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Volume VIII
Part 36




# INTEGRATED INFORMATION SUPPORT SYSTEM (IISS)
## Volume VIII - User Interface Subsystem
## Part 36 - Layout Optimization System Unit Test Plan

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This unit test plan establishes the methodology and procedures used to test the Layout Optimization System (LOS).

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## FOREWORD

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The DAPro project was created to continue the development, test, and demonstration of the Integrated Information Support System (IISS). The IISS technology work comprises enhancements to IISS software and the establishment and operation of IISS test bed hardware and communications for developers and users.

The following list names the Control Data Corporation subcontractors and their contributing activities:

| SUBCONTRACTOR | ROLE |
|---|---|
| Control Data Corporation | Responsible for the overall Common Data Model design development and implementation, IISS integration and test, and technology transfer of IISS. |
| D. Appleton Company | Responsible for providing software information services for the Common Data Model and IDEF1X integration methodology. |
| ONTEK | Responsible for defining and testing a representative integrated system base in Artificial Intelligence techniques to establish fitness for use. |
| Simpact Corporation | Responsible for Communication development. |
| Structural Dynamics Research Corporation | Responsible for User Interfaces, Virtual Terminal Interface, and Network Transaction Manager design, development, implementation, and support. |
| Arizona State University | Responsible for test bed operations and support. |

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# SECTION 1

# GENERAL

## 1.1 Purpose

This unit test plan establishes the methodology and procedures used to adequately test the capabilities of the computer program identified as the Layout Optimization system known in this document as the LOS. The LOS is a tool provided in the Integrated Information Support System (IISS) User Interface (UI).

## 1.2 Project References

[1] Systran, ICAM Documentation Standards, IDS150120000C, 15 September 1983.

[2] Control Data Corporation, System Design Specification, 31 May 1988.

[3] Structural Dynamics Research Corporation, Forms Processor User Manual, UM620344200, 31 May 1988.

[4] Structural Dynamics Research Corporation, Layout Optimization System Development Specification, DS620344908, 31 May 1988.

## 1.3 Terms and Abbreviations

American Standard Code for Information Interchange: (ASCII), the character set defined by ANSI X3.4 and used by most computer vendors.

Application Interface: (AI), subset of the IISS User Interface that consists of the callable routines that are linked with applications that use the Form Processor or Virtual Terminal. The AI enables applications to be hosted on computers other than the host of the User Interface.

Application Process: (AP), a cohesive unit of software that can be initiated as a unit to perform some function or functions.

Attribute: field characteristic such as blinking, highlighted, black, etc. and various other combinations. Background attributes are defined for forms or windows only. Foreground attributes are defined for items. Attributes may be permanent, i.e., they remain the same unless changed by the application program, or they may be temporary, i.e., they remain in effect until the window is redisplayed.

Device Drivers: (DD), software modules written to handle I/O for a specific kind of terminal. The modules map terminal specific commands and data to a neutral format. Device Drivers are part of the UI Virtual Terminal.

Display List: a list of all the open forms that are currently being processed by the FP or the user.

Extended Binary Coded Decimal Interchange Code: (EBCDIC), the character set used by a few computer vendors (notably IBM) instead of ASCII.

Field: two dimensional space on a terminal screen.

Form: structured view which may be imposed on windows or other forms. A form is composed of fields. These fields may be defined as forms, items, and windows.

Form Definition: (FD), forms definition language after compilation. It is read at runtime by the Form Processor.

Forms Definition Language: (FDL), the language in which electronic forms are defined.

Form Hierarchy: a graphic representation of the way in which forms, items and windows are related to their parent form.

Form Editor (FE), subset of the IISS User Interface that is used to create definitions of forms.

Forms Driven Forms Editor: (FDFE), subset of the FE that consists of a forms driven application used to create Forms Definition Language interactively.

Forms Language Compiler: (FLAN), subset of the FE that consists of a batch process that accepts a series of forms definition language statements and produces form definition files as output.

Form Processor: (FP), subset of the IISS User Interface that consists of a set of callable execution time routines available to an application program for form processing.

IISS Function Screen: the first screen that is displayed after logon. It allows the user to specify the function he wants to access and the device type and device name on which he is working.

Integrated Information Support System: (IISS), a computing environment used to investigate, demonstrate, test the concepts and produce application for information management and information integration in the context of Aerospace Manufacturing. The IISS addresses the problems of integration of data resident on heterogeneous data bases supported by heterogeneous computers interconnected via a Local Area Network.

Item: non-decomposable area of a form in which hard-coded descriptive text may be placed and the only defined areas where user data may be input/output.

Layout Optimization System: (LOS), a set of callable routines which allow an application to lay out charts of various types (e.g. IDEF1x, IDEF0 and hierarchies) in an optimal manner, so as to minimize line crossings and line bends which in turn enhances the readability of the chart.

Message: descriptive text which may be returned in the standard message line on the terminal screen. They are used to warn of errors or provide other user information.

Message Line: a line on the terminal screen that is used to display messages.

Network Transaction Manager: (NTM), IISS subsystem that performs the coordination, communication and housekeeping functions required to integrate the Application Processes and System Services resident on the various hosts into a cohesive system.

Open List: a list of all the forms that are currently open for an application process.

Operating System: (OS), software supplied with a computer which allows it to supervise its own operations and manage access to hardware facilities such as memory and peripherals.

Physical Device: a hardware terminal.

Qualified Name: the name of a form, item or window preceded by the hierarchy path so that it is uniquely identified.

Subform: a form that is used within another form.

User Data: data which is either input by the user or output by the application programs to items.

User Interface: (UI), IISS subsystem that controls the user's terminal and interfaces with the rest of the system. The UI consists of two major subsystems: the User Interface Development System (UIDS) and the User Interface Management System (UIMS).

User Interface Development System: (UIDS), collection of IISS User Interface subsystems that are used by applications programmers as they develop IISS applications. The UIDS includes the Form Editor and the Application Generator.

User Interface Management System: (UIMS), the runtime UI. It consists of the Form Processor, Virtual Terminal, Application Interface, the User Interface Services and the Text Editor.

User Interface Monitor: (UIM), part of the Form Processor that handles messaging between the NTM and the UI. It also provides authorization checks and initiates applications.

User Interface Services: (UIS), subset of the IISS User Interface that consists of a package of routines that aid users in controlling their environment. It includes message management, change password, and application definition services.

User Interface/Virtual Terminal Interface: (UI/VTI), another name for the User Interface.

Virtual Terminal: (VT), subset of the IISS User Interface that performs the interfacing between different terminals and the UI. This is done by defining a specific set of terminal features and protocols which must be supported by the UI software which constitutes the virtual terminal definition. Specific terminals are then mapped against the virtual terminal software by specific software modules written for each type of real terminal supported.

Window: dynamic area of a terminal screen on which predefined forms may be placed at run time.

Window Manager: a facility which allows the following to be manipulated: size and location of windows, the device on which an application is running, the position of a form within a window. It is part of the Form Processor.

# SECTION 2

# DEVELOPMENT ACTIVITY

## 2.1 Statement of Pretest Activity

During system development, the routines comprising the LOS subsystem were tested progressively. The software was corrected as bugs were found during this testing.

Each module of the callable interface of the LOS was individually tested. This testing was conducted by the program developer in a manual mode. This was performed in two manners. The developer would run a test program which accessed all the calls as well as manually invoking the callable routines interactively from the UI environment. The testing procedures outlined in this document will use the program in the UI environment which allows for the manual invocation of each routine. As the developer performed these tests, errors were noted and corrected.

Each function provided in the interactive portion of LOS was also exercised in order to find and correct bugs.

## 2.2 Pretest Activity Results

This testing activity performed by the developer brought out some bugs. These were then corrected and retesting was successful.

# SECTION 3

# SYSTEM DESCRIPTION

## 3.1 System Description

There are actually two parts to LOS. One is an interactive program that allows the application developer to define the chart, object and relationship knowledge base. The knowledge base is a set of files containing template information for the layout of any given type of chart. The template information specifies preferences in regard to whether the chart should have a vertical or horizontal orientation as well as the types of objects which make up the chart and the allowable relationships between the objects in the chart. This portion of the system can be run under the UI environment or in a stand alone mode. The test for this portion of the system will be run under the UI environment.

The other part of LOS does not interface directly with a user but is a set of callable routines employed by the application developer. The application developer incorporates these calls into his program, compiles his program, links and executes. The details of the CALLS are specified in Section 8 of the Forms Processor User Manual. The test for this part of the system has been set up such that each of the routines can be invoked independently from a UI screen.

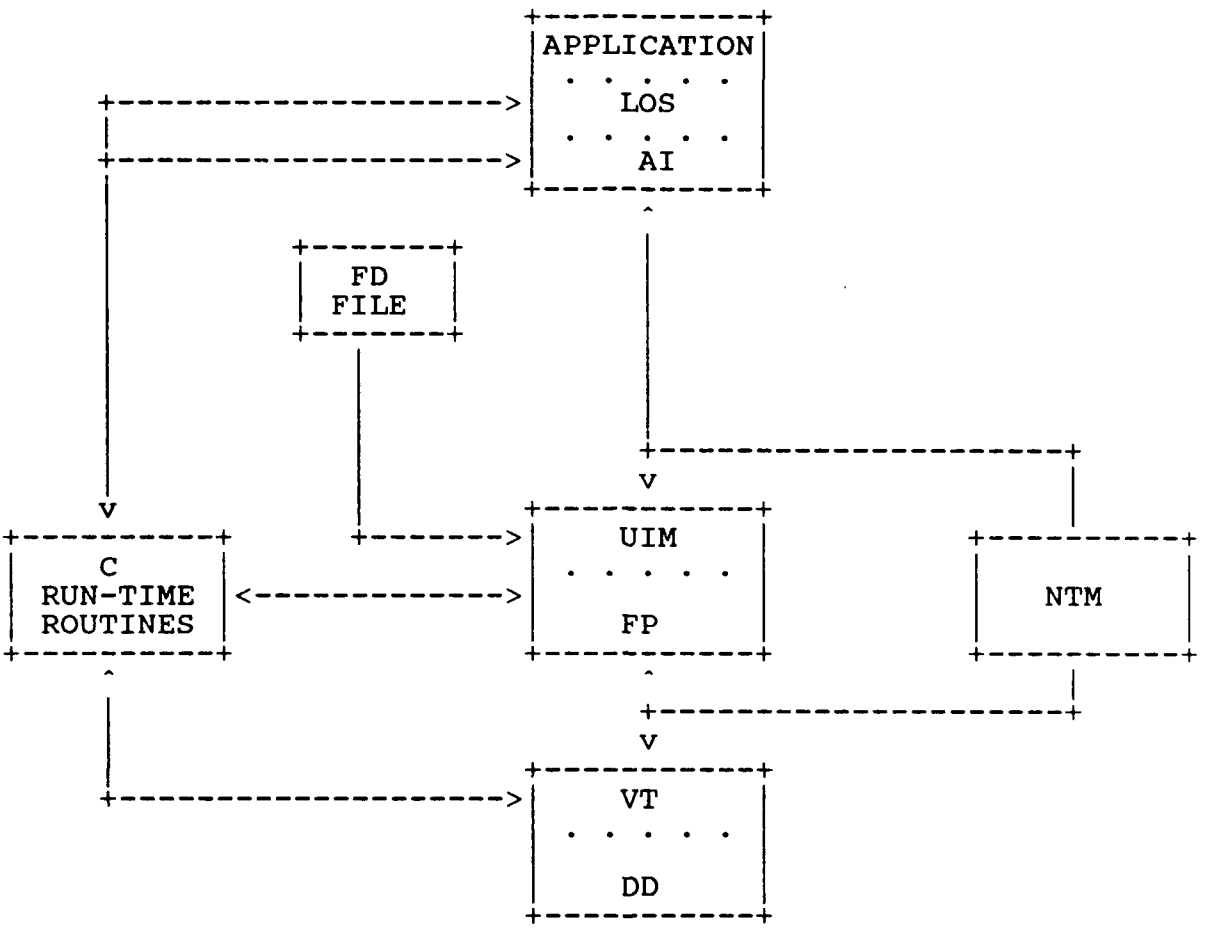


Figure 3-1 Interface Block Diagram

## 3.2 Testing Schedule

The execution of the LOS is dependent upon the NTM subsystem of IISS and testing of the LOS must be done only after the NTM has been successfully tested. Within the UI subsystem, the LOS uses the FP, VT, AI and FLAN and must be tested only after they have been successfully tested.

## 3.3 First Location Testing

These tests of the LOS require the following:

Equipment: VAX, terminal supported by the VT as listed in the the UI Terminal Operator Guide.

Support Software: The Integrated Information Support System and C run-time libraries.

Personnel: One integrator familiar with the IISS.

Training: Form Processor User Manual provided with this release.

Deliverables: The LOS subsystem of the UI.

Test Materials: This test is interactive and can be manually performed as outlined in this test plan. The test program LOSTST and the LOSKB function are used for this test. The file FLTST.CHT must be created in the test directory. This test also uses the files CHART.DAT, RELATN.DAT, OBJECT.DAT, FL6X6T.DAT, FLHTEST.DAT, AND FLKBT.DAT which must be copied from IISS CM to the test directory.

Security considerations: None.

## 3.4 Subsequent Location Testing

The requirements as listed above need to be met; however, in subsequent testing it may be advantageous to create a script file of the outlined tests and run this saving the output of the test for future comparisons.

# SECTION 4

# TEST SPECIFICATIONS AND EVALUATIONS

## 4.1 Test Specification

The following functionality of the LOS is demonstrated by the test outlined in section 5:

List of Functions

1) Chart Knowledge Base Functions
   a) Add chart types to knowledge base
   b) Retrieve all chart types
   c) Update a chart type
   d) Retrieve a single chart type
2) Object Knowledge Base Functions
   a) Add object types to the knowledge base
   b) Retrieve all object types
   c) Update an object type
   d) Retrieve a single object type
3) Relation Knowledge Base Functions
   a) Add relation types to the knowledge base
   b) Retrieve all relation types
   c) Update a relation type
   d) Retrieve a single relation type
4) Initialize LOS data structures
5) Define chart types at run time
6) Define object types for a particular chart type at run time
7) Define relation types for a particular chart type at run time
8) Allow user to retrieve chart definition from data base
9) Allow user determined charts - e.g. hierarchy charts
10) Delete a particular chart type at run time
11) Delete a particular object type from a particular chart type at run time
12) Delete relationship type from a particular chart type at run time
13) Define charts of a particular chart type at run time
14) Define objects of a particular type for a particular chart at run time
15) Define relations of a particular type for a particular chart at run time
16) Delete a particular chart at run time
17) Delete objects from a particular chart at run time
18) Delete relationships from a particular chart at run time
19) Allow user modification of objects through form processor calls
   a) Begcht call
   b) Form processor call
   c) Endcht call
20) Optimize layout reducing line bends and line crossings

21) Paginate - wall style
22) Paginate - binder style
23) Terminate LOS
24) Delete Function of Knowledge Base
    a) Delete chart types from knowledge base
    b) Delete object types from knowledge base
    c) Delete relation types from knowledge base

Table 4-1 shows the direct correspondence between the test (as outlined in Section 5) and the functional requirements as listed above. These functions directly correspond to the detailed functional requirements of the Layout Optimization System Development Specification. The numbers represent the functionality, the characters are used to indicate the figures which correspond to the execution of the test for that function.

| | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | * | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | | * | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | * | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | * | | | | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | * | | | | | | | | | | | | | | | | | | | | | |
| 6 | | | | | | * | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | * | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | * | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | * | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | * | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | * | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | * | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | * | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | * | | | | | | | | | | | | |
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| 22 | | | | | | | | | | | | | | | | | | | | | | * | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | * | | | |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | * | | |

Table 4-1 LOS Function Mapping Matrix

Key for Table 1:

A = Figures 5-4 through 5-20
B = Figures 5-21 through 5-40
C = Figures 5-40 through 5-70
D = Figures 5-79, 5-80
E = Figures 5-80, 5-81, 5-115, 5-116, 5-121, 5-122
F = Figures 5-82, 5-83, 5-117, 5-118, 5-123, 5-124
G = Figures 5-84, 5-85, 5-119, 5-120, 5-125, 5-126
H = Figures 5-129, 5-137
I = Figures 5-122 through 5-124, 5-130 through 5-136
J = Figures 5-97 through 5-99, 5-113, 5-114
K = Figures 5-109, 5-110
L = Figures 5-111, 5-112
M = Figures 5-86, 5-87, 5-128, 5-130
N = Figures 5-88, 5-89, 5-93, 5-94, 5-128, 5-130
O = Figures 5-90 through 5-92, 5-95, 5-96, 5-128
P = Figures 5-107, 5-108
Q = Figures 5-100 through 5-102, 5-105, 5-106
R = Figures 5-103, 5-104
S = Figures 5-162 through 5-169
T = Figures 5-138 through 5-147, 5-169, 5-170
U = Figures 5-148 through 5-160, 5-171, 5-172
V = Not Implemented
W = Figures 5-173, 5-174
X = Figures 5-71 through 77

# SECTION 5

# TEST PROCEDURES

## 5.1 Test Description

The test begins by logging onto the IISS environment and invoking the LOSKB function, which is the function which supports the knowledge base portion of the LOS. The test proceeds to execute the add, update, retrieval and delete functions for each of the three types of elements: charts, objects and relations. After quitting out of the LOSKB application but not out of the IISS environment, a second function is invoked from the IISS Function Screen. This function, LOSTST, is an interactive application designed specifically to test the application interface utilities of the LOS. This test exercises each of the calls in the normal sequence that they would be utilized within an application. Following this test two batch files are also run to draw several specific types of charts that exercise different aspects of the functionality provided in this system.

## 5.2 Test Control

As outlined, this unit test is a manual test which may be done by anyone. The required input data for each function being tested, the resulting successful output and the order of the testing are completely specified below. The test control information is described in Section 4.4. Accurate observation of the resulting successful output must be made to ensure the unit test was done properly. As noted in Section 4.4 scripting may be used instead of the manual test described below.

## 5.3 Test Procedures

To run the unit test plan in the VAX/VMS environment as outlined below, one must be logged on to an IISS account. The NTM must be up and running and the UI symbolic names IISSFLIB, IISSULIB, IISSSLIB and IISSMLIB must be set properly at the group level. IISSFLIB points to the directory containing system form definitions (FD files). IISSULIB points to the directory containing the user's form definitions (FD files). IISSSLIB points to the directory containing the user's form definition source files (FDL files). IISSMLIB points to the directory containing error and help messages (MSG files). To perform this test IISSULIB and IISSSLIB must be pointing to the default directory. The empty file FLTST.CHT must be created in the test directory and the .DAT files listed in the test materials must be copied to the test directory.

The test of the LOS application consists of individually testing each function provided by the LOS. The following keys are generally used to move within forms (using the VT100 terminal as an example): the <ENTER> key is used to activate all commands; the <QUIT> key is used to go back to previous activity without taking current action; the <TAB> key is used to move from field to field within the form; and the arrow keys are used to move within fields. In addition, ESC TAB is a reverse TAB. See Figure 5-1 for VT100 keypad layout.

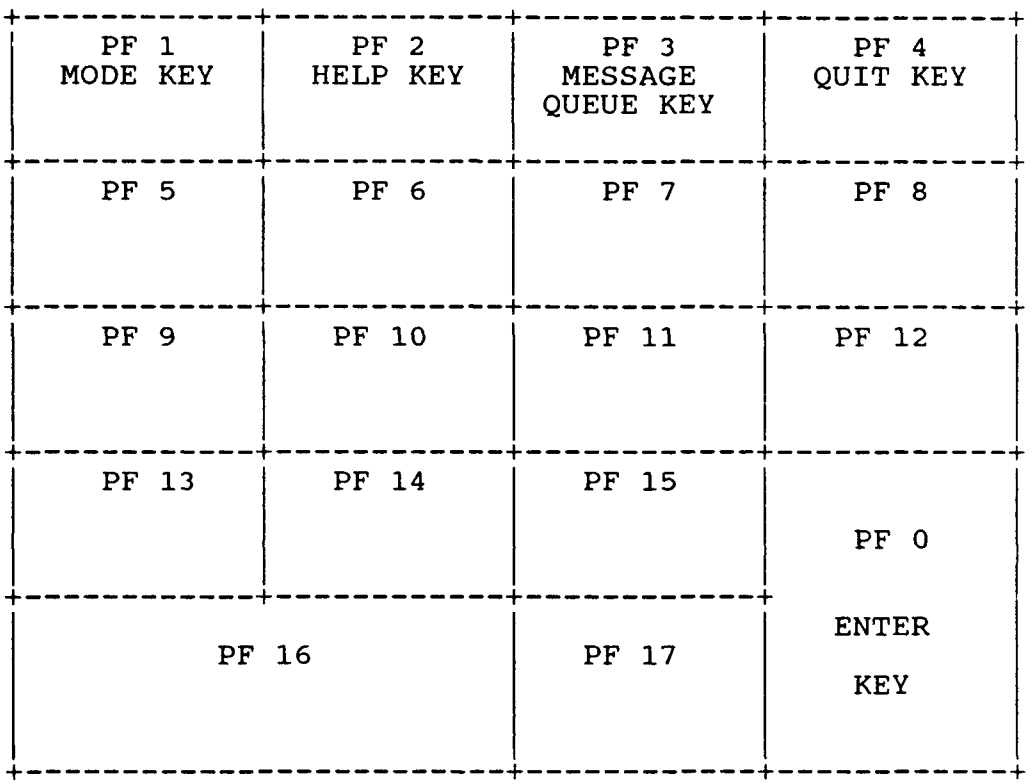


Figure 5-1 Keypad for VT100

Assuming the NTM is up and running, an IISS user may start the test using scripting as follows:

```
$ SET DEF <to directory containing NTM environment>
$ VT100 -RLOSUTP.SCP -SLOSTST.SAV
```

These commands start up the VT100 device driver with a source script as input and specify a save file for the results. If the User Interface system has been installed at your site with a different device driver, then this step should be amended as appropriate. The test begins executing on the terminal. The results of this test are saved in the current directory in the file LOSTST.SAV. To execute this test manually enter only "VT100" at the second '$'. The inputs and outputs for each test are illustrated by examining the following forms.

### 5.3.1 Access to LOS

Following entry of the system command "VT100" which activates the User Interface the following form appears:

```
+-------------------------------------------------------------+
|                                                             |
|                                                             |
|                                                             |
|                    USER ID: _____________                   |
|                                                             |
|                    PASSWORD: _____________                  |
|                                                             |
|                    ROLE: _____________                      |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
| Msg: 0                                          applcation  |
+-------------------------------------------------------------+
```

Figure 5-2 IISS Logon Screen

(1) USER ID is the identification name of the user, and is 1 to 10 alpha-numeric characters. USER ID is input as "MORENC".

(2) PASSWORD must be the password associated with the USER ID, and is 1 to 10 alpha-numeric characters. PASSWORD was input as "STANLEY".

(3) ROLE is any of the identifiers which are associated with the USER ID, and is 1 to 10 alpha-numeric characters. It will be checked against functions and applications which are selected by the user. ROLE is input as "MANAGER".

When this form is correctly completed and the <ENTER> key is pressed, the IISS Function Screen is displayed.

### 5.3.2 Choosing the LOS Functions

The LOSKB application and the LOSTST test program are accessed as functions through the following form:

```
+-------------------------------------------------------------+
|          I I S S   T E S T   B E D   V E R S I O N  2.3     |
|                                                             |
+-------------------------------------------------------------+
| DATE:__/__/__   TIME__:__:__   USER ID:______   ROLE:___ ____ |
|                                                             |
| FUNCTION:_________ DEVICE TYPE:_________ DEVICE NAME:______ |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
|                                                             |
| Msg: 0                                          applcation  |
+-------------------------------------------------------------+
```

Figure 5-3 IISS Function Screen

When the form appears, the cursor is located in the input field labeled FUNCTION. The items in the form are summarized below:

(1) DATE contains the current date. This may not be changed by the user.

(2) TIME contains the current time. This may not be changed by the user.

(3) USER ID is the user's identification that was entered in the previous form. This may not be changed by the user.

(4) ROLE is the currently active role and was entered in the previous form. This may be changed at any time.

(5) FUNCTION is the function the user desires to activate. To begin this test, enter "LOSKB" in this field.

### 5.3.3 Testing the LOS

This section contains the screens with input for the testing of a particular functionality, followed by the resulting screens. When the LOSKB application begins, the following form is displayed:

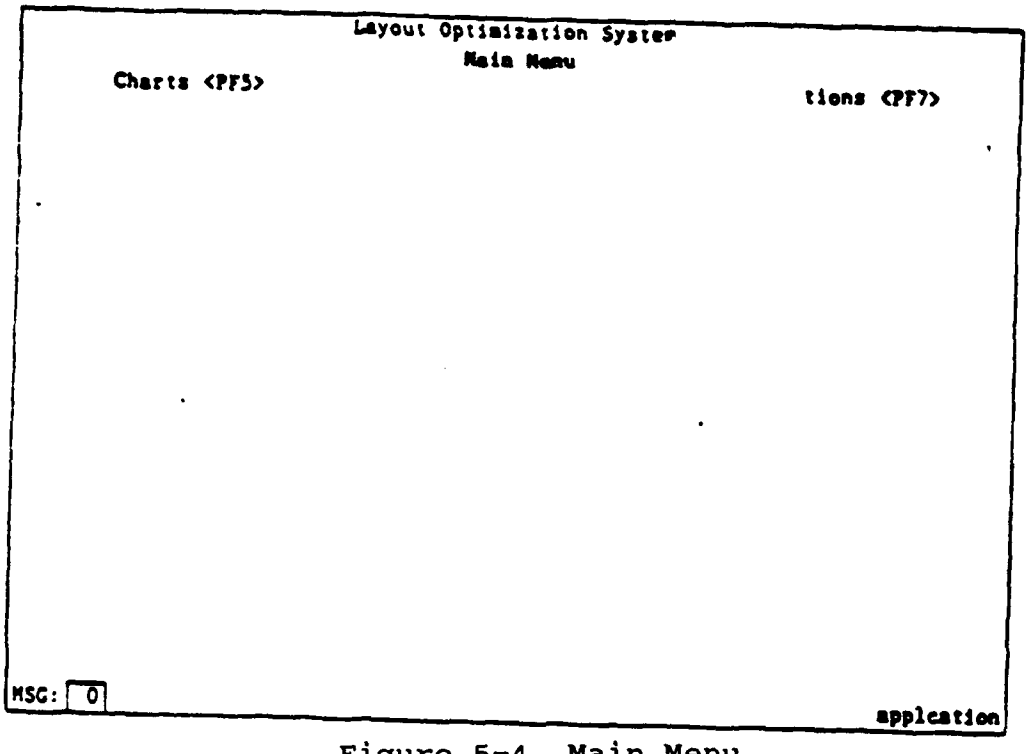


Figure 5-4 Main Menu

If the <PF5> key is pressed, the following screen should be displayed:

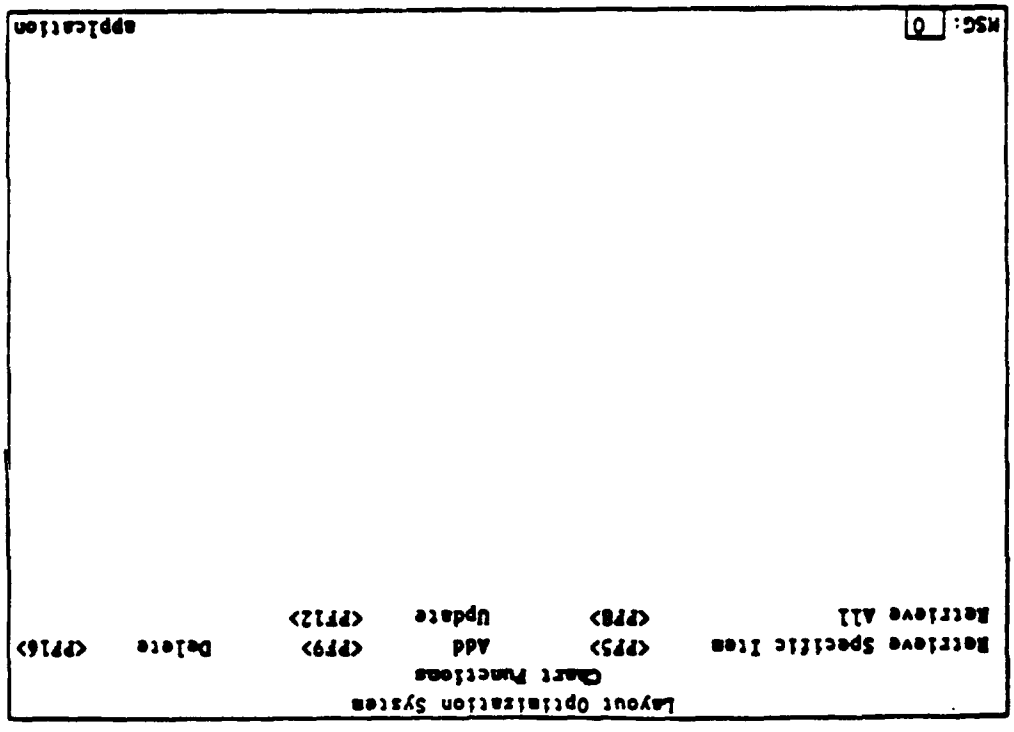


Figure 5-5 Test Screen 1

If the <PF9> key is pressed, the following screen should be displayed:

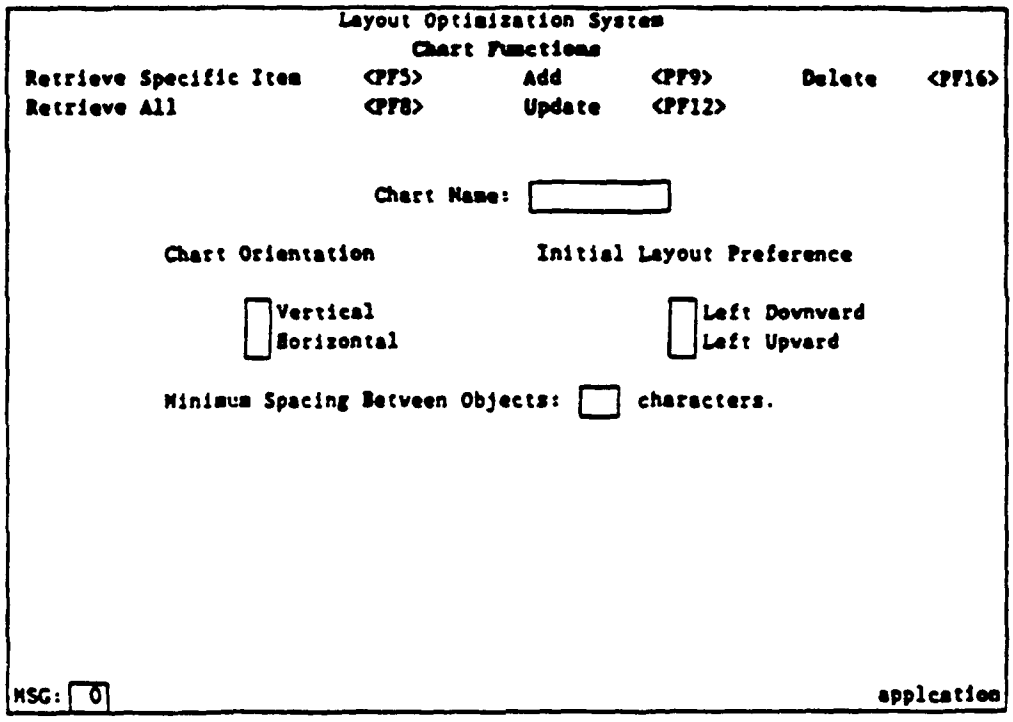


Figure 5-6 Test Screen 2

If the following data is entered:

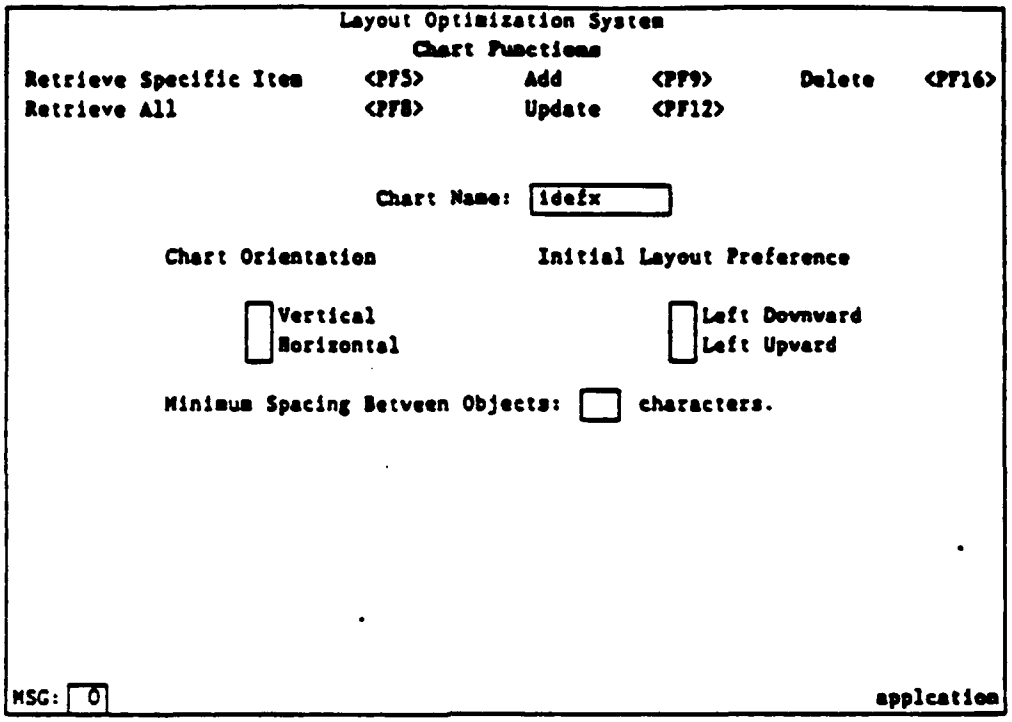


Figure 5-7 Test Screen 3

The following screen should be displayed:

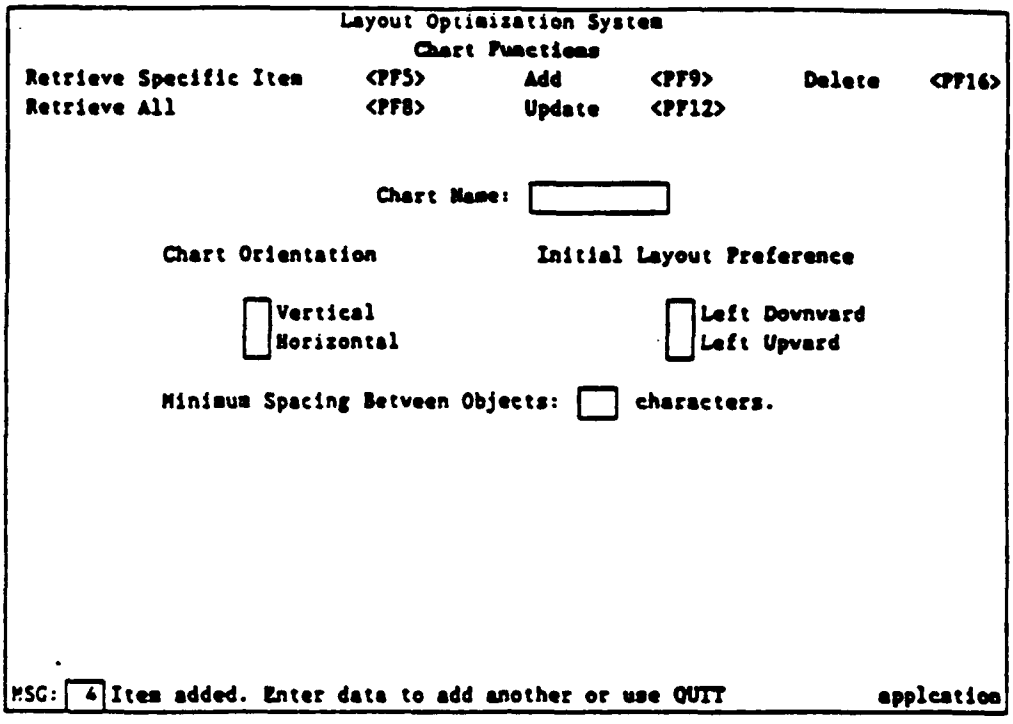


Figure 5-8 Test Screen 4

If the <PF3> is pressed, the following screen should be displayed:

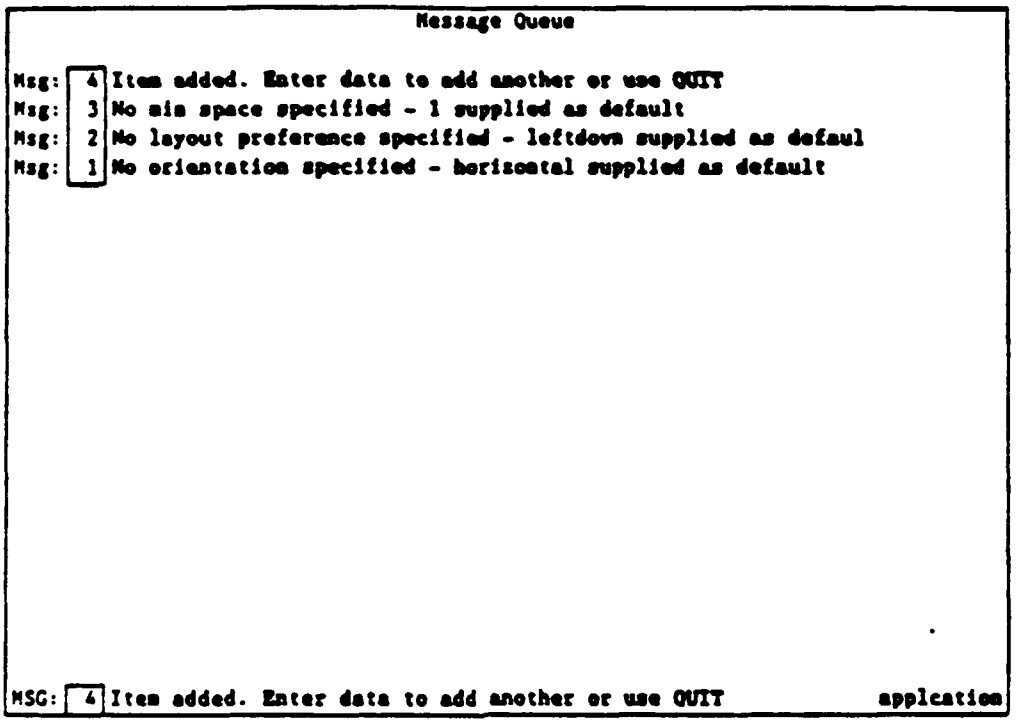


Figure 5-9 Test Screen 5

If <QUIT> is pressed, the following screen should be displayed:

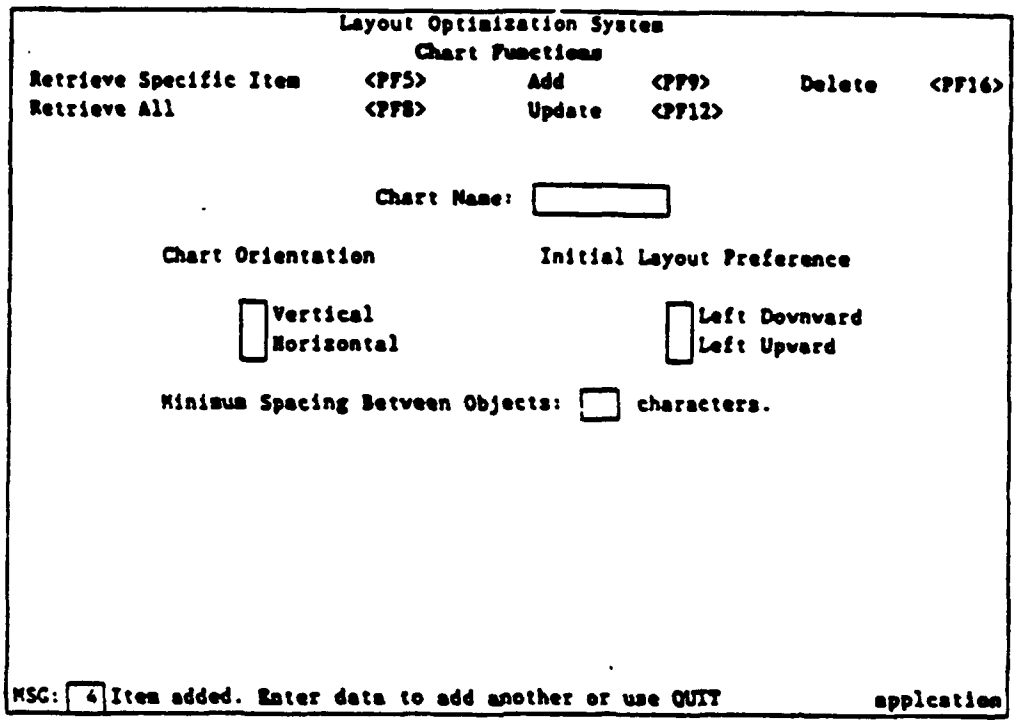


Figure 5-10 Test Screen 6

If <QUIT> is pressed again, the chart menu screen will be redisplayed:

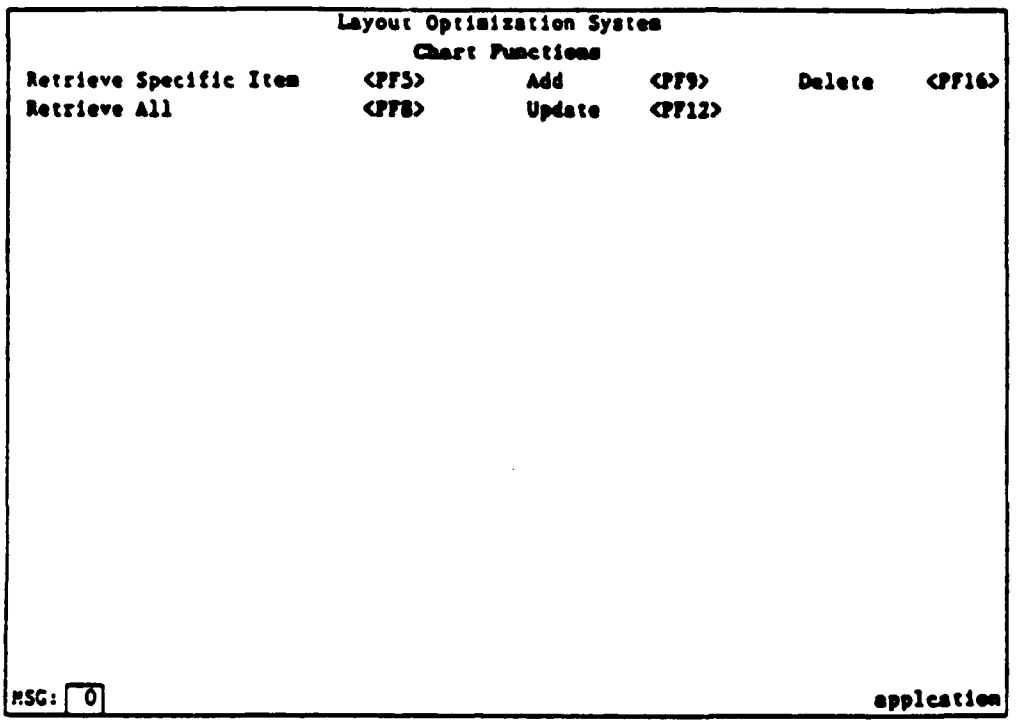


Figure 5-11 Test Screen 7

If <PF8> is pressed, the following screen should be displayed:

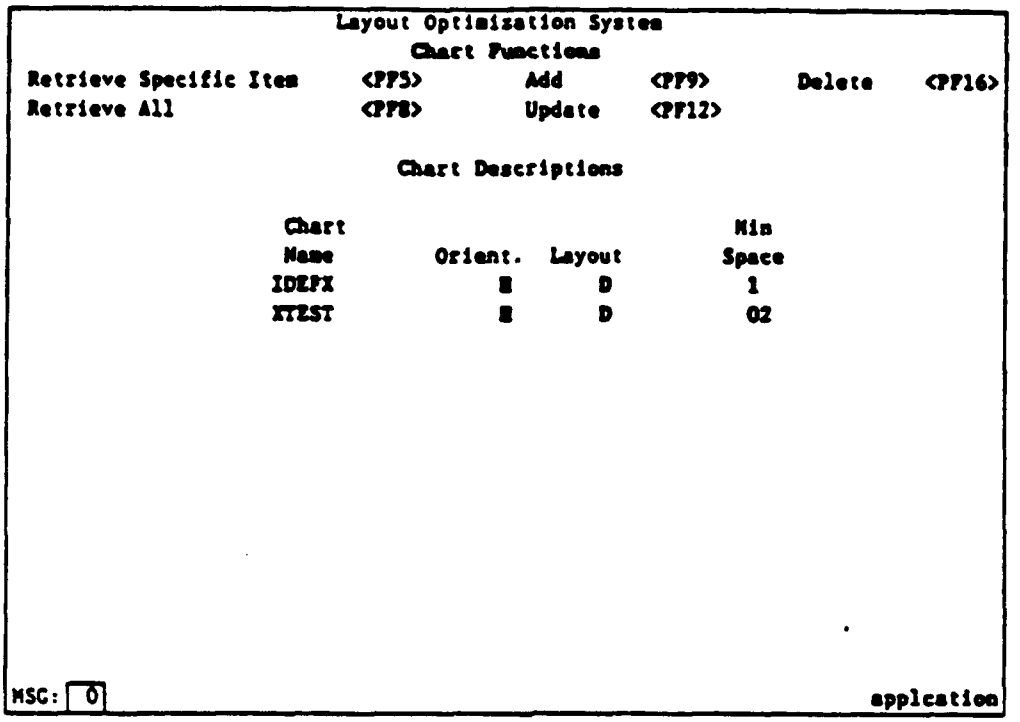


Figure 5-12 Test Screen 8

If <ENTER> is pressed while on this screen, and the cursor is on chart name IDEFX, this information will become the default. The screen does not change after the <ENTER> key is pressed. If <QUIT> is pressed the chart menu is redisplayed:

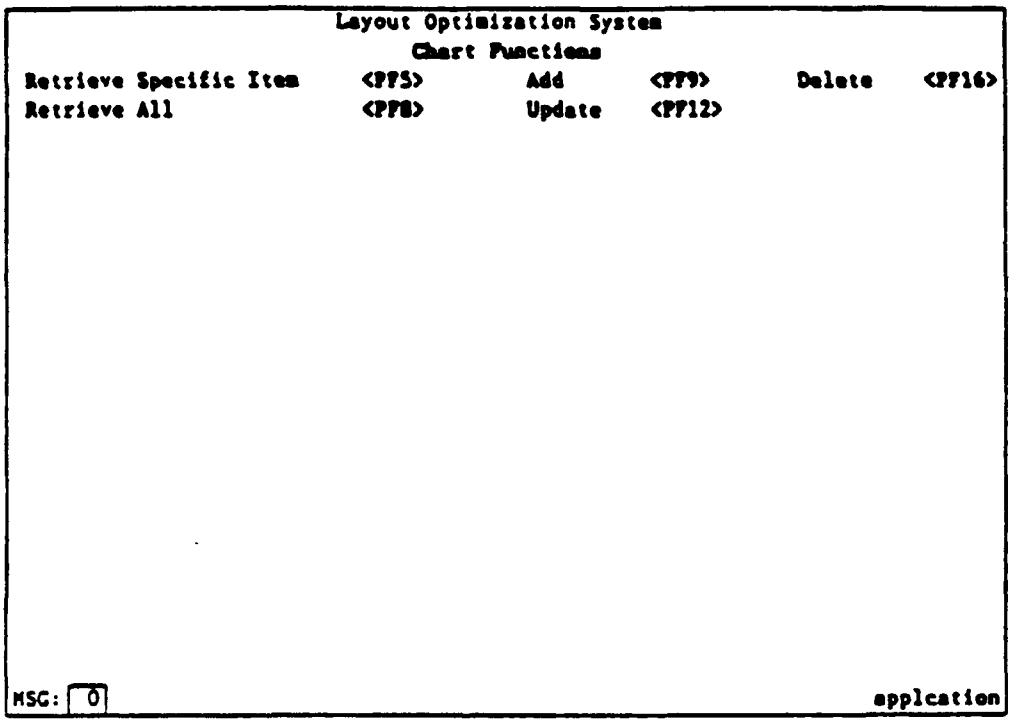


Figure 5-13 Test Screen 9

If <PF12> is pressed, the following form is displayed:

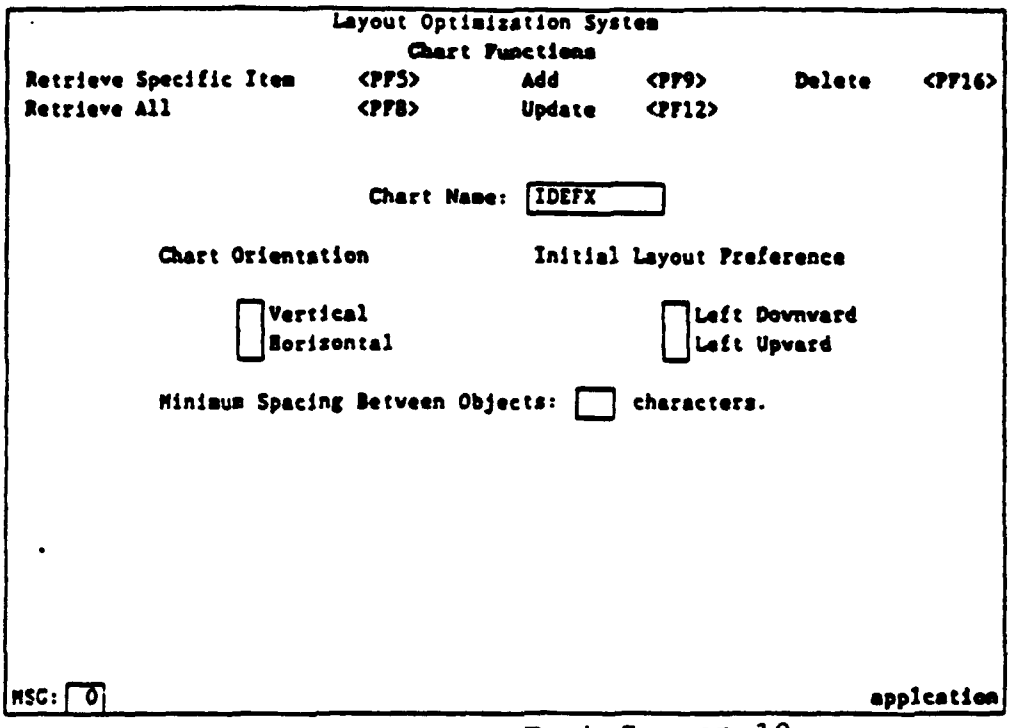


Figure 5-14 Test Screen 10

If the following information is entered:

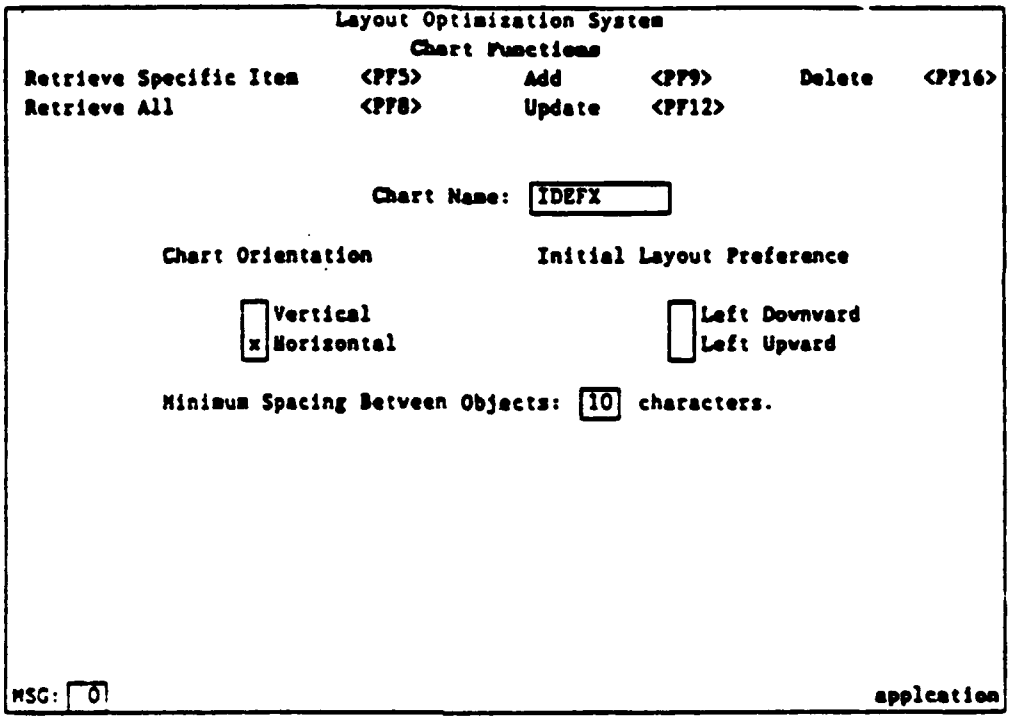


Figure 5-15 Test Screen 11

The following screen is displayed:

