*pSender\*/, LPARAM /\*lHint\*/, CObject\* /\*pHint\*/);  };  #ifndef \_DEBUG // debug version in DrawingView.cpp  inline CDrawingDoc\* CDrawingView::GetDocument() const  { return reinterpret\_cast<CDrawingDoc\*>(m\_pDocument); }  #endif |

|  |
| --- |
| DrawingView.cpp |
| // DrawingView.cpp : implementation of the CDrawingView class  //  #include "pch.h"  #include "framework.h"  // SHARED\_HANDLERS can be defined in an ATL project implementing preview, thumbnail  // and search filter handlers and allows sharing of document code with that project.  #ifndef SHARED\_HANDLERS  #include "Drawing.h"  #endif  #include "DrawingDoc.h"  #include "DrawingView.h"  #include "CSizeDlg.h"  #ifdef \_DEBUG  #define new DEBUG\_NEW  #endif  // CDrawingView  IMPLEMENT\_DYNCREATE(CDrawingView, CView)  BEGIN\_MESSAGE\_MAP(CDrawingView, CView)  // Standard printing commands  ON\_COMMAND(ID\_FILE\_PRINT, &CView::OnFilePrint)  ON\_COMMAND(ID\_FILE\_PRINT\_DIRECT, &CView::OnFilePrint)  ON\_COMMAND(ID\_FILE\_PRINT\_PREVIEW, &CView::OnFilePrintPreview)  ON\_WM\_MOUSEMOVE()  ON\_COMMAND(O\_OPTION\_SIZE, &CDrawingView::OnOptionSize)  END\_MESSAGE\_MAP()  // CDrawingView construction/destruction  CDrawingView::CDrawingView() noexcept  {  // TODO: add construction code here  w = 5;  정사각형 크기는 기본설정이 5  }  CDrawingView::~CDrawingView()  {  }  BOOL CDrawingView::PreCreateWindow(CREATESTRUCT& cs)  {  // TODO: Modify the Window class or styles here by modifying  // the CREATESTRUCT cs  return CView::PreCreateWindow(cs);  }  // CDrawingView drawing  void CDrawingView::OnDraw(CDC\* pDC)  뷰가 가려졌다 노출될때 그대로 재생해주는 함수  {  CDrawingDoc\* pDoc = GetDocument();  ASSERT\_VALID(pDoc);  if (!pDoc)  return;  for (int i = 0; i < pDoc->Size(); i++) {  CPoint p = pDoc->GetPoint(i);  pDC->Rectangle(p.x, p.y, p.x + w, p.y + w);  }  }  // CDrawingView printing  BOOL CDrawingView::OnPreparePrinting(CPrintInfo\* pInfo)  {  // default preparation  return DoPreparePrinting(pInfo);  }  void CDrawingView::OnBeginPrinting(CDC\* /\*pDC\*/, CPrintInfo\* /\*pInfo\*/)  {  // TODO: add extra initialization before printing  }  void CDrawingView::OnEndPrinting(CDC\* /\*pDC\*/, CPrintInfo\* /\*pInfo\*/)  {  // TODO: add cleanup after printing  }  // CDrawingView diagnostics  #ifdef \_DEBUG  void CDrawingView::AssertValid() const  {  CView::AssertValid();  }  void CDrawingView::Dump(CDumpContext& dc) const  {  CView::Dump(dc);  }  CDrawingDoc\* CDrawingView::GetDocument() const // non-debug version is inline  {  ASSERT(m\_pDocument->IsKindOf(RUNTIME\_CLASS(CDrawingDoc)));  return (CDrawingDoc\*)m\_pDocument;  }  #endif //\_DEBUG  // CDrawingView message handlers  void CDrawingView::OnMouseMove(UINT nFlags, CPoint point)  {  CDrawingDoc\* pDoc = GetDocument();  ASSERT\_VALID(pDoc);  if (!pDoc)  return;  if (nFlags == MK\_LBUTTON) { // 마우스 왼쪽 버튼이 눌려져 있으면  CClientDC dc(this);  dc.Rectangle(point.x, point.y, point.x + w, point.y + w);  pDoc->Add(point);  마우스 왼쪽 버튼이 눌려져 있으면 움직임에 따라 해당 좌표에 사각형을 그림  pDoc->SetModifiedFlag();  pDoc->UpdateAllViews(this, 0, 0);  }  CView::OnMouseMove(nFlags, point);  }  void CDrawingView::OnOptionSize()  {  사각형 사이즈 변경 설정 함수  // TODO: Add your command handler code here  CSizeDlg dlg;  dlg.m\_nSize = w;  if(dlg.DoModal() == IDOK)  w = dlg.m\_nSize;  }  void CDrawingView::OnUpdate(CView\* pSender, LPARAM lHint,CObject\* pHint)  {  CDrawingDoc\* pDoc = GetDocument();  ASSERT\_VALID(pDoc);  서로 다른 창에 대한 실시간 동기화를 하는 함수  if (!pDoc)  return;  int n = pDoc->Size();  if (n > 0) {  CPoint p = pDoc->GetPoint(n - 1);  CClientDC dc(this);  dc.Rectangle(p.x, p.y, p.x + w, p.y + w);  }  } |

