

CHAPTER 5: INTEGRATION

Objectives

The objectives are:

- Integrate previously created seminar module features with one another by adding navigation to forms.
- Add to the navigation pane so that the seminar module functionality is accessible in a standard way.
- Integrate the Navigate feature into the seminar module.

Introduction

At this stage the solution is a basic, functioning module, where a user can input seminar master data, perform registrations, and post completed seminar registrations. The next step is to integrate these features with one another and with the standard application. This will require using MenuSuite objects and implementing navigation functionality. This chapter addresses the integration of solution functionality with the user interface, or UI of the application.

Prerequisite Information

Part of the solution in this chapter involves making changes to tables that already contain data. This section covers important information that is needed later.

Changing Tables that Contain Data

When creating the seminar module, a number of tables were created and a few were modified. There are a few guidelines to keep in mind when changing tables that contain data.

C/SIDE is designed to ensure that data is not lost when modifying the design of a table that contains data. This means that while it is possible to change a table that contains data, there are important general guidelines that specify which types of changes are allowed under certain conditions. These guidelines are as follows:

- The name of a field can always be changed.
- The data type for a field can only be changed if there is no data in the field for any of the records in the table. There is one exception to this rule: The data type of a field can be changed from **Code** to **Text** even if the field contains data for some records.
- A field can always be added to a table.
- To delete a field, all data must be deleted from the field in all records in the table. Furthermore, all references to the field from other tables, forms, and reports must be removed.
- The length of a string field can always be increased, meaning a field with a data type of Code or Text. Whether the length can be decrease the length of a string field depends on the contents of all the values in the column in the table. The minimum length of a string field is determined by the longest string in the column.
- Although the **Field No.** may be changed, only do so if absolutely required because existing code must be modified if it references use the **Field No.**

Seminar Feature Integration

The goal of this section is to integrate the features created thus far with one another and with the standard application. This means adding navigation support to some forms and creating a menu for the seminar module, as part of the main menu shown in the Navigation Pane.

The Navigate feature in Microsoft Dynamics™ NAV provides a summary of the number and type of entries posted for a specific document number or posting date. This feature can be useful in helping the user easily trace the ledger entries that result from certain transactions. To make the seminar module fit with the standard application and to improve the usability, this features will be integrated into the module.

Solution Analysis

To integrate the seminar features with one another, the registrations and ledger entries should be available from the seminar forms, all of which were developed earlier. A MenuSuite object will be created for the seminar module, which can be accessed from the standard Navigation Pane.

The purpose of integration is to make all seminar features available from the appropriate places in the application. This makes the customized application as usable as possible.

The appropriate seminar registrations and ledger entries will be accessible from the **Seminar Card** and **Seminar List** forms. The seminar module will be accessible from the main menu, which will be the typical method for seminar managers to access the seminar module features.

When the seminar managers look at a seminar definition in the **Seminar Card** or **Seminar List** form, they can access the **Seminar Registration** for the seminar as well as the **Seminar Ledger Entries** that relate to the seminar.

Solution Design

To integrate the seminar module as described in the analysis section, modifications to some existing forms and tables will be made and a new **Seminar Menu** will be added to the main MenuSuite. Because integration is largely a user interface issue, it is important to plan the user interface.

The **Seminar Card** form should be Modified by adding a **Registration** menu button as shown in Figure 5–1.

SEM0001 Programming - Seminar Card

General Invoicing

No. SEM0001 Search Name PROGRAMMING

Name Programming Seminar Duration 5

Minimum Participants 6

Maximum Participants 12

Blocked ☐

Last Date Modified 05.13.03

Seminar Registration Help

FIGURE 5–1: THE SEMINAR CARD FORM (123456700)

The **Seminar List** form should be modified by adding a menu button as shown in Figure 5-2.

Seminar List

No.	Name	Seminar ...	Seminar ...	Gen. Pro...	VAT Pro...	Job No.
SEM0001	Programming	5	500,00	SERVICES	VAT10	J00010
SEM0002	Solution Development	10	500,00	SERVICES	VAT10	J00010

Seminar Registration Help

FIGURE 5–2: THE SEMINAR LIST FORM (123456701)

The **Seminar Menu** (figure 5-3) is a new Partner-level menu accessible from the standard main menu suite. All seminar module features are available from this menu.