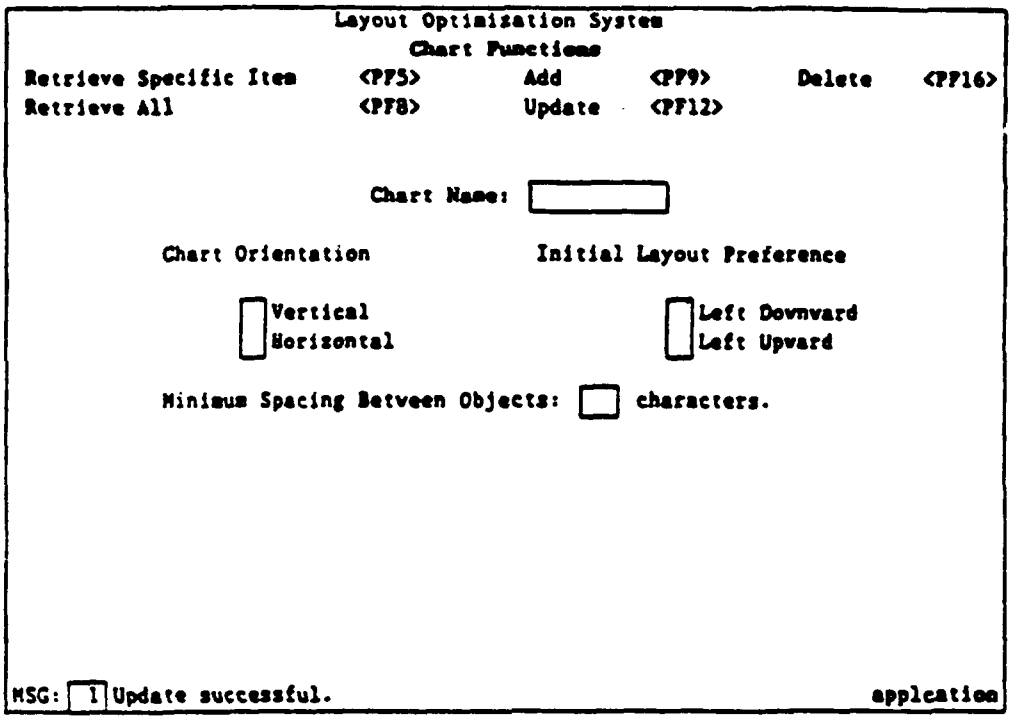


Figure 5-16 Test Screen 12

If <QUIT> is pressed, the chart menu is redisplayed:

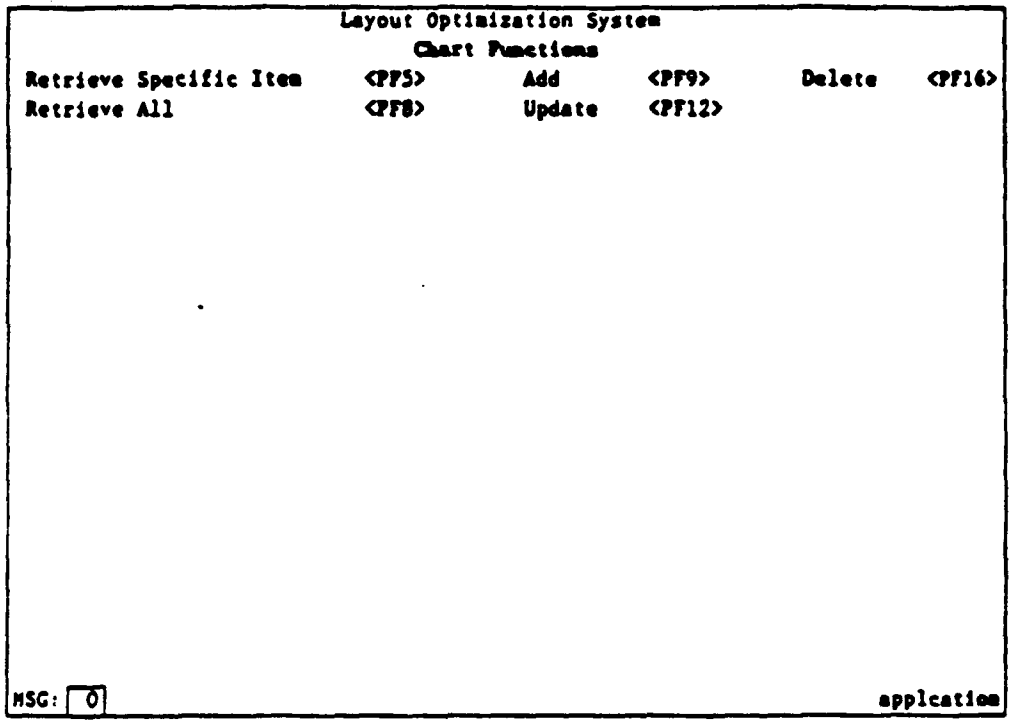


Figure 5-17 Test Screen 13

If <PF5> is pressed, the following screen is displayed:

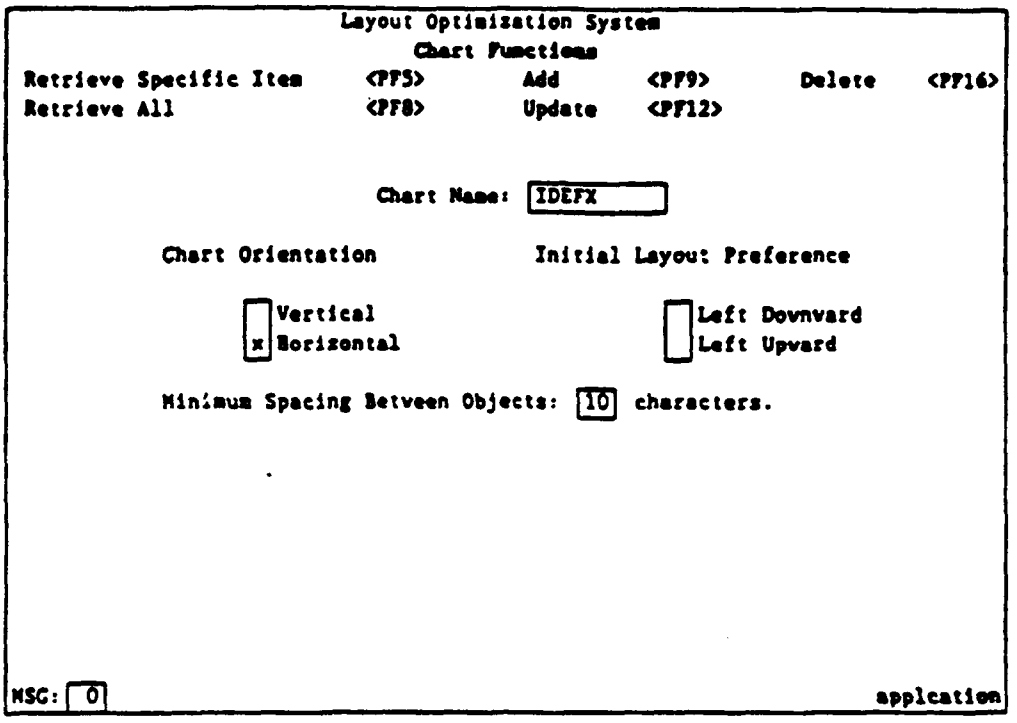


Figure 5-18 Test Screen 14

If <ENTER> is pressed, the following screen is displayed:

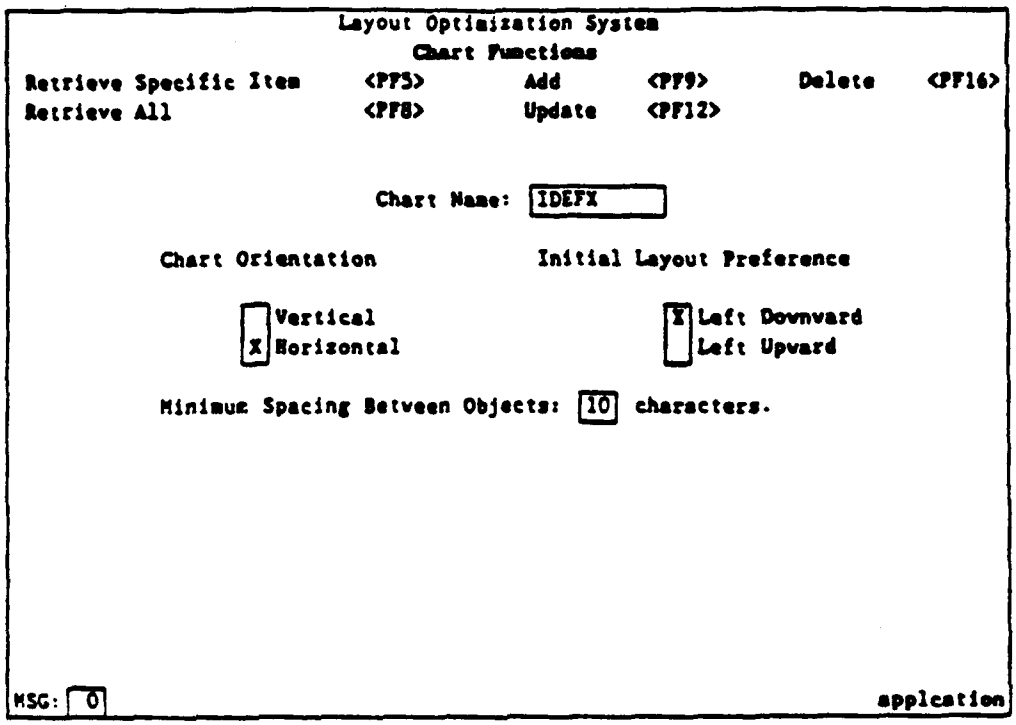


Figure 5-19 Test Screen 15

If <QUIT> is pressed, the chart menu is redisplayed:

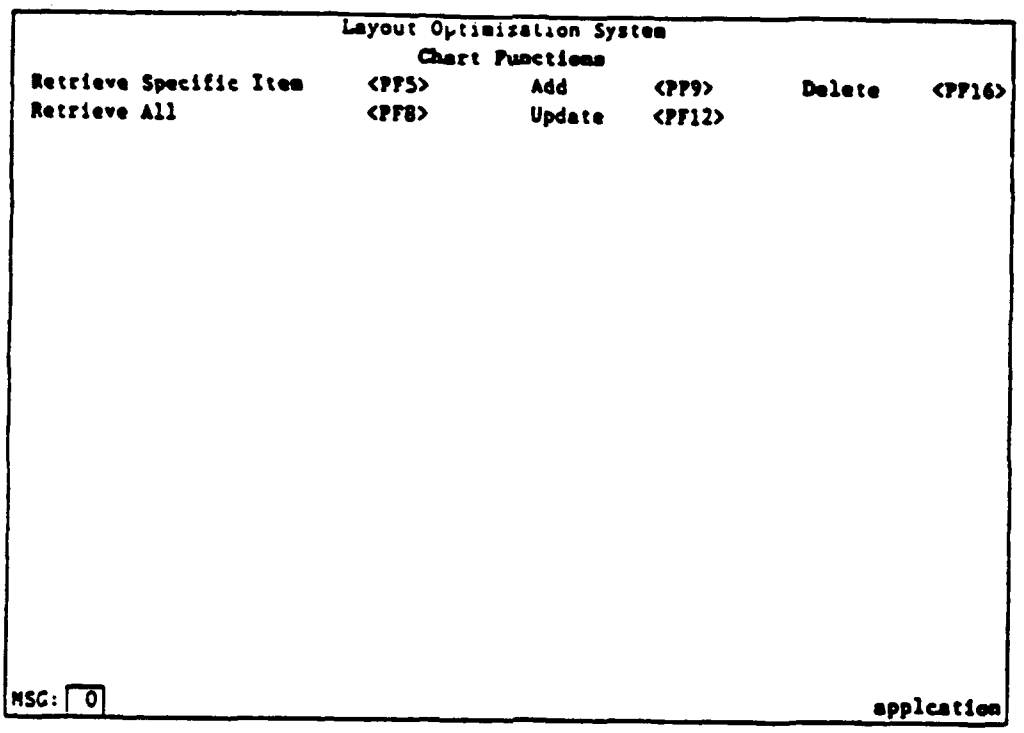


Figure 5-20 Test Screen 16

If <QUIT> is pressed again, the main menu is redisplayed:

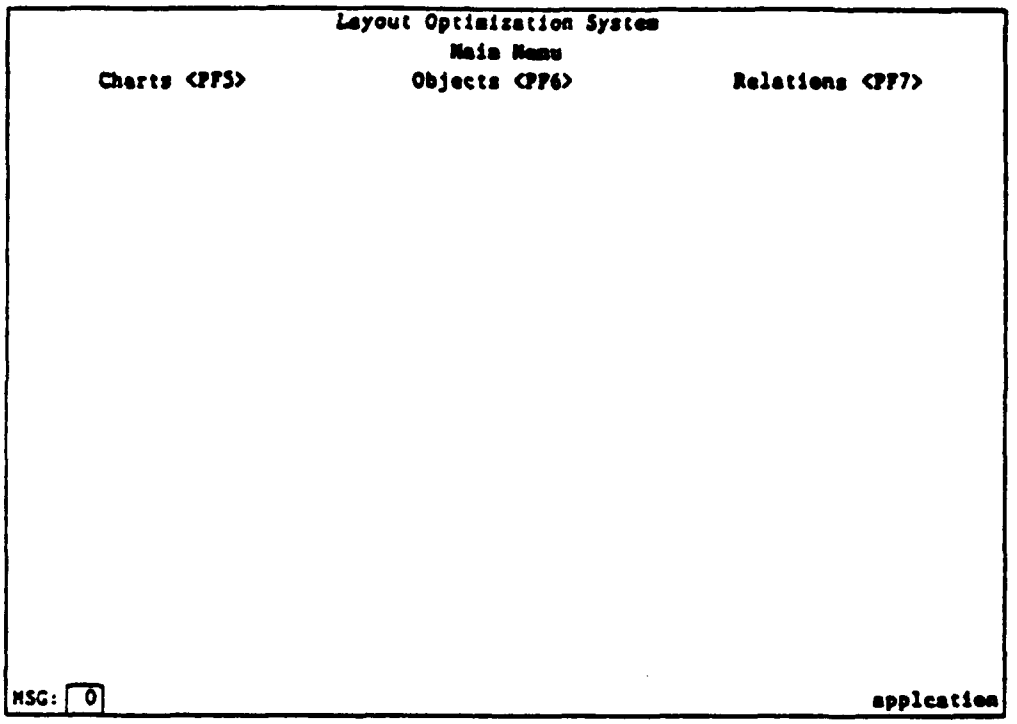


Figure 5-21 Test Screen 17

If <PF6> is pressed, the object menu is displayed:

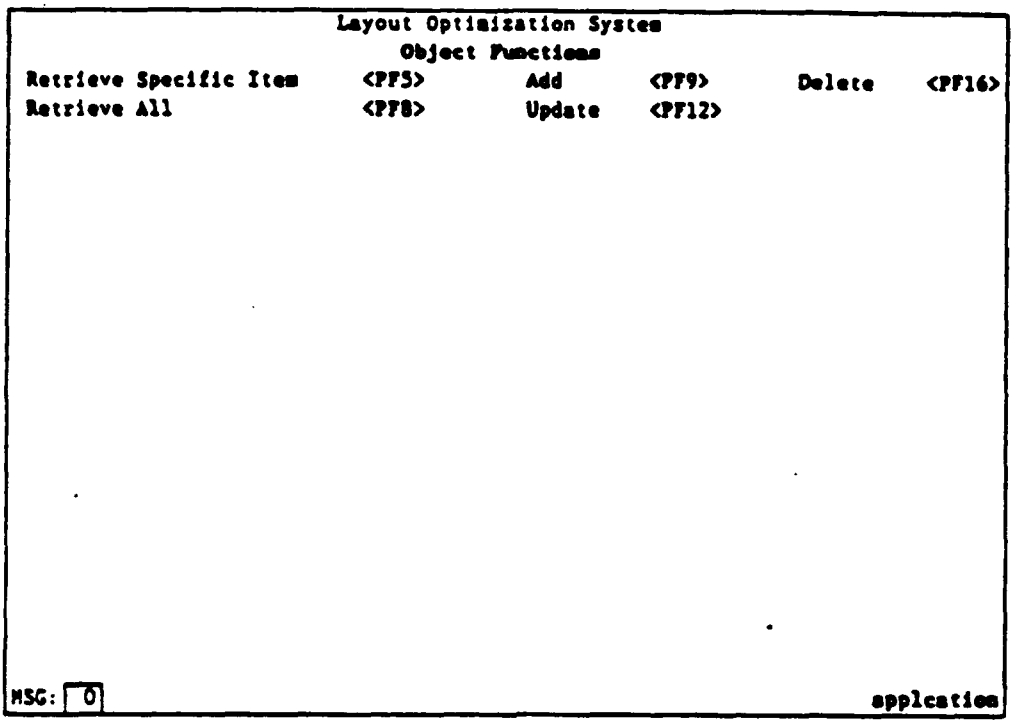


Figure 5-22 Test Screen 18

If <PF9> is pressed, the following is displayed:

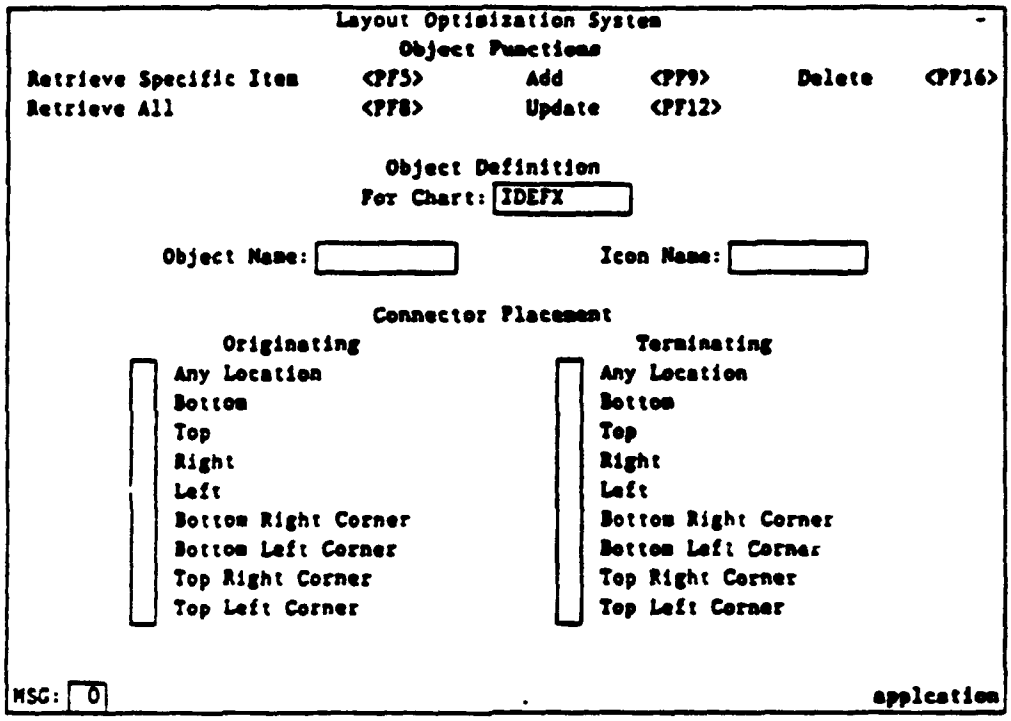


Figure 5-23 Test Screen 19

If the following data is entered:

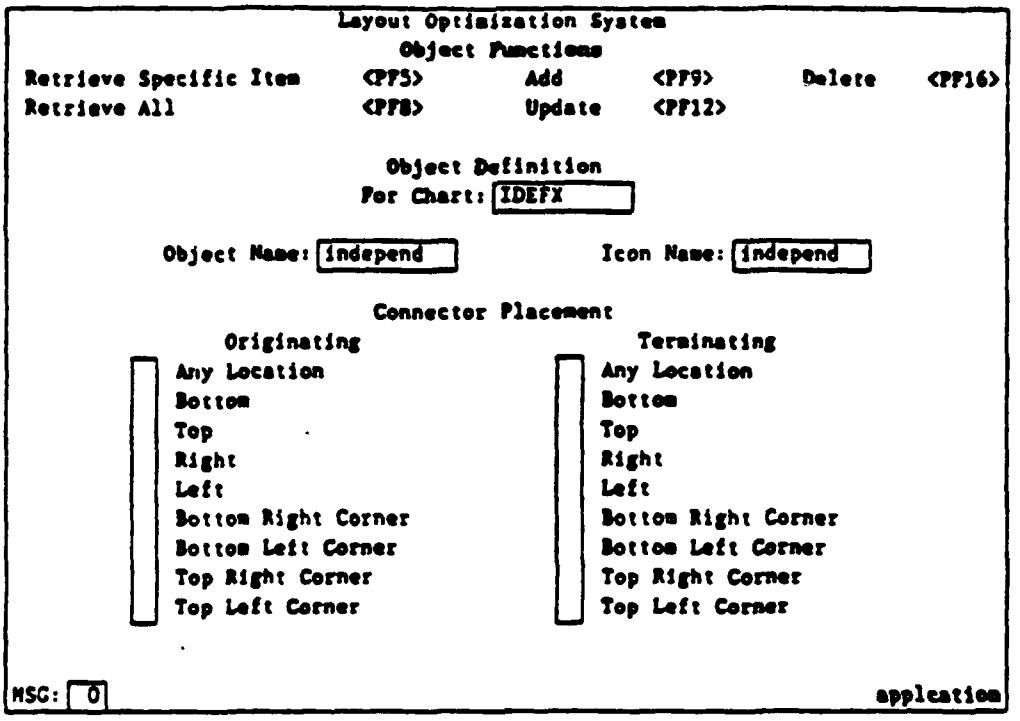


Figure 5-24 Test Screen 20

The following screen is displayed:

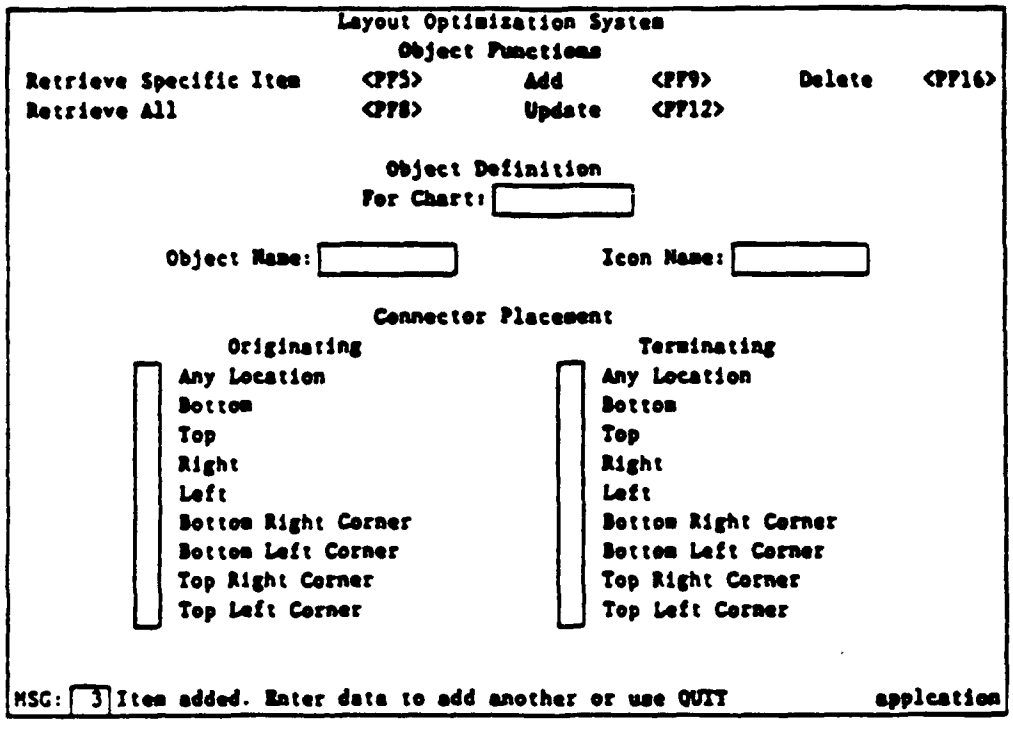


Figure 5-25 Test Screen 21

If the following data is entered:

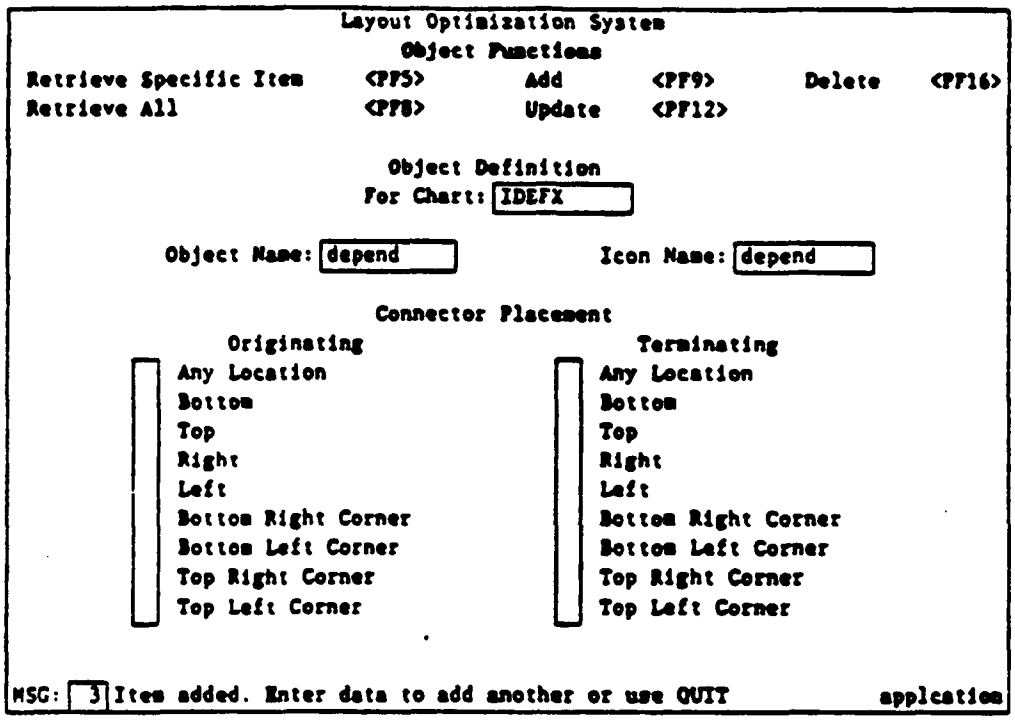


Figure 5-26 Test Screen 22

The following screen is displayed:

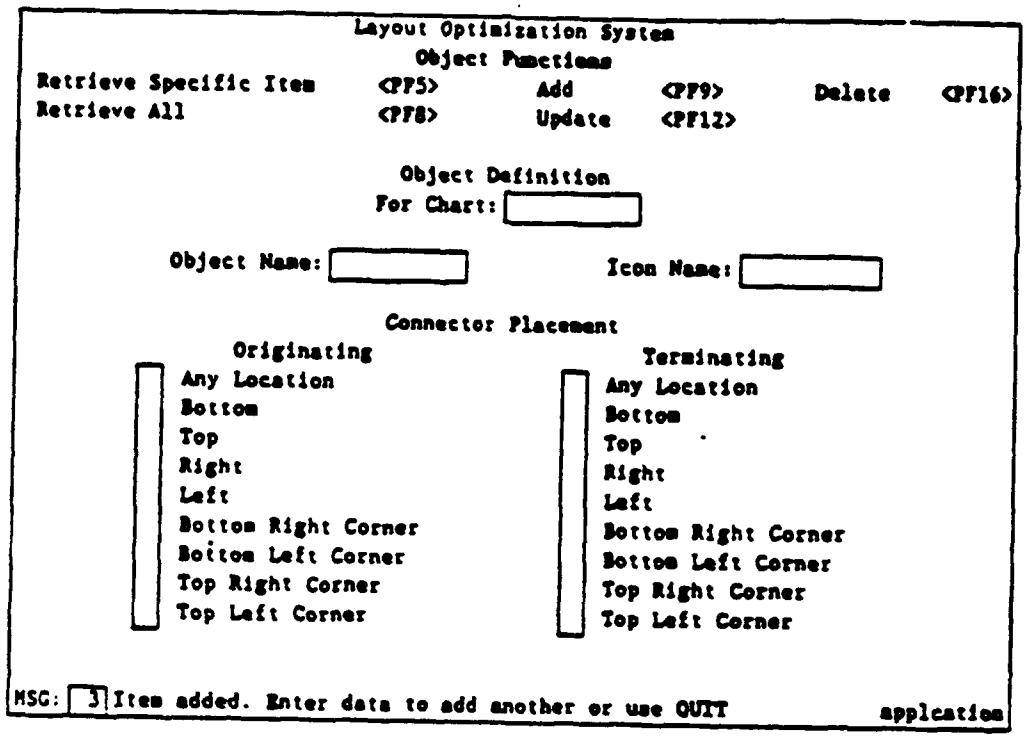


Figure 5-27 Test Screen 23

If <QUIT> is pressed, the object menu is displayed:

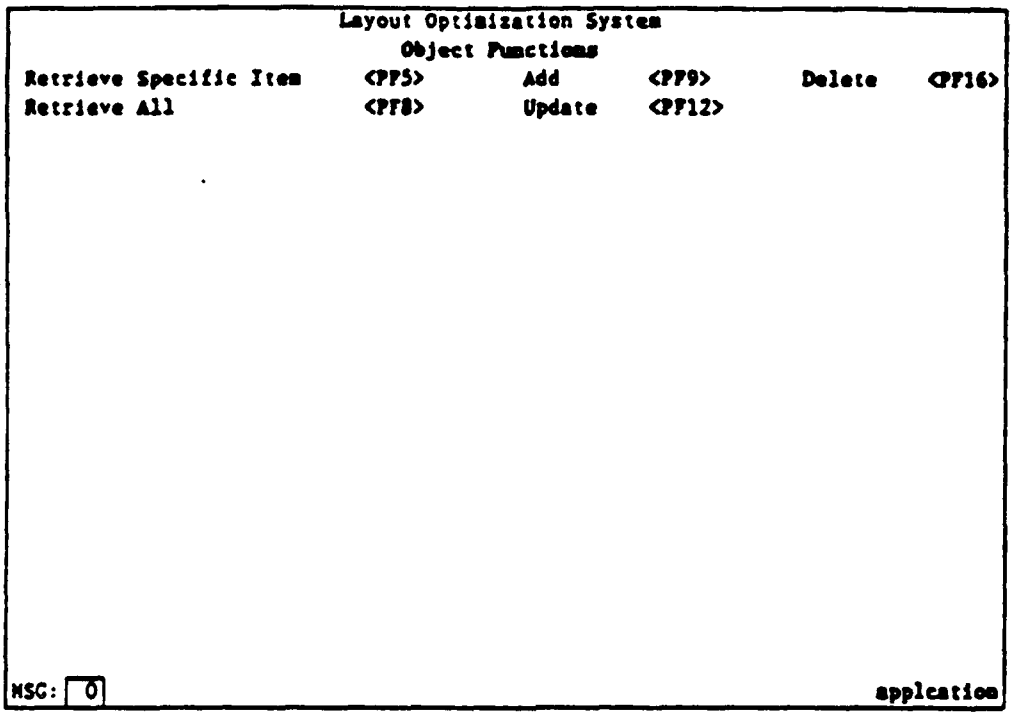


Figure 5-28 Test Screen 24

If <PF8> is pressed, the following is displayed:

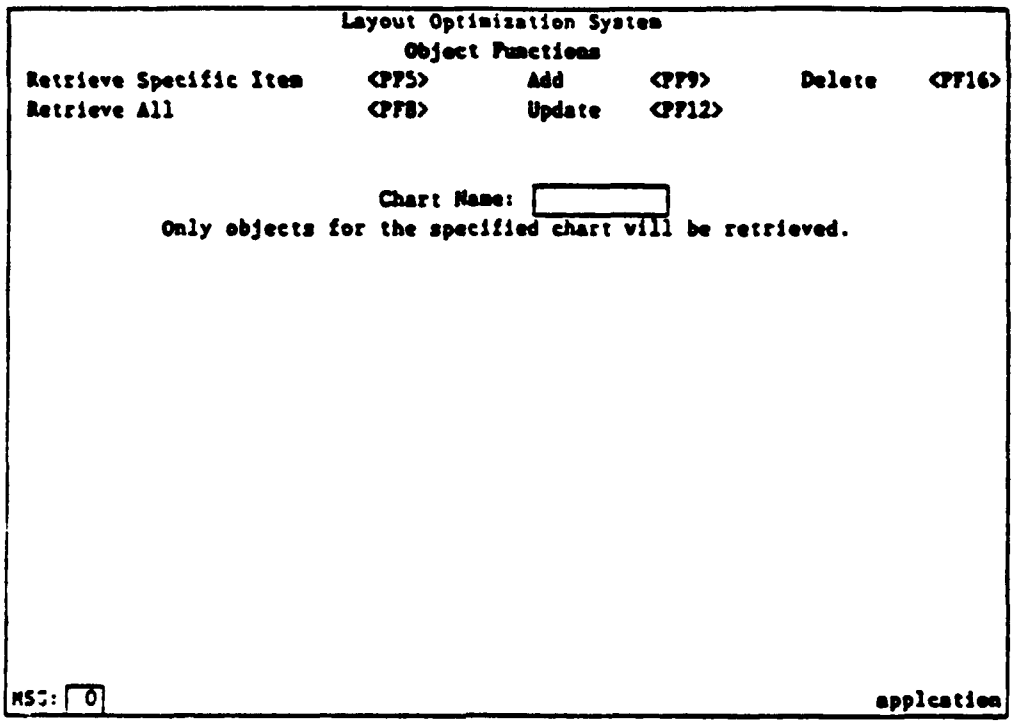


Figure 5-29 Test Screen 25

If the following is entered:

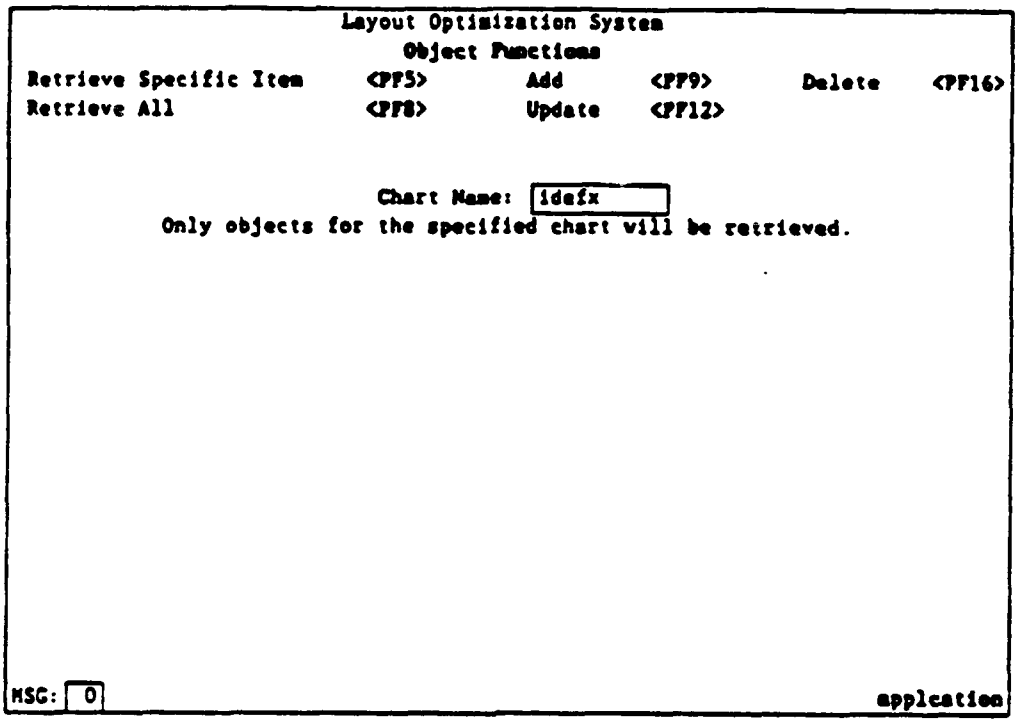


Figure 5-30 Test Screen 26

The following screen is displayed:

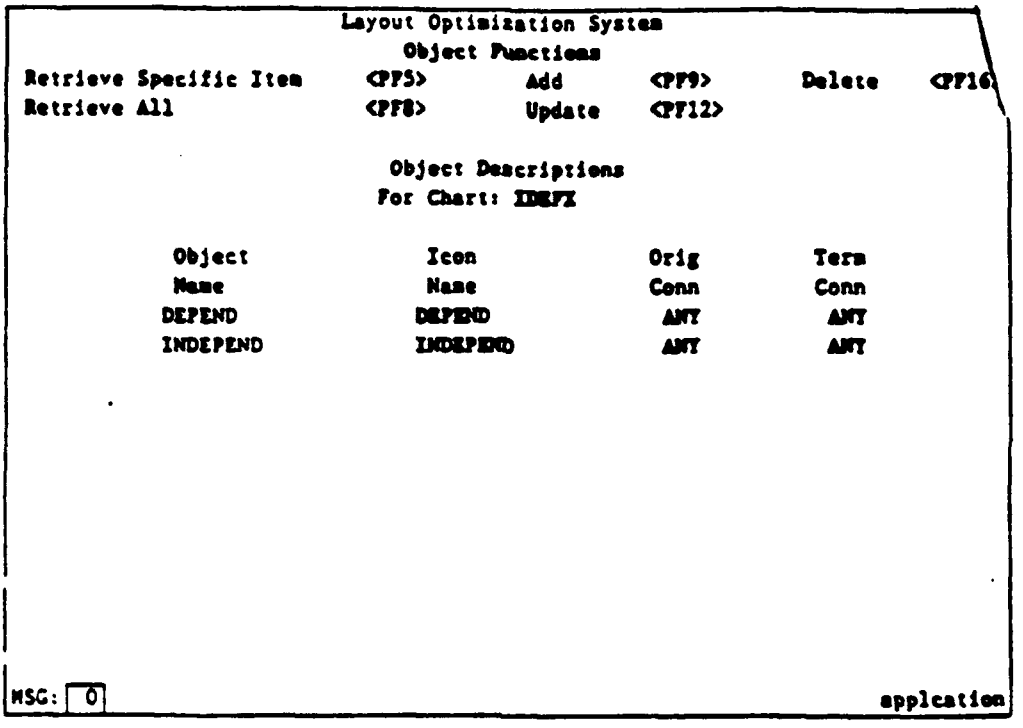


Figure 5-31 Test Screen 27

If <ENTER> is pressed while the cursor is on DEPEND in the object name field, that object information becomes the default and the following screen is displayed:

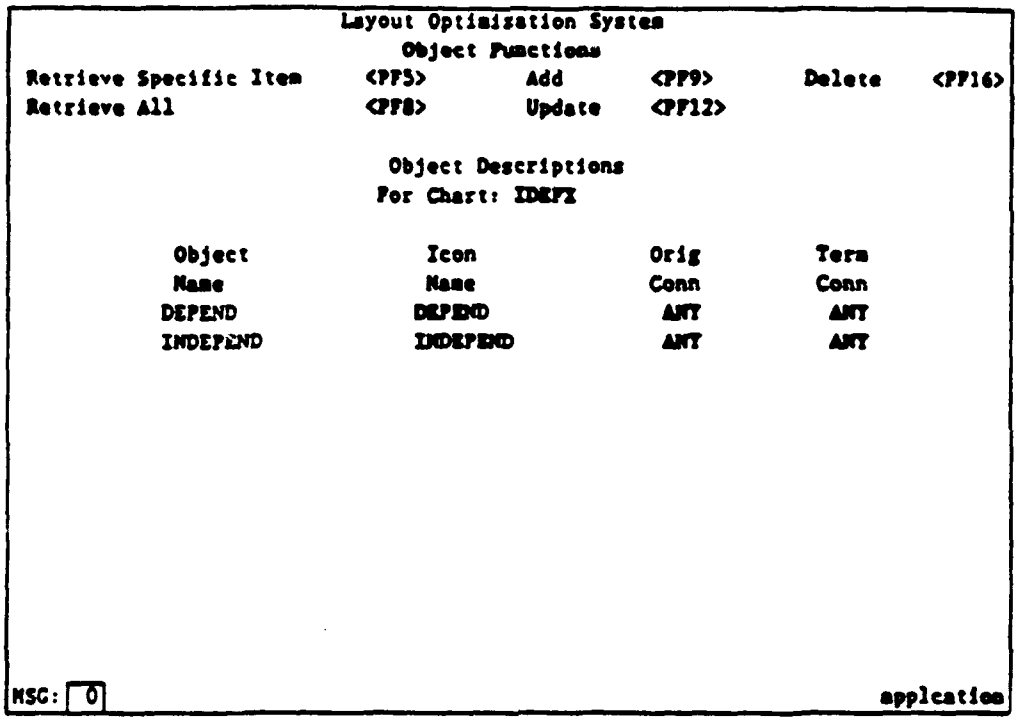


Figure 5-32 Test Screen 28

If <QUIT> is pressed, the object menu is redisplayed:

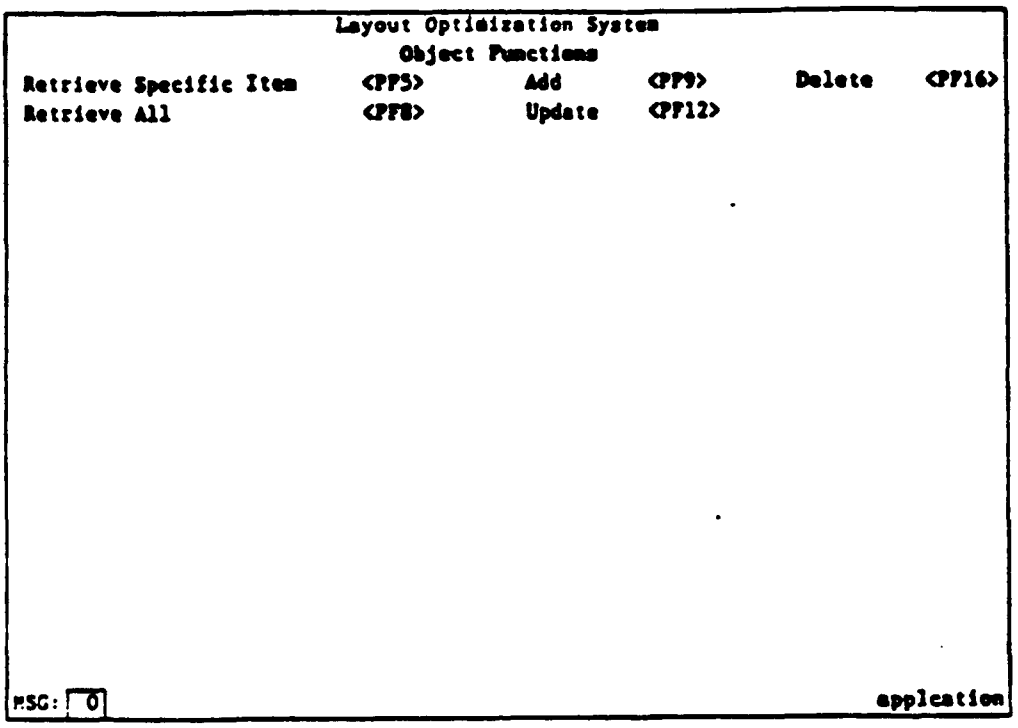


Figure 5-33 Test Screen 29

If <PF12> is pressed, the following is displayed:

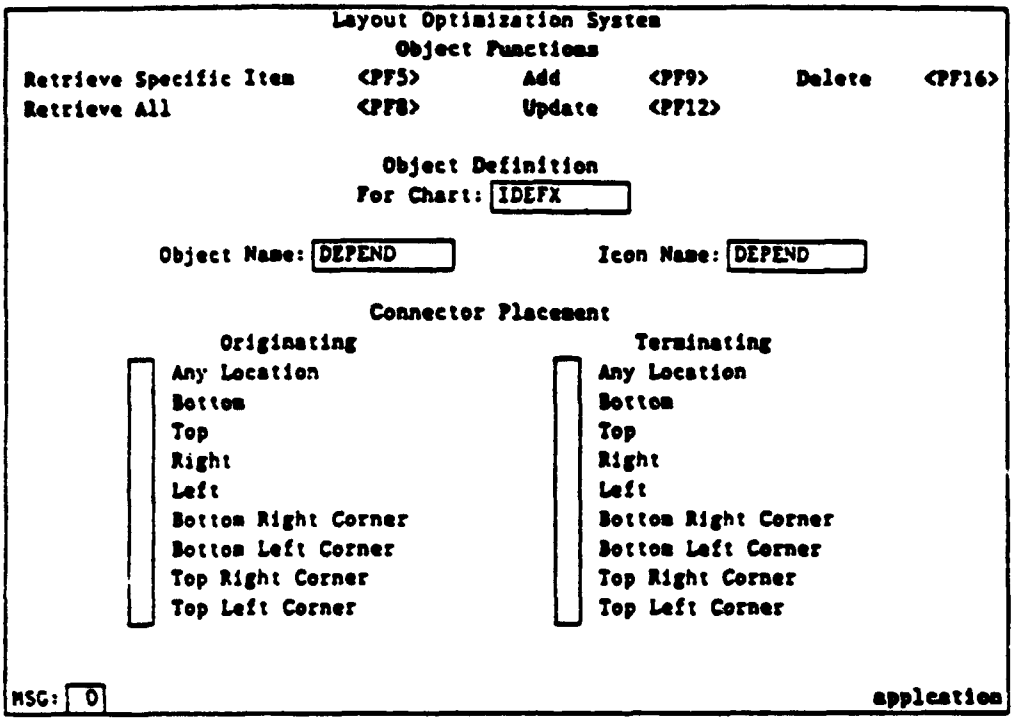


Figure 5-34 Test Screen 30

If the following data is entered:

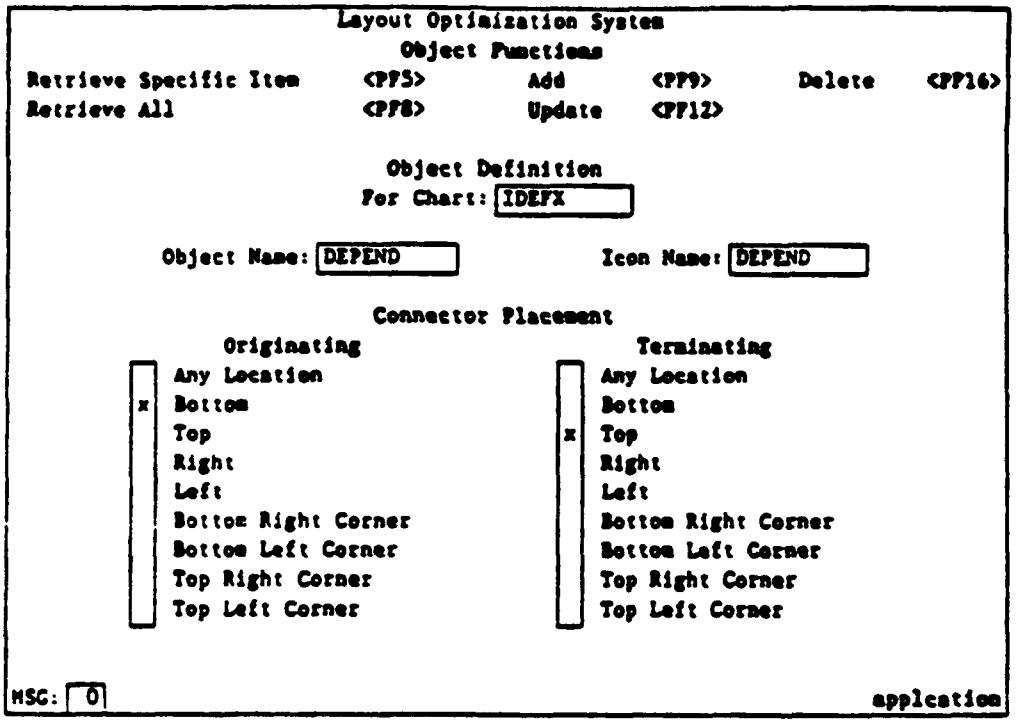


Figure 5-35 Test Screen 31

The following screen is displayed:

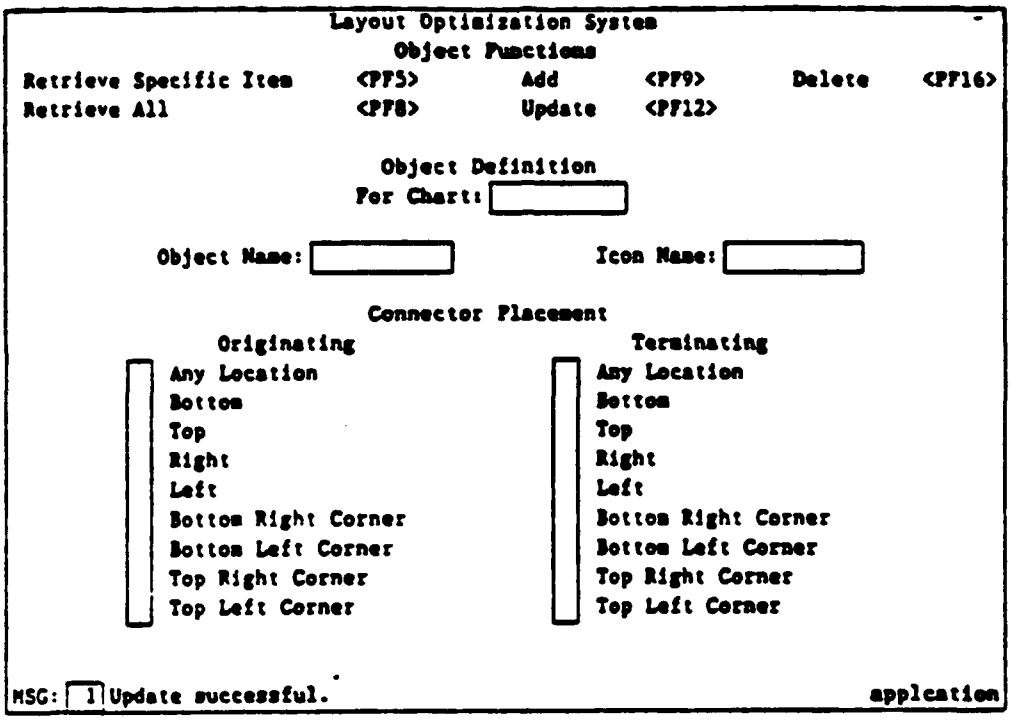


Figure 5-36 Test Screen 32

If <QUIT> is entered. The object menu is redisplayed:

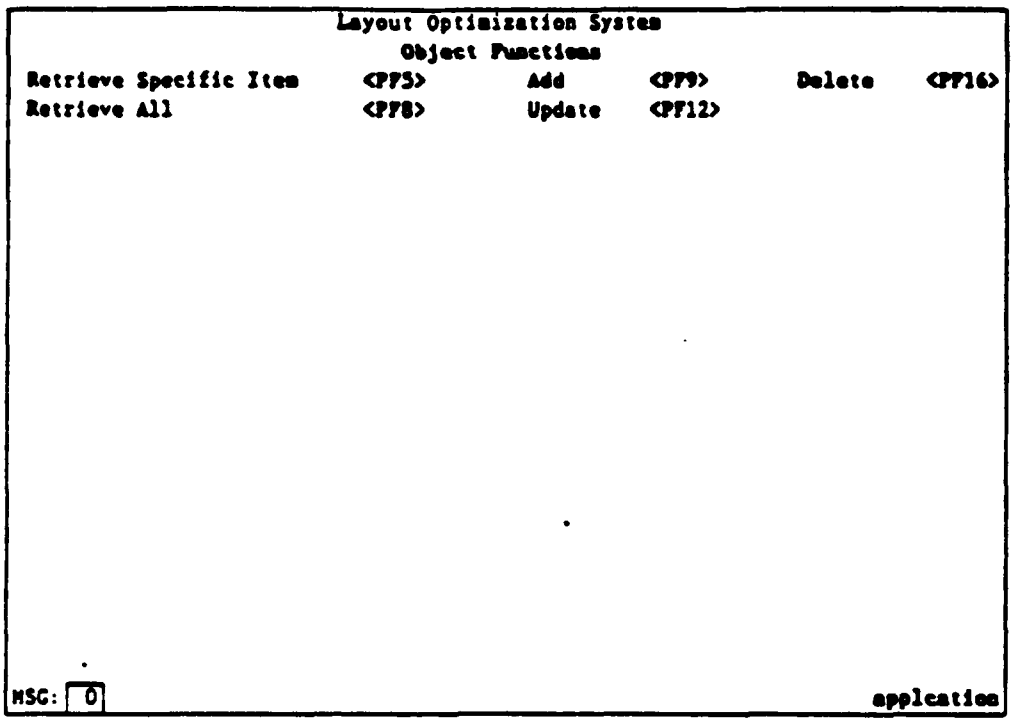


Figure 5-37 Test Screen 33

If <PF5> is pressed, the following is displayed:

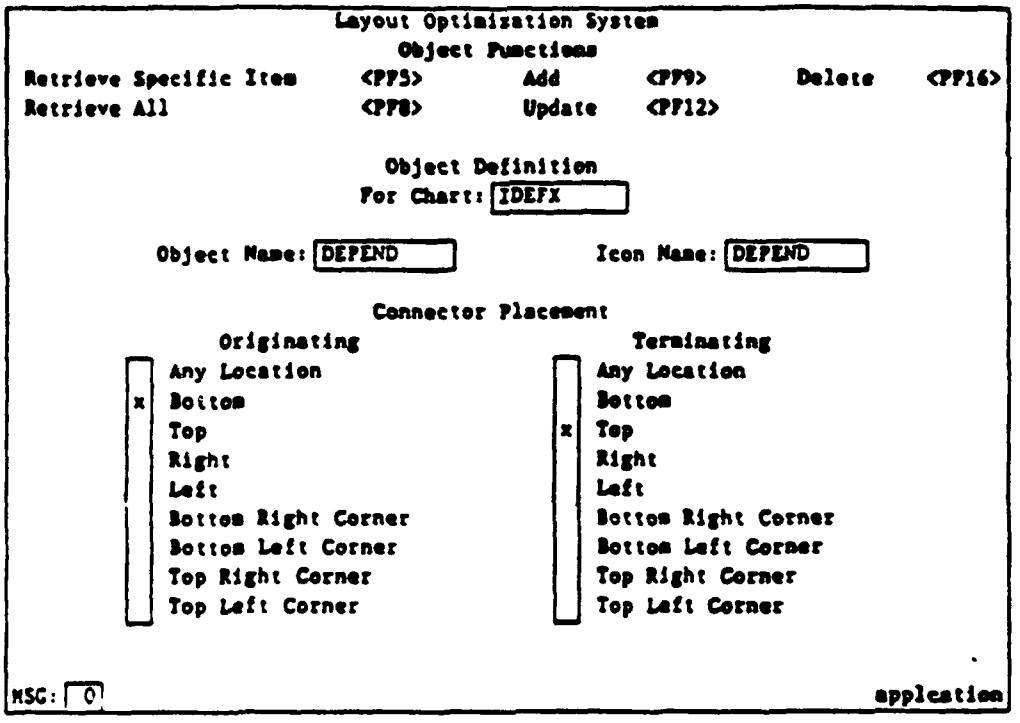


Figure 5-38 Test Screen 34

If <ENTER> is pressed, the following screen is displayed:

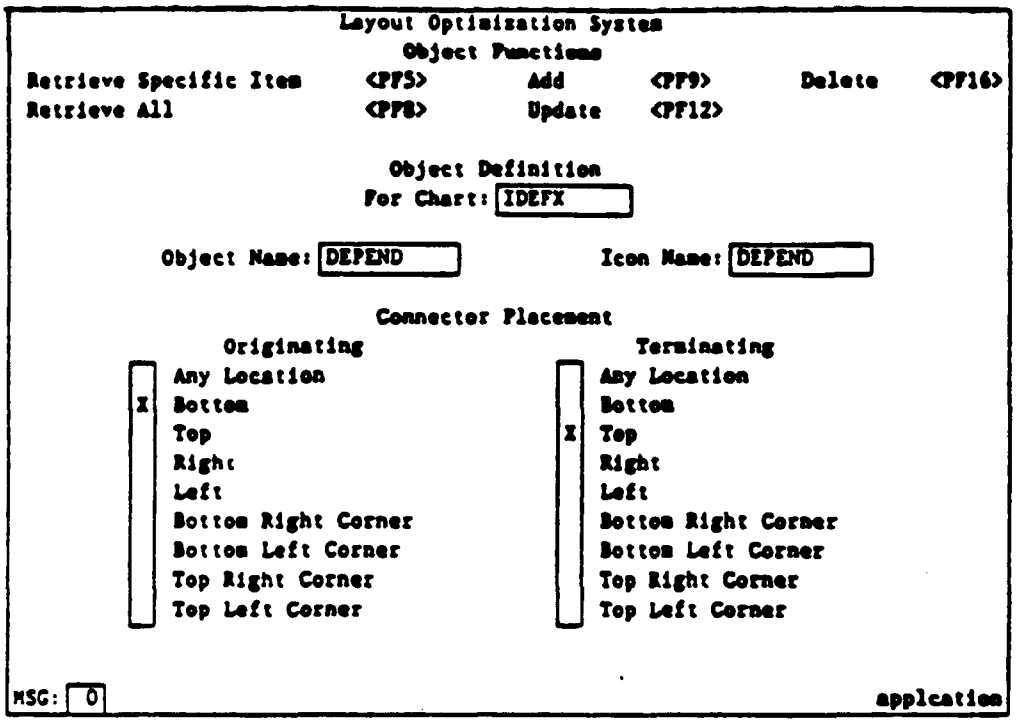


Figure 5-39 Test Screen 35

If <QUIT> is pressed, the object menu is redisplayed:

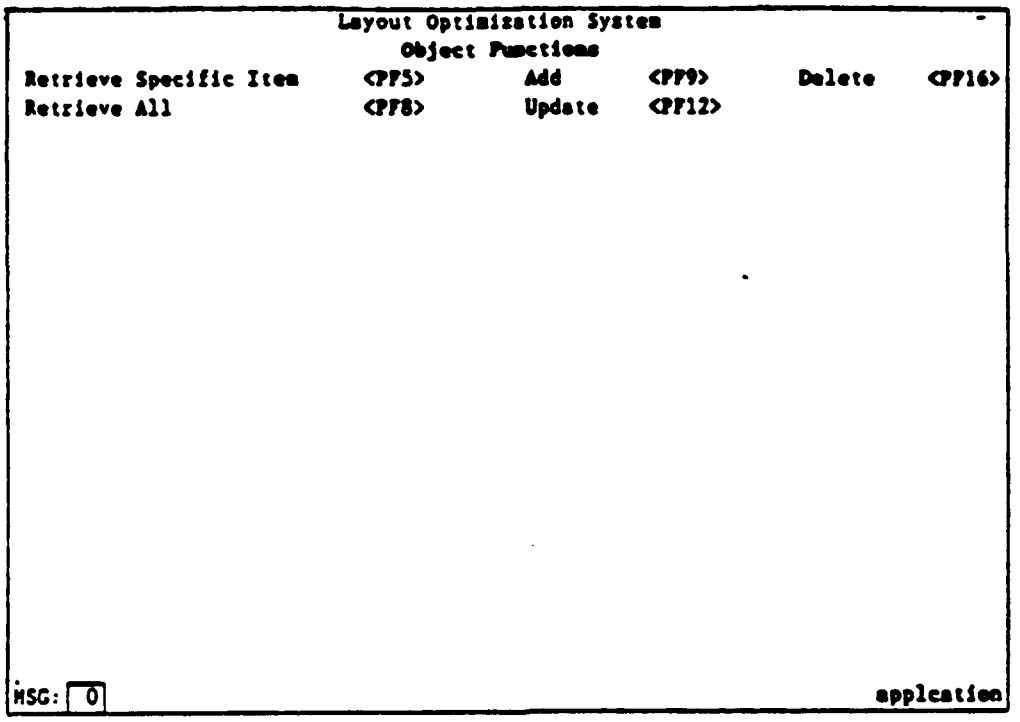


Figure 5-40 Test Screen 36

IF <QUIT> is pressed again, the main menu is redisplayed:

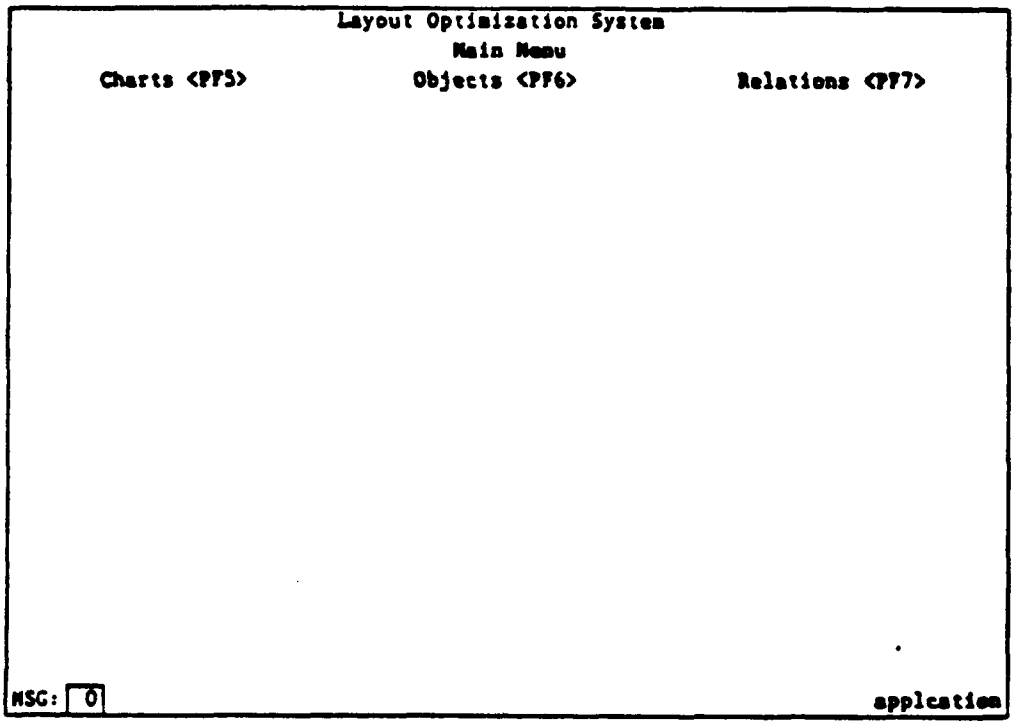


Figure 5-41 Test Screen 37

If <PF7> is pressed, the relation menu is displayed:

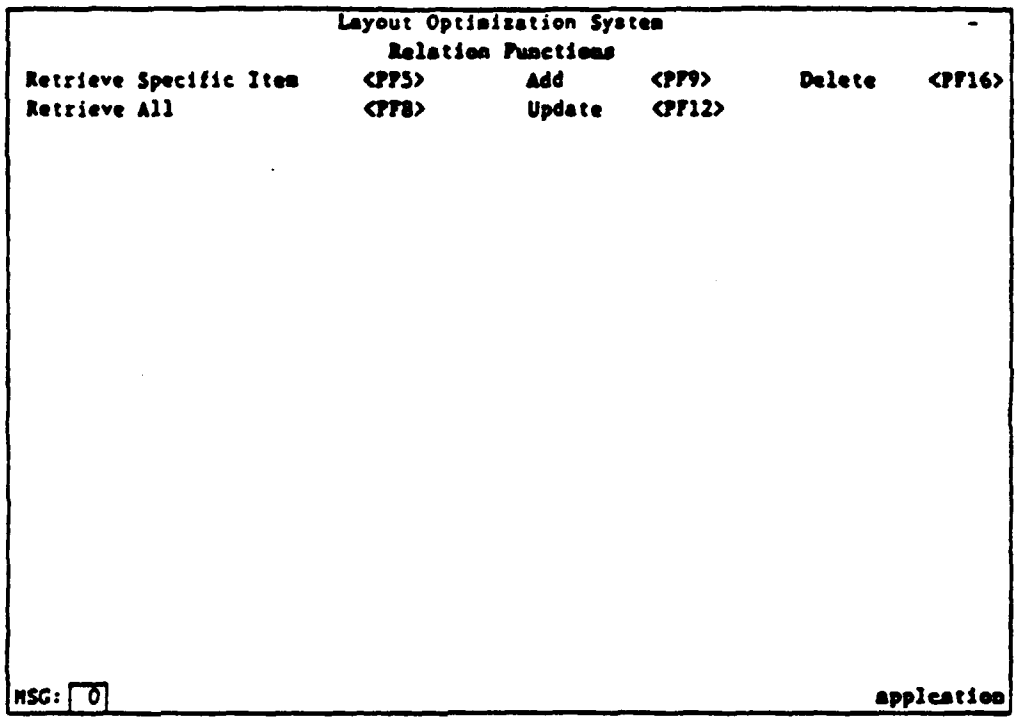


Figure 5-42 Test Screen 38

If <PF9> is pressed, the following screen is displayed:

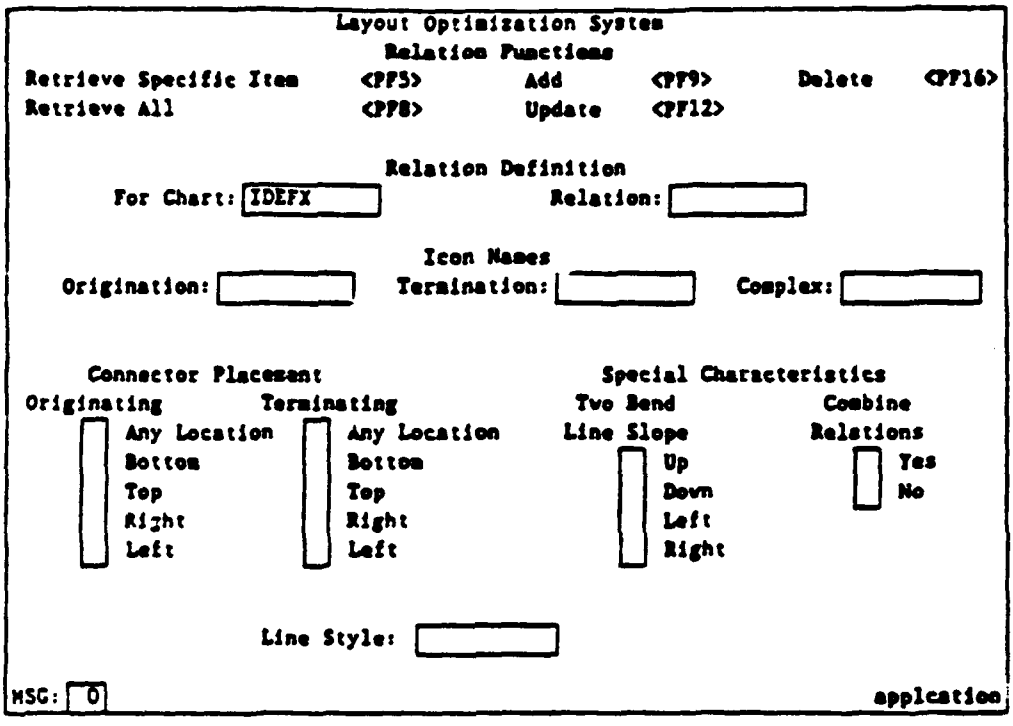


Figure 5-43 Test Screen 39

If the following data is entered:

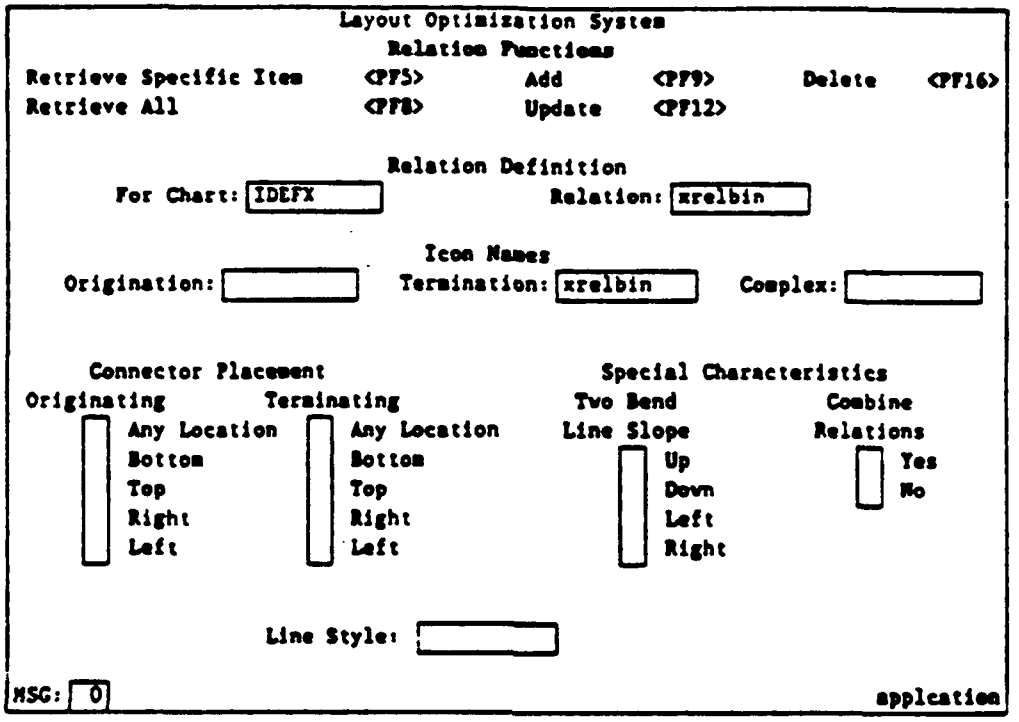


Figure 5-44 Test Screen 40

The following screen is displayed:

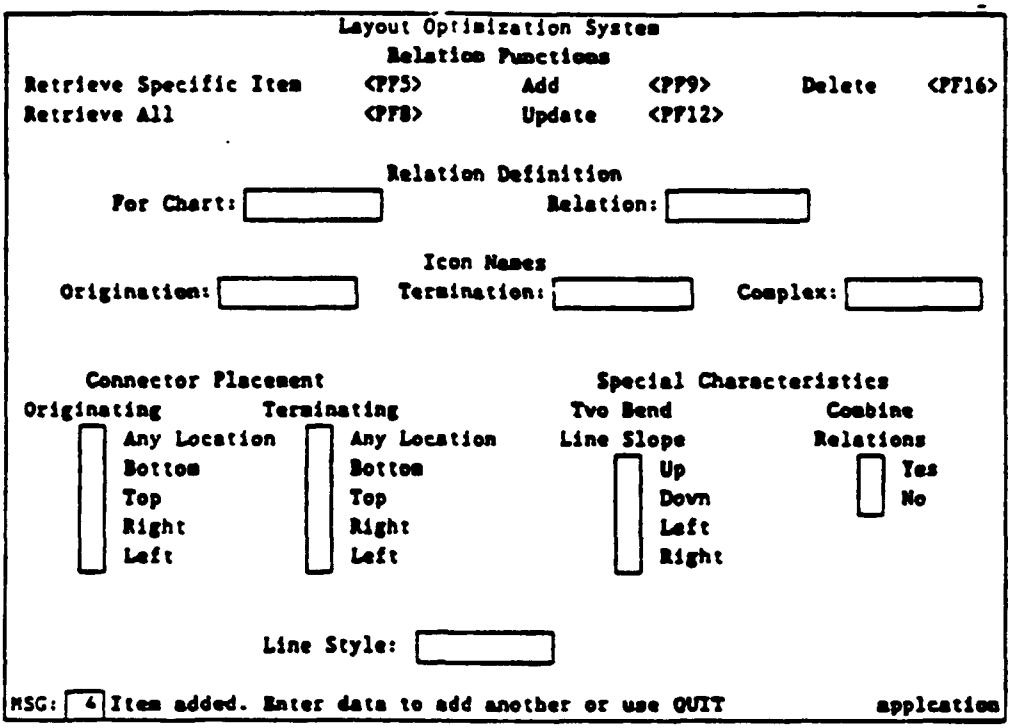


Figure 5-45 Test Screen 41

If the following data is entered:

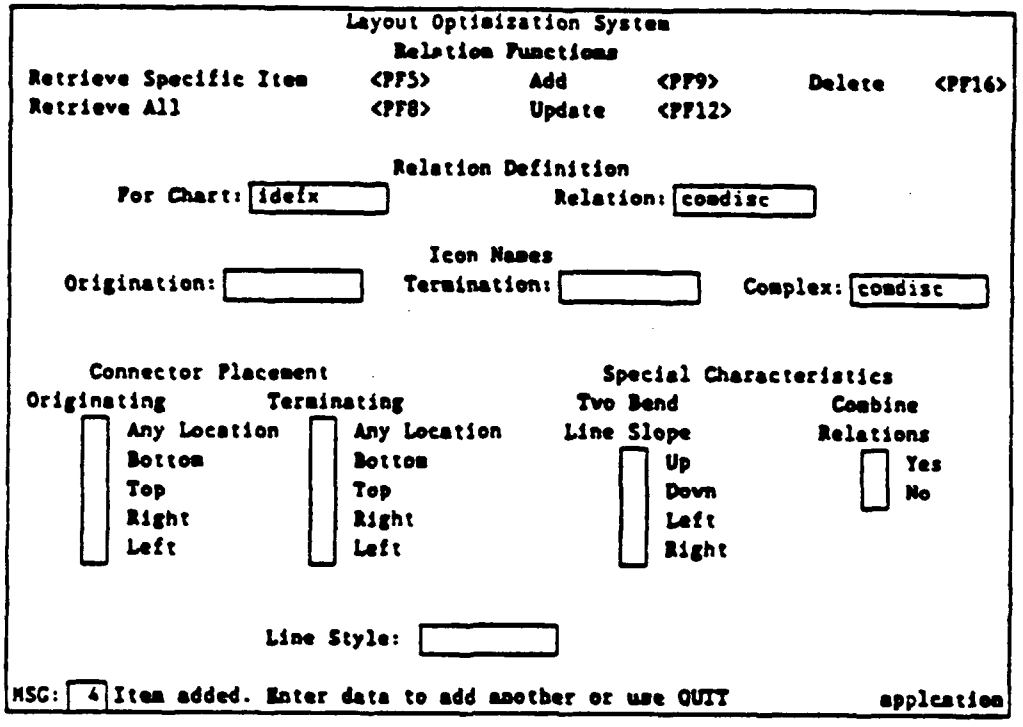


Figure 5-46 Test Screen 42

The following screen is displayed:

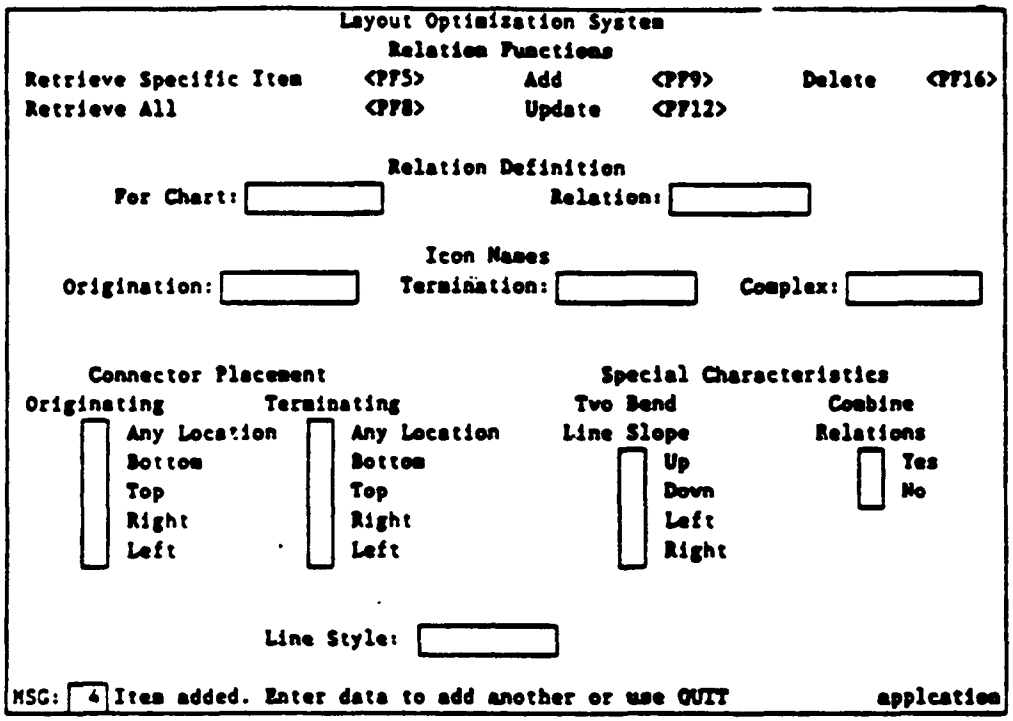


Figure 5-47 Test Screen 43

If <PF3> is pressed, the following screen is displayed:

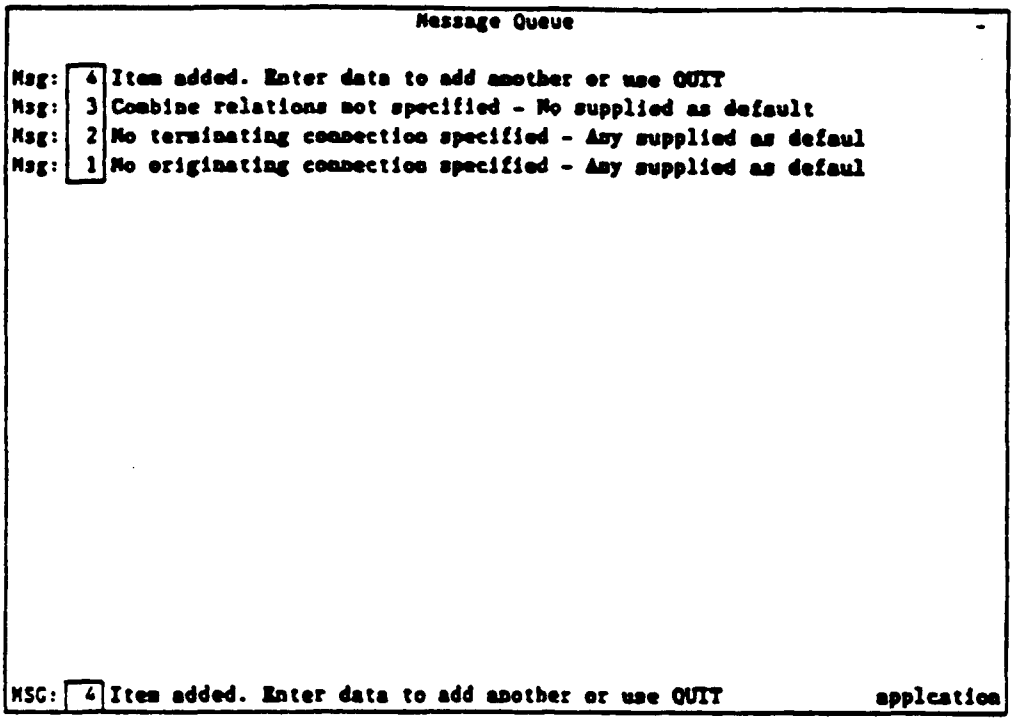


Figure 5-48 Test Screen 44

If <QUIT> is entered, the following screen is displayed:

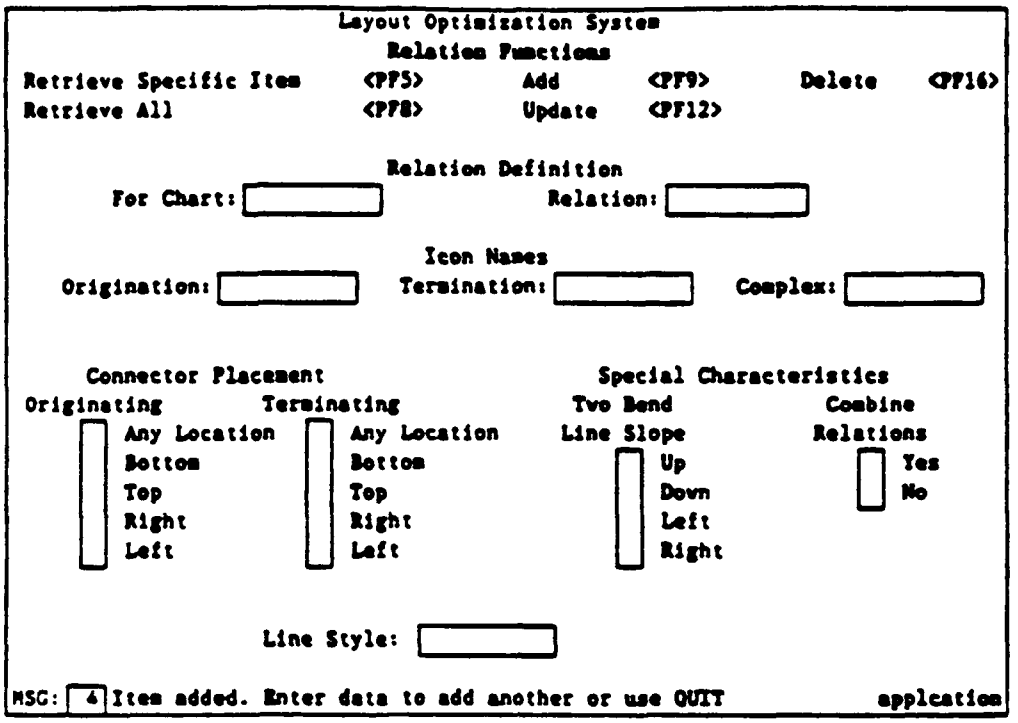


Figure 5-49 Test Screen 45

If the following is entered:

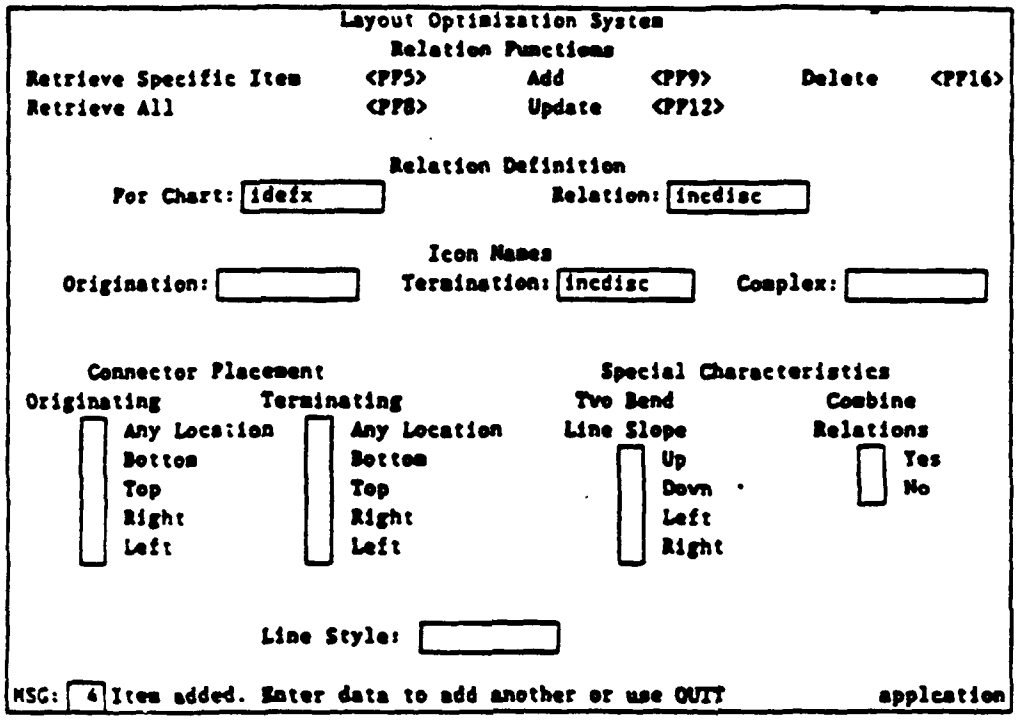


Figure 5-50 Test Screen 46

The following screen is displayed:

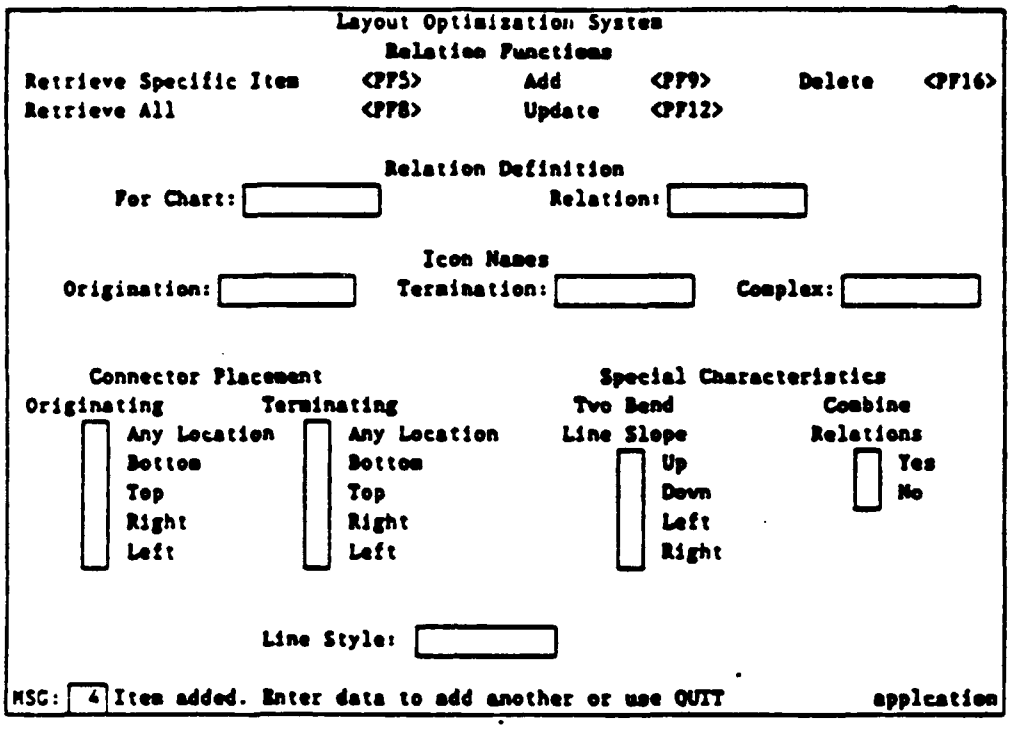


Figure 5-51 Test Screen 47

If the following data is entered:

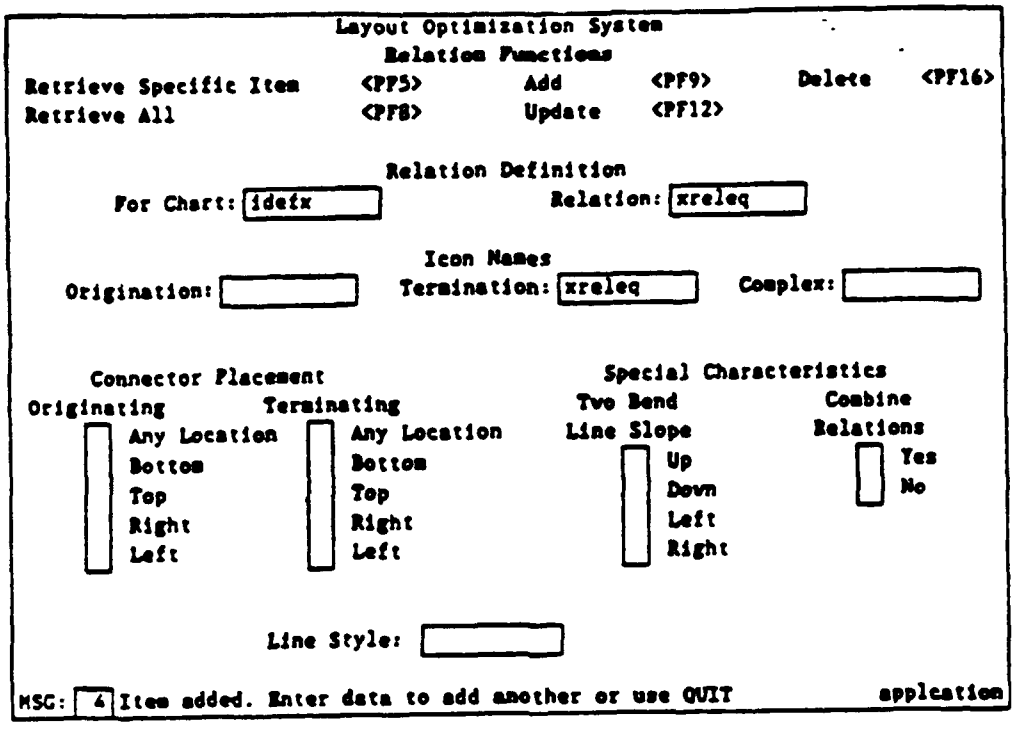


*Figure 5-52 Test Screen 48*

The following screen is displayed:

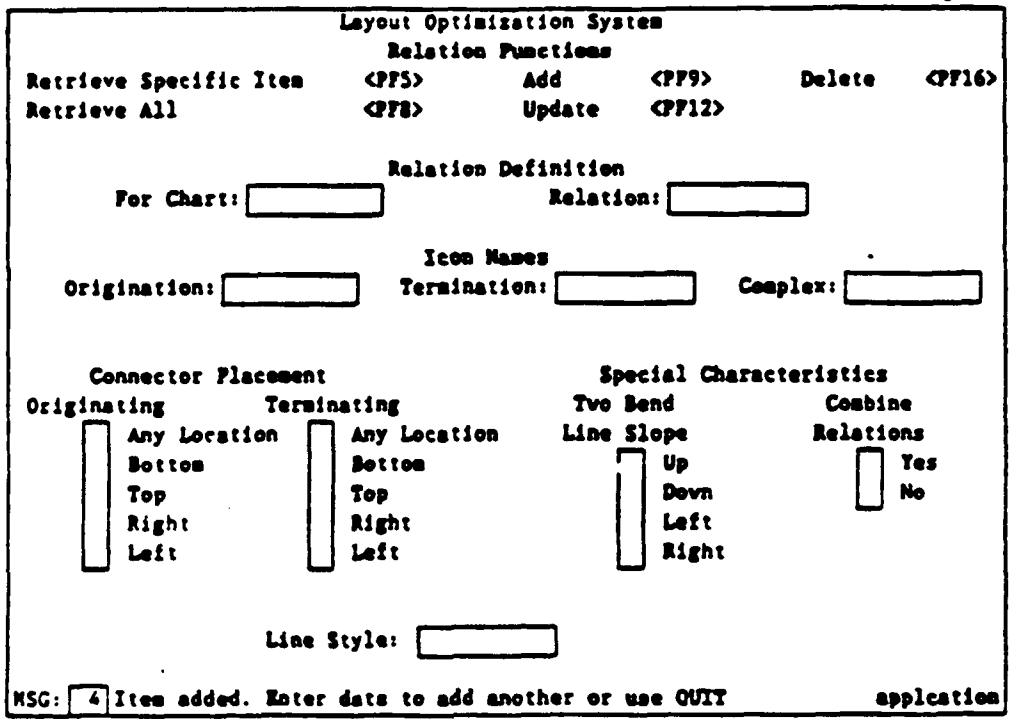


Figure 5-53 Test Screen 49

If the following is entered:

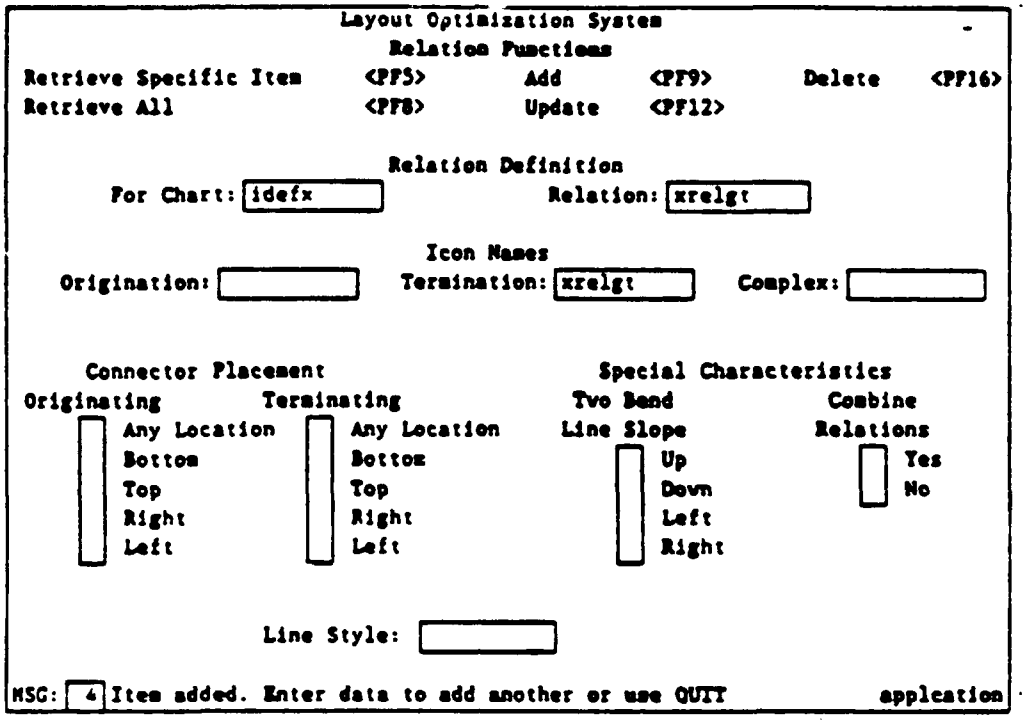


Figure 5-54 Test Screen 50

The following is displayed:

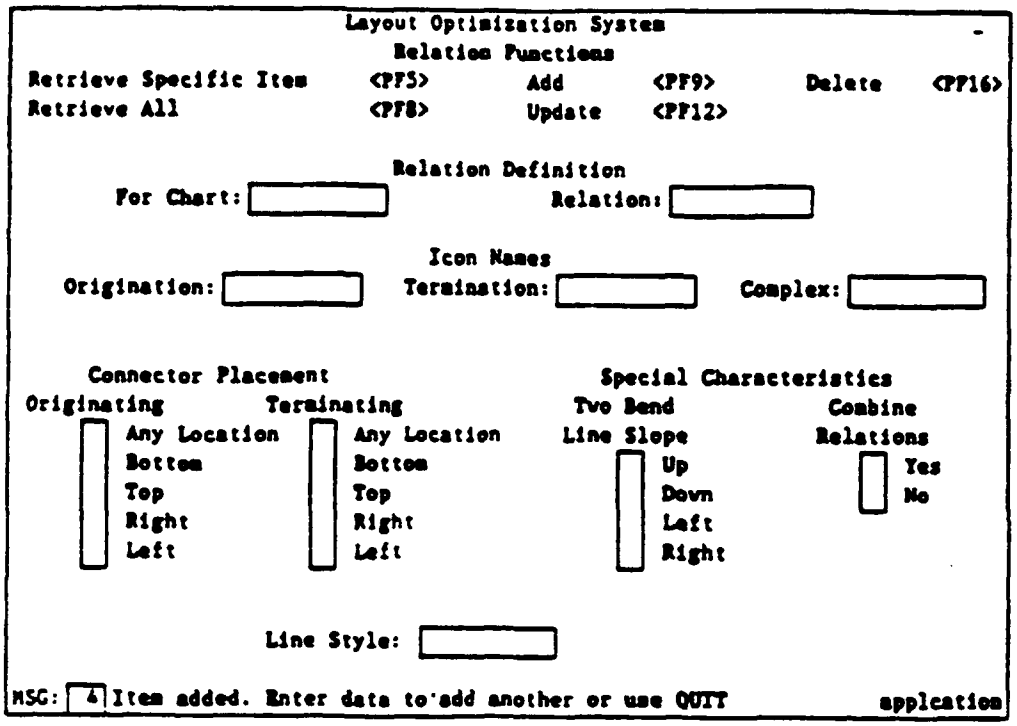


Figure 5-55 Test Screen 51

If the following is entered:

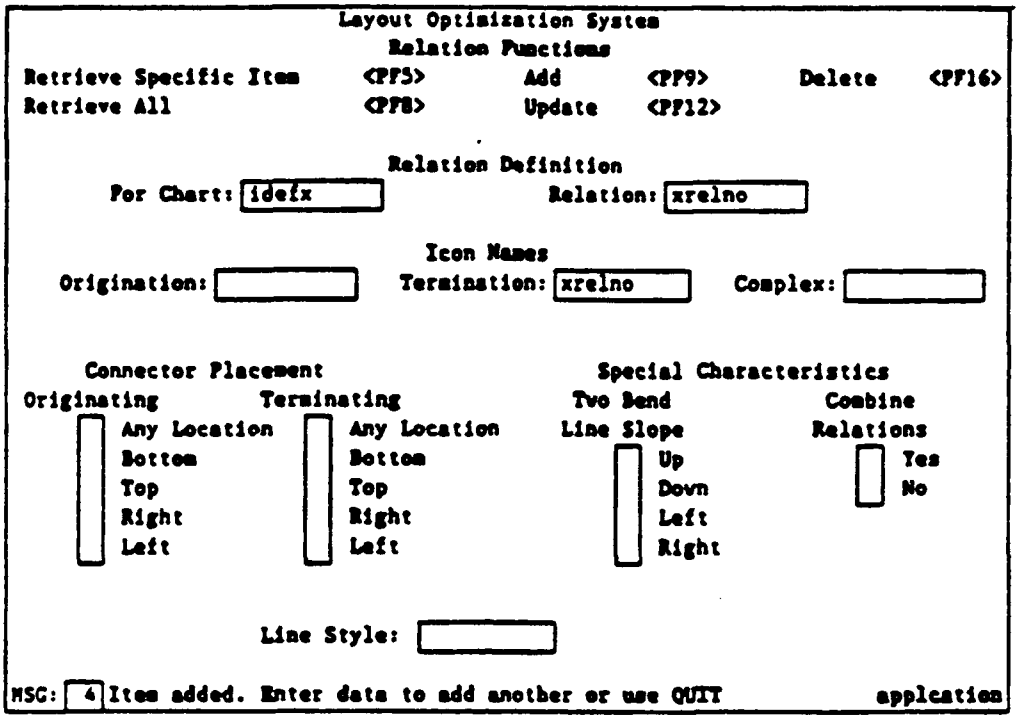


Figure 5-56 Test Screen 52

The following is displayed:

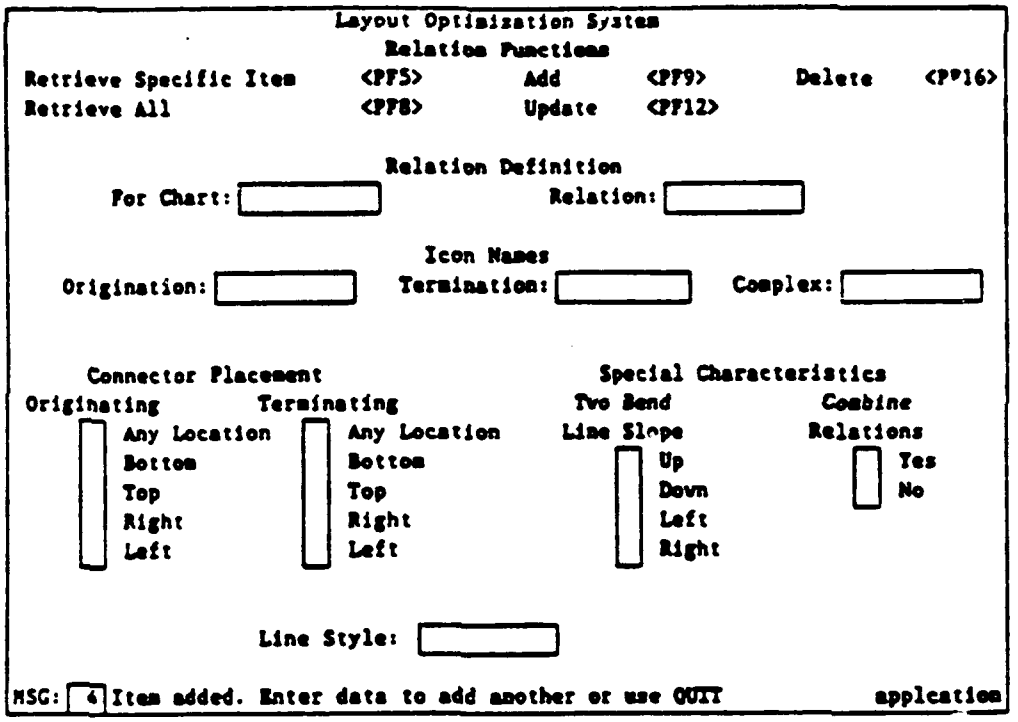


Figure 5-57 Test Screen 53

If <QUIT> is pressed, the relation menu is redisplayed:

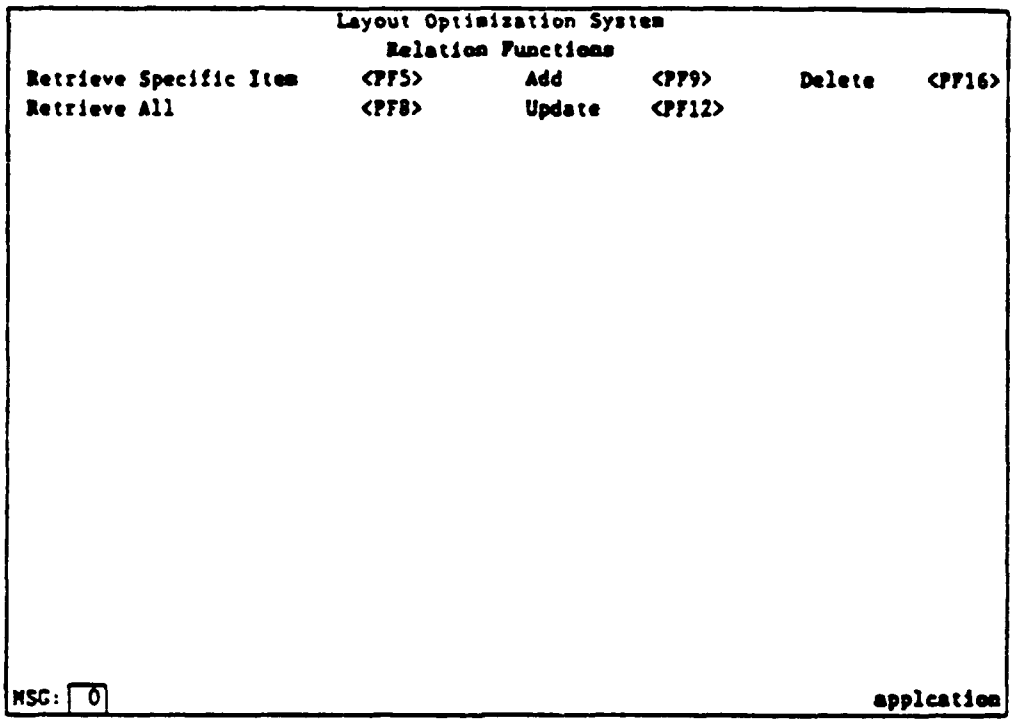


Figure 5-58 Test Screen 54

If <PF8> is pressed, the following screen is displayed:

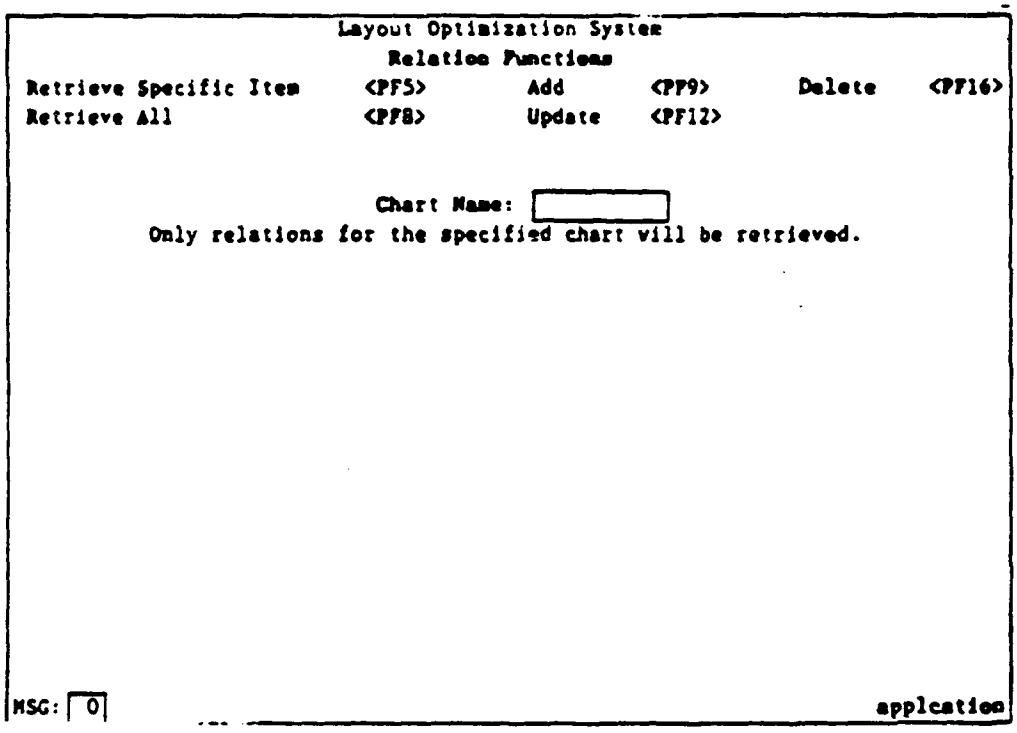


Figure 5-59 Test Screen 55

If the following data is entered:

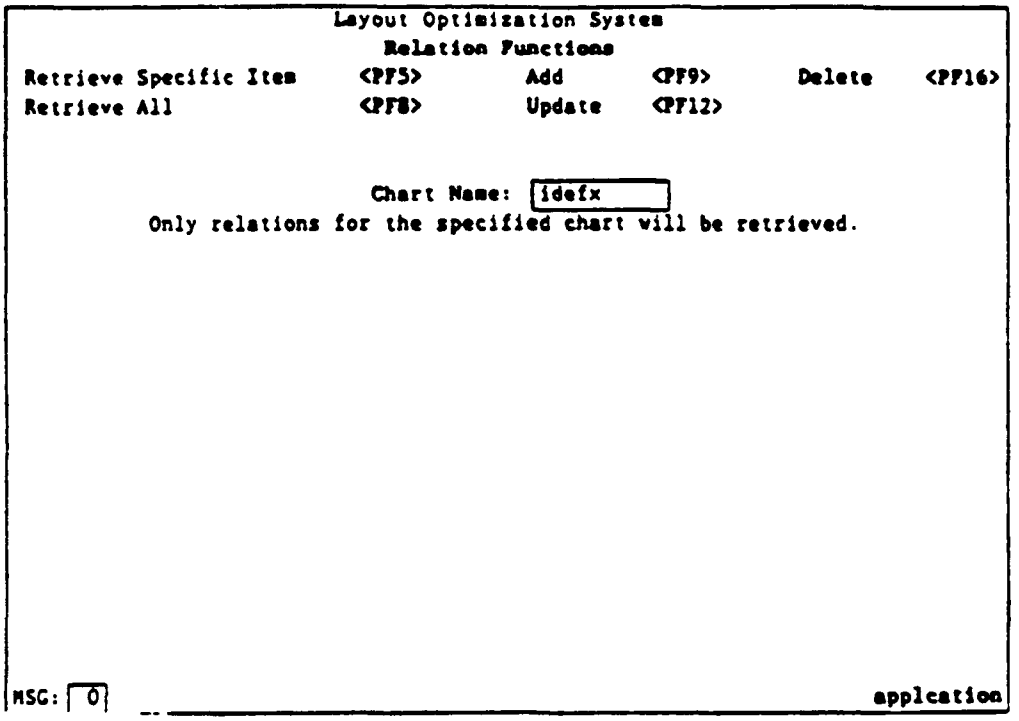


Figure 5-60 Test Screen 56

The following screen will be displayed:

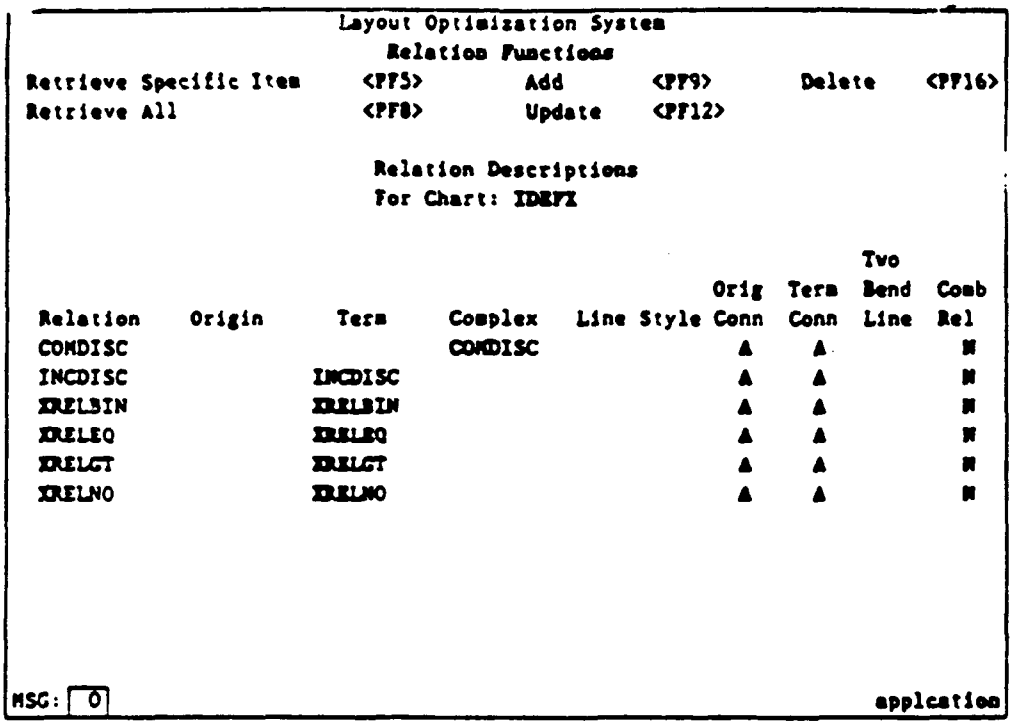


Figure 5-61 Test Screen 57

If the cursor is placed on the relation field containing COMDISC and <ENTER> is pressed, CDMDISC becomes the default and the following screen is displayed:

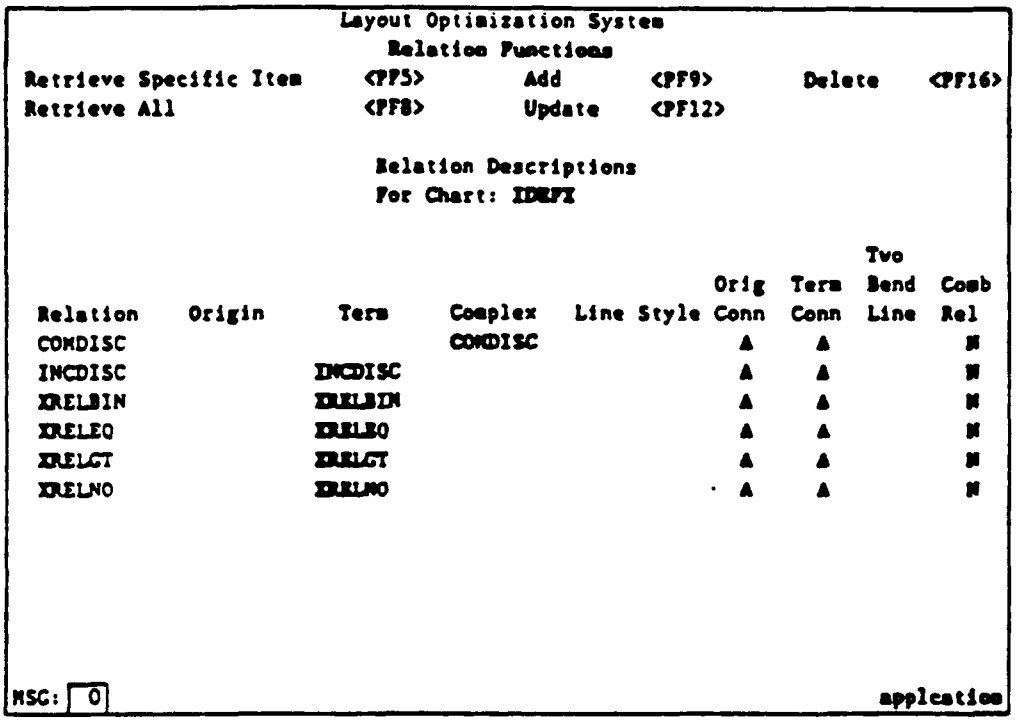


Figure 5-62 Test Screen 58

If <QUIT> is pressed, the relation menu is redisplayed:

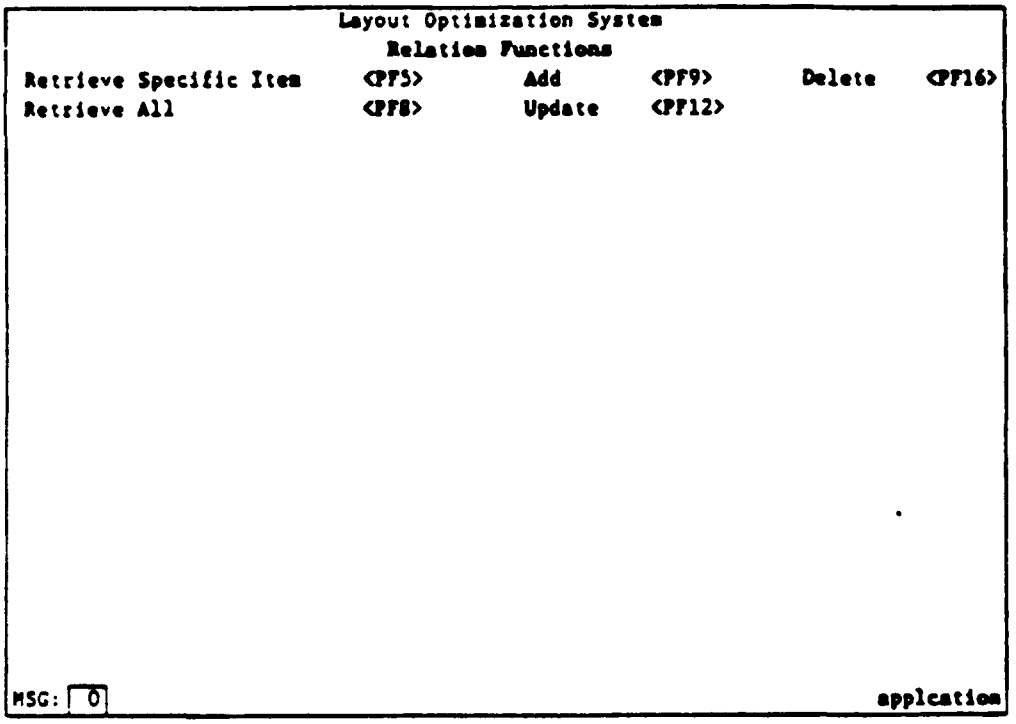


Figure 5-63 Test Screen 59

If the <PF12> is pressed, the following screen is displayed:

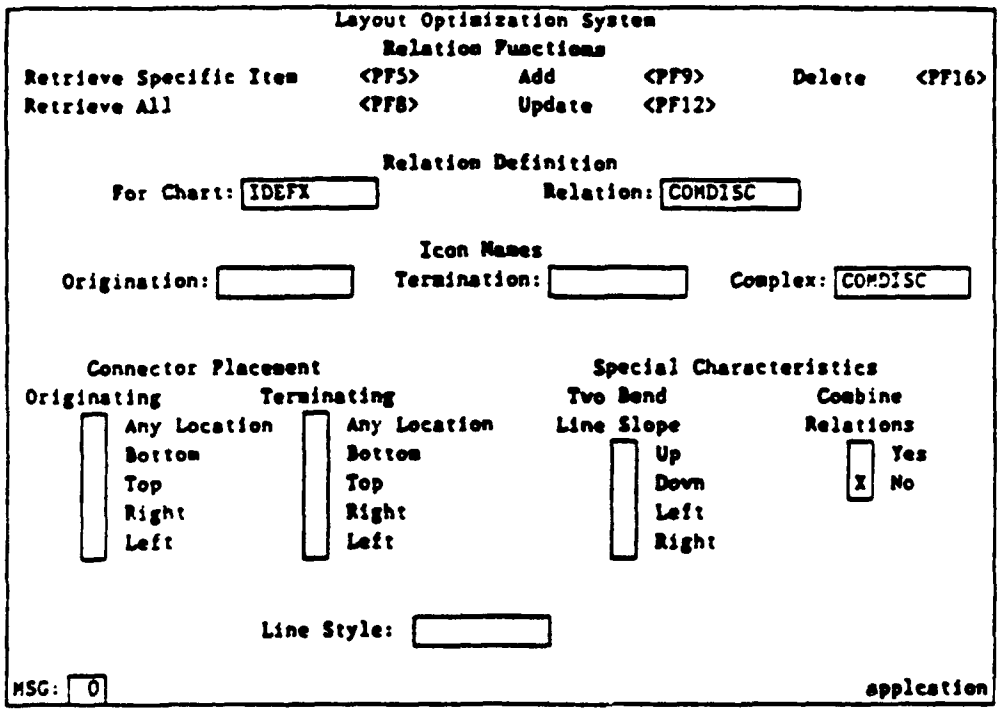


Figure 5-64 Test Screen 60

If the following is entered:

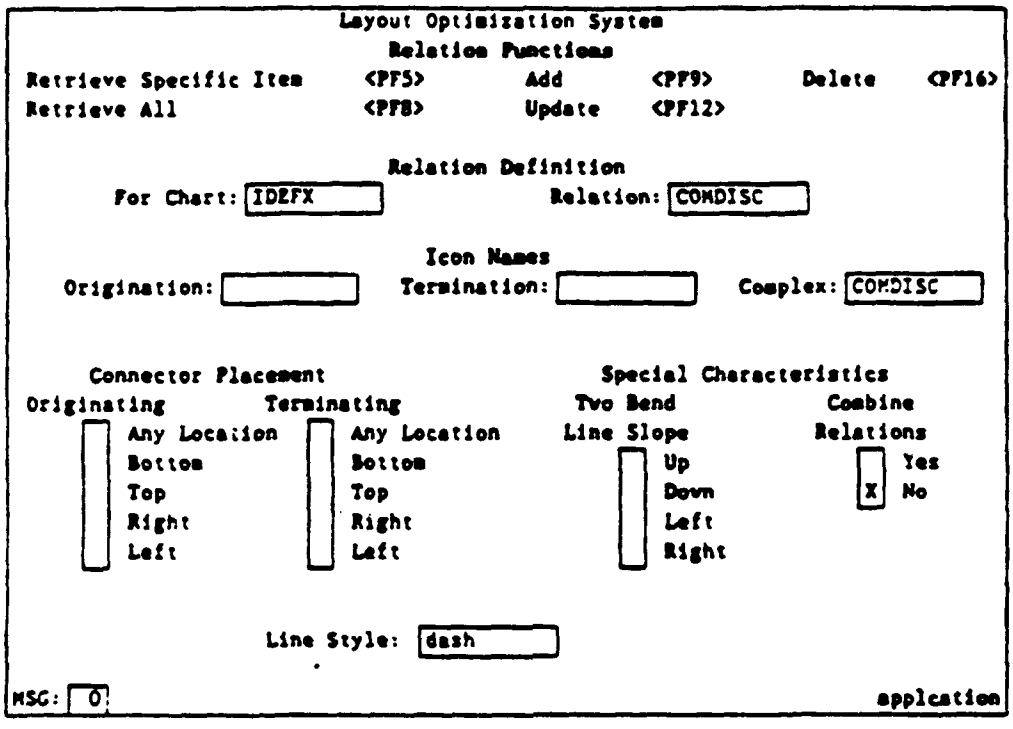


Figure 5-65 Test Screen 61

The following is displayed:

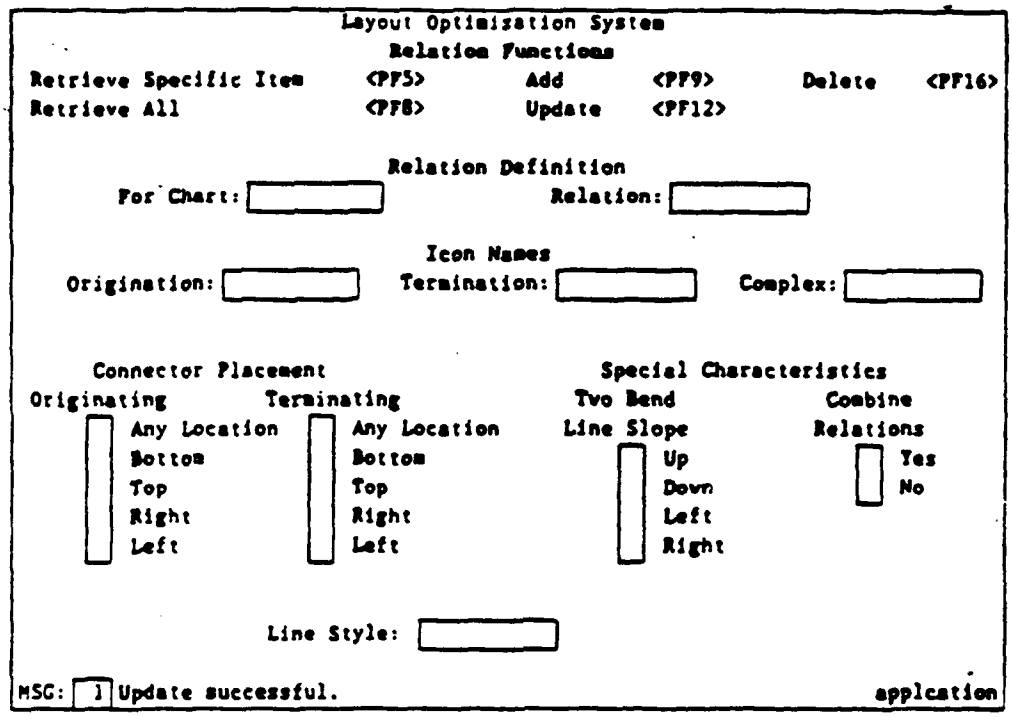


Figure 5-66 Test Screen 62

If <QUIT> is pressed, the relation menu is redisplayed:

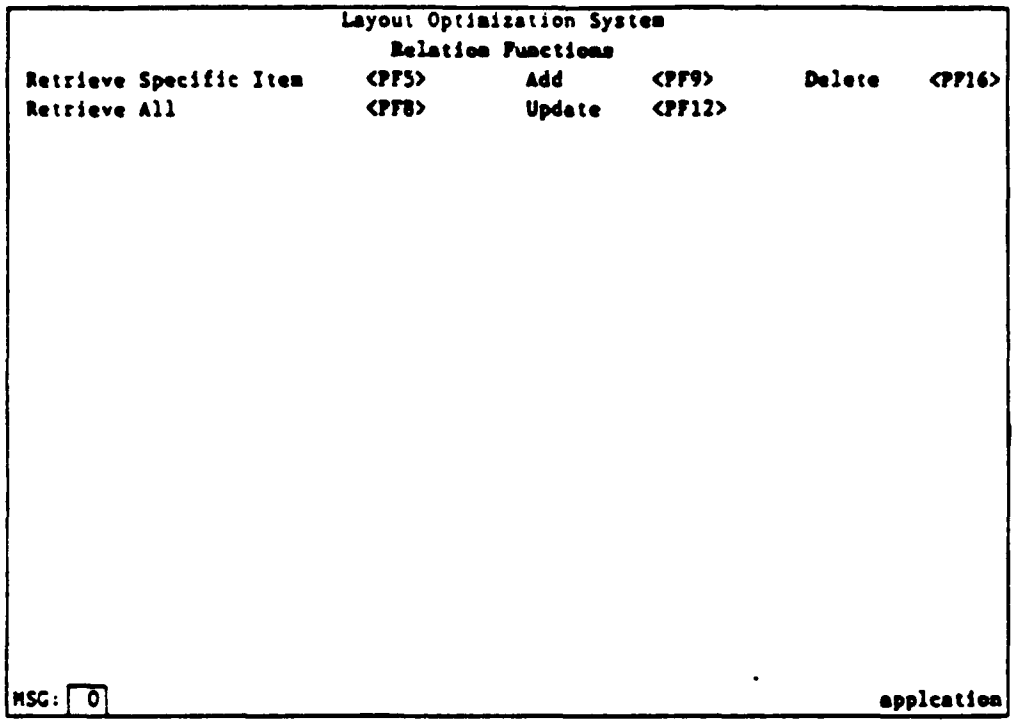


Figure 5-67 Test Screen 63

If <PF5> is pressed, the following is displayed:

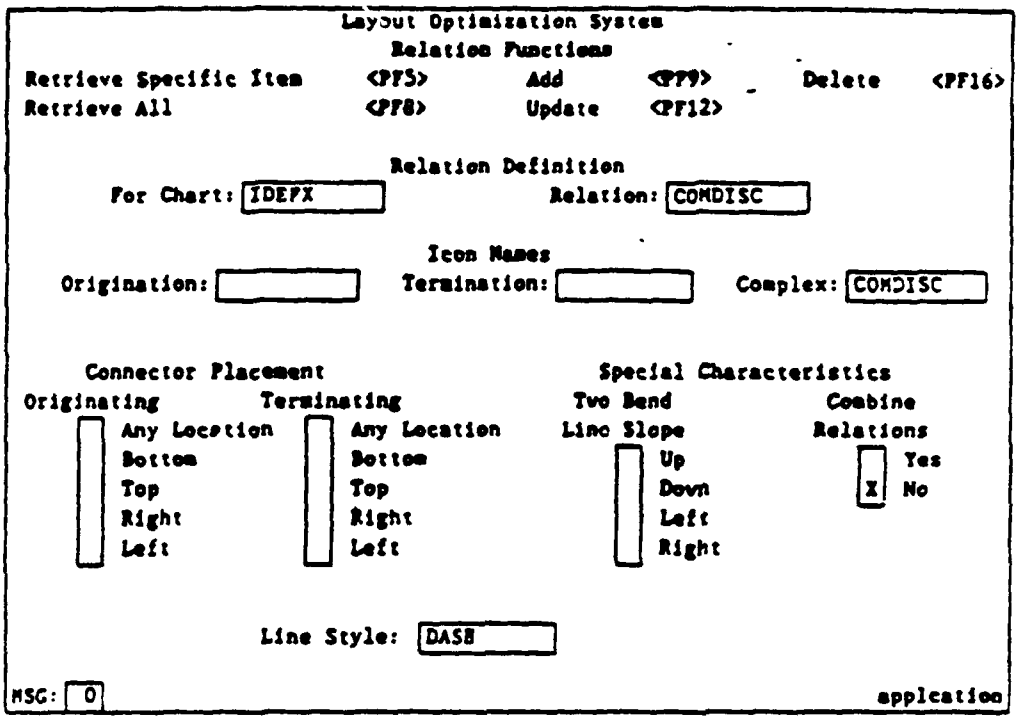


Figure 5-68 Test Screen 64

If <ENTER> is pressed, the following is displayed:

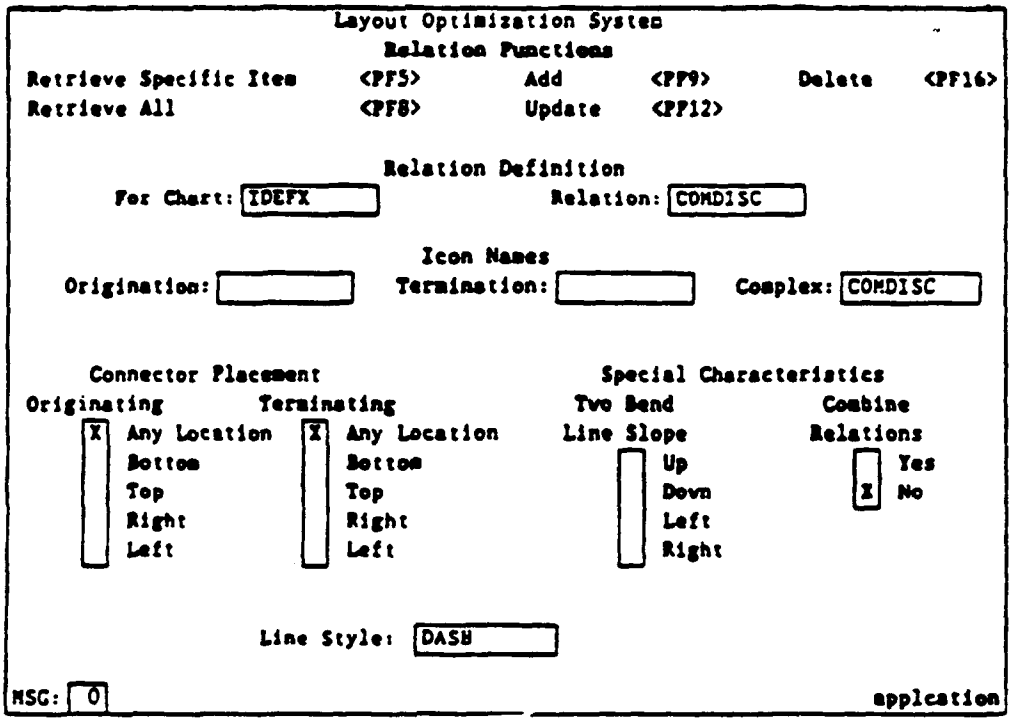


Figure 5-69 Test Screen 65

If <QUIT> is pressed, the relation menu is redisplayed:

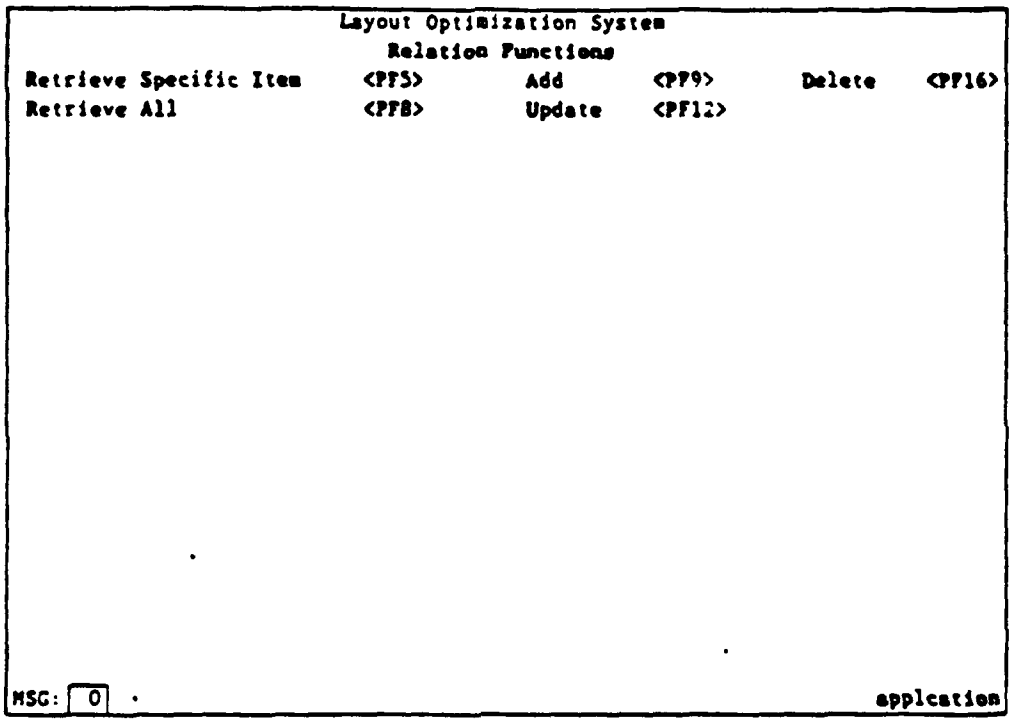


Figure 5-70 Test Screen 66

If <QUIT> is pressed, the main menu is redisplayed:

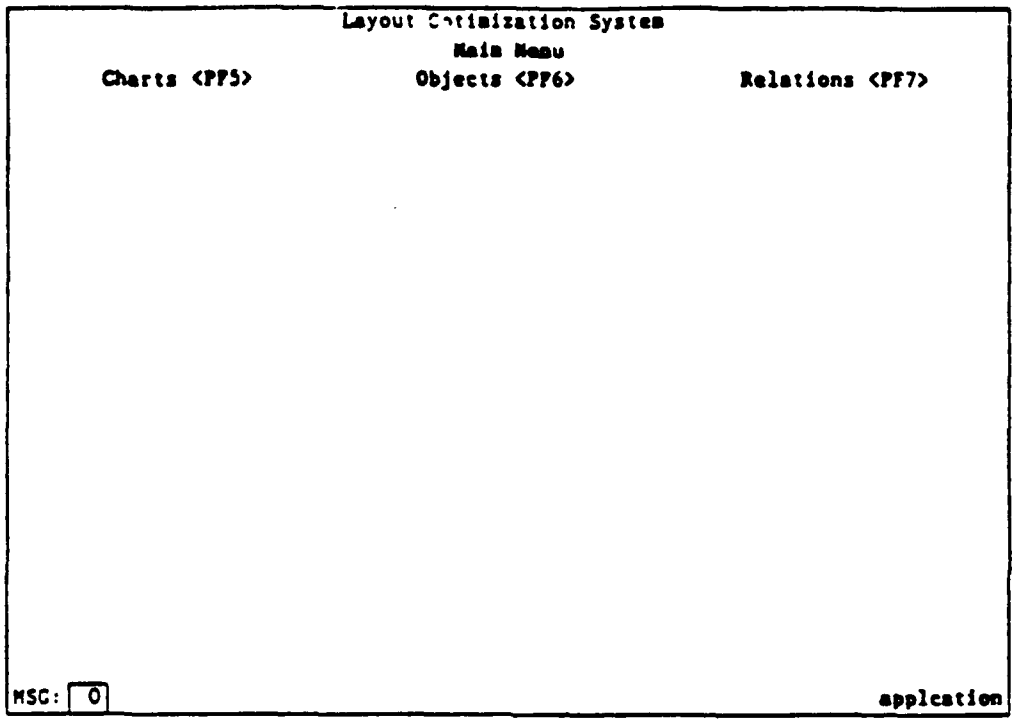


Figure 5-71 Test Screen 67

If <PF5> is pressed, the following is displayed:

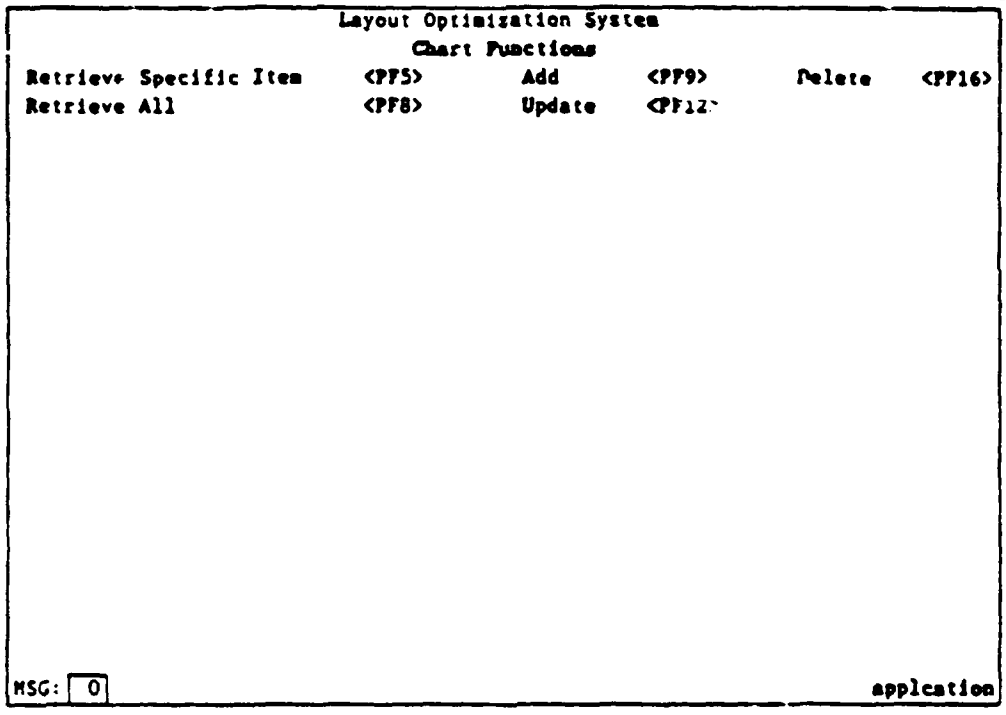


Figure 5-72 Test Screen 68

If <PF16> is pressed the following is displayed:

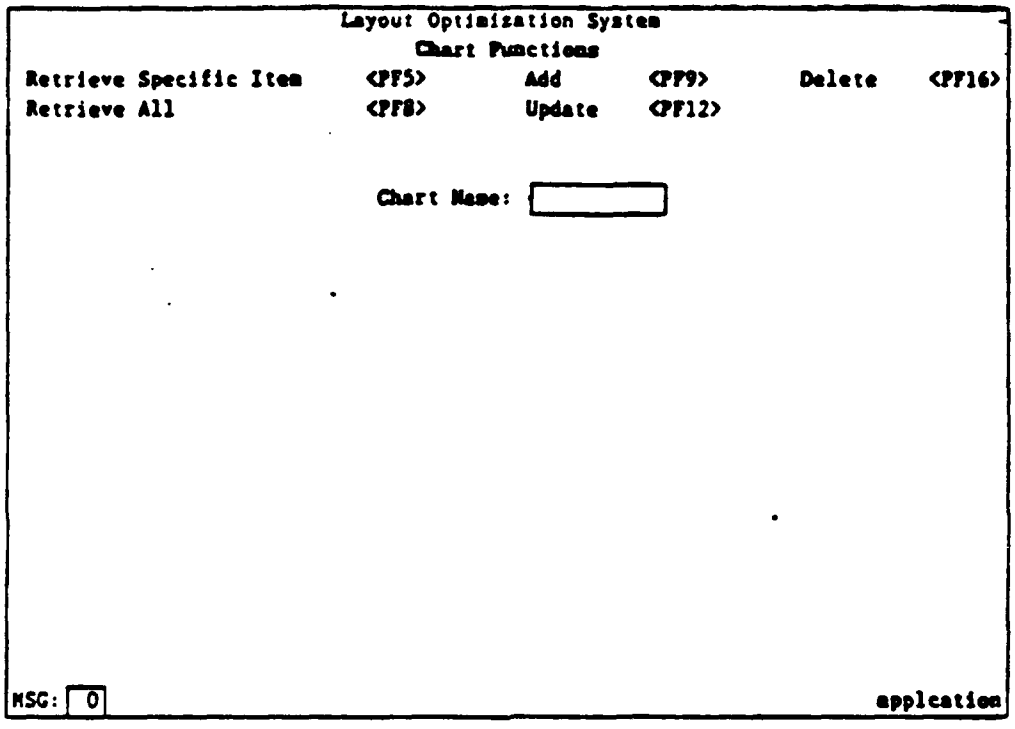


Figure 5-73 Test Screen 69

If the following is entered:

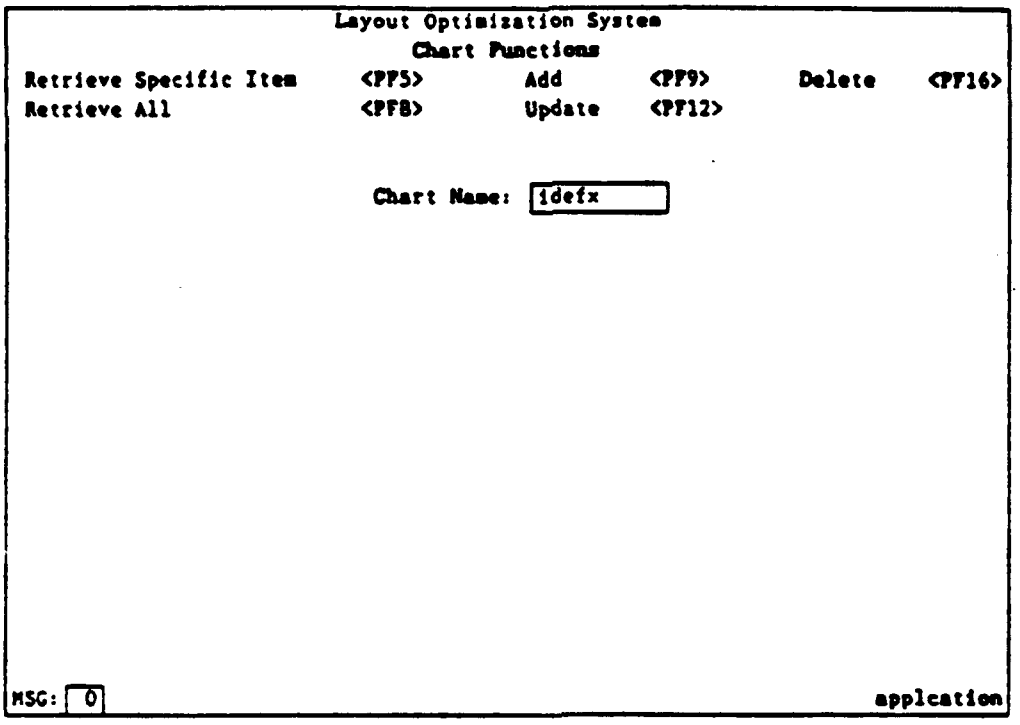


Figure 5-74 Test Screen 70

If <ENTER> is pressed, the following is displayed:

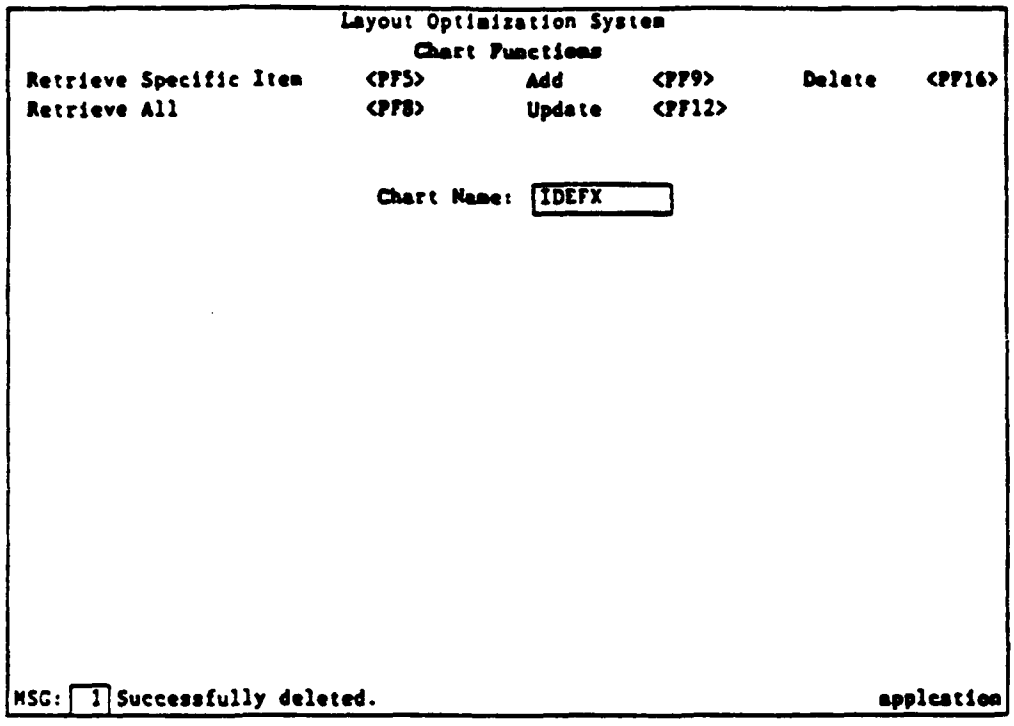


Figure 5-75 Test Screen 71

If <QUIT> is pressed, the chart menu is redisplayed:

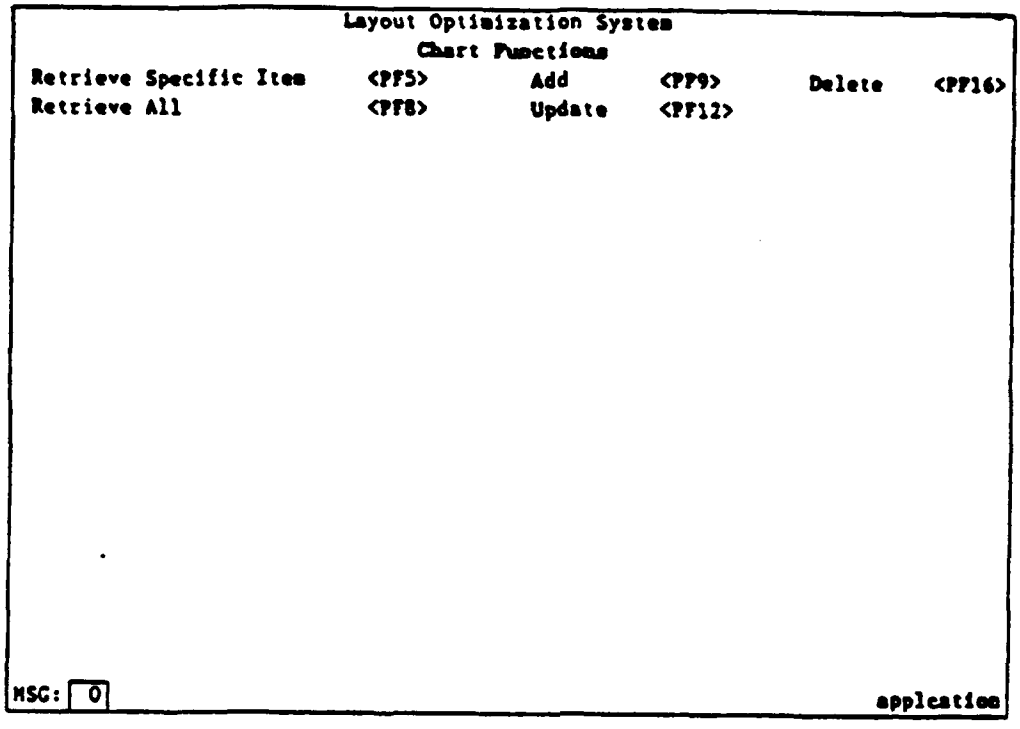


Figure 5-76 Test Screen 72

If <QUIT> is pressed, the main menu is redisplayed:

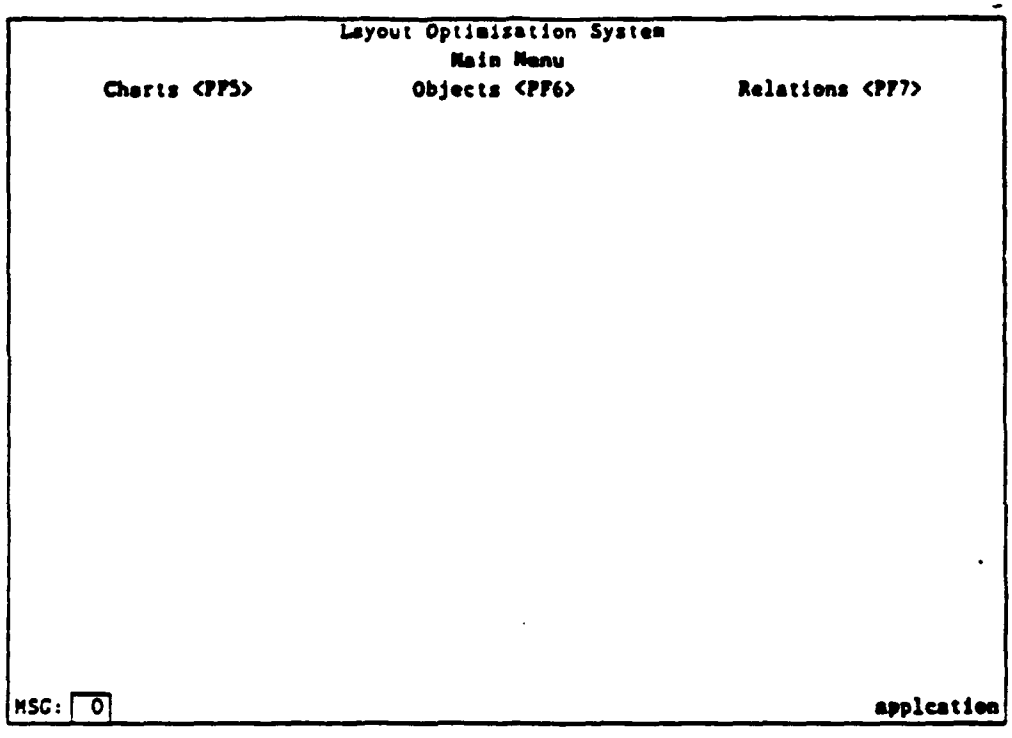


Figure 5-77 Test Screen 73

If <QUIT> is pressed again, the IISS function screen will be displayed.

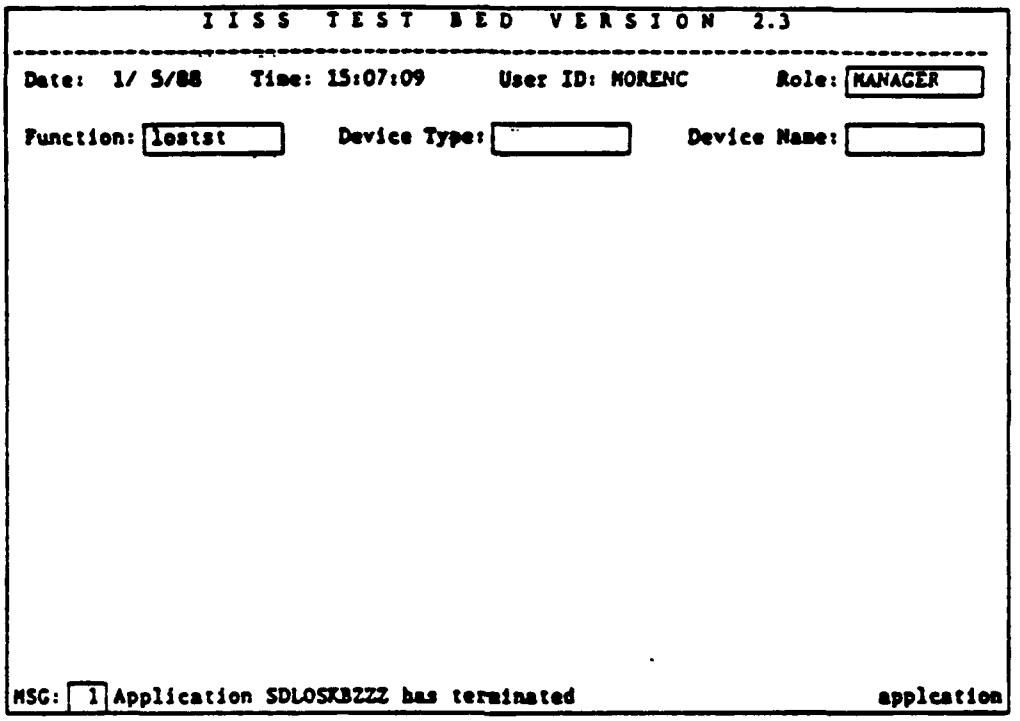


Figure 5-78 IISS Function Screen

Enter the screen as shown to run the LOSTST test program.

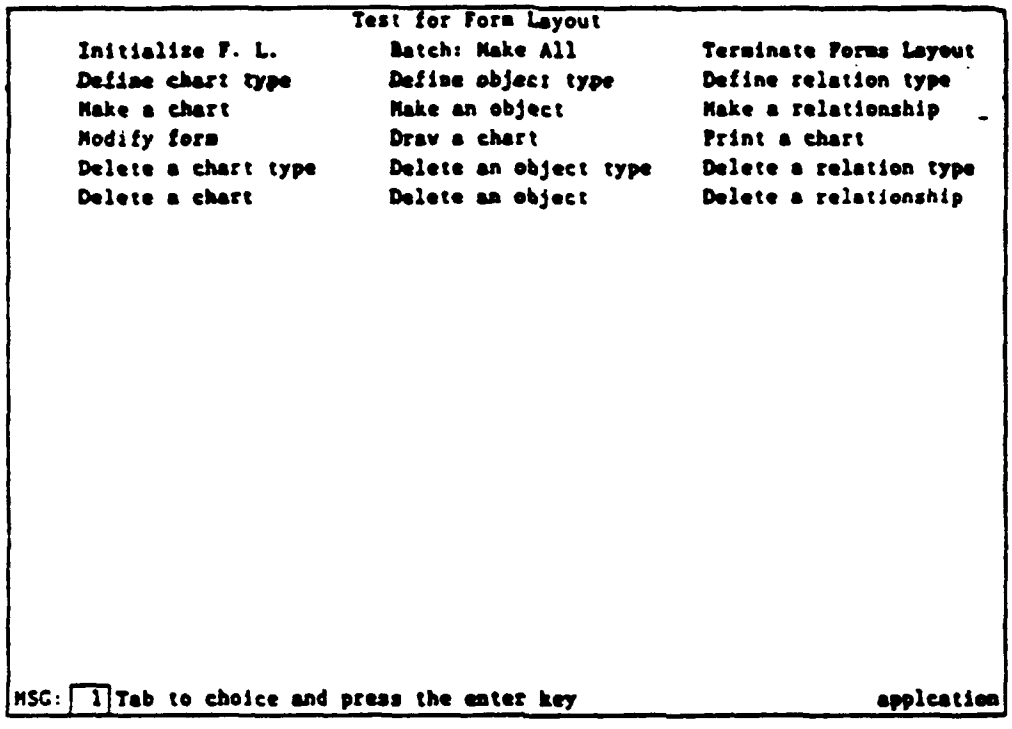


Figure 5-79 LOSTST Menu

Tab to "Initialize F.L." and press <ENTER>.

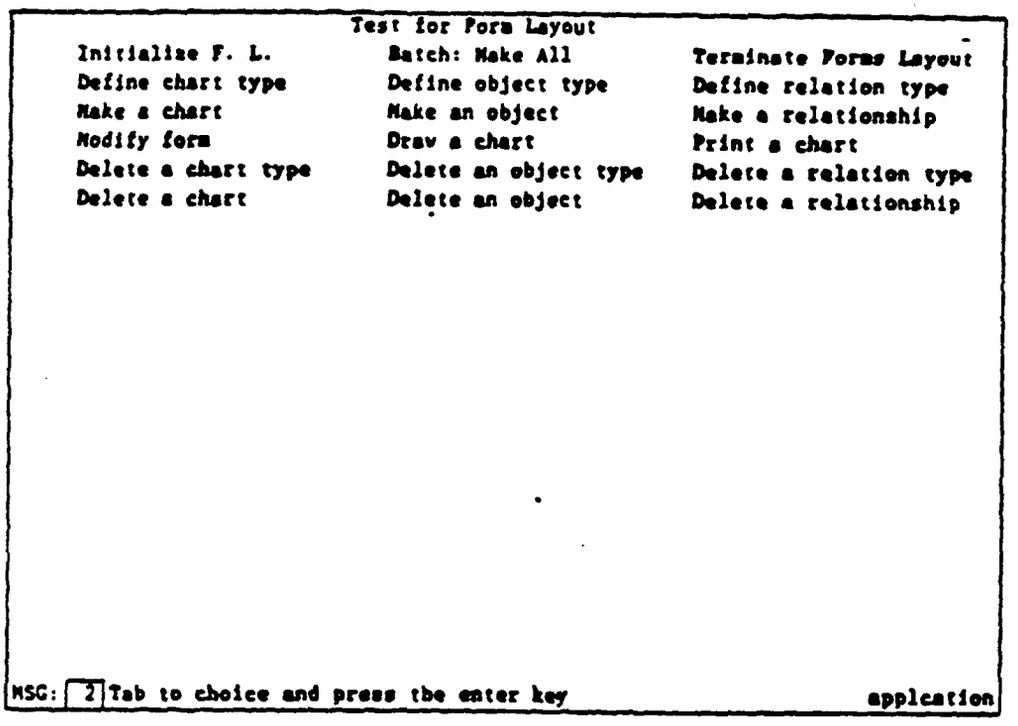


Figure 5-80 Test Screen 74

Tab to "Define chart type" and press <ENTER>.

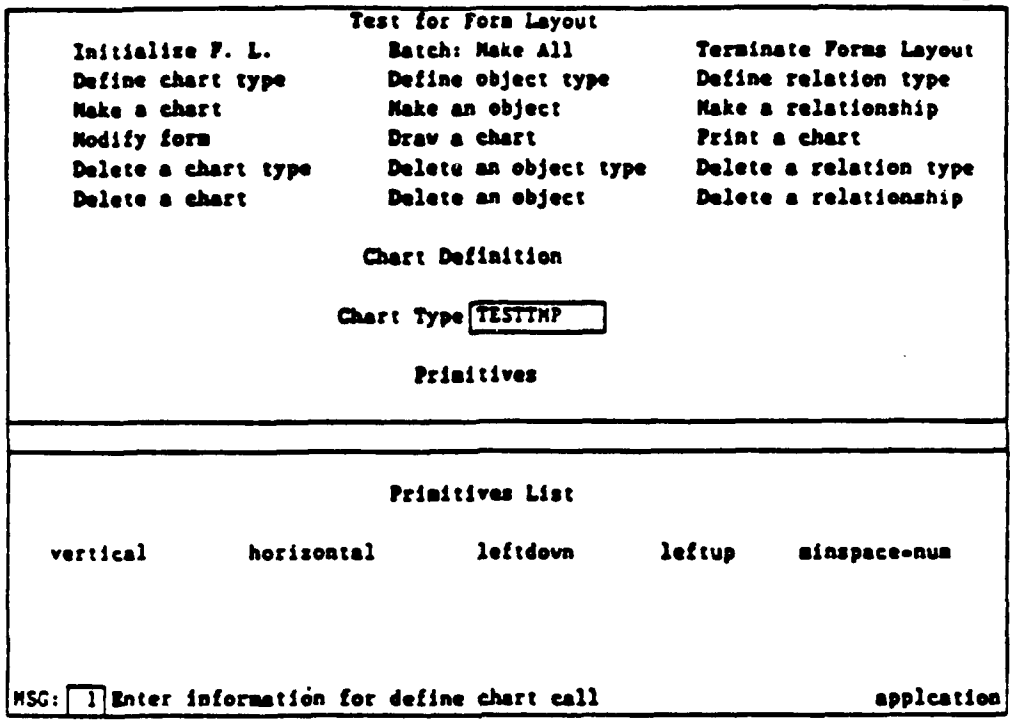


Figure 5-81 Test Screen 75

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

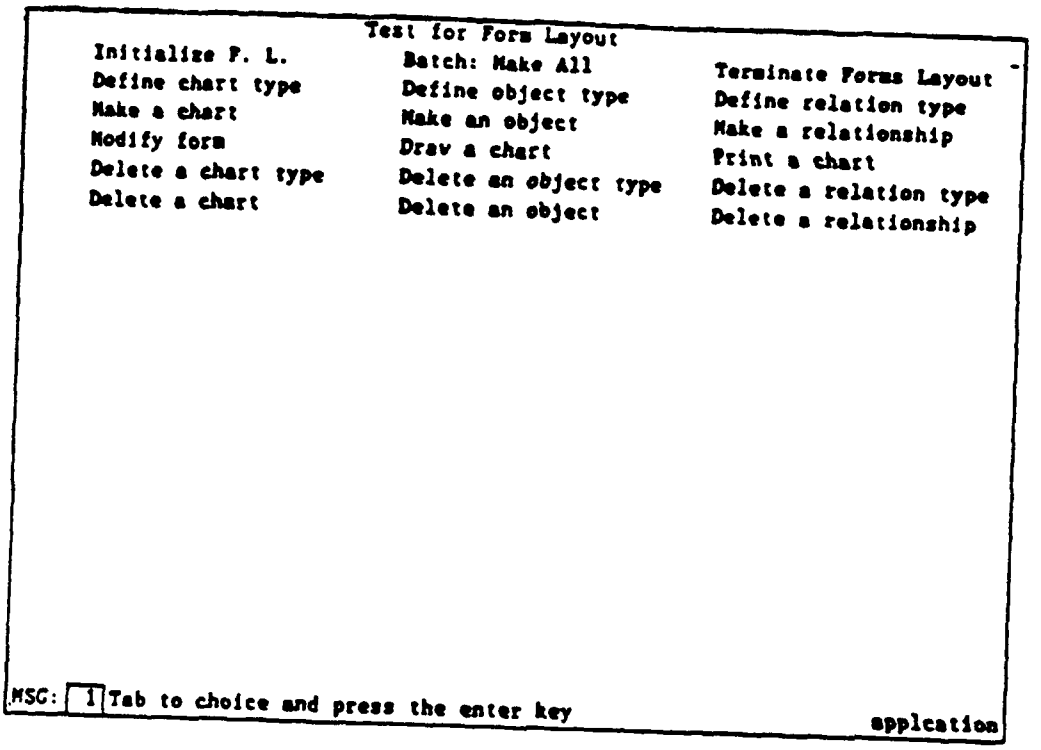


Figure 5-82 Test Screen 76

Tab to "Define object type" and press <ENTER>.