#2 DrawingDoc.h / DrawingDoc.cpp 프로그램 소스 및 설명 (추가 및 수정한 부분에 대한 설명)

|  |
| --- |
| DrawingDoc.h |
| // DrawingDoc.h : interface of the CDrawingDoc class  //  #pragma once  class CDrawingDoc : public CDocument  {  protected: // create from serialization only  CDrawingDoc() noexcept;  DECLARE\_DYNCREATE(CDrawingDoc)  // Attributes  public:  private:  각기 x,y좌표를 나타냄. 사용자가 그리는 점들을 저장하기 위한 자료구조. 32bit 타입인 DWORD 타입 원소를 가짐.  CDWordArray x, y;  // Operations  public:  위의 자료구조에 점을 추가하기 위한 함수  void Add(CPoint point);  int Size();  CPoint GetPoint(int i);  // Overrides  public:  virtual BOOL OnNewDocument();  virtual void Serialize(CArchive& ar);  #ifdef SHARED\_HANDLERS  virtual void InitializeSearchContent();  virtual void OnDrawThumbnail(CDC& dc, LPRECT lprcBounds);  #endif // SHARED\_HANDLERS  // Implementation  public:  virtual ~CDrawingDoc();  #ifdef \_DEBUG  virtual void AssertValid() const;  virtual void Dump(CDumpContext& dc) const;  #endif  protected:  // Generated message map functions  protected:  DECLARE\_MESSAGE\_MAP()  #ifdef SHARED\_HANDLERS  // Helper function that sets search content for a Search Handler  void SetSearchContent(const CString& value);  #endif // SHARED\_HANDLERS  }; |

|  |
| --- |
| DrawingDoc.cpp |
| // DrawingDoc.cpp : implementation of the CDrawingDoc class  //  #include "pch.h"  #include "framework.h"  // SHARED\_HANDLERS can be defined in an ATL project implementing preview, thumbnail  // and search filter handlers and allows sharing of document code with that project.  #ifndef SHARED\_HANDLERS  #include "Drawing.h"  #endif  #include "DrawingDoc.h"  #include <propkey.h>  #ifdef \_DEBUG  #define new DEBUG\_NEW  #endif  // CDrawingDoc  IMPLEMENT\_DYNCREATE(CDrawingDoc, CDocument)  BEGIN\_MESSAGE\_MAP(CDrawingDoc, CDocument)  END\_MESSAGE\_MAP()  // CDrawingDoc construction/destruction  CDrawingDoc::CDrawingDoc() noexcept  {  // TODO: add one-time construction code here  }  CDrawingDoc::~CDrawingDoc()  {  }  BOOL CDrawingDoc::OnNewDocument()  {  if (!CDocument::OnNewDocument())  return FALSE;  // TODO: add reinitialization code here  // (SDI documents will reuse this document)  return TRUE;  }  // CDrawingDoc serialization  void CDrawingDoc::Serialize(CArchive& ar)  {  x.Serialize(ar);  y.Serialize(ar);  }  각 함수는 자료구조에 점을 저장하는 것과 관련된 함수.  void CDrawingDoc::Add(CPoint point)  {  x.Add(point.x);  y.Add(point.y);  }  int CDrawingDoc::Size()  {  return x.GetSize();  }  CPoint CDrawingDoc::GetPoint(int i)  {  return CPoint(x[i], y[i]);  }  #ifdef SHARED\_HANDLERS  // Support for thumbnails  void CDrawingDoc::OnDrawThumbnail(CDC& dc, LPRECT lprcBounds)  {  // Modify this code to draw the document's data  dc.FillSolidRect(lprcBounds, RGB(255, 255, 255));  CString strText = \_T("TODO: implement thumbnail drawing here");  LOGFONT lf;  CFont\* pDefaultGUIFont = CFont::FromHandle((HFONT) GetStockObject(DEFAULT\_GUI\_FONT));  pDefaultGUIFont->GetLogFont(&lf);  lf.lfHeight = 36;  CFont fontDraw;  fontDraw.CreateFontIndirect(&lf);  CFont\* pOldFont = dc.SelectObject(&fontDraw);  dc.DrawText(strText, lprcBounds, DT\_CENTER | DT\_WORDBREAK);  dc.SelectObject(pOldFont);  }  // Support for Search Handlers  void CDrawingDoc::InitializeSearchContent()  {  CString strSearchContent;  // Set search contents from document's data.  // The content parts should be separated by ";"  // For example: strSearchContent = \_T("point;rectangle;circle;ole object;");  SetSearchContent(strSearchContent);  }  void CDrawingDoc::SetSearchContent(const CString& value)  {  if (value.IsEmpty())  {  RemoveChunk(PKEY\_Search\_Contents.fmtid, PKEY\_Search\_Contents.pid);  }  else  {  CMFCFilterChunkValueImpl \*pChunk = nullptr;  ATLTRY(pChunk = new CMFCFilterChunkValueImpl);  if (pChunk != nullptr)  {  pChunk->SetTextValue(PKEY\_Search\_Contents, value, CHUNK\_TEXT);  SetChunkValue(pChunk);  }  }  }  #endif // SHARED\_HANDLERS  // CDrawingDoc diagnostics  #ifdef \_DEBUG  void CDrawingDoc::AssertValid() const  {  CDocument::AssertValid();  }  void CDrawingDoc::Dump(CDumpContext& dc) const  {  CDocument::Dump(dc);  }  #endif //\_DEBUG  // CDrawingDoc commands |