FIGURE 5-3: THE SEMINAR MENU

The seminar tree for this menu is as follows:

Menu Type	Menu Name	Group	Comment
Group	Seminars		
Item	Contacts	Seminars	Opens the Contact Card form (5050).
Item	Instructors	Seminars	Opens the Instructors form (123456705).
Item	Seminars	Seminars	Opens the Seminar Card form (123456700).
Group	Periodic Activities	Seminars	
Item	Periodic Activities	Periodic Activities	Runs report 123456700 (to be created later in the course) that creates Seminar Invoices.
Group	Order Processing		
Item	Registrations	Order Processing	Opens the Seminar Registration form (123456710).
Item	Sales Invoices	Order Processing	Opens the Sales Invoice form (43).
Group	Reports	Order Processing	Add reports under this group in Chapter 6.
Group	Documents	Order Processing	Add documents under this group in a later chapter.
Group	History	Order Processing	
Item	Posted Registrations	History	Opens the Posted Seminar Registration form (123456734).
Item	Posted Sales Invoices	History	Opens the Posted Sales Invoice form (132).
Item	Registers	History	Opens the Seminar Registers form (123456722).
Item	Navigate	History	Opens the Navigate form (344).
Group	Setup		
Item	Seminar Setup	Setup	Opens the Seminar Setup form (123456702).
Item	Seminar Rooms	Setup	Opens the Seminar Room Card form (123456703).

Lab 5.1 - Integrating Seminar Features

Now that the analysis and design phases are complete, the solution can be implemented. Begin by making modifications to the **Seminar Card** and **Seminar List** forms:

1. Add the new button and the new menu items to the **Seminar Card** form (123456700) as follows:

Menu Button	Options	Comment
Seminar	Entries	Opens submenu with the following option: Ledger Entries (CTRL + F5): Opens the Seminar Ledger Entries form (123456721) filtered to entries with a corresponding Seminar No. The link should be run whenever the form is updated. The lines in the form should be sorted by Seminar No. and Posting Date.
Registration	Registrations	Opens the Seminar Registration form (123456710) for registrations with a Seminar Code that corresponds to the No. field. The link should be run whenever the form is updated.

2. Add the same menu button and menu items to the **Seminar List** form (123456701) added to the **Seminar Card** above.
3. Create a new MenuSuite using the "Partner" level. See the Navigation Pane Designer open on the left.
4. Right-click on a menu on the Navigation Pane Designer and select Create Menu. Set the caption to Seminars and the bitmap to 12.
5. Create the tree in the Seminar Menu as shown in the Solution Design section.

Navigation Integration

The goal of this section is to make the seminar module fit with the standard application and to improve usability by integrating the Navigate feature into the module.

Solution Analysis

The purpose of integrating the Navigate feature is to improve the traceability of transactions to their ledger entries.

The user will be able to access the Navigate function from ledger entry forms and posted seminar documents as well as from the standard application.

When the seminar managers want to view a complete summary of the ledger entries that were created for a posted seminar registration or ledger entry, they will use Navigate.

Solution Design

As an integration topic, the design of this solution centers around the user interface, but some table modifications are necessary as well.

The Navigate feature should be available from the Seminar Ledger Entries form and the Posted Seminar Registration form.

The **Seminar Ledger Entries** form should be modified this form by adding a **Navigate** command button, as shown in Figure 5-4.

Posting D...	Documen...	E..	Seminar No.	Description	Bill-to Cu...	Charge T...	Type	Quantity
01.25.01	PSEM00001	R..	SEM0001	David Hodgson	10000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	John Emory	10000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Mindy Martin	10000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Stephanie Bourne	10000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Pamela Ansman-Wolfe	30000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Tina Gorenc	30000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Mr. Kevin Wright	40000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Mr. Jim Stewart	50000	Participant	Resource	1
01.25.01	PSEM00001	R..	SEM0001	Annette Hill	50000	Instructor	Resource	5
01.25.01	PSEM00001	R..	SEM0001	Room 1	50000	Room	Resource	5

Navigate Help

FIGURE 5-4: THE SEMINAR LEDGER ENTRIES FORM (123456721)

The **Posted Seminar Registration** form should be modified by adding a **Navigate** command button, as shown in Figure 5–5.