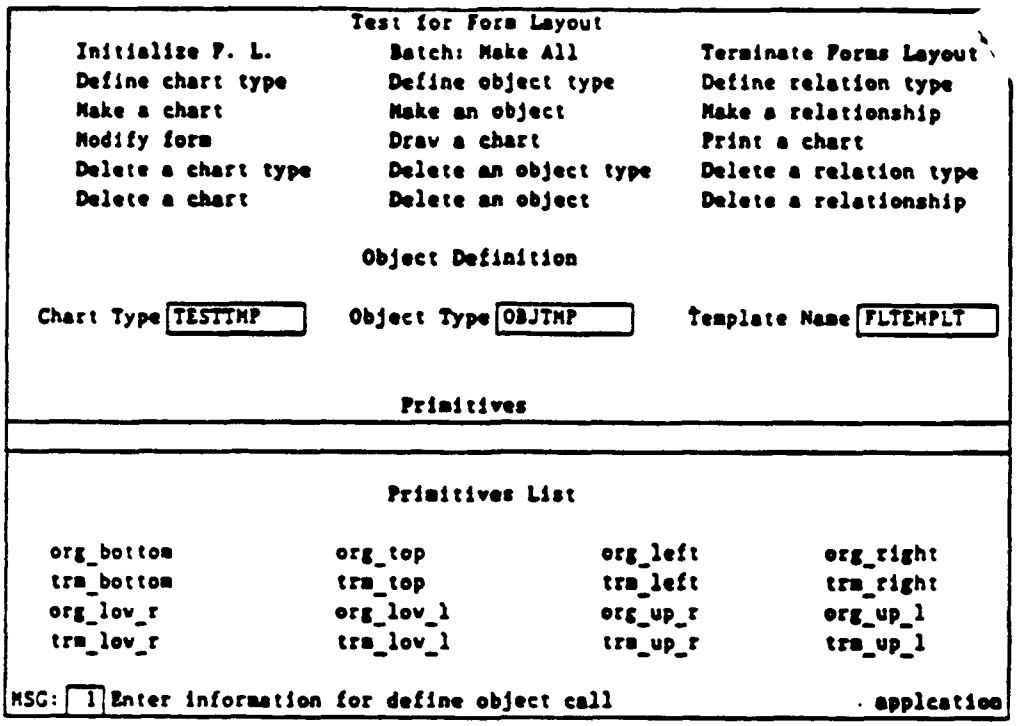


Figure 5-83 Test Screen 77

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

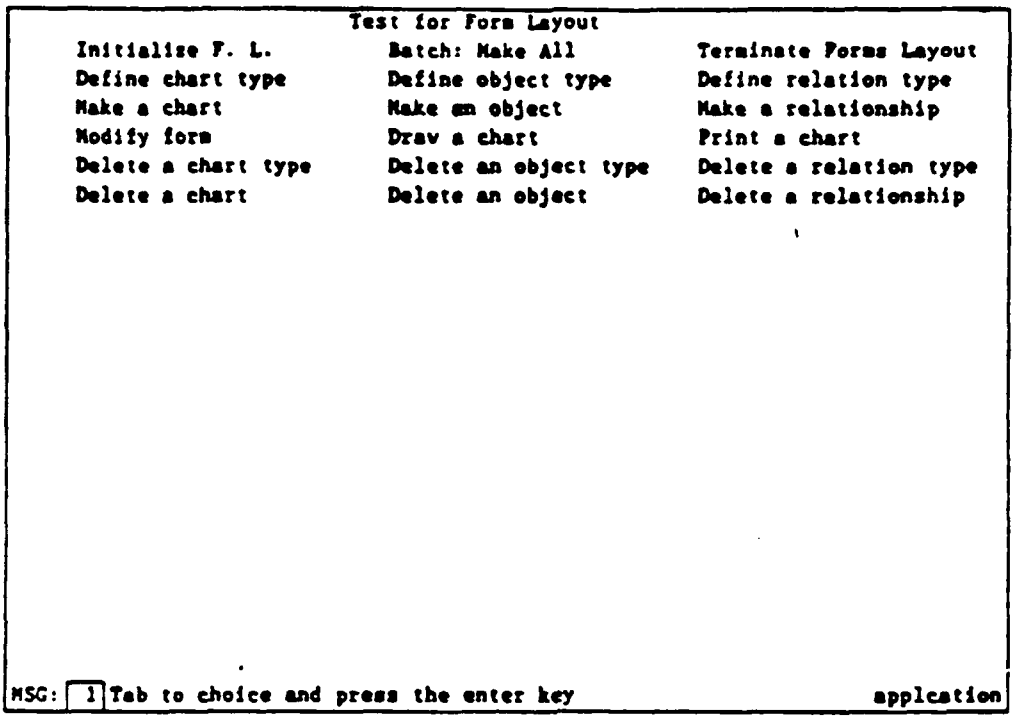


Figure 5-84 Test Screen 78

Tab to "Define relation type" and press <ENTER>.

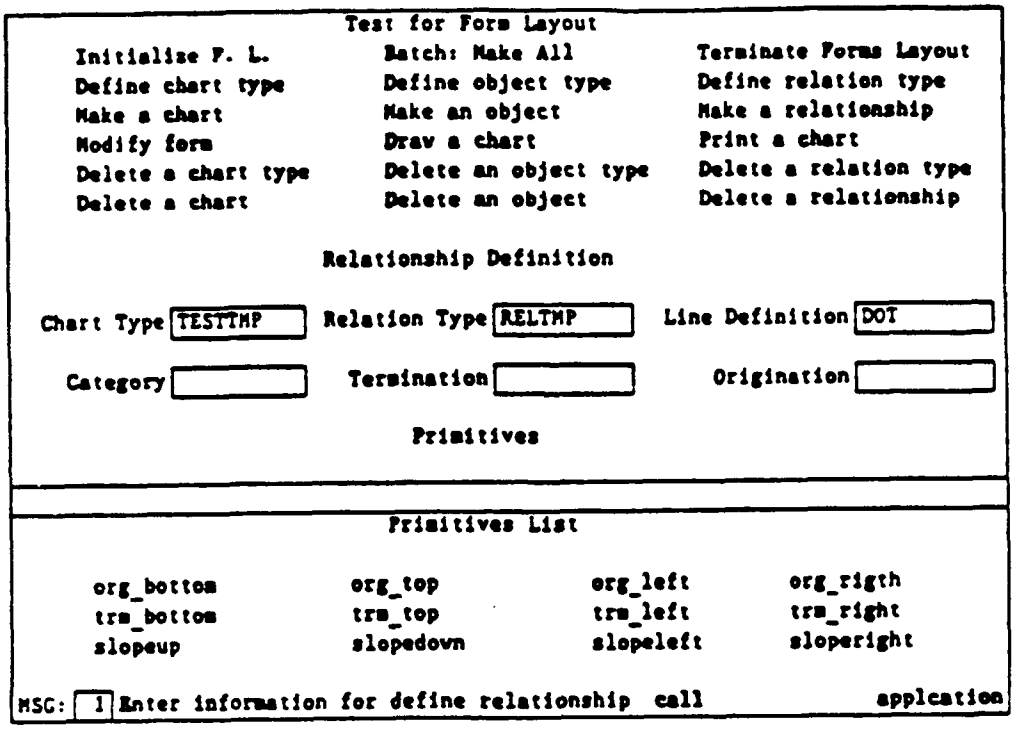


Figure 5-85 Test Screen 79

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

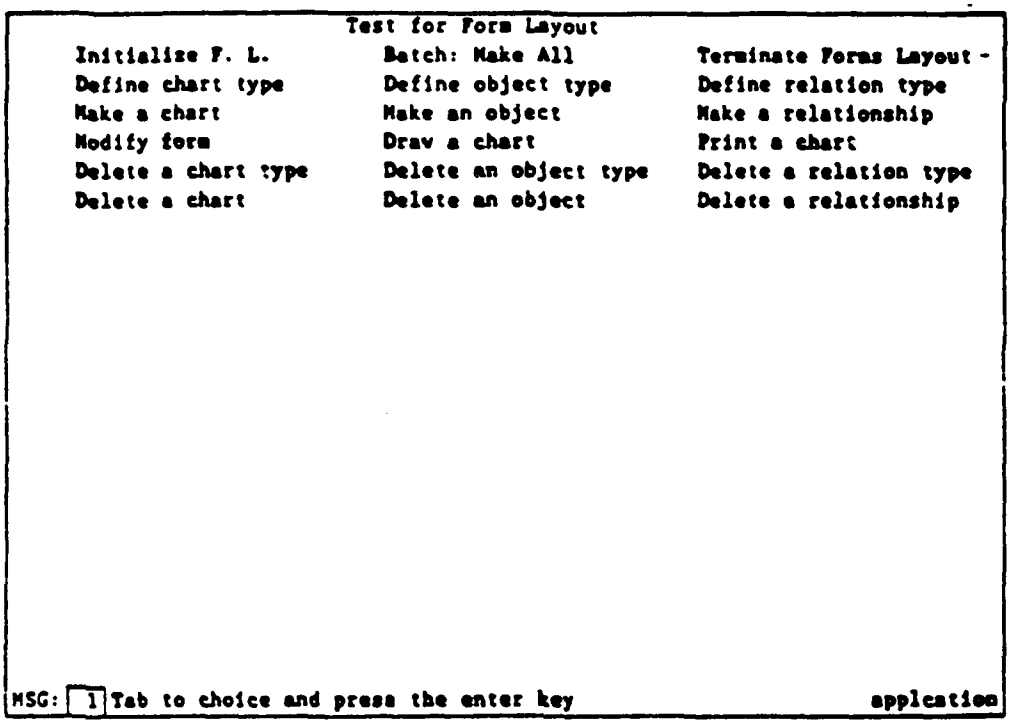


Figure 5-86 Test Screen 80

Tab to "Make a chart" and press <ENTER>.

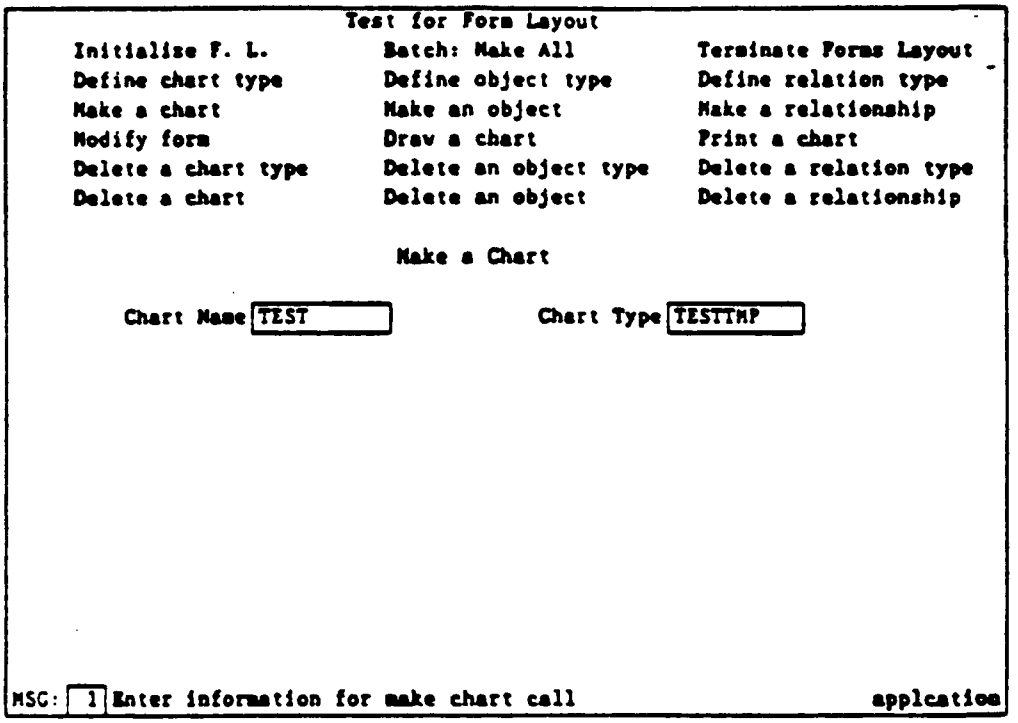


Figure 5-87 Test Screen 81

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

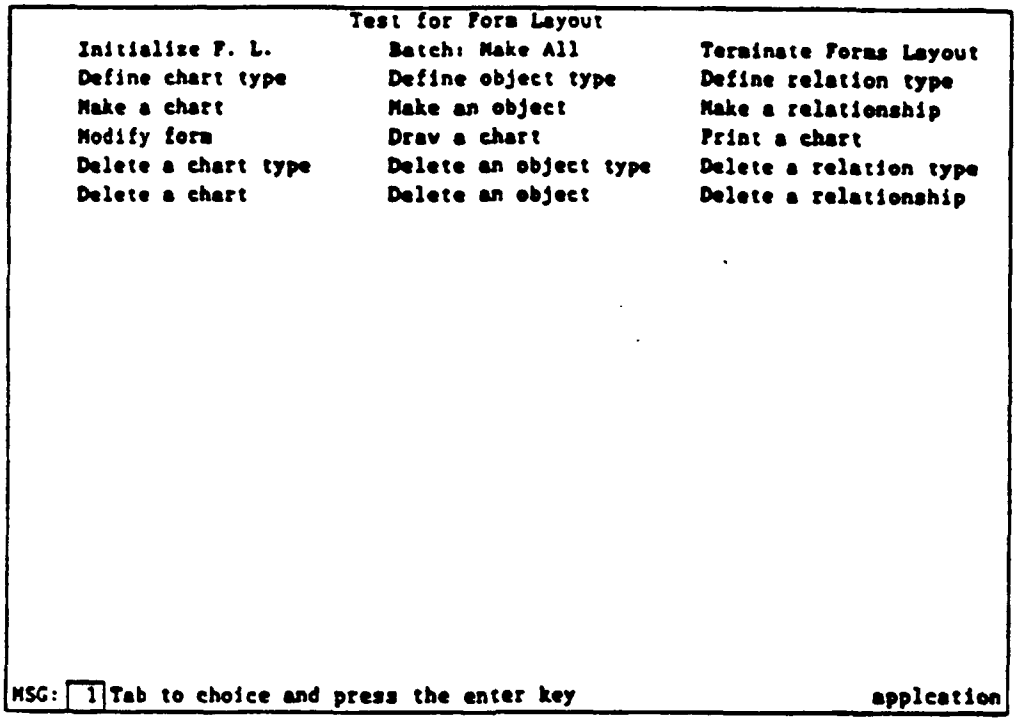


Figure 5-88 Test Screen 82

Tab to "Make an object" and press <ENTER>.

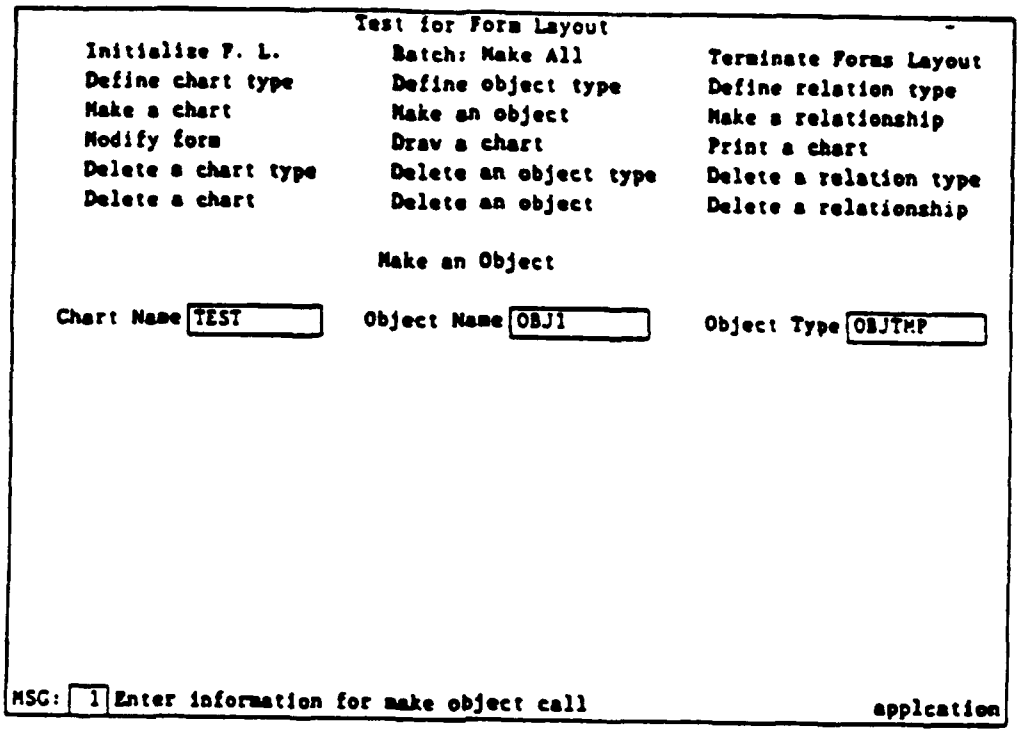


Figure 5-89 Test Screen 83

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

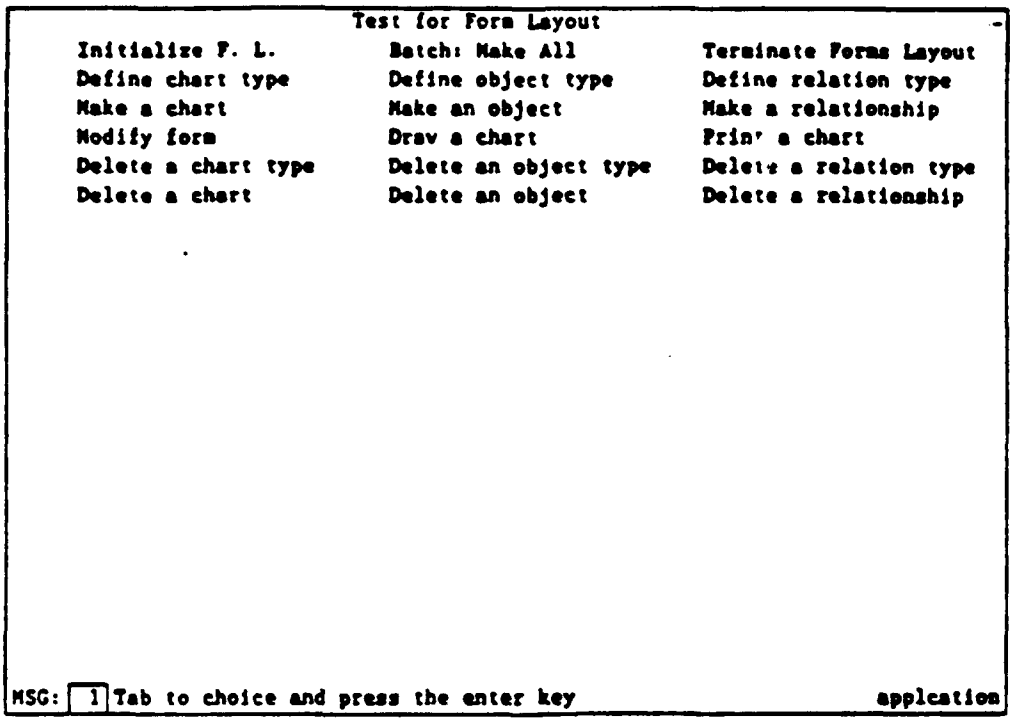


Figure 5-90 Test Screen 84

Tab to "Make a relationship" and press <ENTER>.

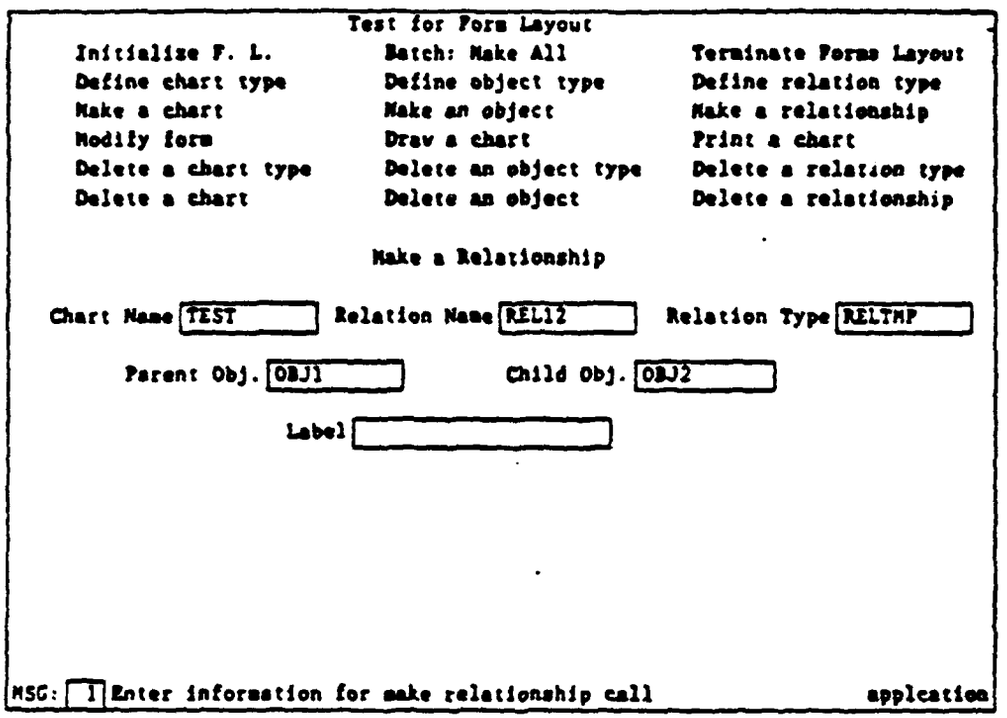


Figure 5-91 Test Screen 85

Enter the screen as shown and press <ENTER>.

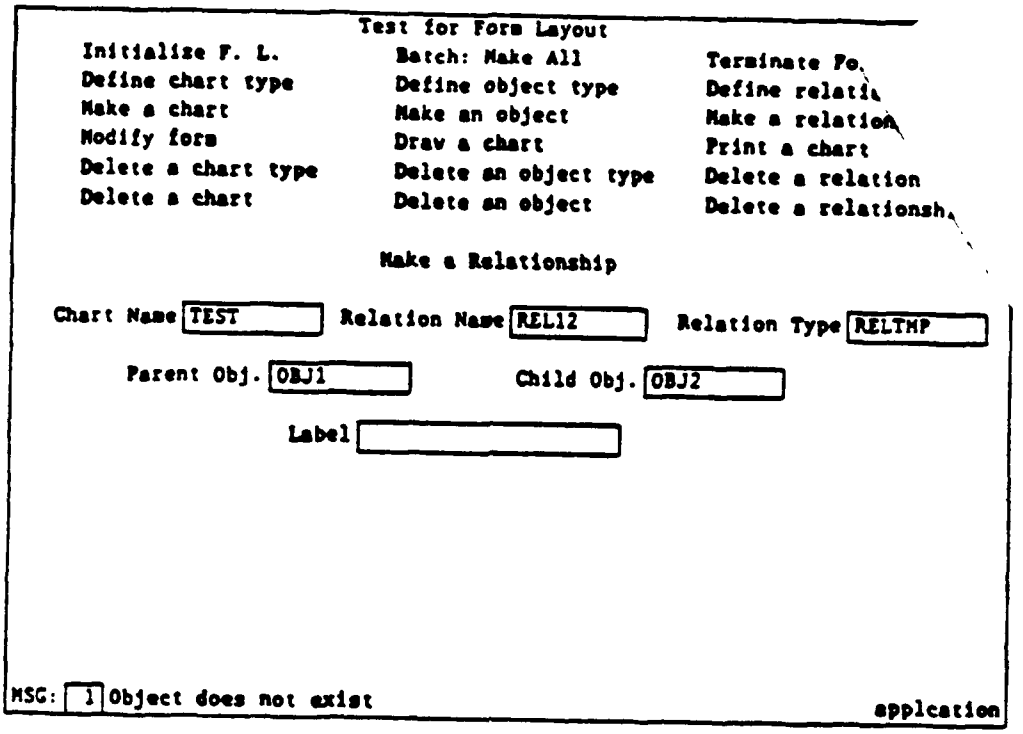


Figure 5-92 Test Screen 86

You will notice that you will not be able to create this relationship because one of the objects (obj 2) does not yet exist. Return to the main menu by pressing <QUIT>.

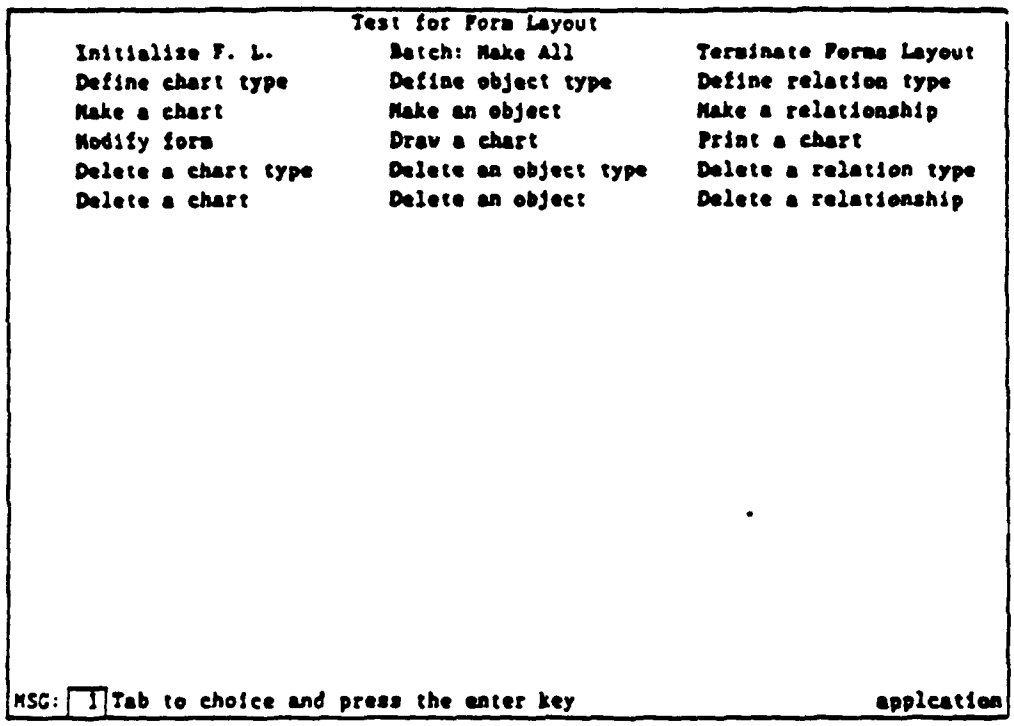


Figure 5-93 Test Screen 87

Tab back to "Make an object" and press <ENTER>.

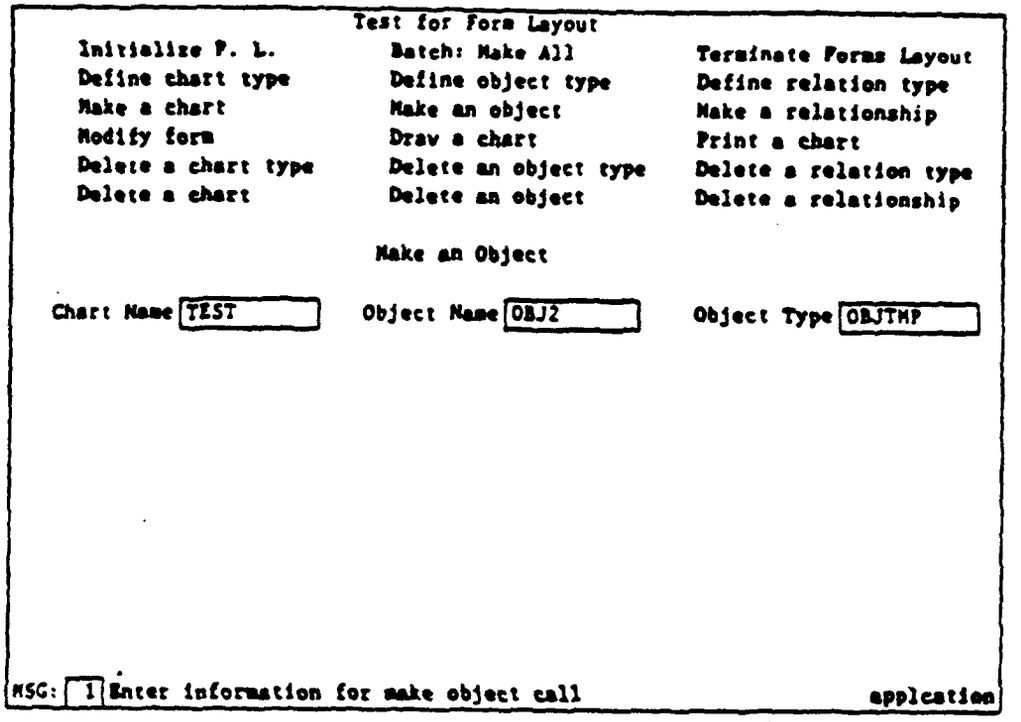


Figure 5-94 Test Screen 88

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

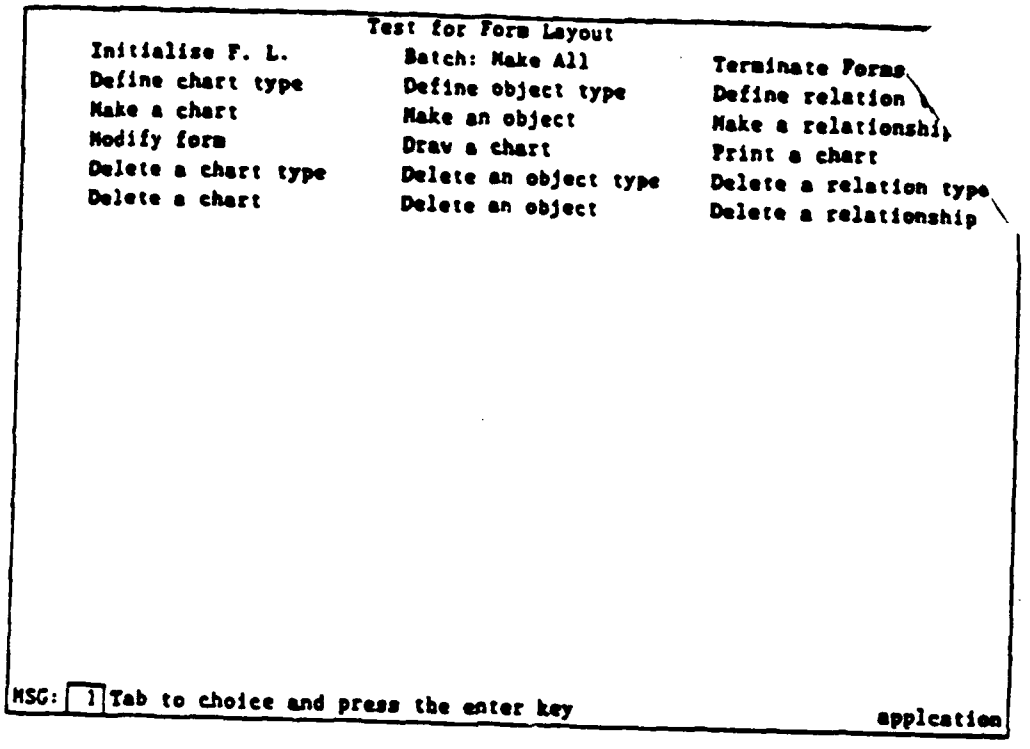


Figure 5-95 Test Screen 89

Tab back to "Make a relationship" and press <ENTER>.

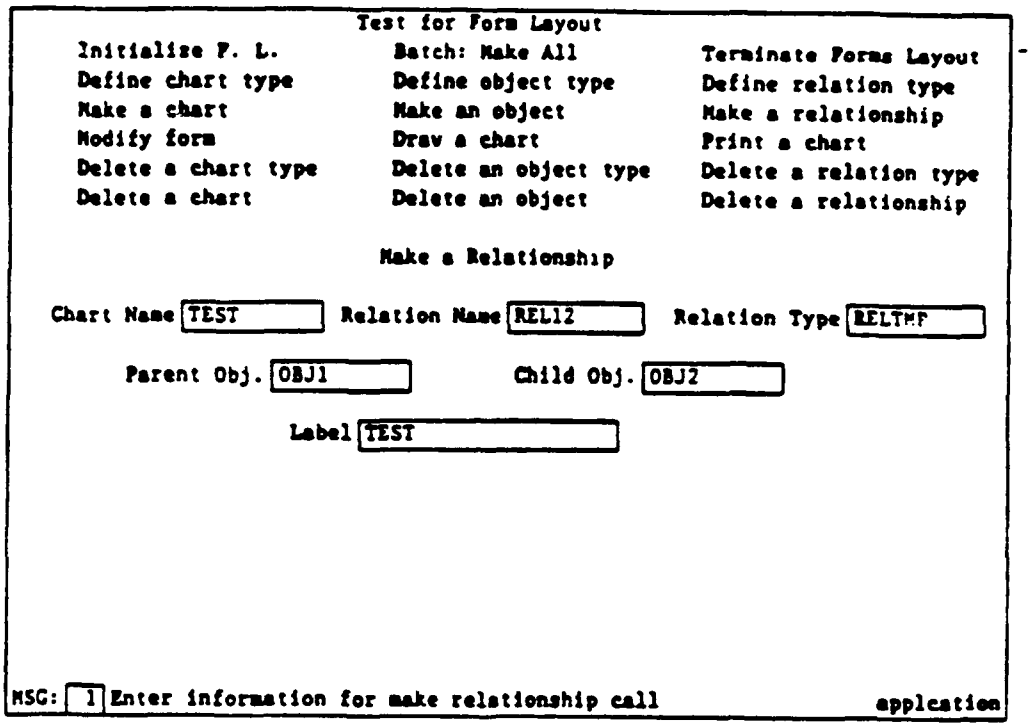


Figure 5-96 Test Screen 90

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

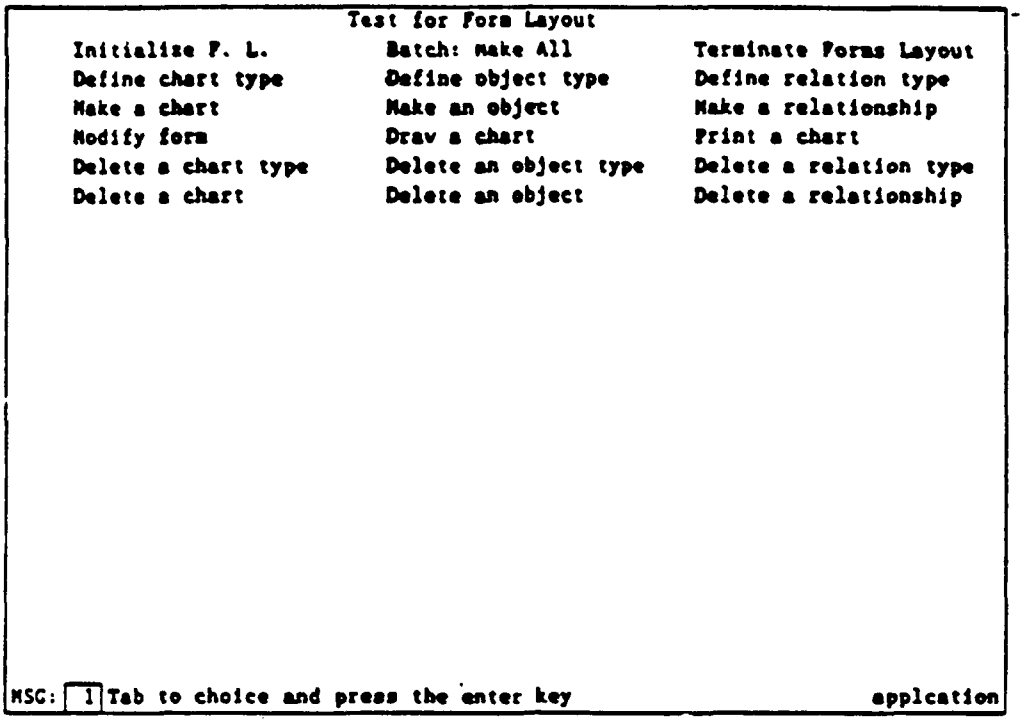


Figure 5-97 Test Screen 91

Tab to "Delete a chart type" and press <ENTER>.

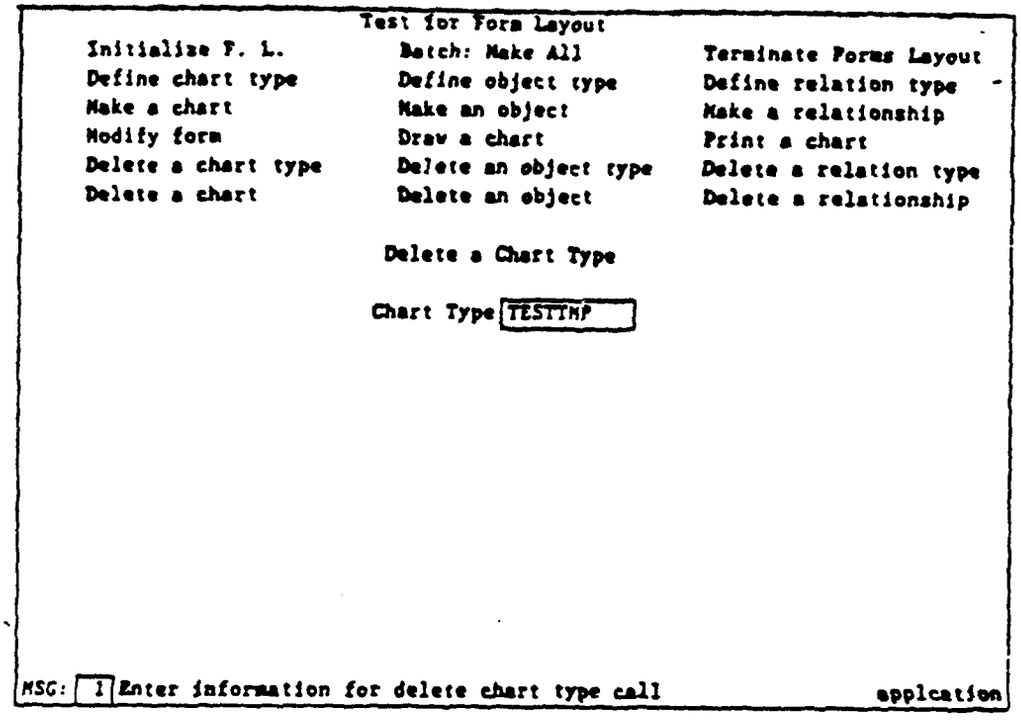


Figure 5-98 Test Screen 92

Enter the screen as shown and press <ENTER>.

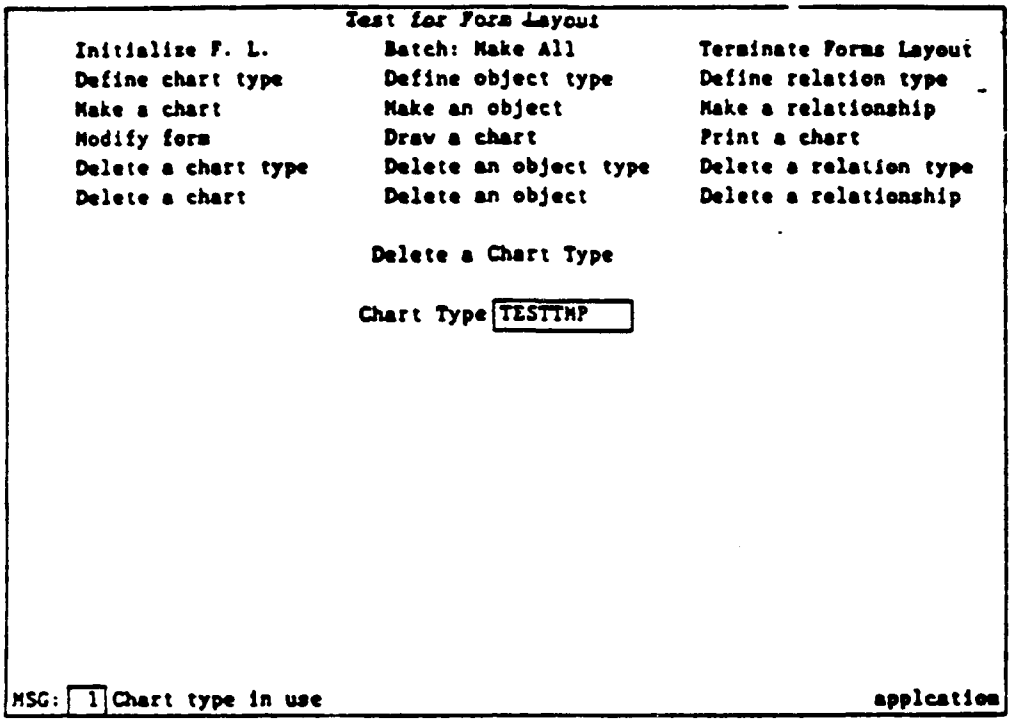


Figure 5-99 Test Screen 93

You will notice that you are unable to delete chart type because it is in use. Return to the main menu by pressing <QUIT>.

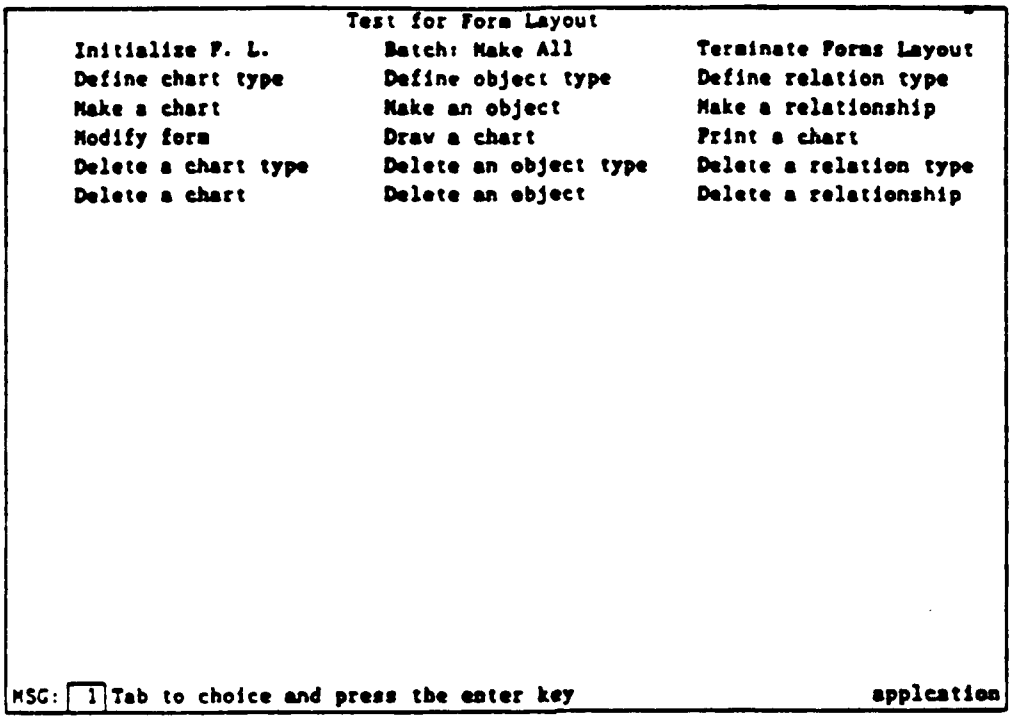


Figure 5-100 Test Screen 94

Tab to "Delete an object" and press <ENTER>.

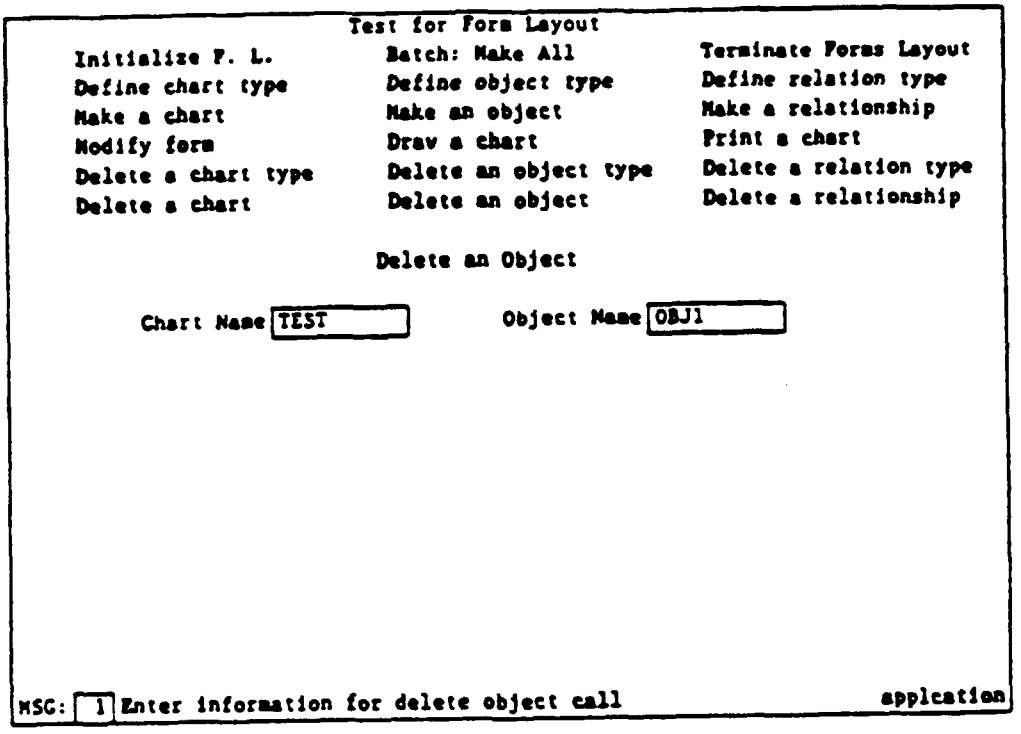


Figure 5-101 Test Screen 95

Enter the screen as shown and press <ENTER>.

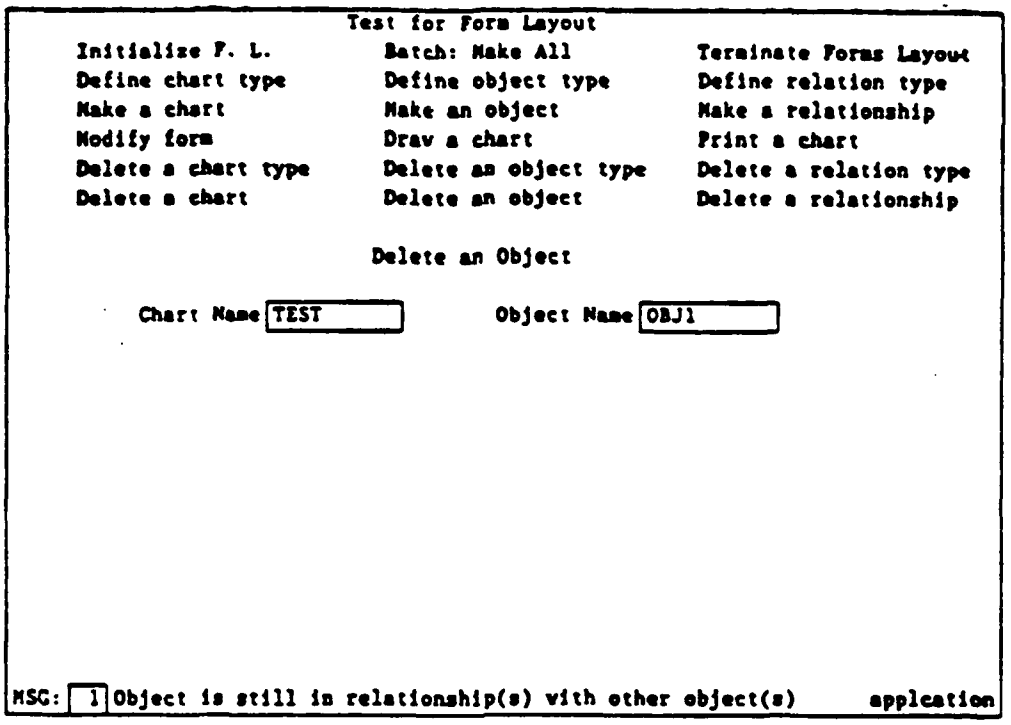


Figure 5-102 Test Screen 96

You will notice that you can not delete the object because it is still in a relationship. Return to the main menu by pressing <QUIT>.

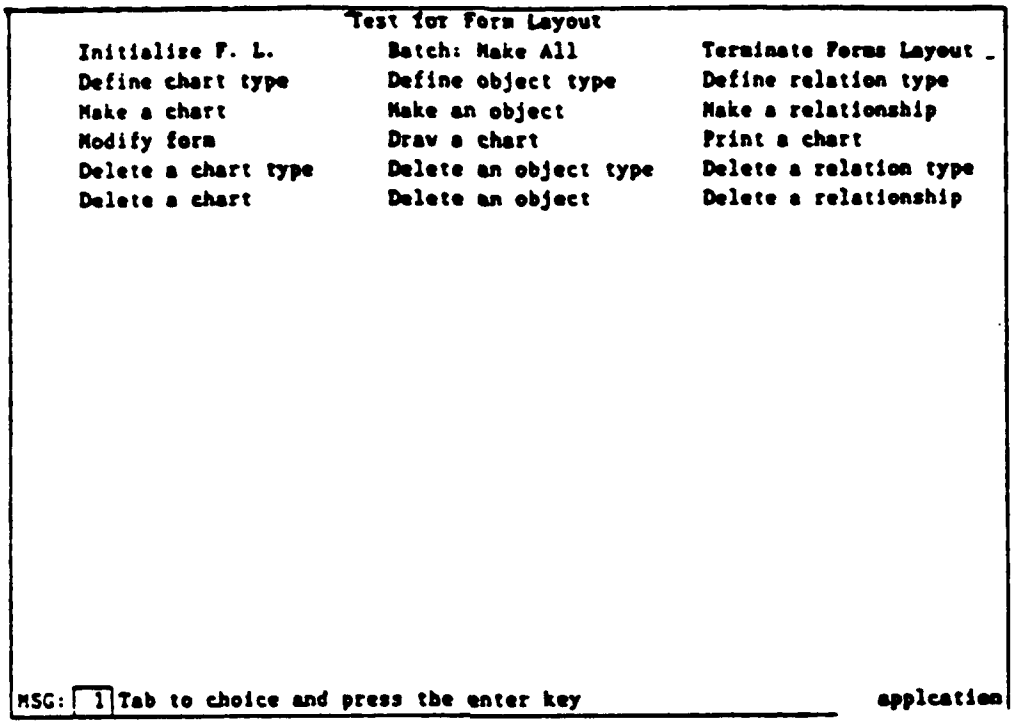


Figure 5-103 Test Screen 97

Tab to "Delete a relationship" and press <ENTER>.