#3 EdDoc.cpp 프로그램 소스 및 설명 (추가 및 수정한 부분에 대한 설명)

|  |
| --- |
| EdDoc.cpp |
| // EdDoc.cpp : implementation file  //  #include "pch.h"  #include "Drawing.h"  #include "EdDoc.h"  // CEdDoc  IMPLEMENT\_DYNCREATE(CEdDoc, CDocument)  CEdDoc::CEdDoc()  {  }  BOOL CEdDoc::OnNewDocument()  {  if (!CDocument::OnNewDocument())  return FALSE;  return TRUE;  }  CEdDoc::~CEdDoc()  {  }  BEGIN\_MESSAGE\_MAP(CEdDoc, CDocument)  END\_MESSAGE\_MAP()  // CEdDoc diagnostics  #ifdef \_DEBUG  void CEdDoc::AssertValid() const  {  CDocument::AssertValid();  }  #ifndef \_WIN32\_WCE  void CEdDoc::Dump(CDumpContext& dc) const  {  CDocument::Dump(dc);  }  #endif  #endif //\_DEBUG  #ifndef \_WIN32\_WCE  // CEdDoc serialization  void CEdDoc::Serialize(CArchive& ar)  {  ((CEditView\*)m\_viewList.GetHead()) -> SerializeRaw(ar);  }  파일 저장 및 읽기를 위한 함수  #endif  // CEdDoc commands |

#4 Drawing.cpp 프로그램 소스 및 설명 (추가 및 수정한 부분에 대한 설명)