Bill-to Cus...	Participant ...	Participant Name	Participated	Register ...	Confirm...	To Invoice
10000	CT100140	David Hodgson	✓	01.25.01		✓
10000	CT100156	John Emory	✓	01.25.01		✓
10000	CT200136	Mindy Martin	✓	01.25.01		✓
10000	CT100210	Stephanie Bourne		01.25.01		✓
30000	CT200080	Pamela Ansman-Wolfe	✓	01.25.01		✓

FIGURE 5–5: THE POSTED SEMINAR REGISTRATION FORM (123456734)

Table Design

This solution does not require new tables, but it does require new keys for two tables. These new keys are specified in the development section.

Lab 5.2 – Modifying Objects to Integrate Navigation

The development steps to integrate the Navigate feature consist of adding keys to the ledger entry tables of the Seminar module, adding code to the Navigate form and adding command buttons to forms as shown in the Solution Design section.

1. Add the secondary key **Document No.**, **Posting Date** to the **Seminar Ledger Entry** table (123456732).
2. In the **Navigate** form (344) , add the following global variables:

Name	Data Type	Subtype	Length
SemRegHeader	Record	Seminar Registration Header	
PstdSemRegHeader	Record	Posted Seminar Reg. Header	
SemLedgEntry	Record	Seminar Ledger Entry	

3. Enter code in the **FindRecords** function trigger of the **Navigate** form so that the function performs the following tasks:
 - If the **READPERMISSION** property is **TRUE** on the **Seminar Registration Header** record, the program resets this record variable and filters the table to the records where the **No.** matches the **DocNoFilter** variable and the **Posting Date** matches the **PostingDateFilter** variable. Next, the program runs the function **InsertIntoDocEntry**.
 - The program then performs the same steps as above for the **Posted Seminar Reg. Header** table and the **Seminar Ledger Entry** table.
4. Enter code in the **ShowRecords** function trigger of the **Navigate** form so that the function performs the following tasks:
 - When the **Table ID** is the **Seminar Registration Header**, the function runs the lookup form for the **Seminar Registration Header** table.
 - When the **Table ID** is the **Posted Seminar Reg. Header**, the function runs the lookup form for the **Posted Seminar Reg. Header** table.
 - When the **Table ID** is the **Seminar Ledger Entry**, the function runs the lookup form for the **Seminar Ledger Entry** table.

5. Add the **Navigate** command button to the **Seminar Ledger Entries** form (123456721).
6. Enter code in the appropriate trigger so that when the user clicks the **Navigate** button, the program runs the **SetDoc** function of the **Navigate** form and then runs the **Navigate** form.
7. Add the **Navigate** command button to the **Posted Seminar Registration** form (123456734).
8. Enter code in the appropriate trigger so that when the user clicks the **Navigate** button, the program runs the **SetDoc** function of the **Navigate** form and then runs the **Navigate** form.

Testing Managing Integration

Use the following steps to test completed functionality.

1. Click the **Seminars** menu item in the Navigation Pane.
2. In the menu tree, click each of the items and check that the appropriate form or report opens. Remember that there are some items yet to be developed.
3. Use the **Posted Registrations** menu item to open the **Posted Seminar Registrations** form. Click the **Navigate** button and see that the **Navigate** form opens with the same **Document Number**.
4. Select **Seminar Ledger Entry** in the subform and click **Show**. The **Seminar Ledger Entries** form should open with the entries related to **Posted Seminar Registration**.

Conclusion

In this chapter:

- Previously created seminar module features were integrated with one another by adding navigation to forms.
- The navigation pane was added so that the seminar module functionality is accessible in a standard way.
- The **Navigate** feature was integrated into the seminar module.

In the next chapter, reports will be added to the seminar module.

Test Your Knowledge

Review Questions

1. What is the standard Microsoft Dynamics NAV shortcut for viewing Ledger Entries?
2. As a developer, at what level will you normally create MenuSuite objects?
3. From which types of forms is the Navigate feature typically available?

Quick Interaction: Lessons Learned

Take a moment to note three key points you have learned from this chapter:

1.

2.

3.