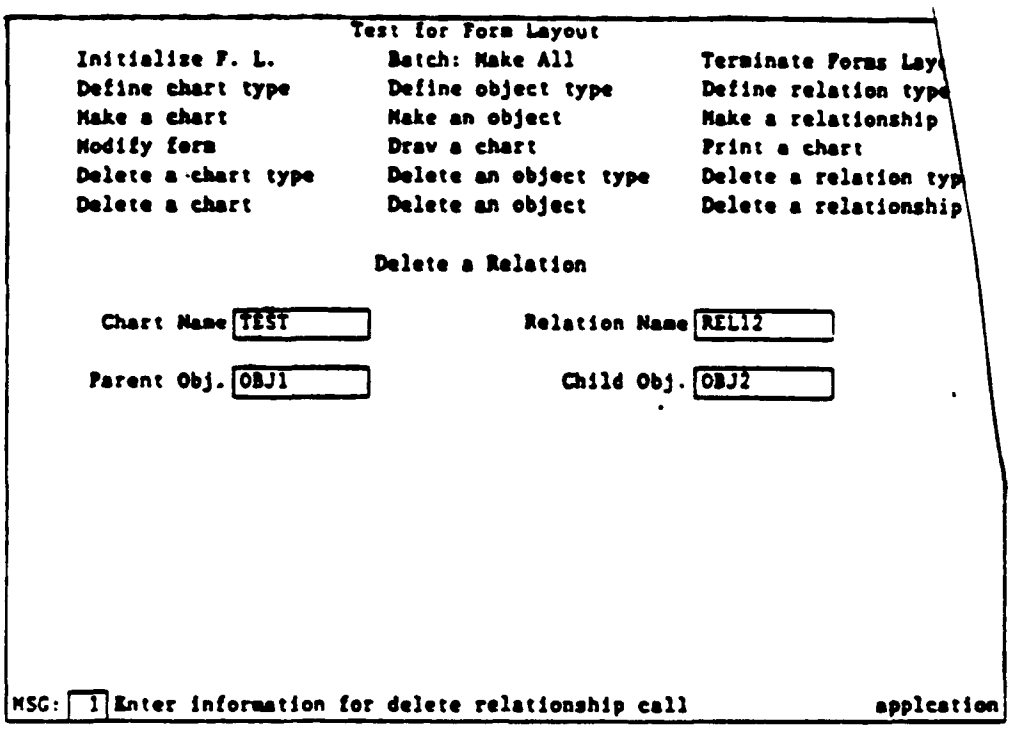


Figure 5-104 Test Screen 98

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

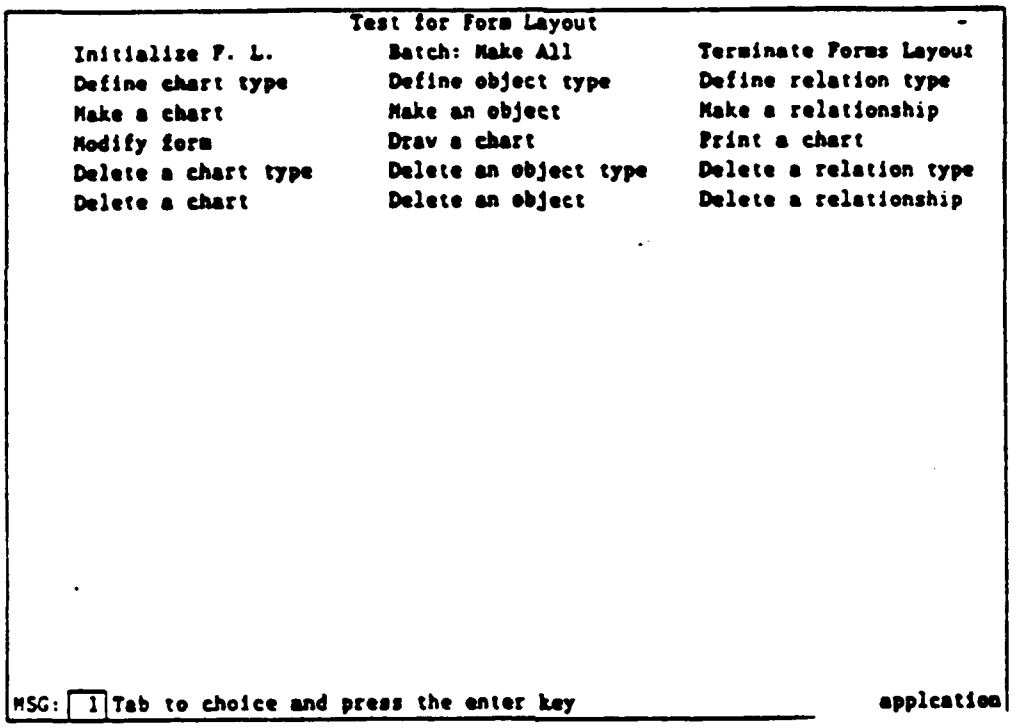


Figure 5-105 Test Screen 99

Tab back to "Delete an object" and press <ENTER>.

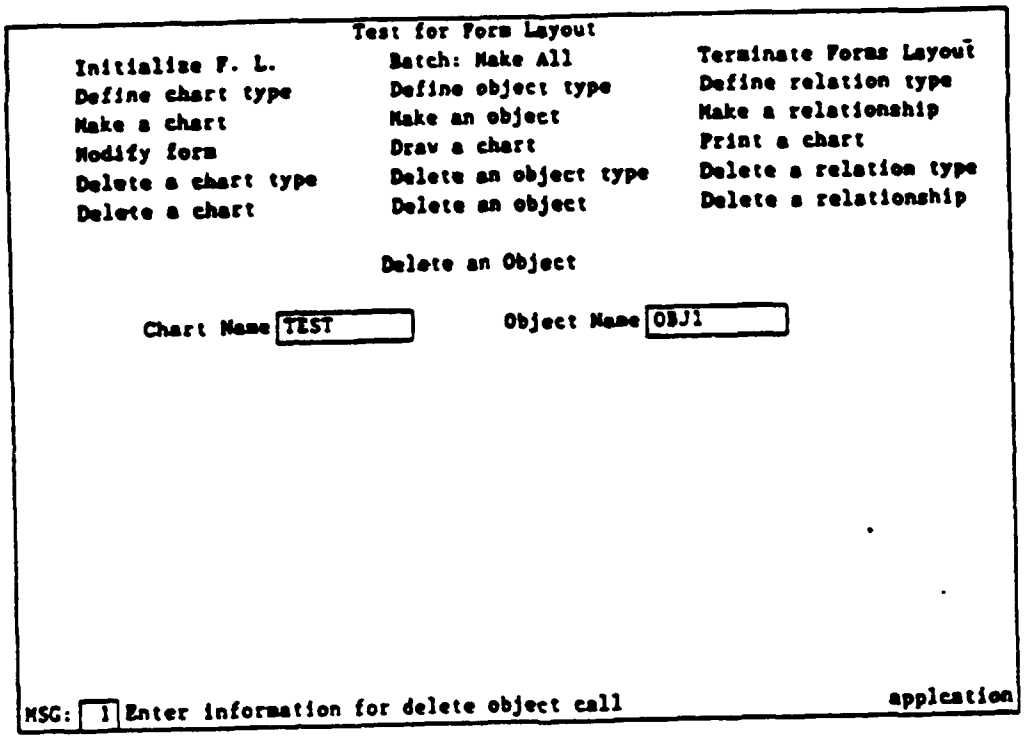


Figure 5-106 Test Screen 100

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

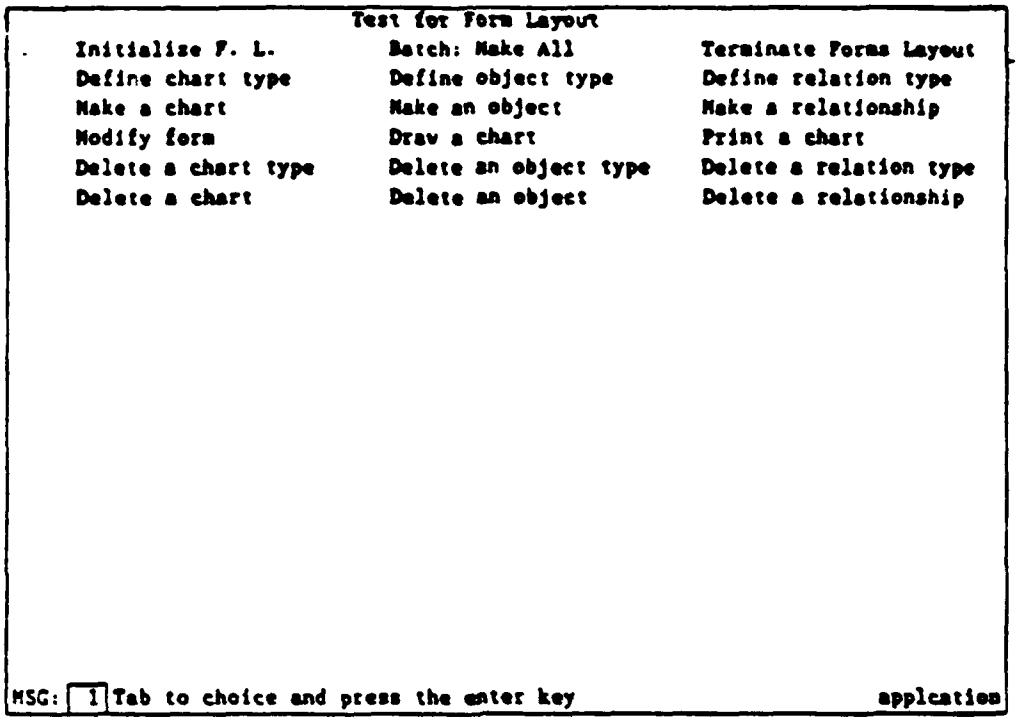


Figure 5-107 Test Screen 101

Tab to "Delete a chart" and press <ENTER>.

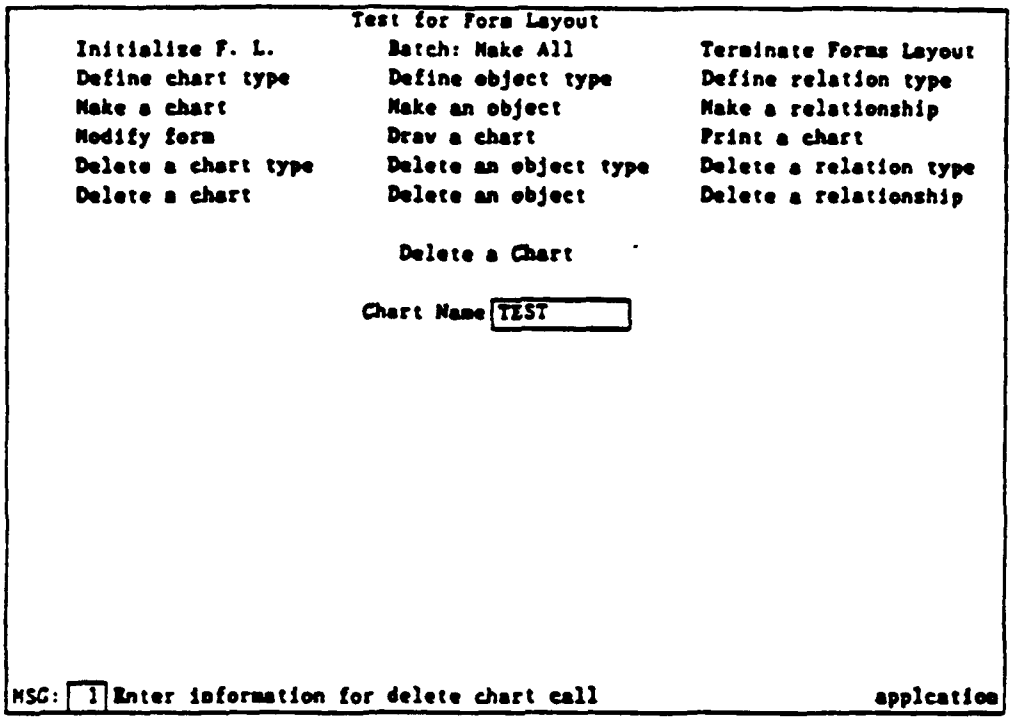


Figure 5-108 Test Screen 102

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

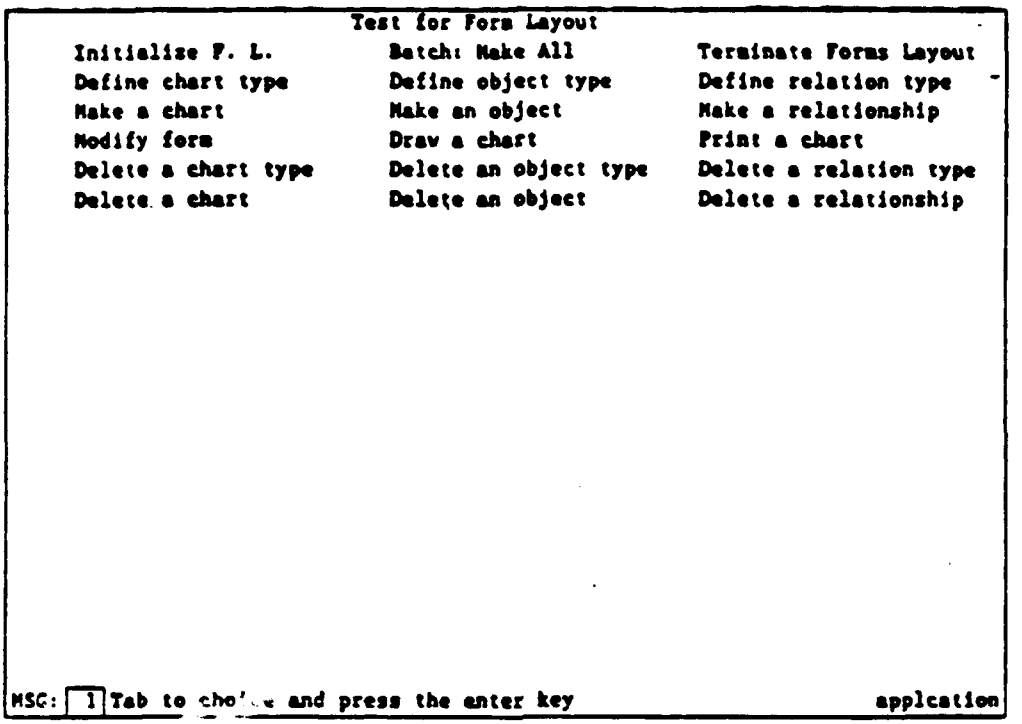


Figure 5-109 Test Screen 103

Tab to "Delete an object type" and press <ENTER>.

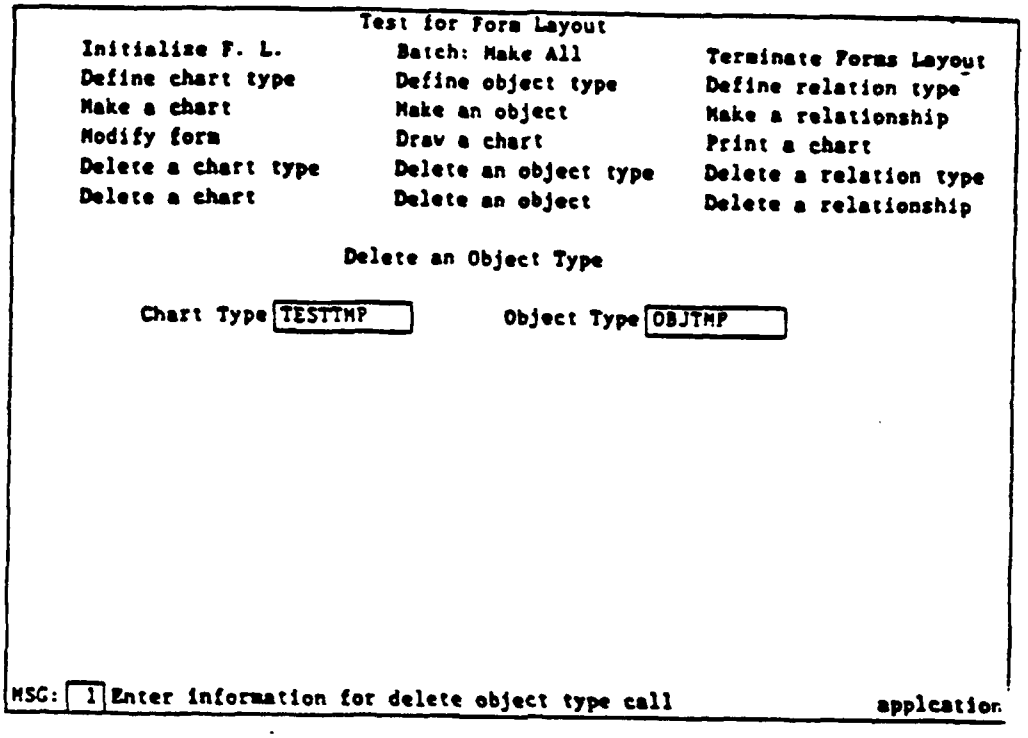


Figure 5-110 Test Screen 104

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

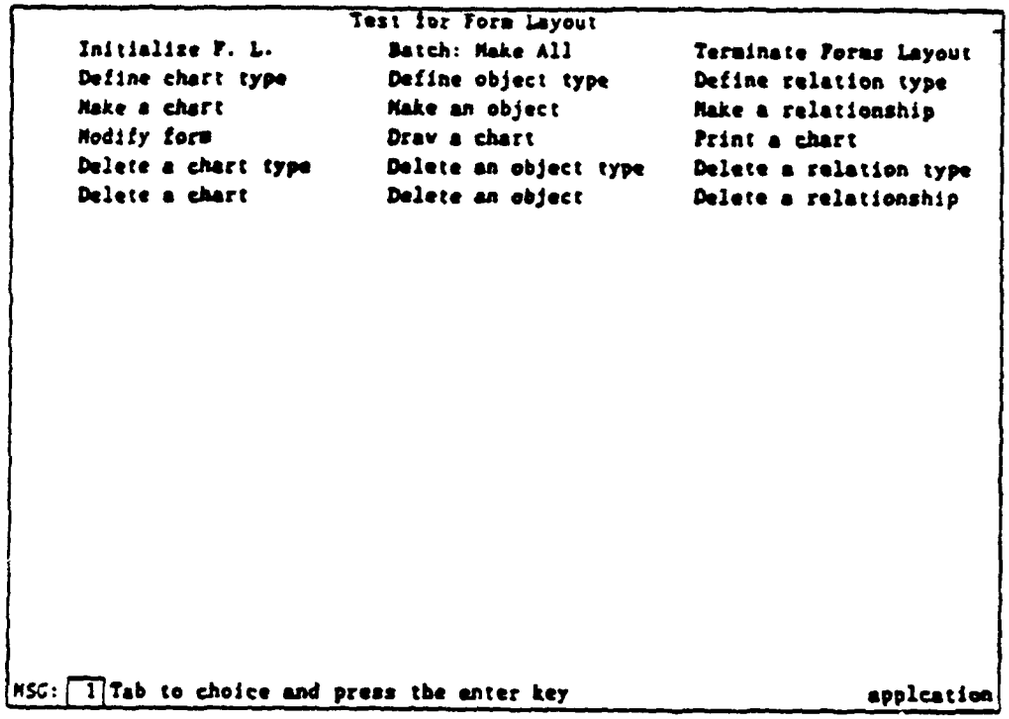


Figure 5-111 Test Screen 105

Tab to "Delete relation type" and press <ENTER>.

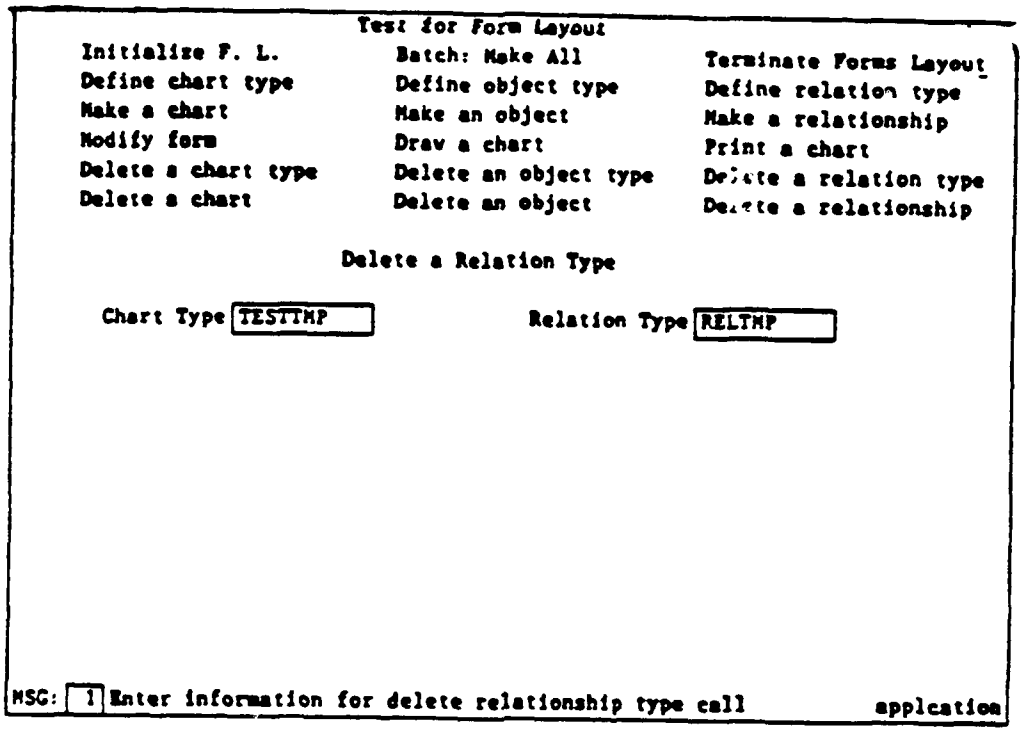


Figure 5-112 Test Screen 106

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

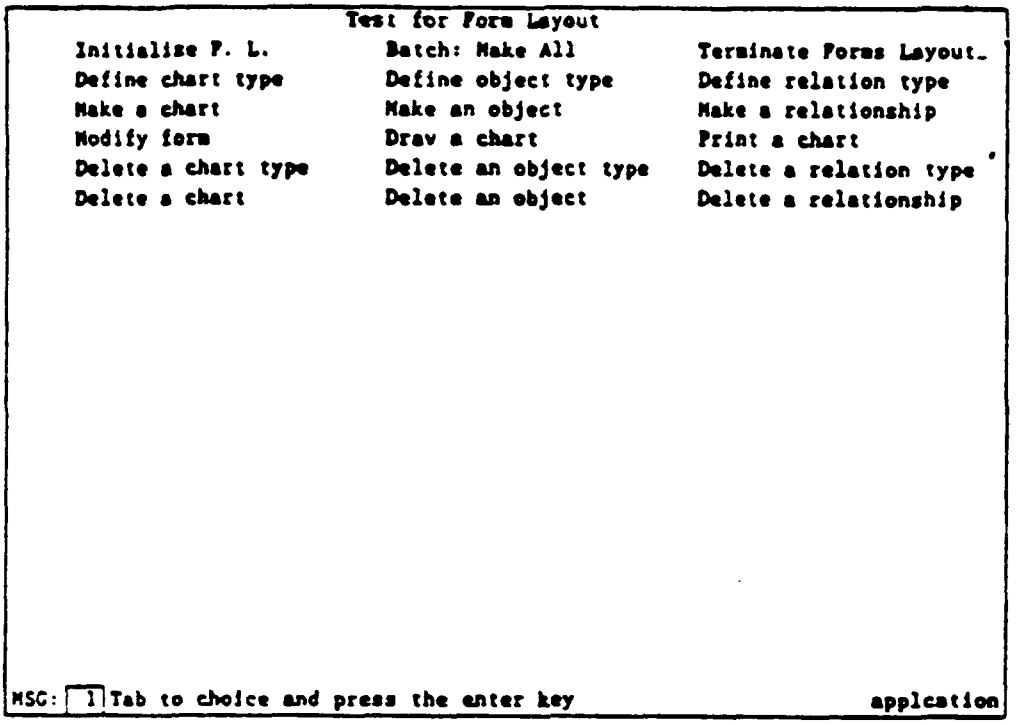


Figure 5-113 Test Screen 107

Tab to "Delete chart type" and press <ENTER>.

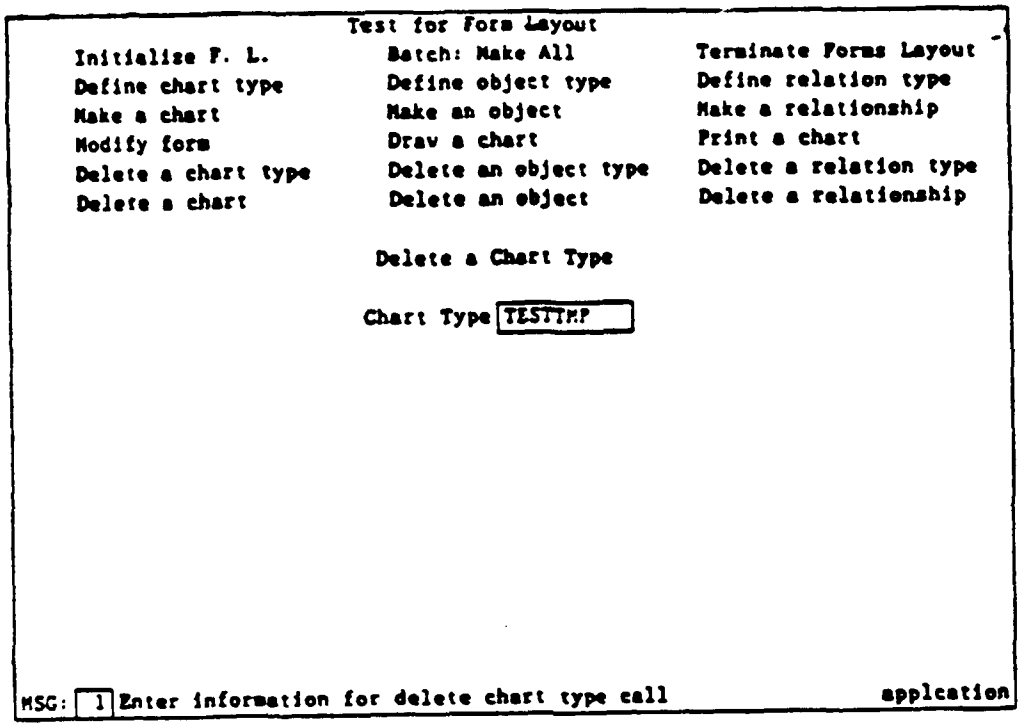


Figure 5-114 Test Screen 108

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

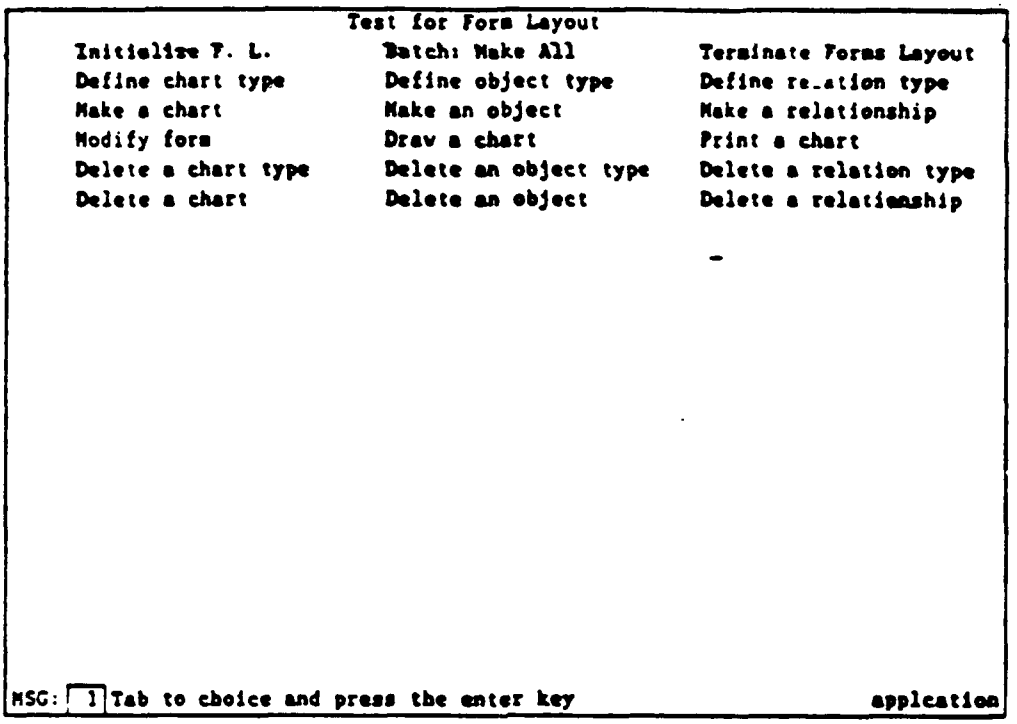


Figure 5-115 Test Screen 109

Tab to "Define chart type" and press <ENTER>.

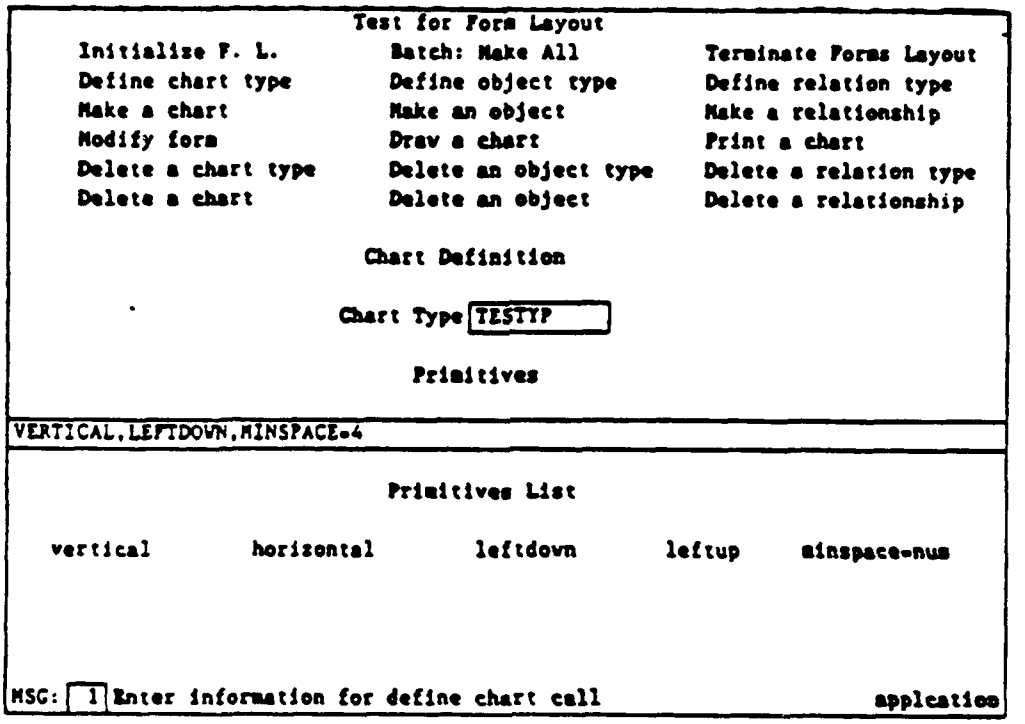


Figure 5-116 Test Screen 110

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

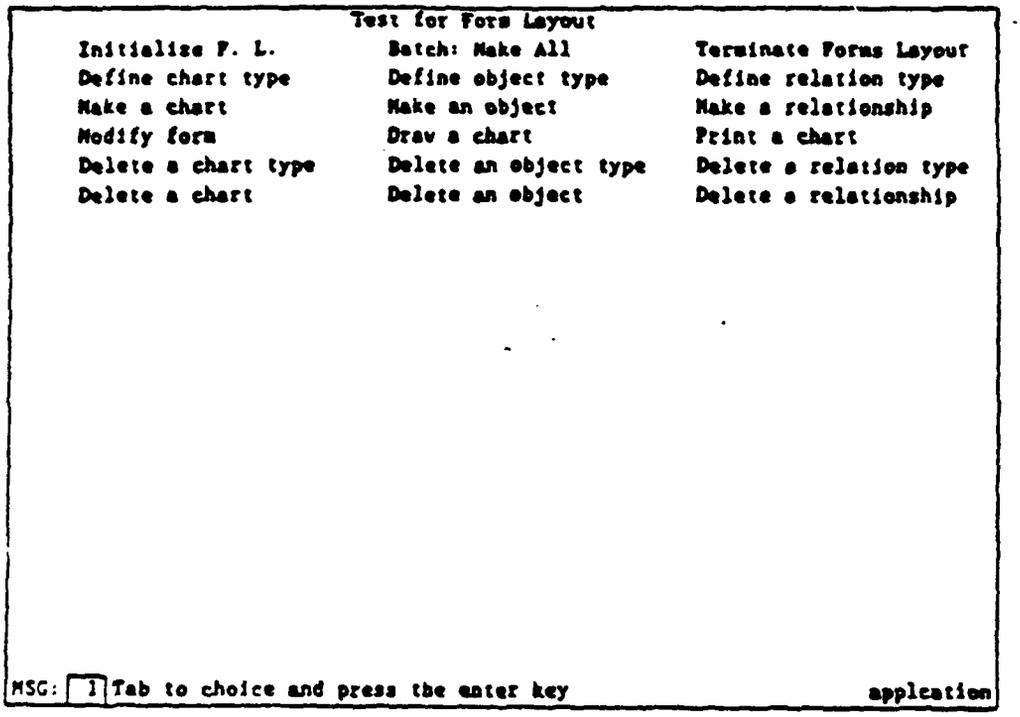


Figure 5-117 Test Screen 111

Tab to "Define object type" and press <ENTER>.

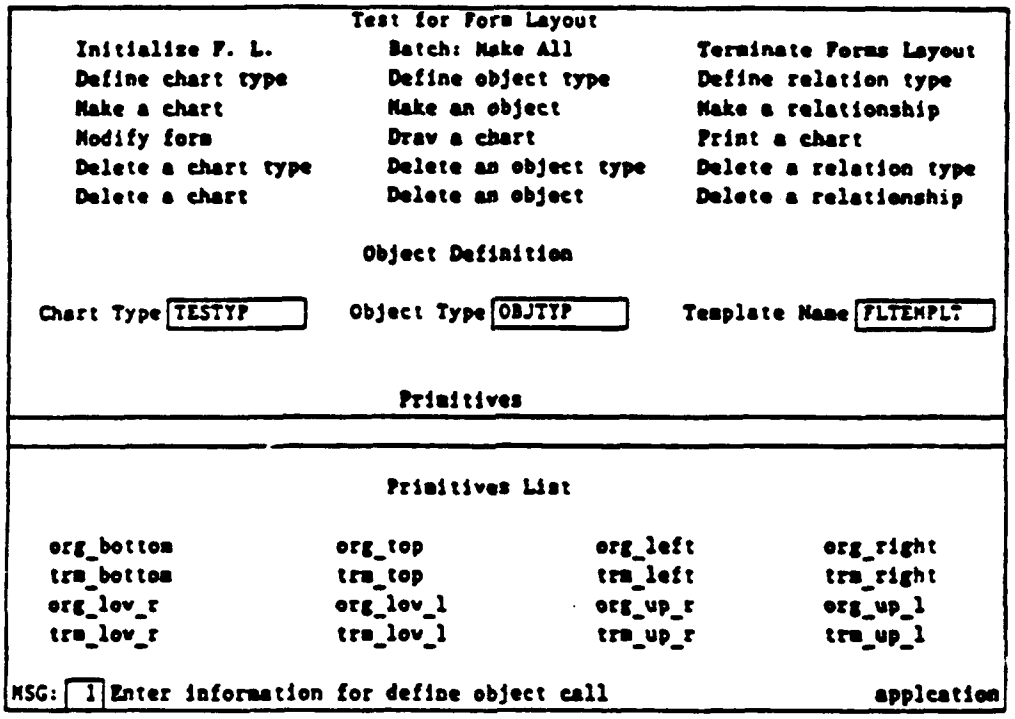


Figure 5-118 Test Screen 112

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

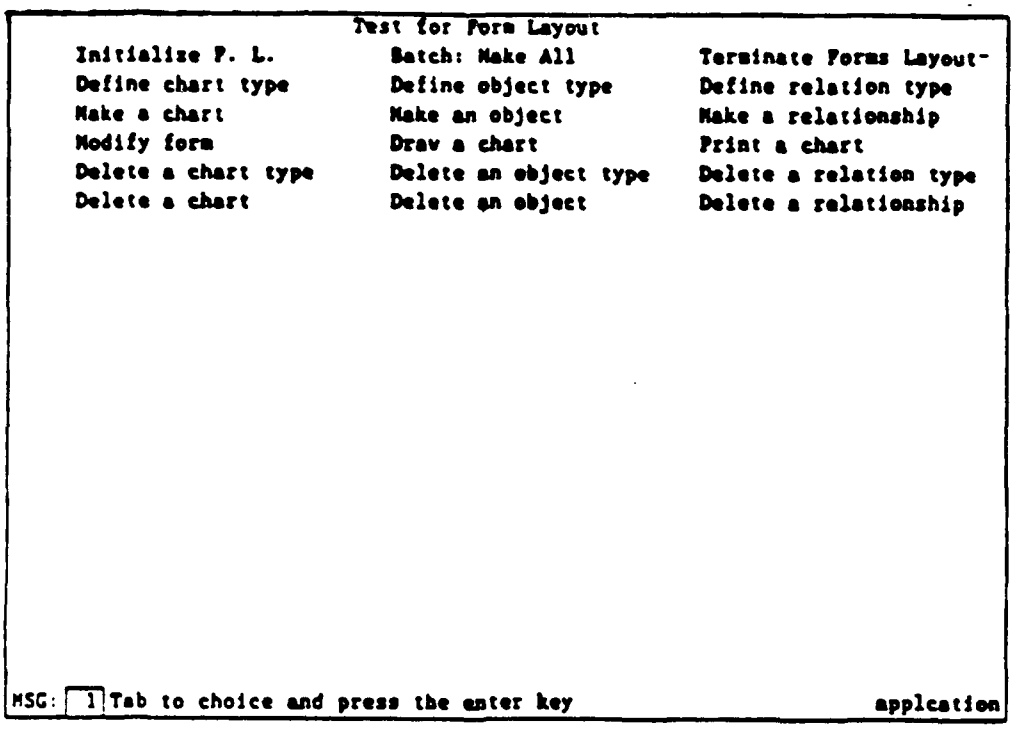


Figure 5-119 Test Screen 113

Tab to "Define relation type" and press <ENTER>.

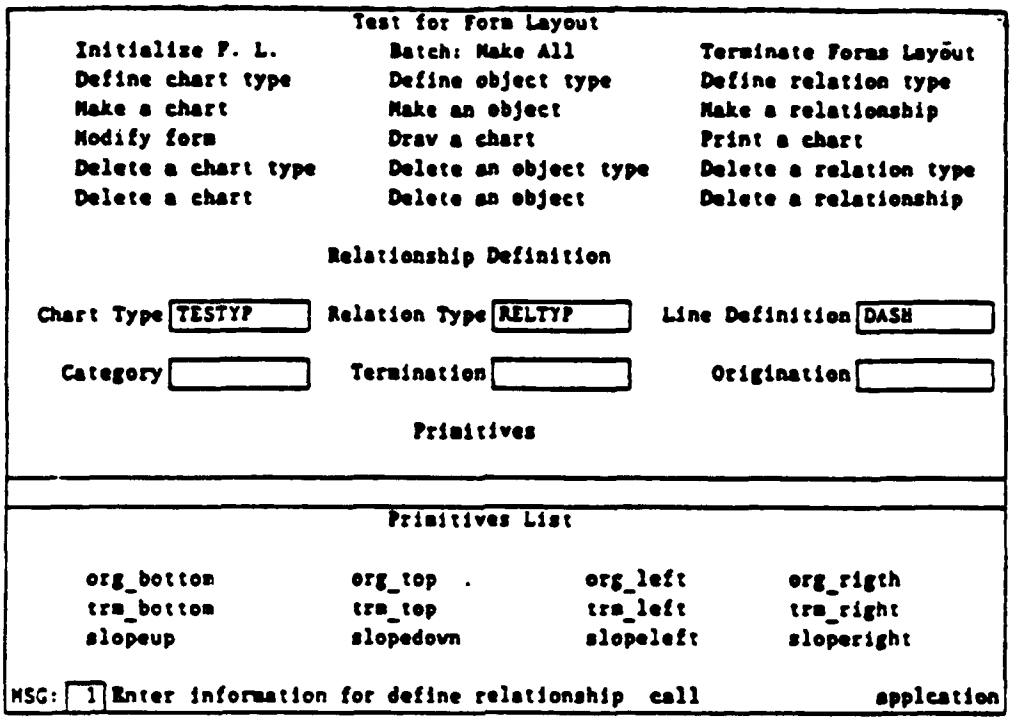


Figure 5-120 Test Screen 114

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

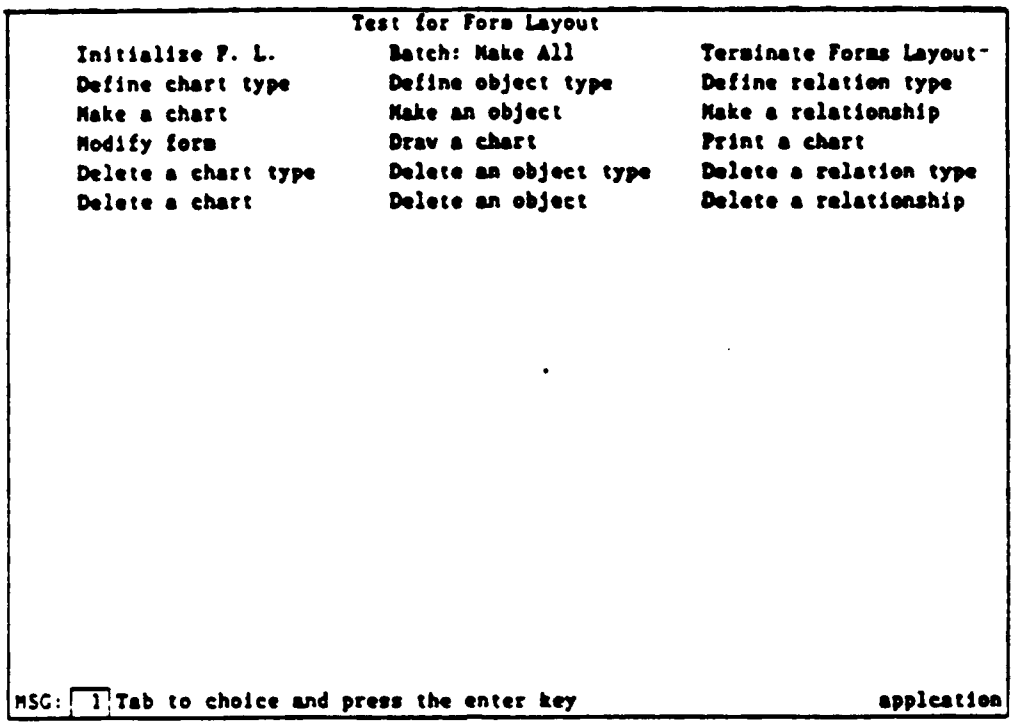


Figure 5-121 Test Screen 115

Tab to "Define chart type" and press <ENTER>.

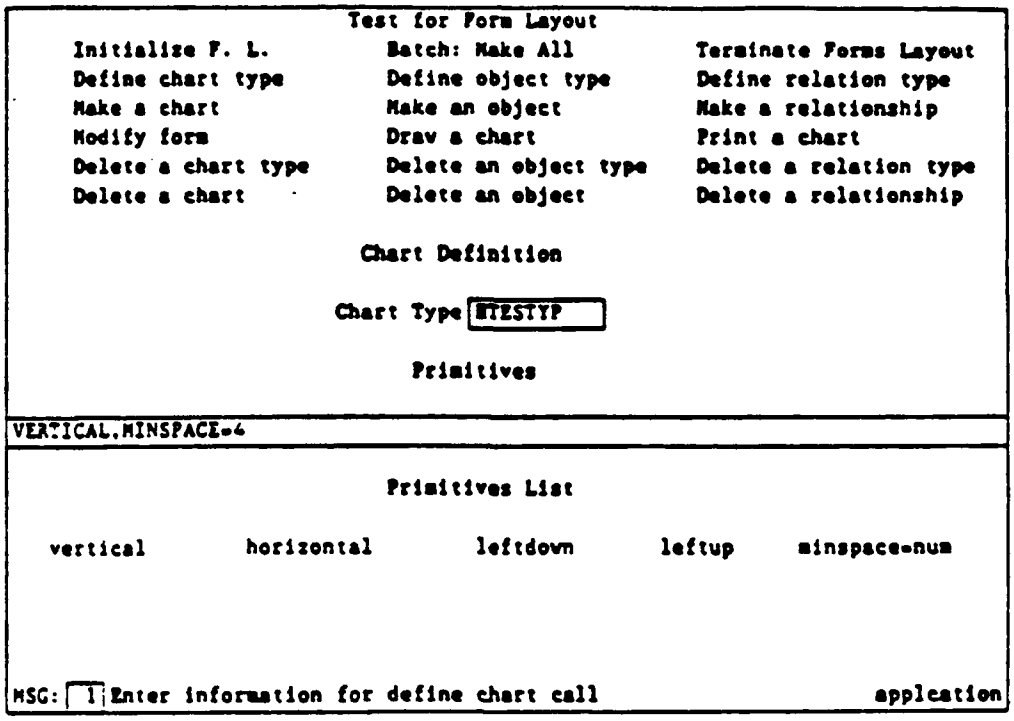


Figure 5-122 Test Screen 116

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

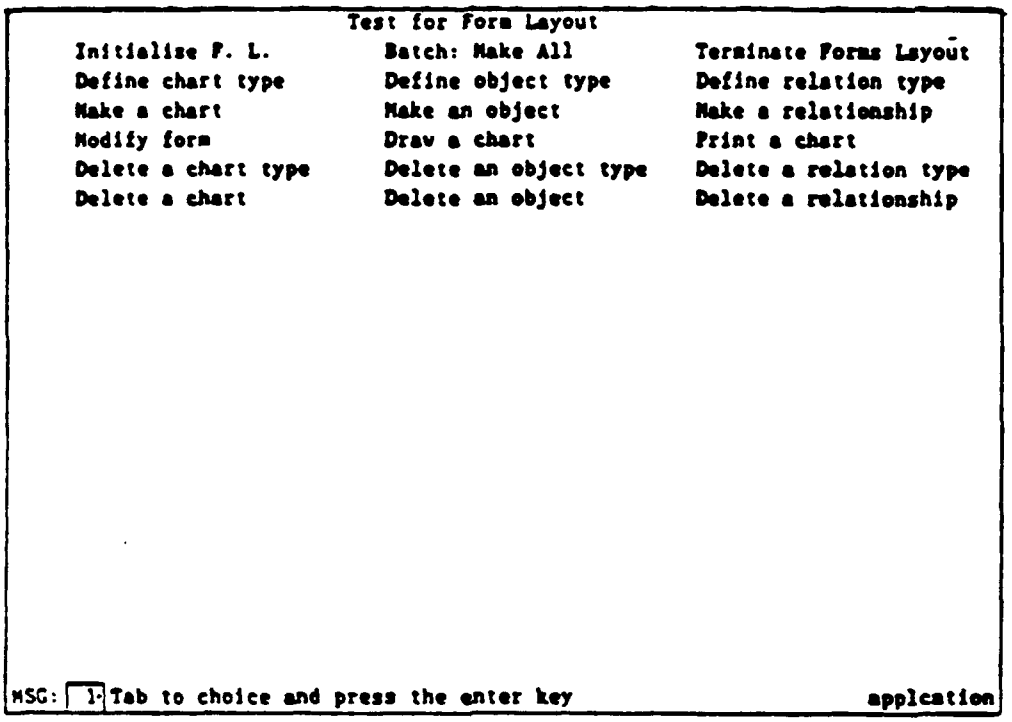


Figure 5-123 Test screen 117

Tab to "Define object type" and press <ENTER>.

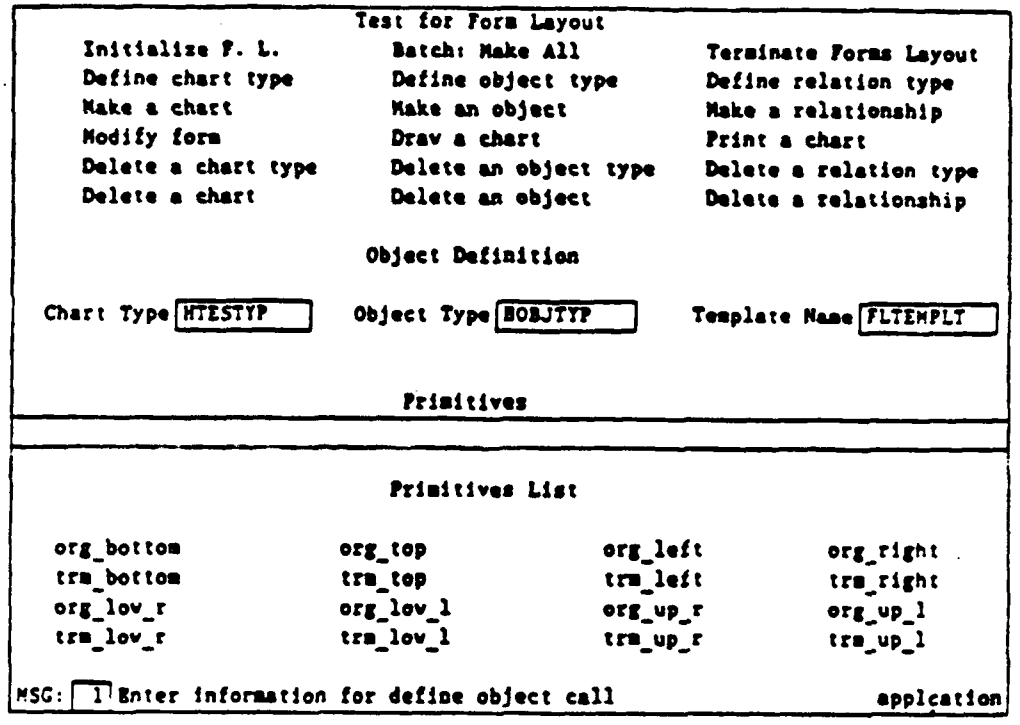


Figure 5-124 Test Screen 118

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

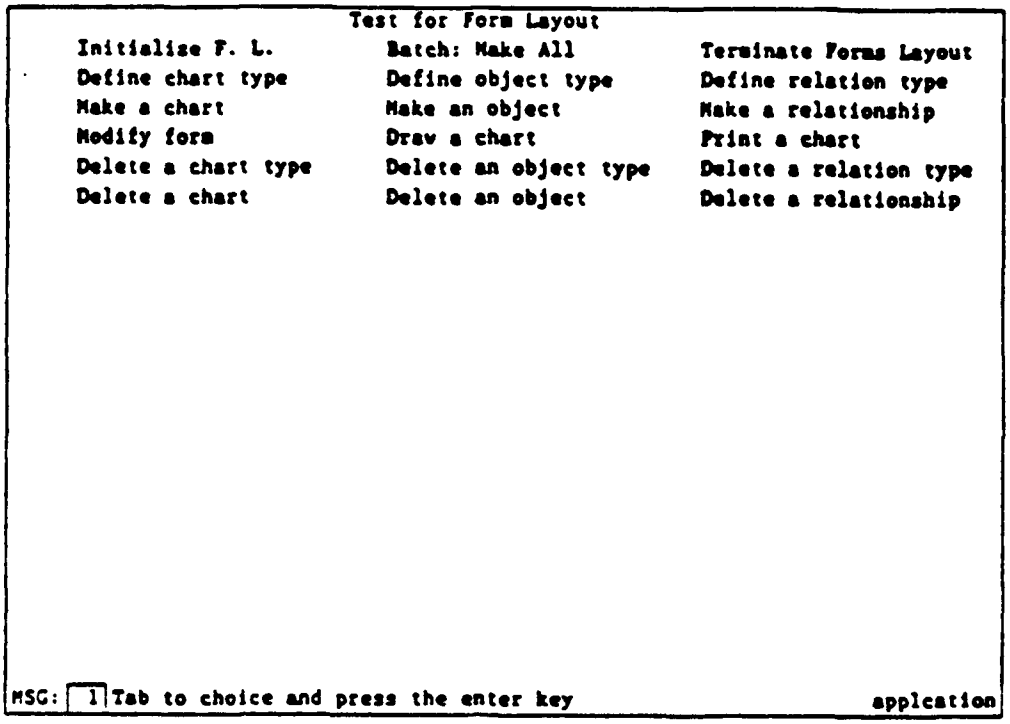


Figure 5-125 Test Screen 119

Tab to "Define relation type" and press <ENTER>.