|  |
| --- |
| Drawing.cpp |
| // Drawing.cpp : Defines the class behaviors for the application.  //  #include "pch.h"  #include "framework.h"  #include "afxwinappex.h"  #include "afxdialogex.h"  #include "Drawing.h"  #include "MainFrm.h"  #include "ChildFrm.h"  #include "DrawingDoc.h"  #include "DrawingView.h"  #include "EdDoc.h"  #include "EdView.h"  #ifdef \_DEBUG  #define new DEBUG\_NEW  #endif  // CDrawingApp  BEGIN\_MESSAGE\_MAP(CDrawingApp, CWinApp)  ON\_COMMAND(ID\_APP\_ABOUT, &CDrawingApp::OnAppAbout)  // Standard file based document commands  ON\_COMMAND(ID\_FILE\_NEW, &CWinApp::OnFileNew)  ON\_COMMAND(ID\_FILE\_OPEN, &CWinApp::OnFileOpen)  // Standard print setup command  ON\_COMMAND(ID\_FILE\_PRINT\_SETUP, &CWinApp::OnFilePrintSetup)  END\_MESSAGE\_MAP()  // CDrawingApp construction  CDrawingApp::CDrawingApp() noexcept  {  // support Restart Manager  m\_dwRestartManagerSupportFlags = AFX\_RESTART\_MANAGER\_SUPPORT\_ALL\_ASPECTS;  #ifdef \_MANAGED  // If the application is built using Common Language Runtime support (/clr):  // 1) This additional setting is needed for Restart Manager support to work properly.  // 2) In your project, you must add a reference to System.Windows.Forms in order to build.  System::Windows::Forms::Application::SetUnhandledExceptionMode(System::Windows::Forms::UnhandledExceptionMode::ThrowException);  #endif  // TODO: replace application ID string below with unique ID string; recommended  // format for string is CompanyName.ProductName.SubProduct.VersionInformation  SetAppID(\_T("Drawing.AppID.NoVersion"));  // TODO: add construction code here,  // Place all significant initialization in InitInstance  }  // The one and only CDrawingApp object  CDrawingApp theApp;  // CDrawingApp initialization  BOOL CDrawingApp::InitInstance()  {  // InitCommonControlsEx() is required on Windows XP if an application  // manifest specifies use of ComCtl32.dll version 6 or later to enable  // visual styles. Otherwise, any window creation will fail.  INITCOMMONCONTROLSEX InitCtrls;  InitCtrls.dwSize = sizeof(InitCtrls);  // Set this to include all the common control classes you want to use  // in your application.  InitCtrls.dwICC = ICC\_WIN95\_CLASSES;  InitCommonControlsEx(&InitCtrls);  CWinApp::InitInstance();  // Initialize OLE libraries  if (!AfxOleInit())  {  AfxMessageBox(IDP\_OLE\_INIT\_FAILED);  return FALSE;  }  AfxEnableControlContainer();  EnableTaskbarInteraction(FALSE);  // AfxInitRichEdit2() is required to use RichEdit control  // AfxInitRichEdit2();  // Standard initialization  // If you are not using these features and wish to reduce the size  // of your final executable, you should remove from the following  // the specific initialization routines you do not need  // Change the registry key under which our settings are stored  // TODO: You should modify this string to be something appropriate  // such as the name of your company or organization  SetRegistryKey(\_T("Local AppWizard-Generated Applications"));  LoadStdProfileSettings(4); // Load standard INI file options (including MRU)  // Register the application's document templates. Document templates  // serve as the connection between documents, frame windows and views  CMultiDocTemplate\* pDocTemplate;  pDocTemplate = new CMultiDocTemplate(IDR\_EdTYPE,  Drawing과 Ed 문서 중 하나를 고르면 해당하는 문서의 새 문서를 만들어주는 함수.  RUNTIME\_CLASS(CEdDoc),  RUNTIME\_CLASS(CChildFrame),  RUNTIME\_CLASS(CEdView));  if (!pDocTemplate)  return FALSE;  AddDocTemplate(pDocTemplate);  pDocTemplate = new CMultiDocTemplate(IDR\_DrawingTYPE,  RUNTIME\_CLASS(CDrawingDoc),  RUNTIME\_CLASS(CChildFrame),  RUNTIME\_CLASS(CDrawingView)); // 사용자 지정 MDI 자식 프레임입니다.  if (!pDocTemplate)  return FALSE;  AddDocTemplate(pDocTemplate);  // create main MDI Frame window  CMainFrame\* pMainFrame = new CMainFrame;  if (!pMainFrame || !pMainFrame->LoadFrame(IDR\_MAINFRAME))  {  delete pMainFrame;  return FALSE;  }  m\_pMainWnd = pMainFrame;  // call DragAcceptFiles only if there's a suffix  // In an MDI app, this should occur immediately after setting m\_pMainWnd  // Enable drag/drop open  m\_pMainWnd->DragAcceptFiles();  // Parse command line for standard shell commands, DDE, file open  CCommandLineInfo cmdInfo;  ParseCommandLine(cmdInfo);  // Enable DDE Execute open  EnableShellOpen();  RegisterShellFileTypes(TRUE);  // Dispatch commands specified on the command line. Will return FALSE if  // app was launched with /RegServer, /Register, /Unregserver or /Unregister.  if (!ProcessShellCommand(cmdInfo))  return FALSE;  // The main window has been initialized, so show and update it  pMainFrame->ShowWindow(m\_nCmdShow);  pMainFrame->UpdateWindow();  return TRUE;  }  int CDrawingApp::ExitInstance()  {  //TODO: handle additional resources you may have added  AfxOleTerm(FALSE);  return CWinApp::ExitInstance();  }  // CDrawingApp message handlers  // CAboutDlg dialog used for App About  class CAboutDlg : public CDialogEx  {  public:  CAboutDlg() noexcept;  // Dialog Data  #ifdef AFX\_DESIGN\_TIME  enum { IDD = IDD\_ABOUTBOX };  #endif  protected:  virtual void DoDataExchange(CDataExchange\* pDX); // DDX/DDV support  // Implementation  protected:  DECLARE\_MESSAGE\_MAP()  };  CAboutDlg::CAboutDlg() noexcept : CDialogEx(IDD\_ABOUTBOX)  {  }  void CAboutDlg::DoDataExchange(CDataExchange\* pDX)  {  CDialogEx::DoDataExchange(pDX);  }  BEGIN\_MESSAGE\_MAP(CAboutDlg, CDialogEx)  END\_MESSAGE\_MAP()  // App command to run the dialog  void CDrawingApp::OnAppAbout()  {  CAboutDlg aboutDlg;  aboutDlg.DoModal();  }  // CDrawingApp message handlers |

#5 실행 화면 (텍스트 편집기, 그림 편집기, 창 동기화, 다중 문서에 대한 화면 첨부)