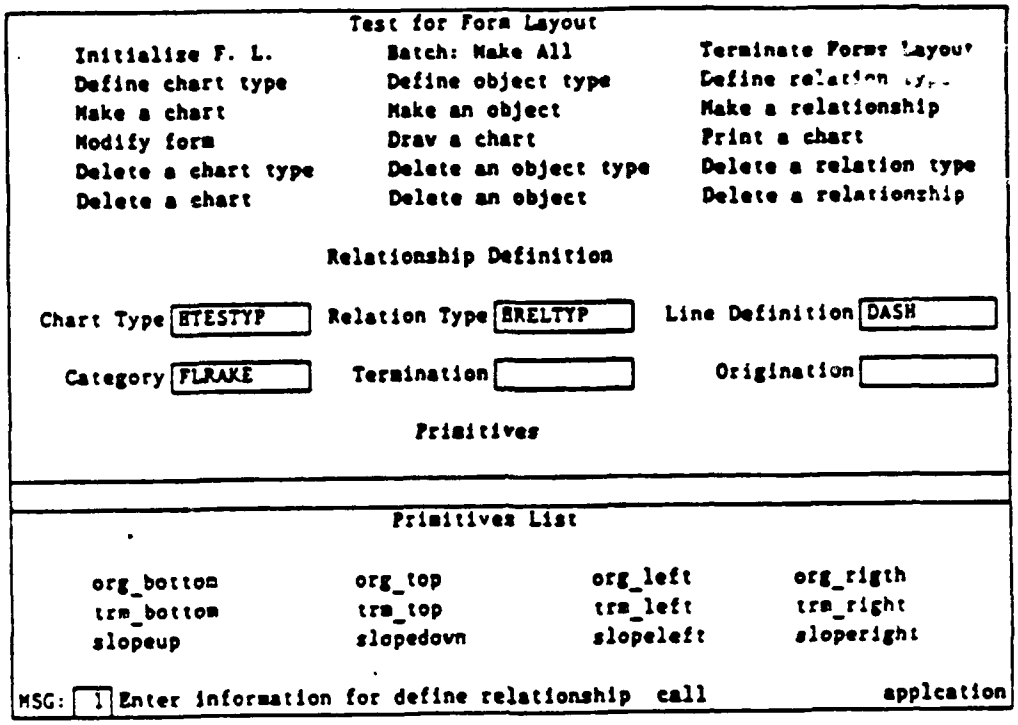


Figure 5-126 Test Screen 120

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

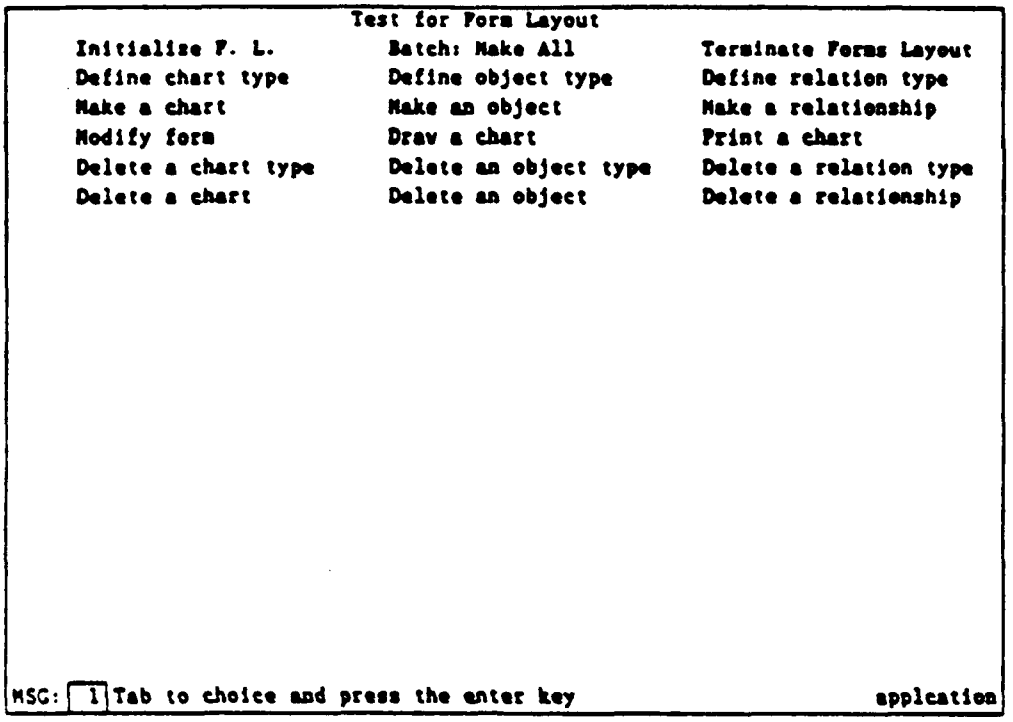


Figure 5-127 Test Screen 121

Tab to "Batch: Make All" and press <ENTER>.

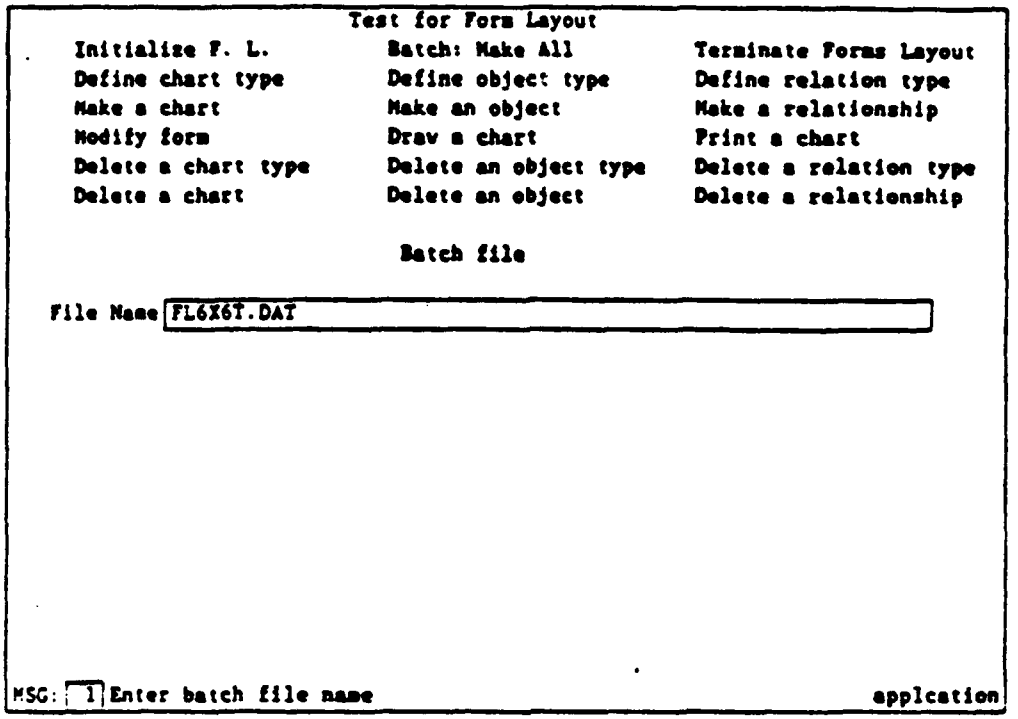


Figure 5-128 Test Screen 122

Enter the screen as shown and press <ENTER>.

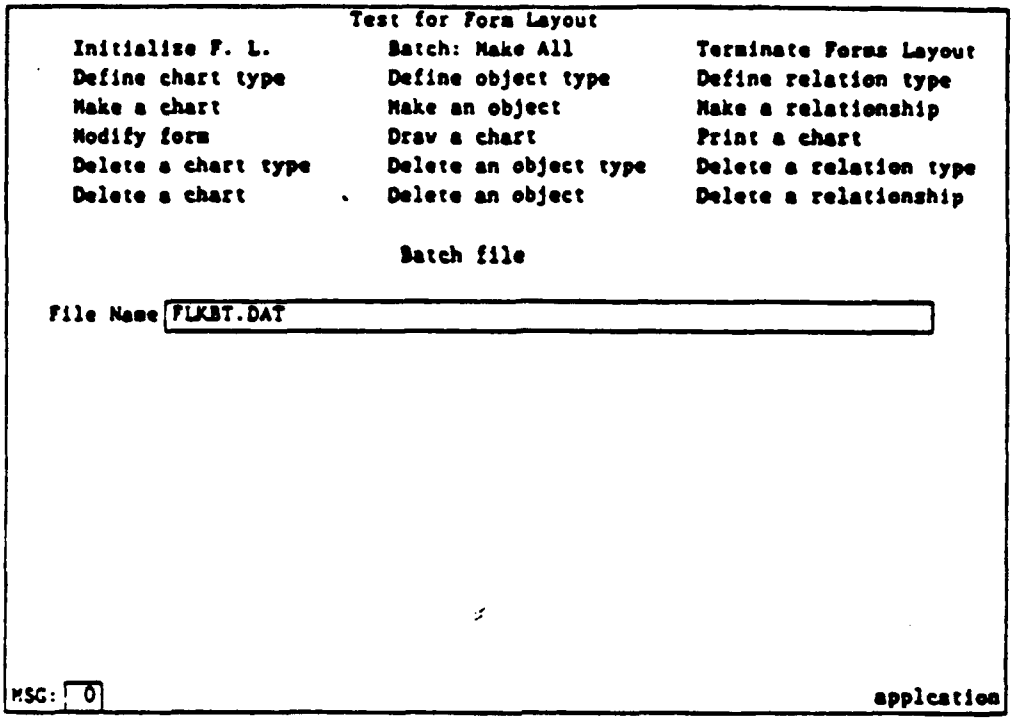


Figure 5-129 Test Screen 123

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

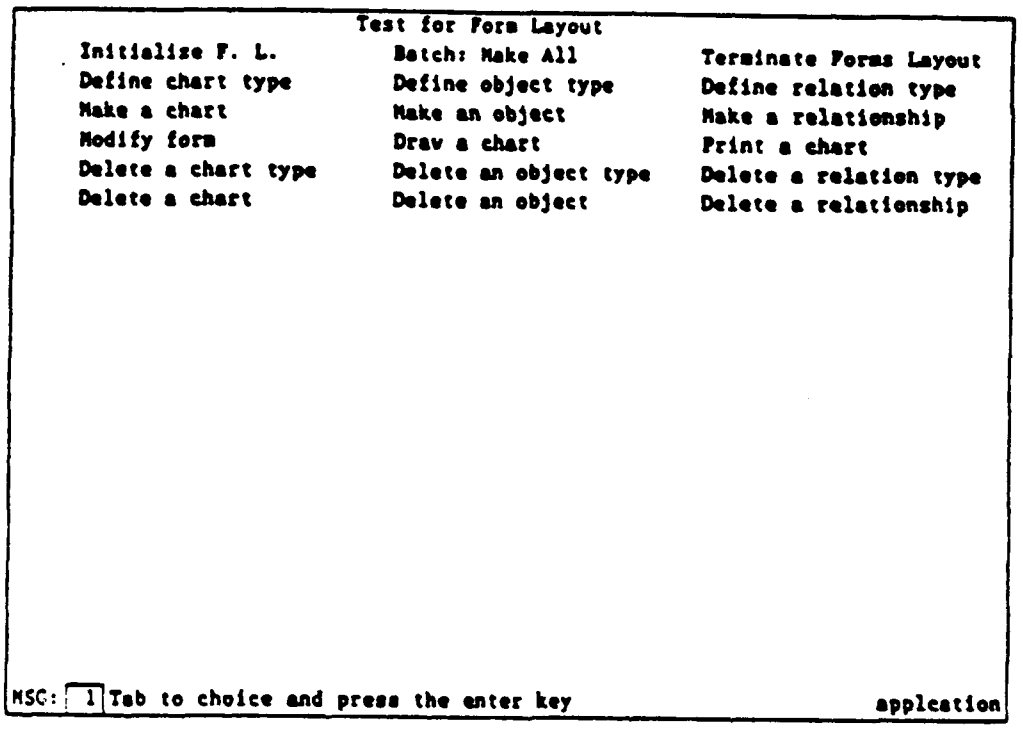


Figure 5-130 Test Screen 124

Tab to "Draw a chart" and press <ENTER>.

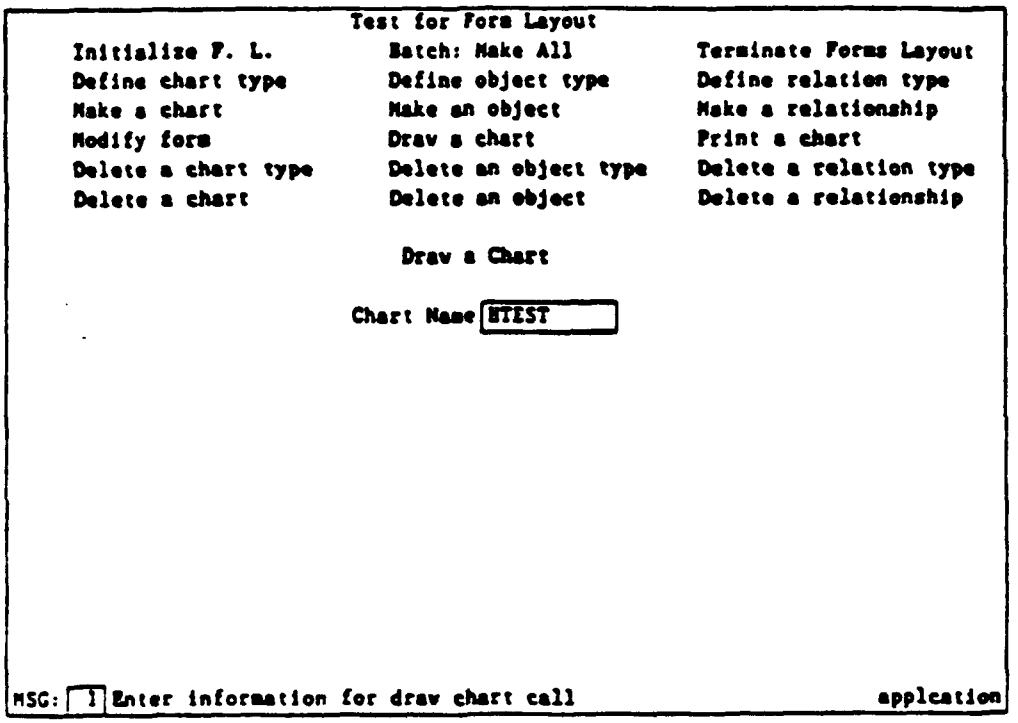


Figure 5-131 Test Screen 125

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

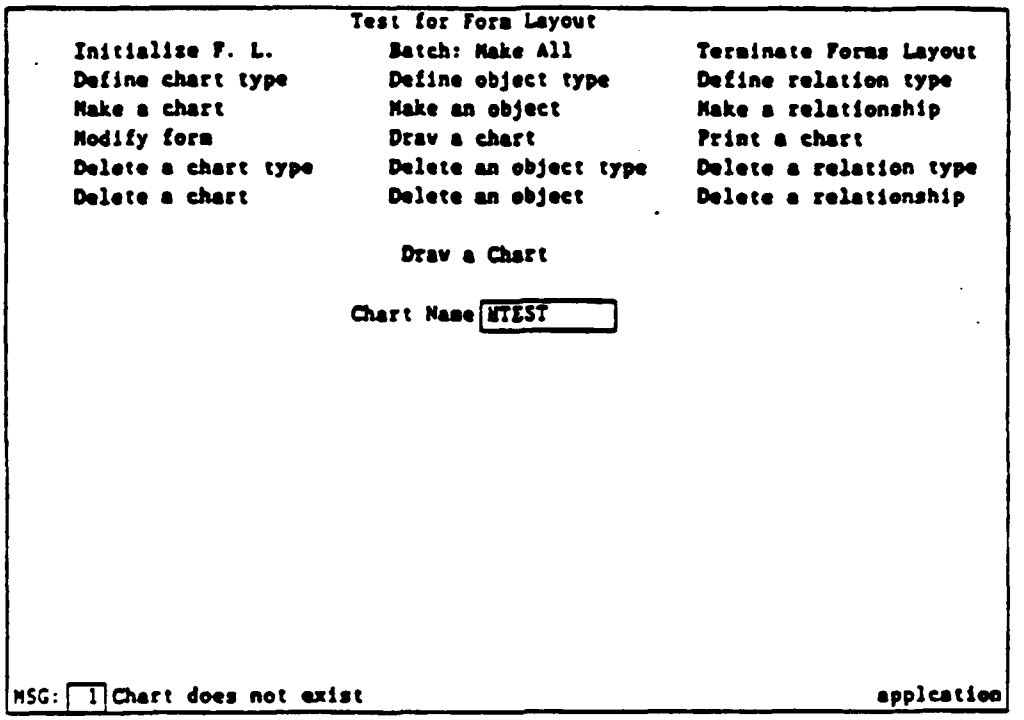


Figure 5-132 Test Screen 126

You should get an error saying that the chart does not exist. return to the main menu by pressing <QUIT>.

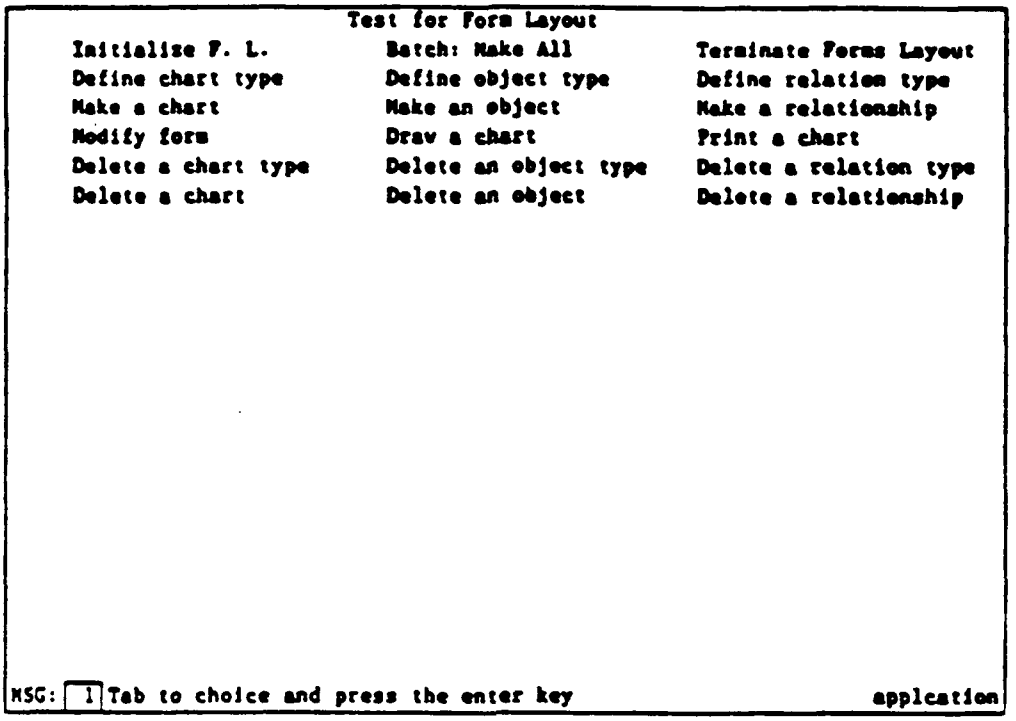


Figure 5-133 Test screen 127

Tab to "Batch: Make All" and press <ENTER>.

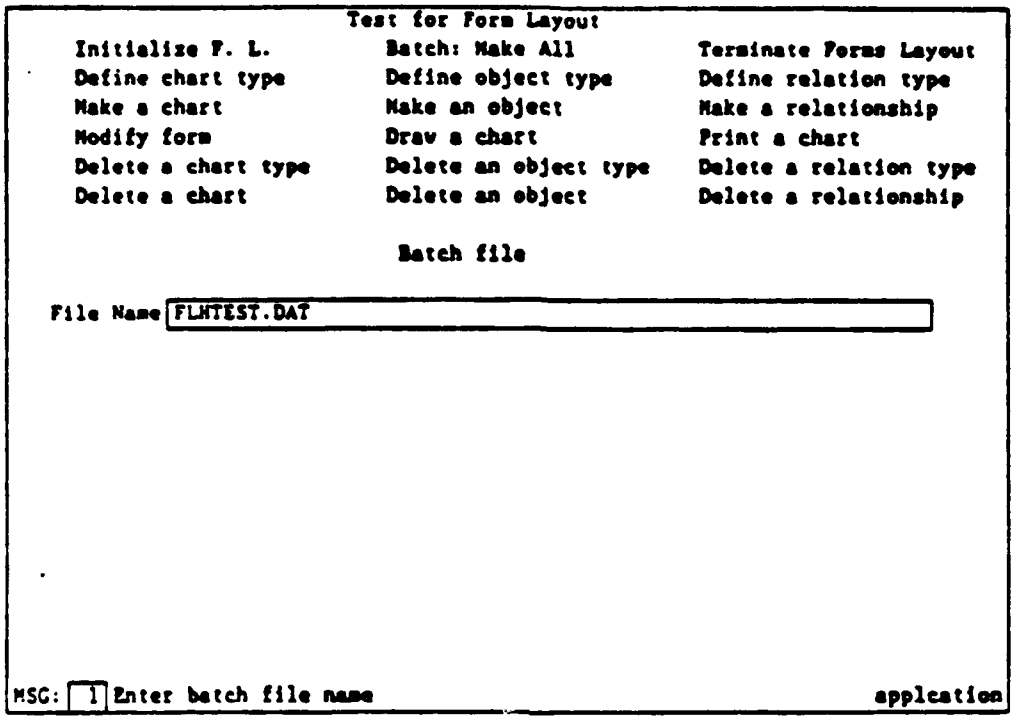


Figure 5-134 Test Screen 128

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

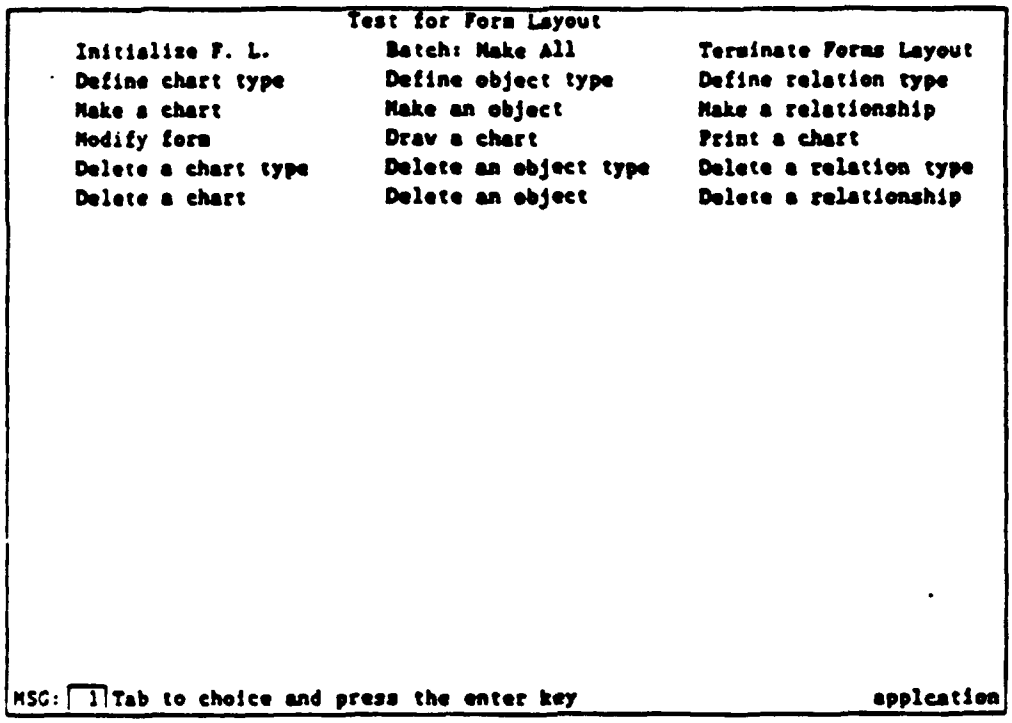


Figure 5-135 Test Screen 129

Tab to "Draw a chart" and press <ENTER>.

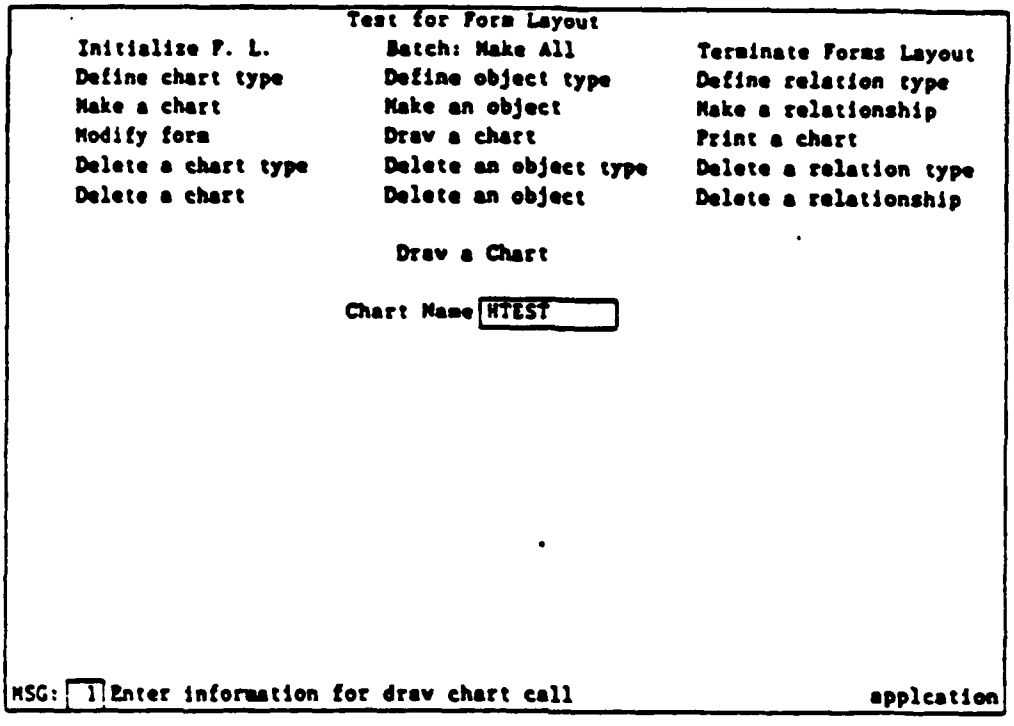


Figure 5-136 Test Screen 130

Enter the screen as shown and press <ENTER>.

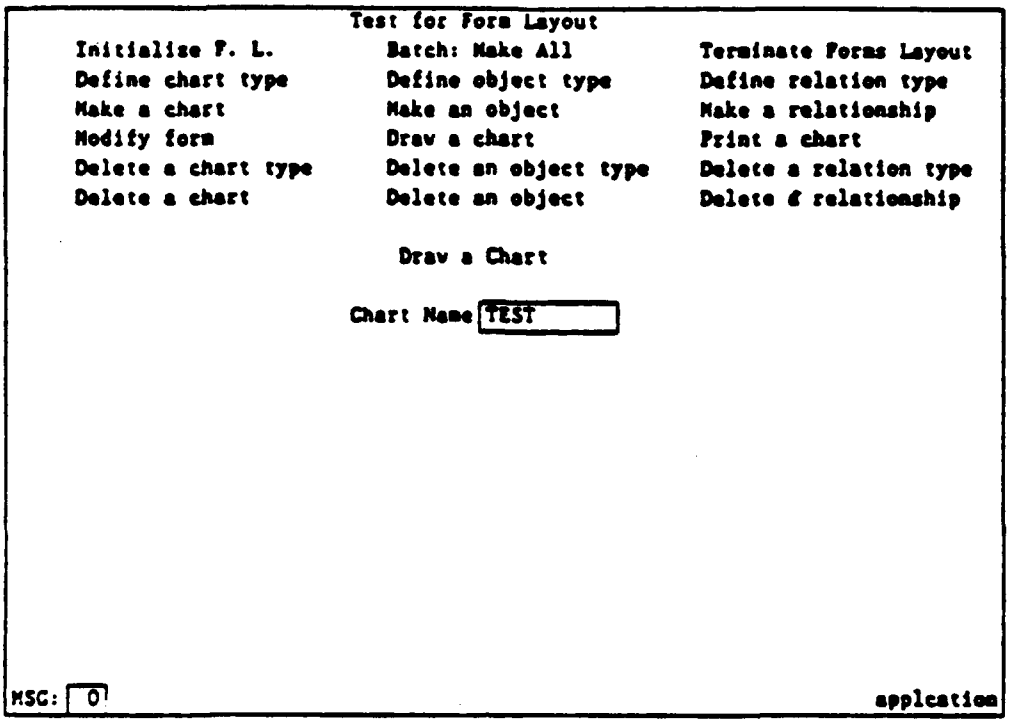


Figure 5-137 Test Screen 131

Enter the screen as shown and press <ENTER>.

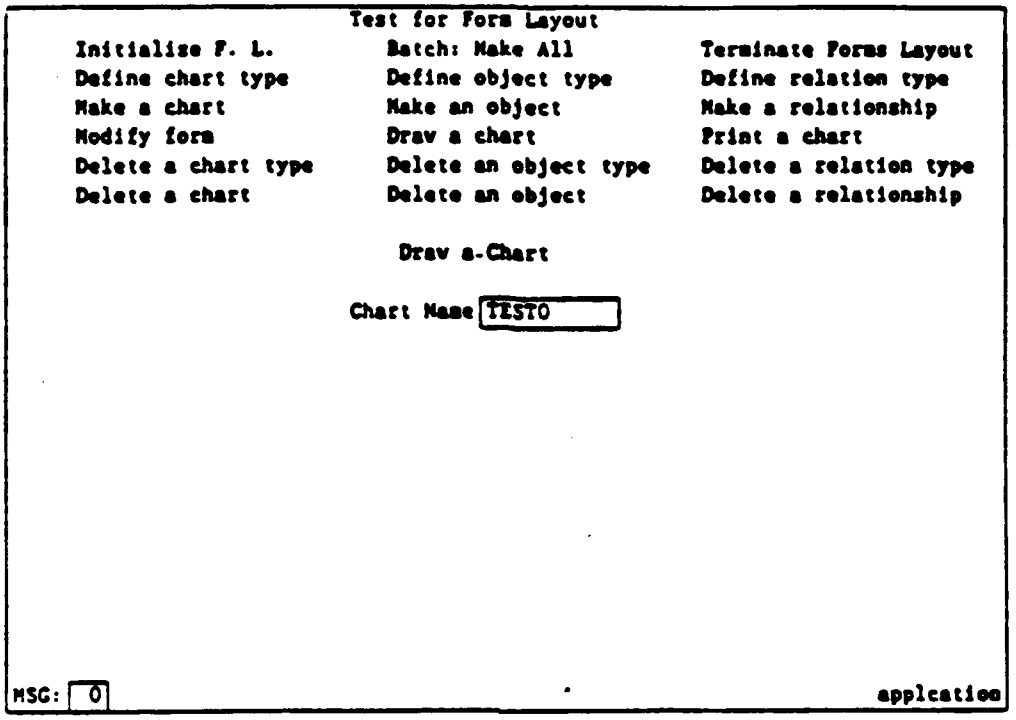


Figure 5-138 *Test Screen* 132

Enter the screen as shown and press <ENTER>.

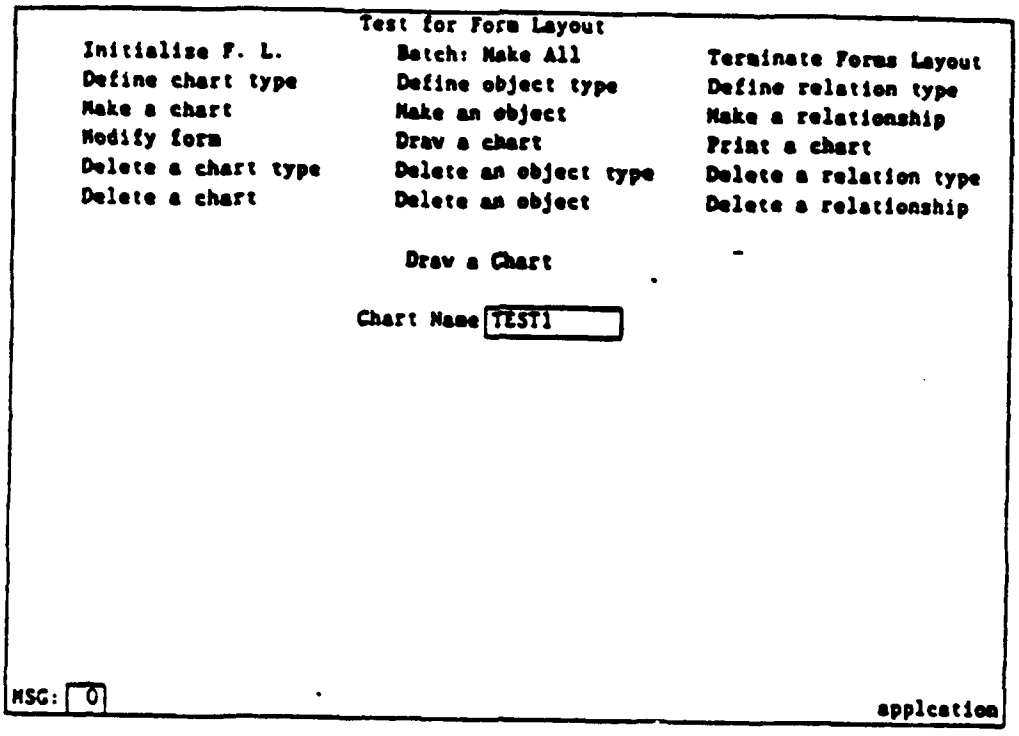


Figure 5-139 Test Screen 133

Enter the screen as shown and press <ENTER>.

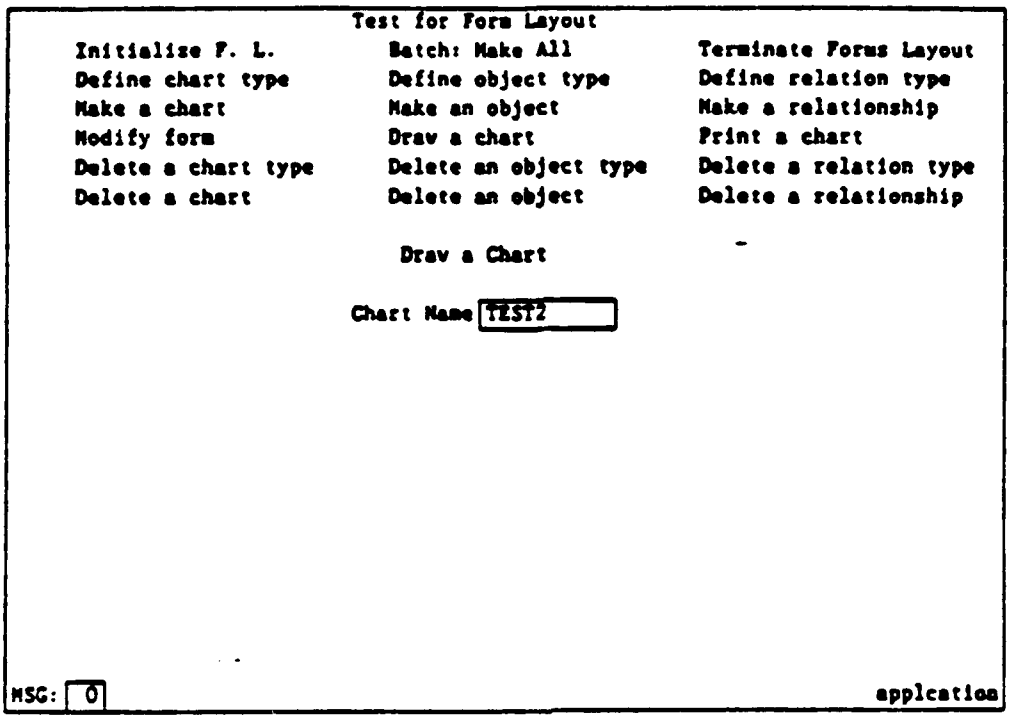


Figure 5-140 Test Screen 134

Enter the screen as shown and press <ENTER>.

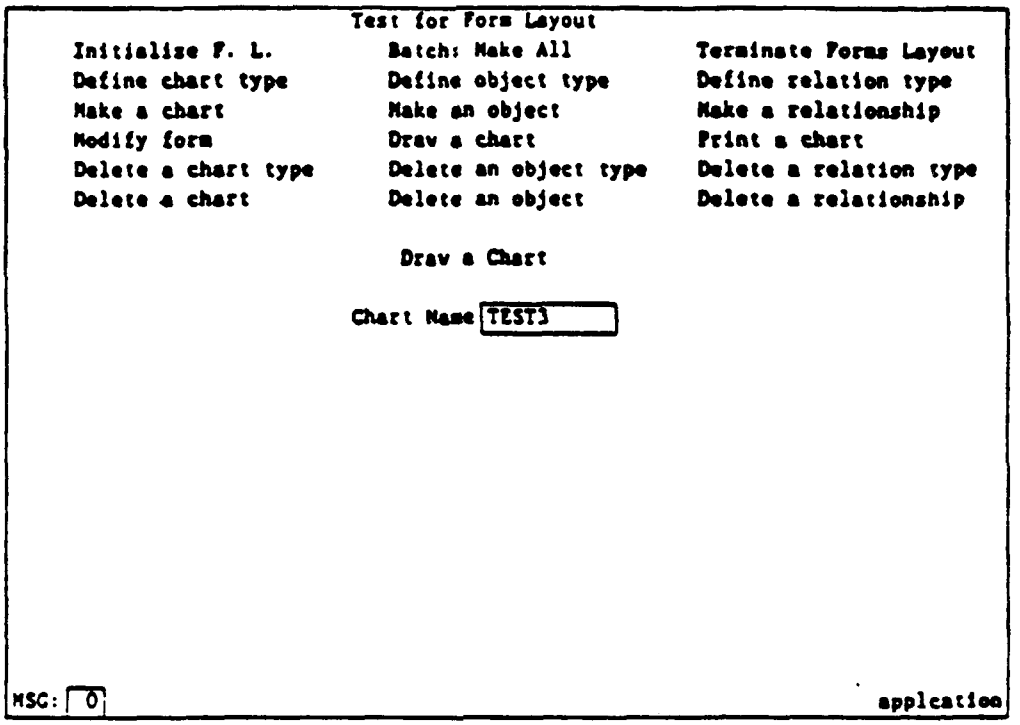


Figure 5-141 Test Screen 135

Enter the screen as shown and press <ENTER>.

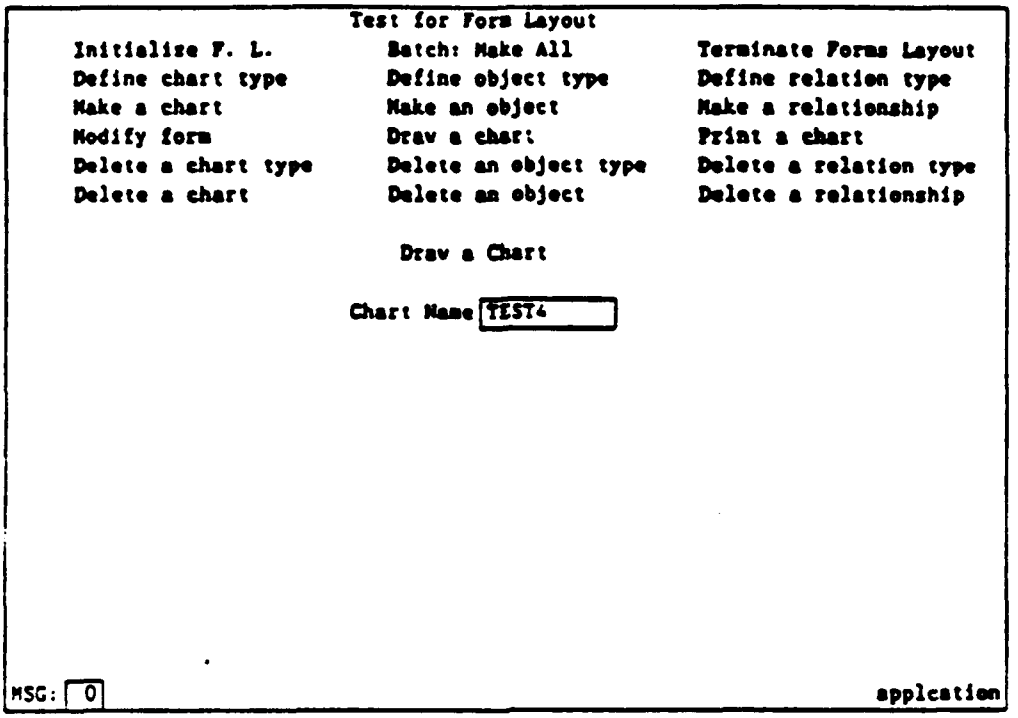


Figure 5-142 Test Screen 136

Enter the screen as shown and press <ENTER>.

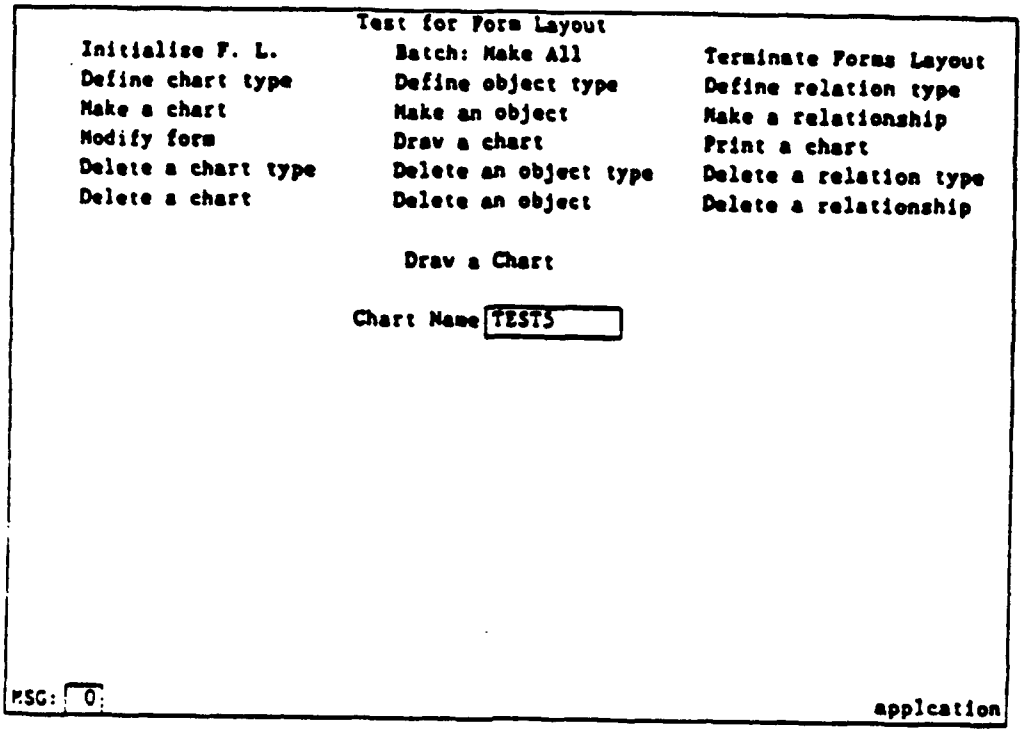


Figure 5-143 Test Screen 137

Enter the screen as shown and press <ENTER>.

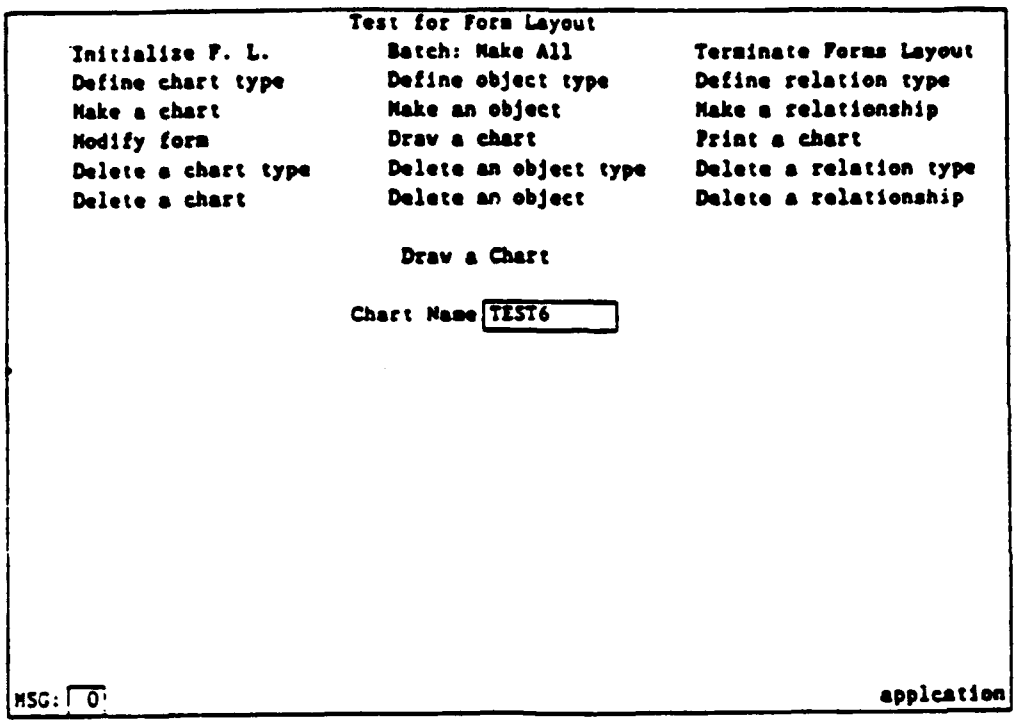


Figure 5-144 Test Screen 138

Enter the screen as shown and press <ENTER>.

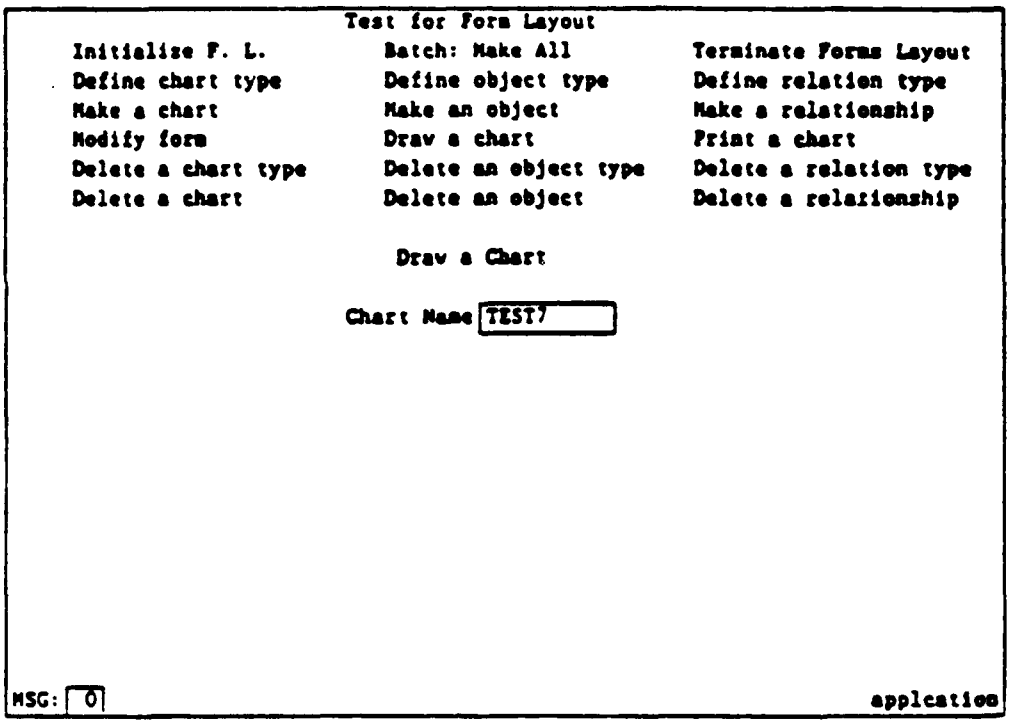


Figure 5-145 Test Screen 139

Enter the screen as shown and press <ENTER>.

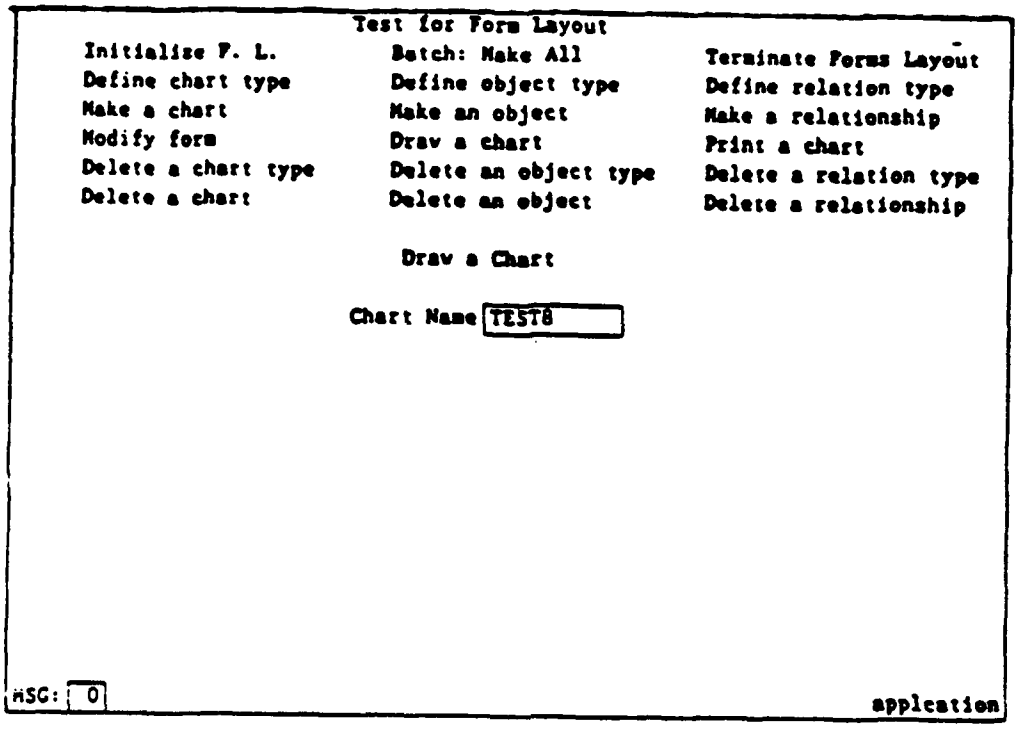


Figure 5-146 Test Screen 140

Enter the screen as shown and press <ENTER>.

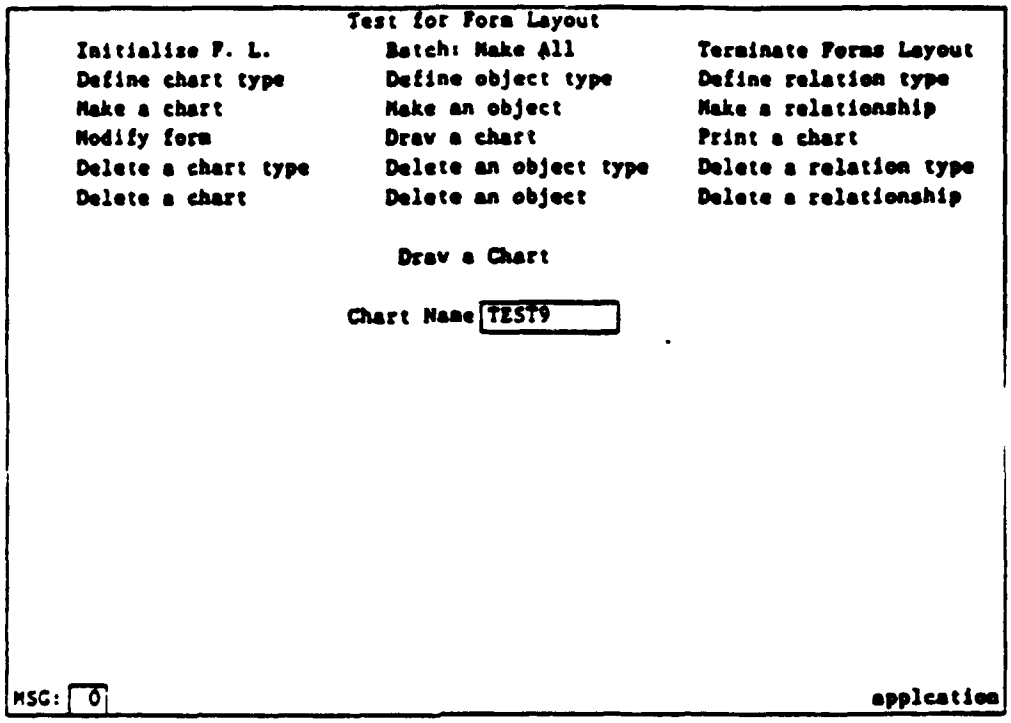


Figure 5-147 Test Screen 141

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

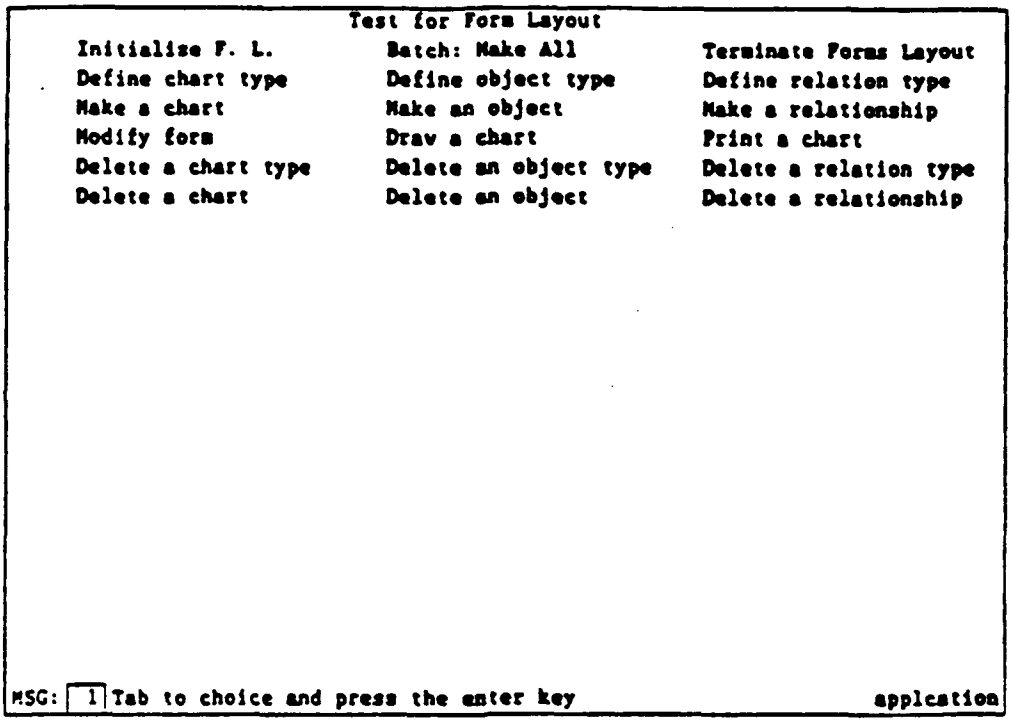


Figure 5-148 Test Screen 142

Tab to "Print a chart" and press <ENTER>.

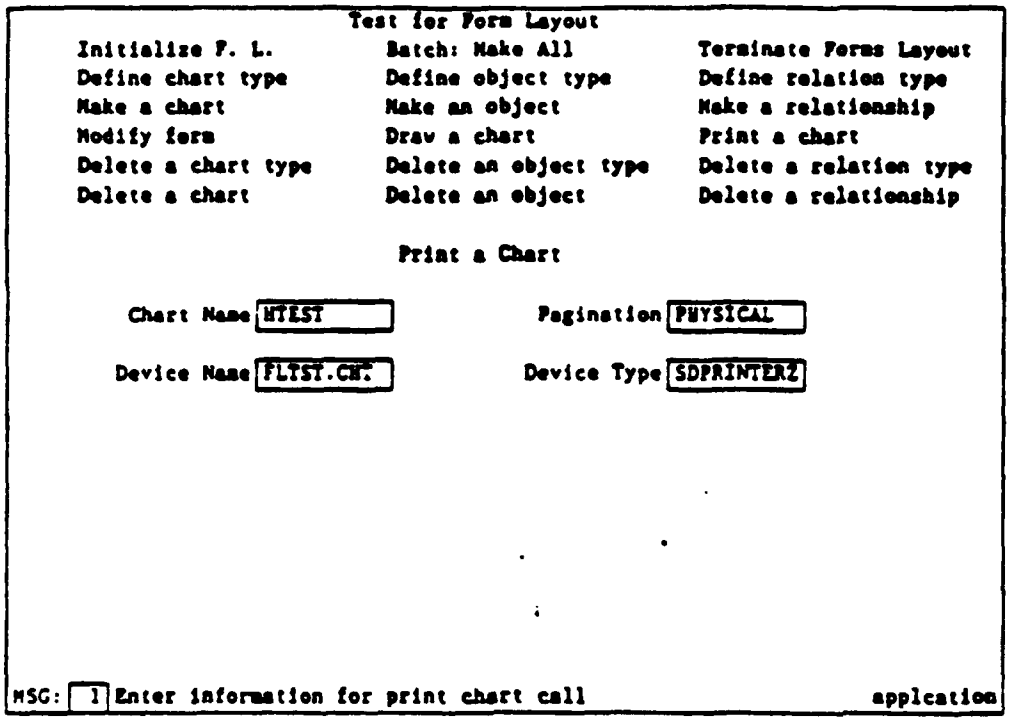


Figure 5-149 Test Screen 143

Enter the screen as shown and press <ENTER>.

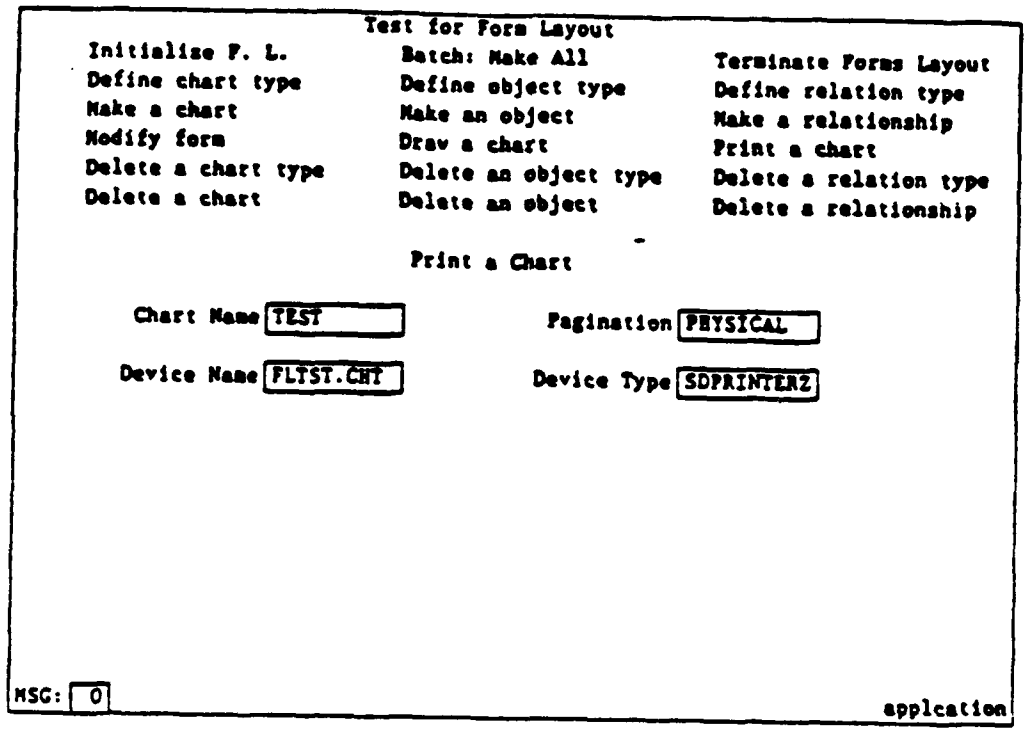


Figure 5-150 Test Screen 144

Enter the screen as shown and press <ENTER>.

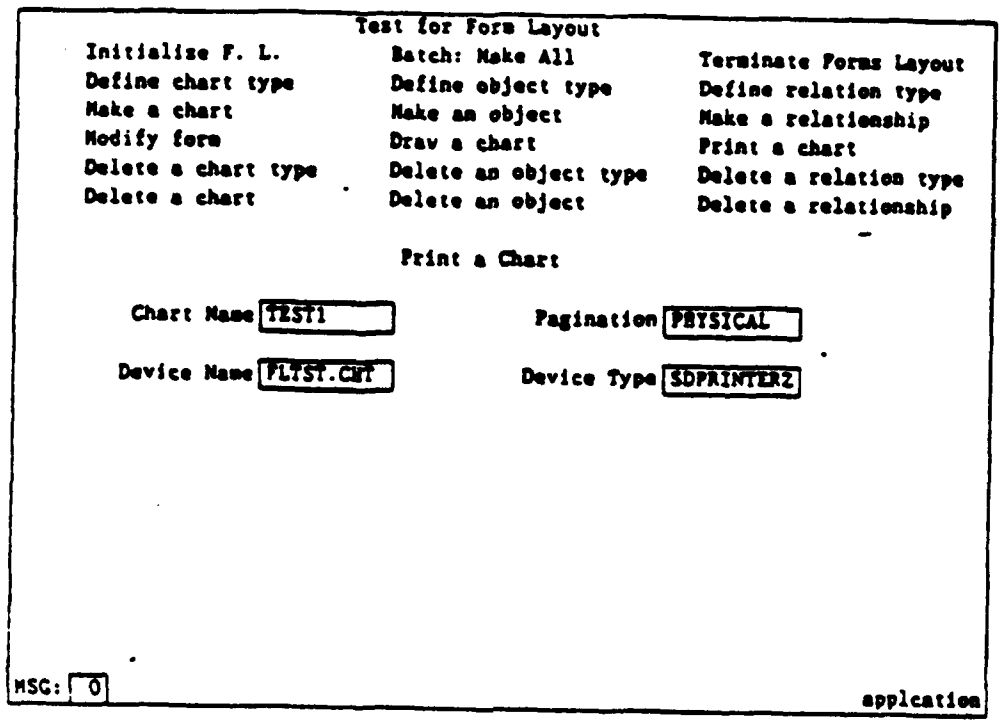


Figure 5-151 Test Screen 145

Enter the screen as shown and press <ENTER>.

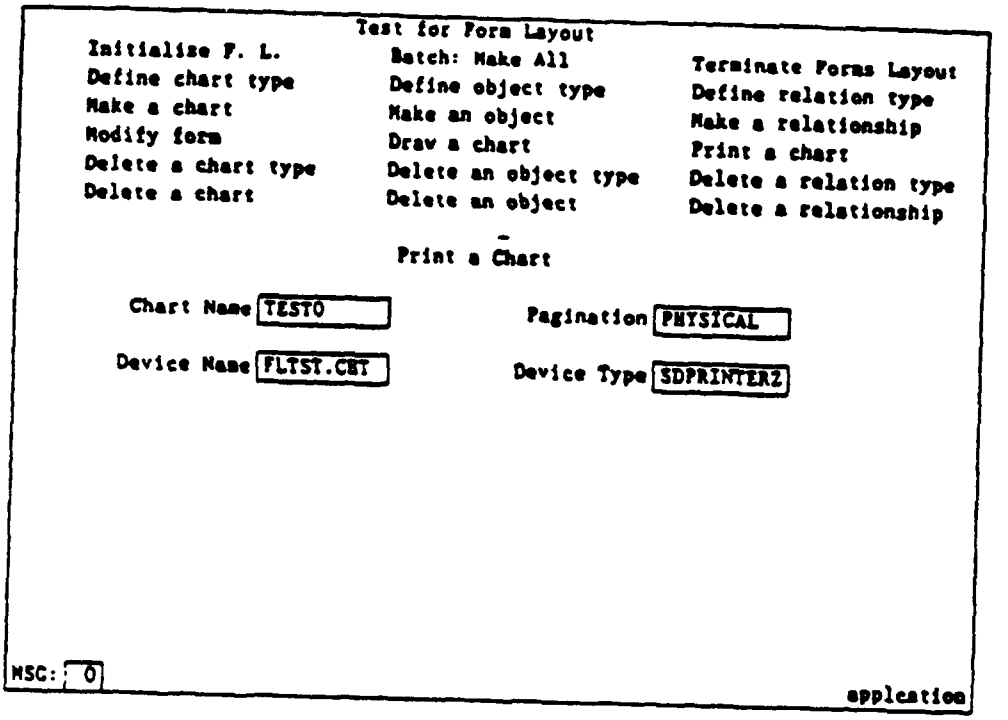


Figure 5-152 Test Screen 146

Enter the screen as shown and press <ENTER>.

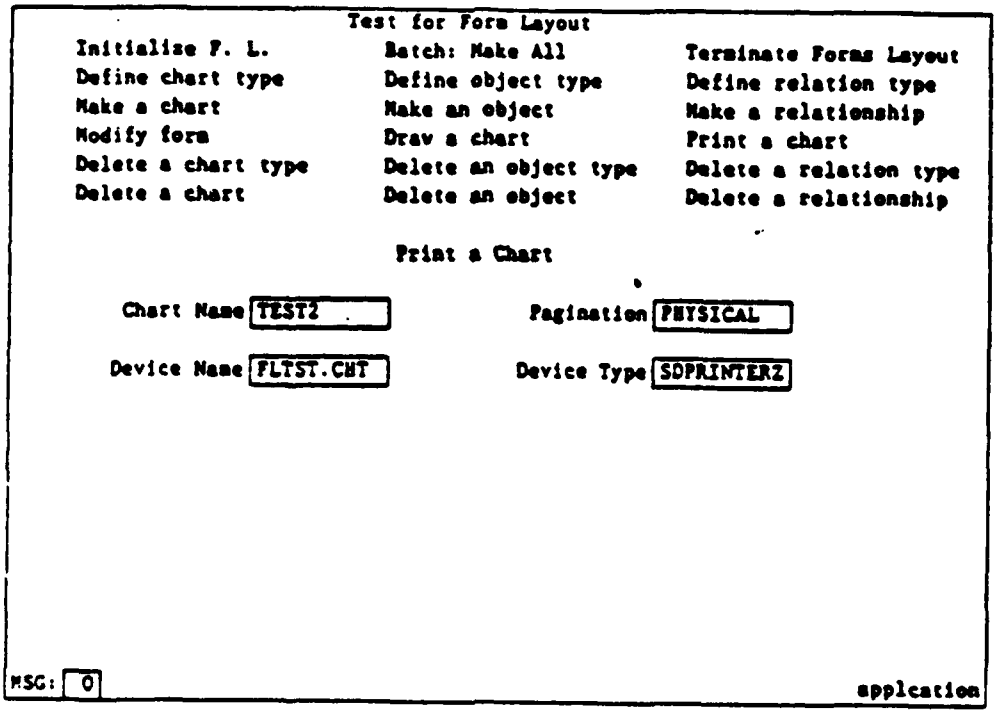


Figure 5-153 Test Screen 147

Enter the screen as shown and press <ENTER>.

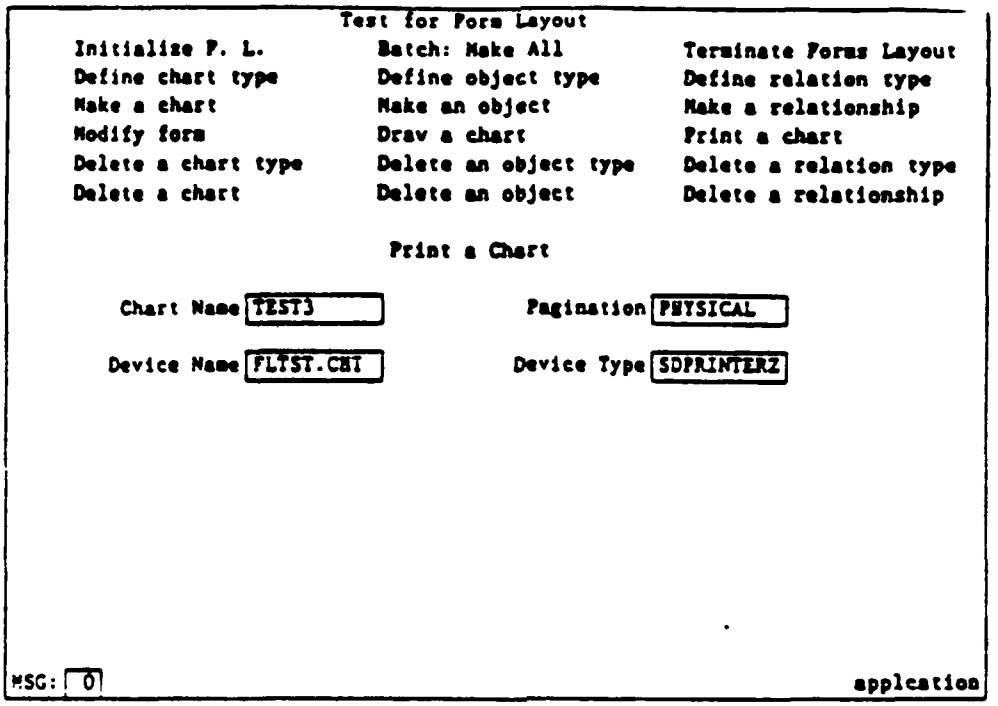


Figure 5-154 Test Screen 148

Enter the screen as shown and press <ENTER>.

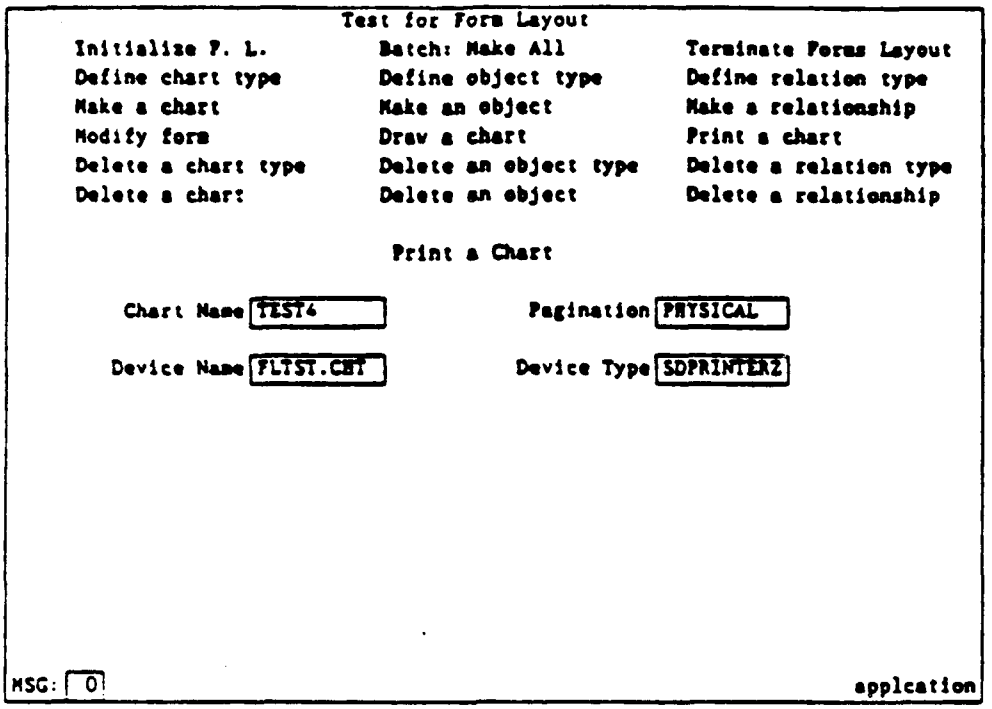


Figure 5-155 Test Screen 149

Enter the screen as shown and press <ENTER>.

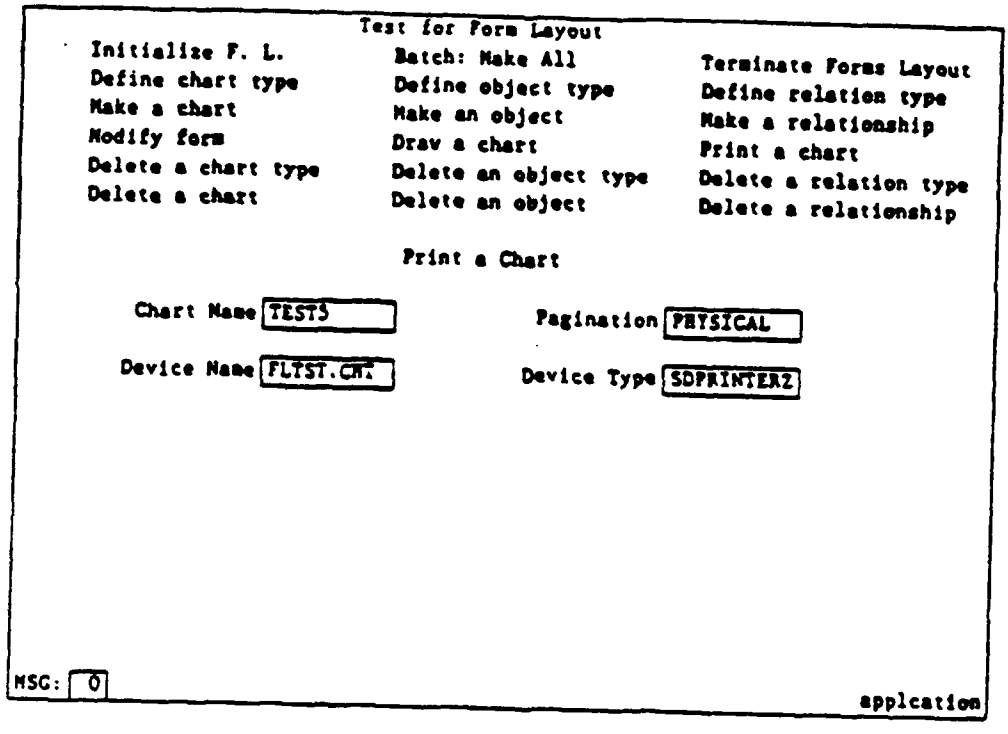


Figure 5-156 Test Screen 150

Enter the screen as shown and press <ENTER>.

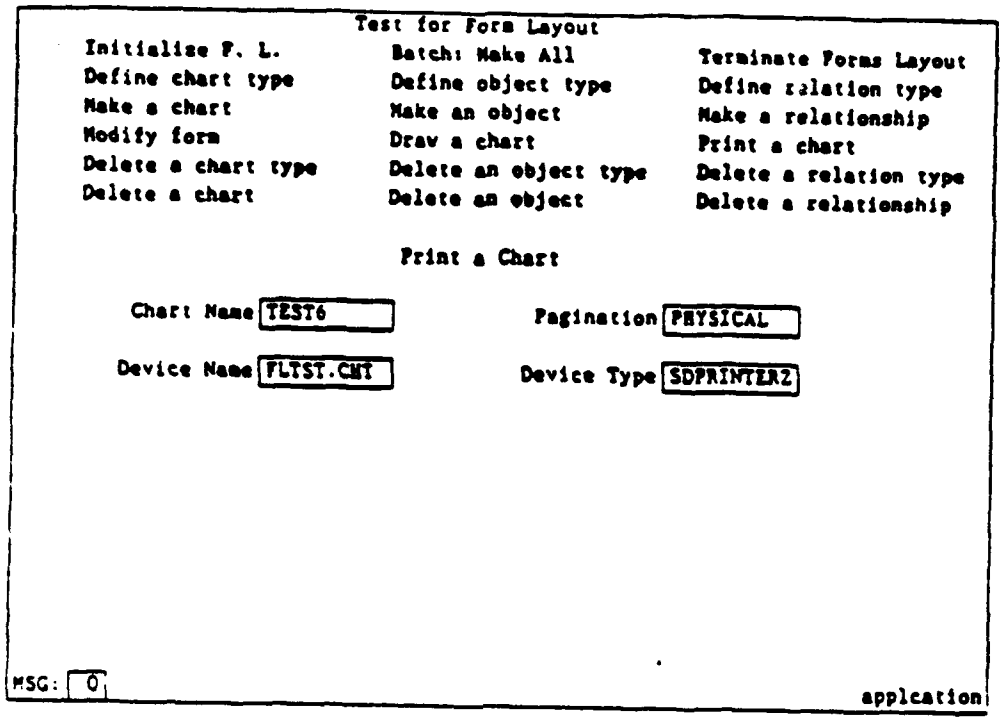


Figure 5-157 Test Screen 151

Enter the screen as shown and press <ENTER>.

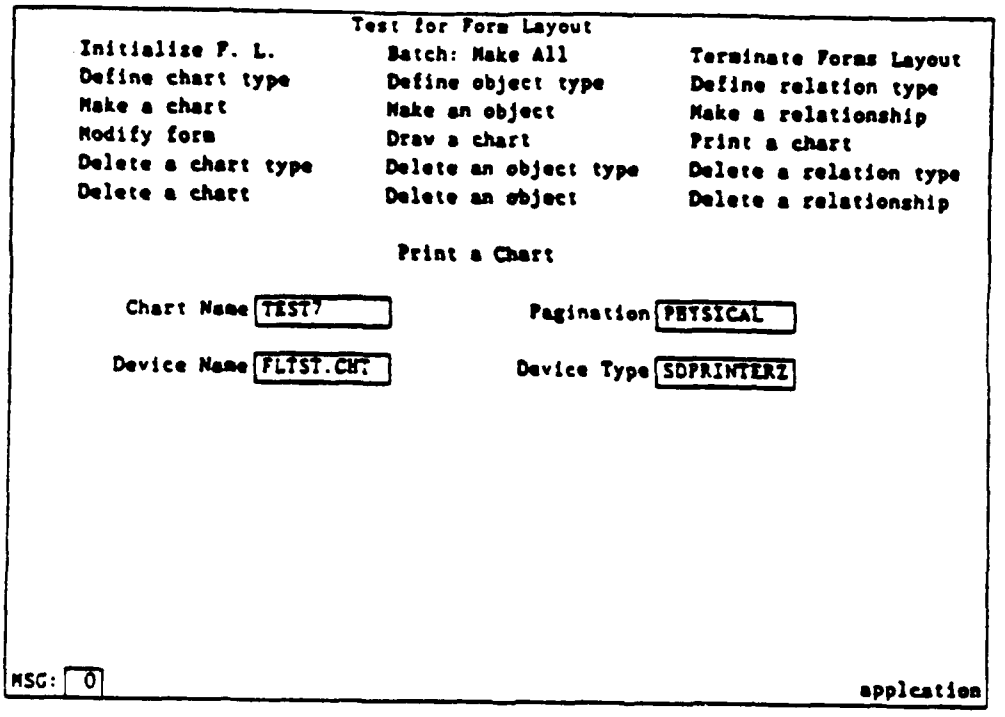


Figure 5-158 Test SCREEN 152

Enter the screen as shown and press <ENTER>.

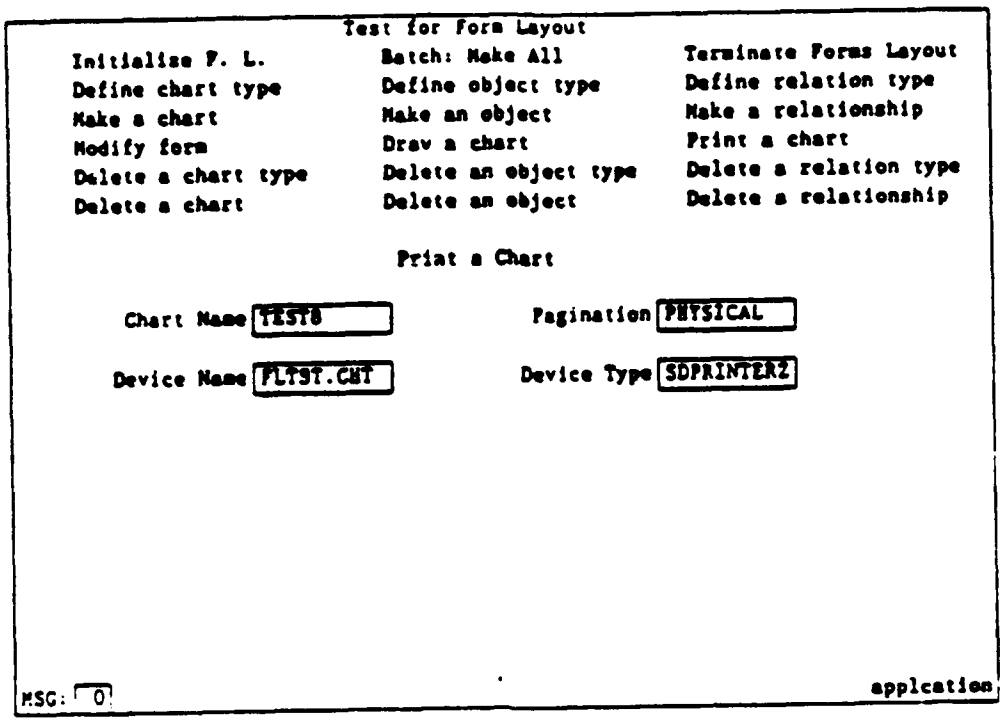


Figure 5-159 Test Screen 153

Enter the screen as shown and press <ENTER>.

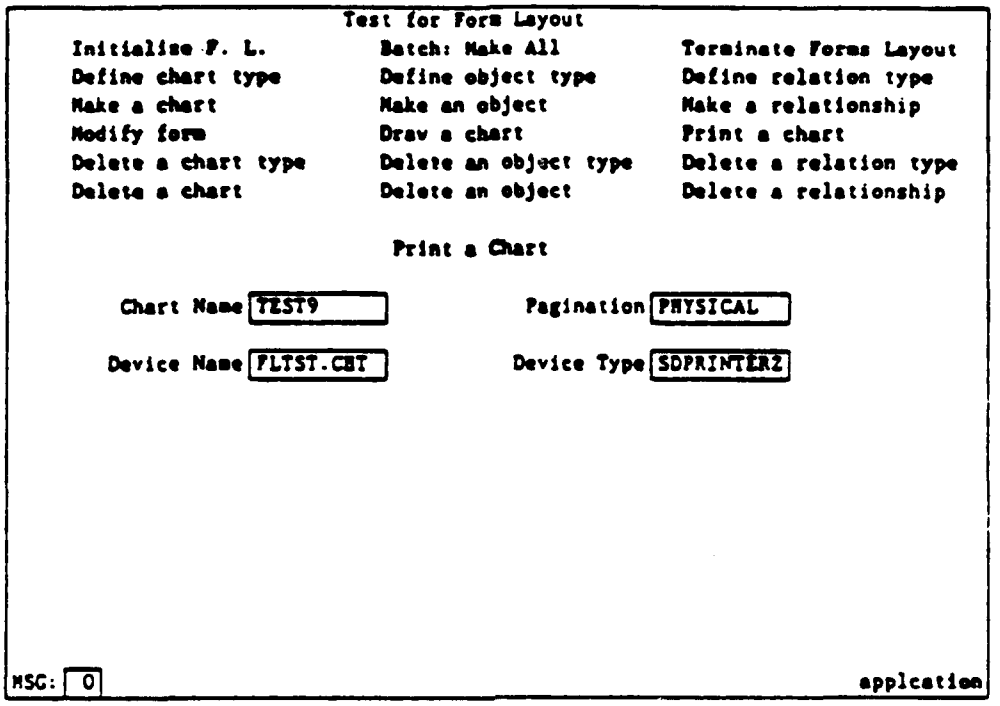


Figure 5-160 Test Screen 154

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

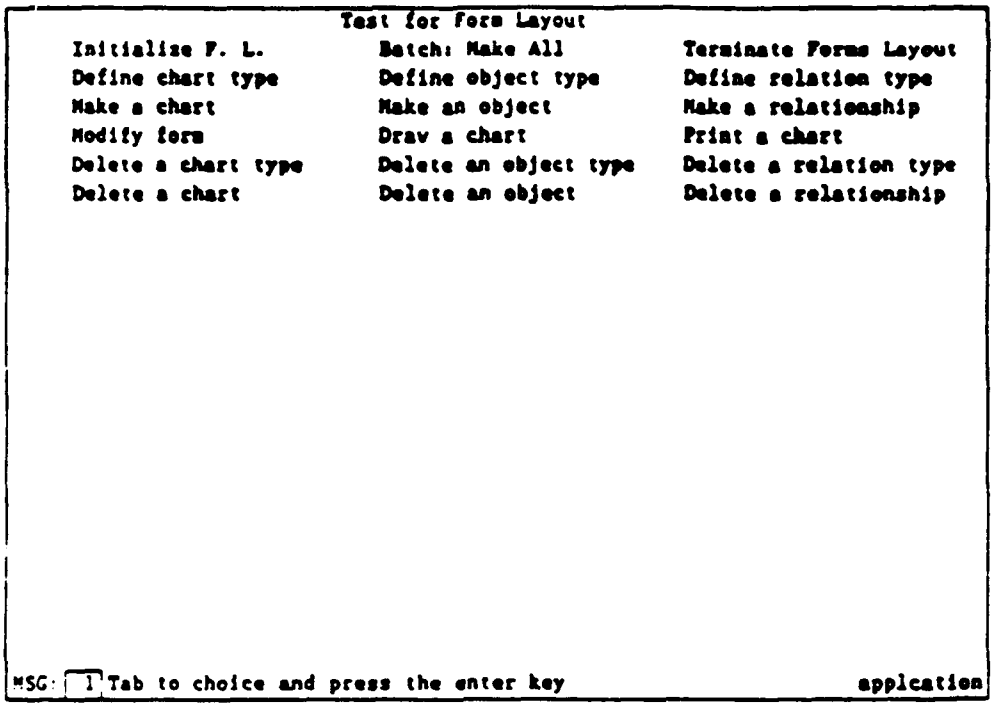


Figure 5-161 Test Screen 155

Tab to "Modify form" and press <ENTER>.

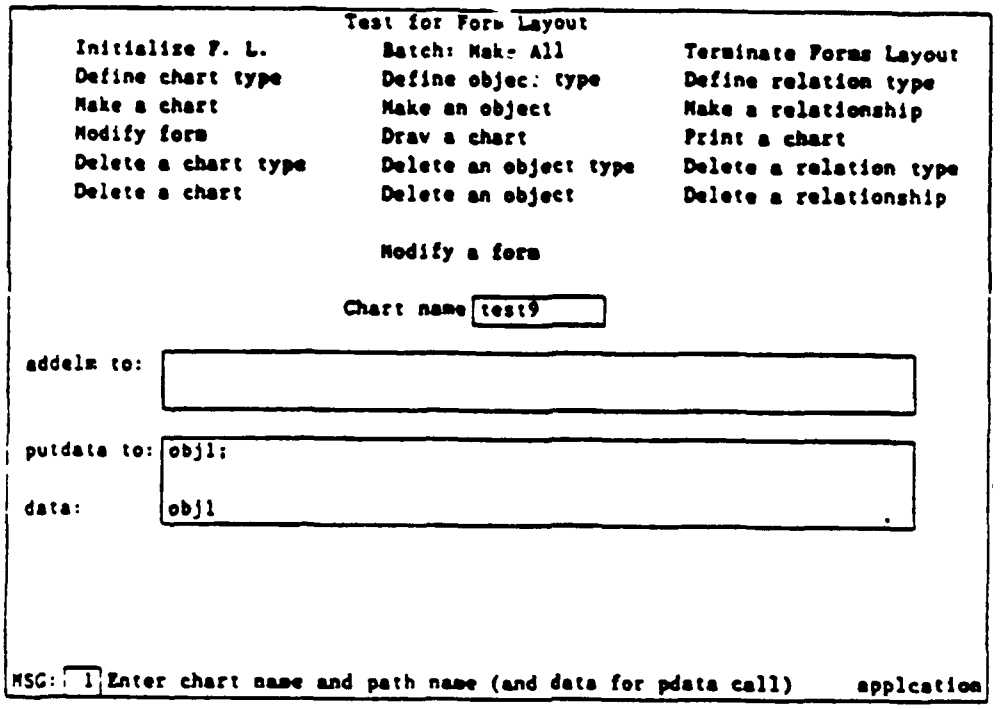


Figure 5-162 Test Screen 156

Enter the screen as shown and press <ENTER>.

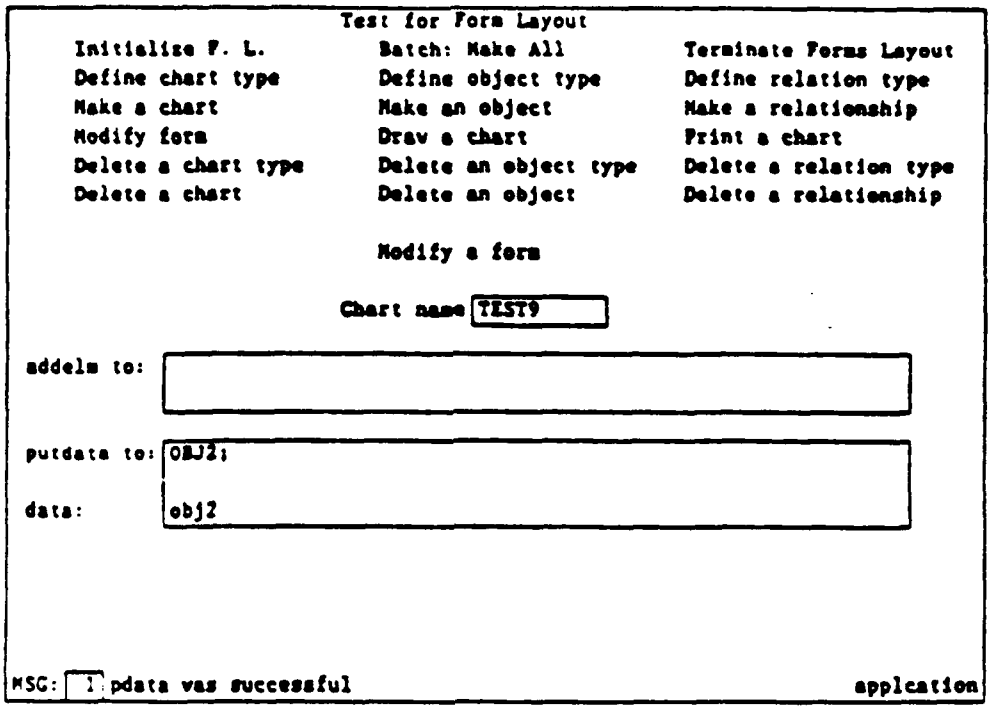


Figure 5-163 Test Screen 157

Enter the screen as shown and press <ENTER>.

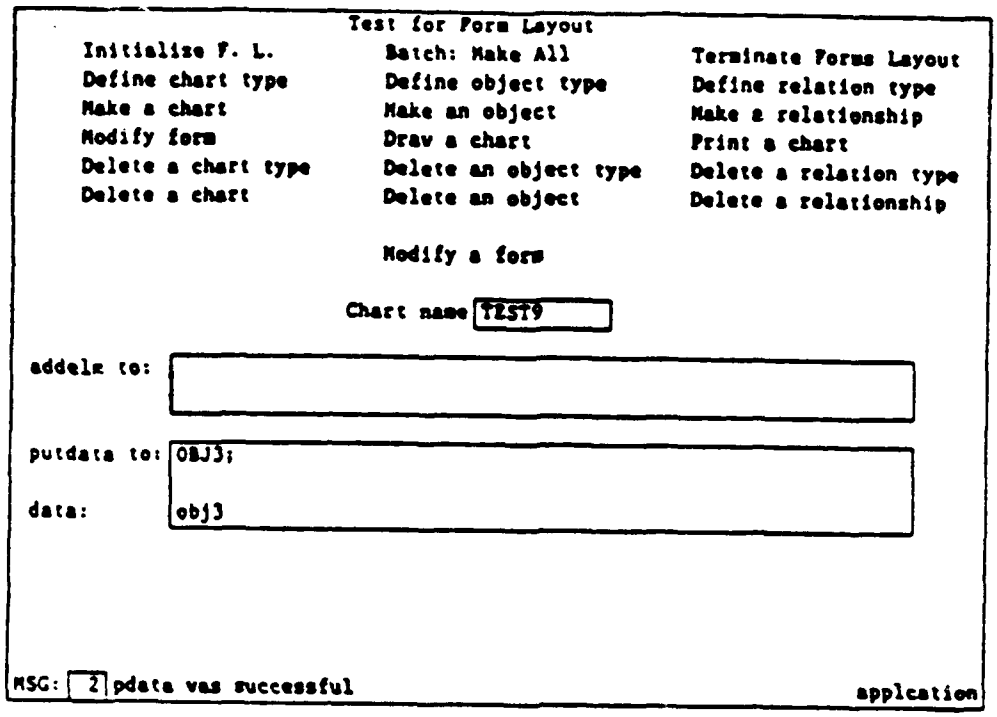


Figure 5-164 Test Screen 158

Enter the screen as shown and press <ENTER>.

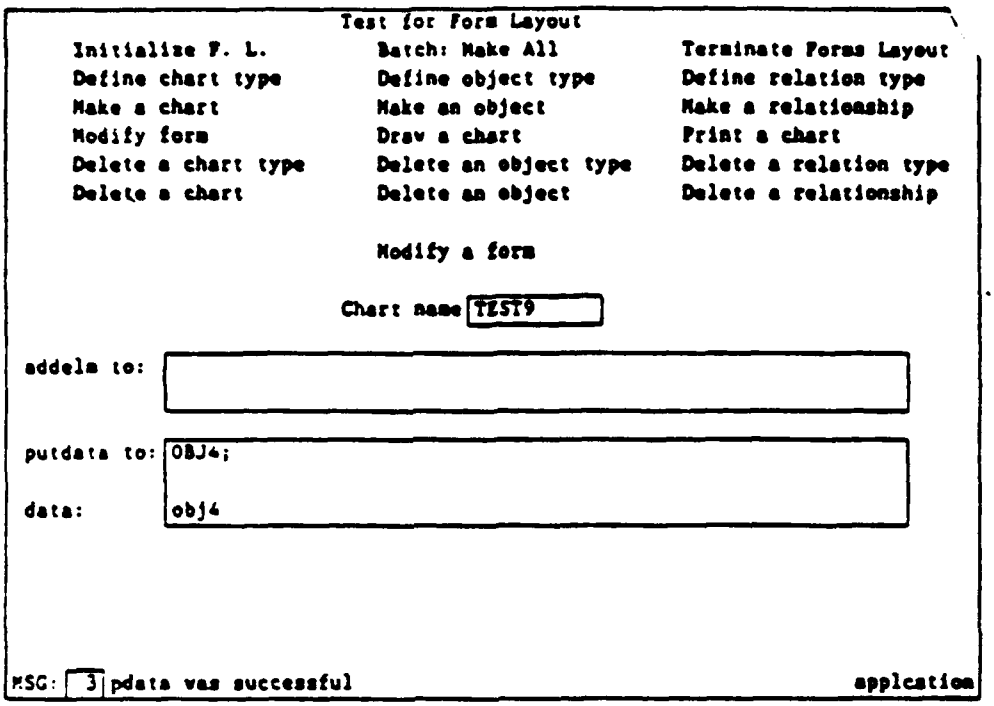


Figure 5-165 Test Screen 159

Enter the screen as shown and press <ENTER>.

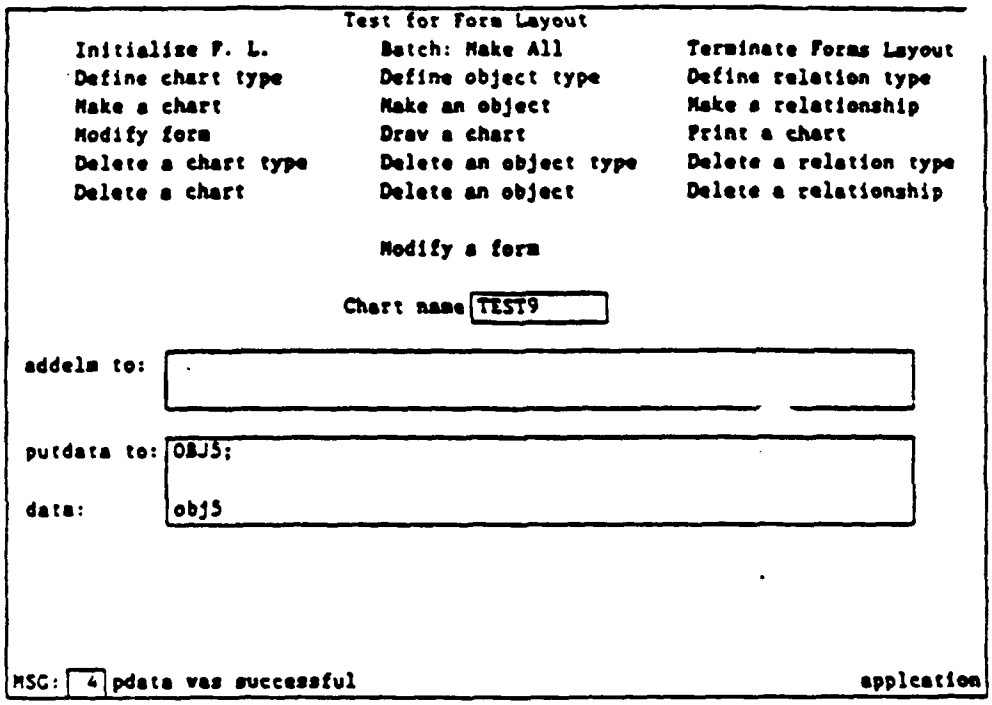


Figure 5-166 Test Screen 160

Enter the screen as shown and press <ENTER>.

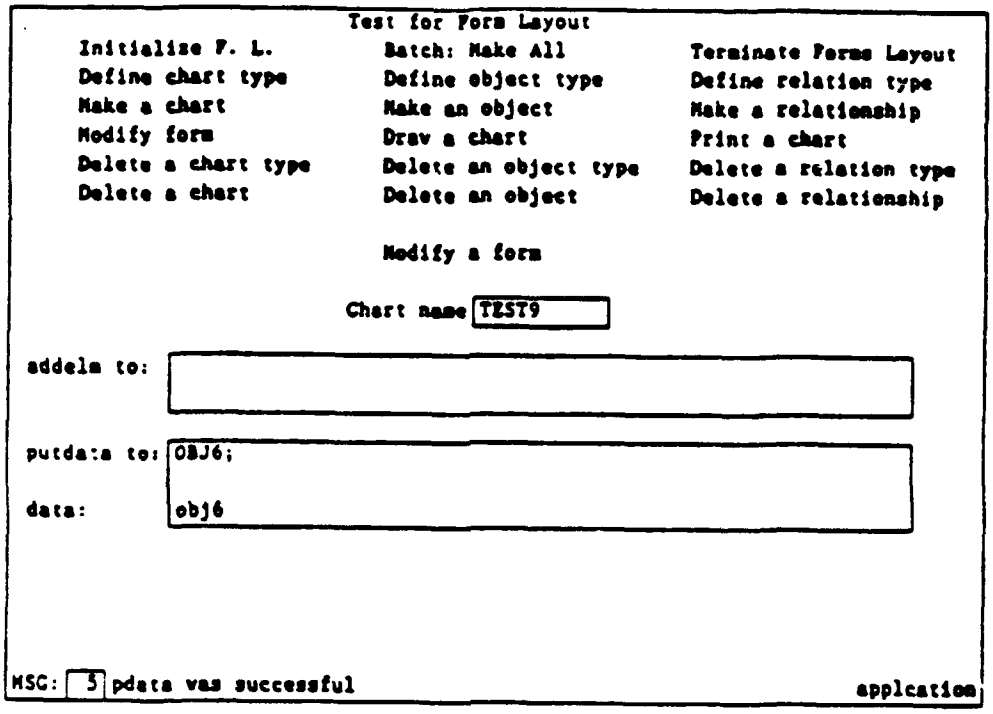


Figure 5-167 Test Screen 161

Enter the screen as shown and press <ENTER>.

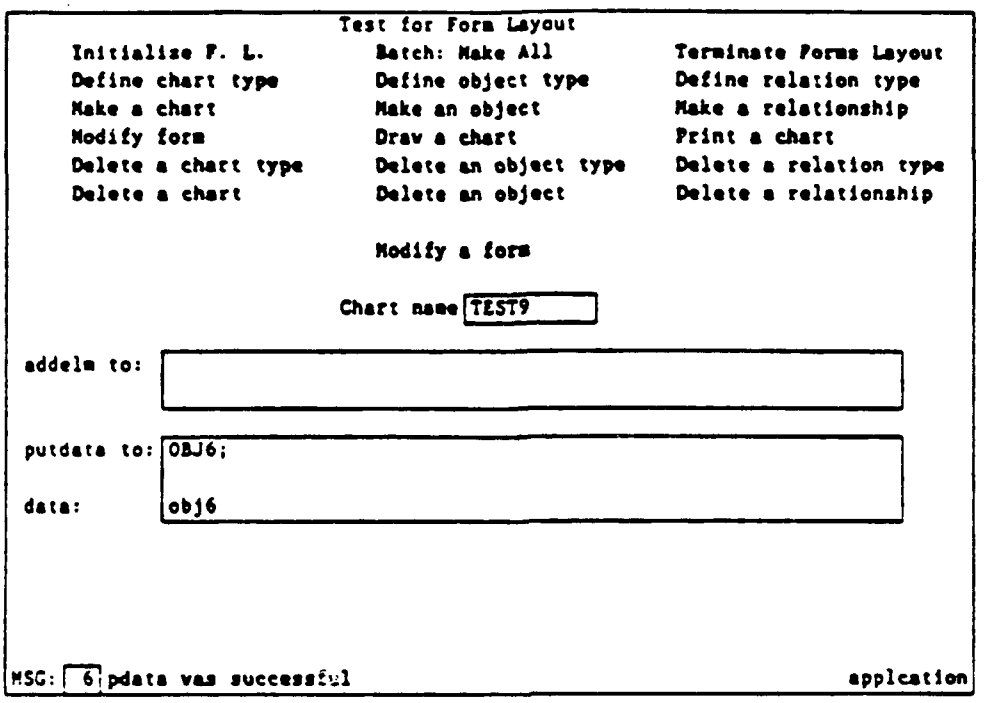


Figure 5-168 Test Screen 162

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

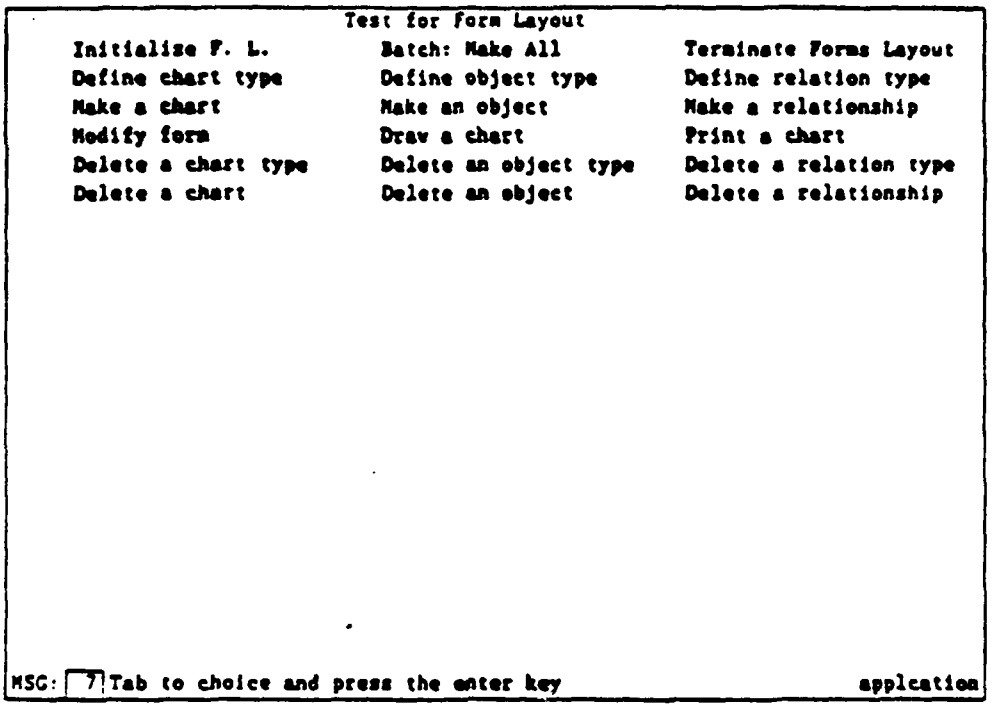


Figure 5-169 Test Screen 163

Tab to "Draw a chart" and press <ENTER>.

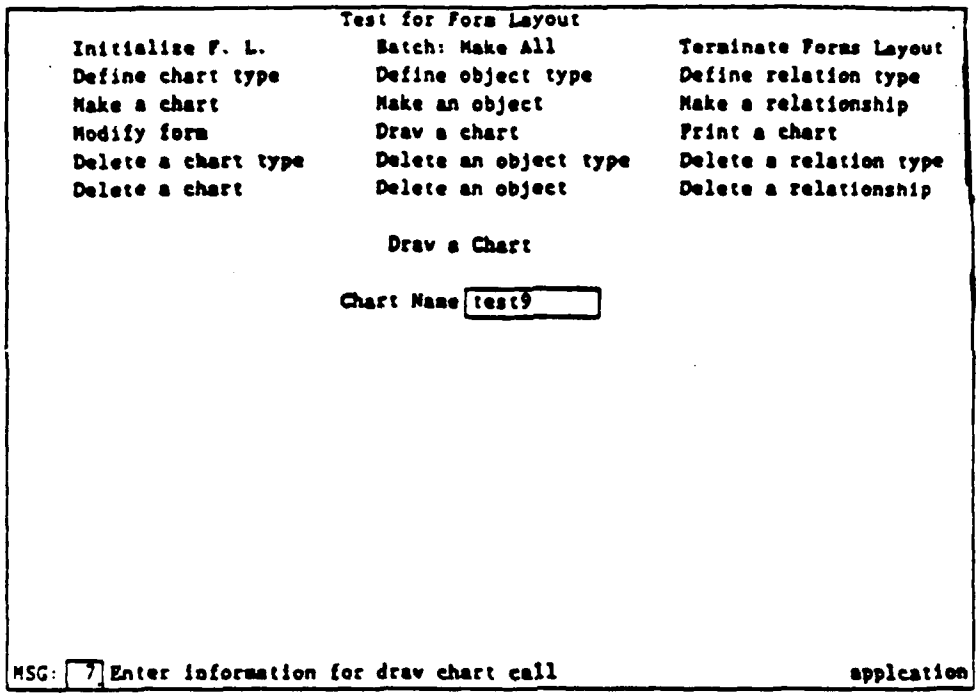


Figure 5-170 Test Screen 164

Enter the screen as shown and press <ENTER>.

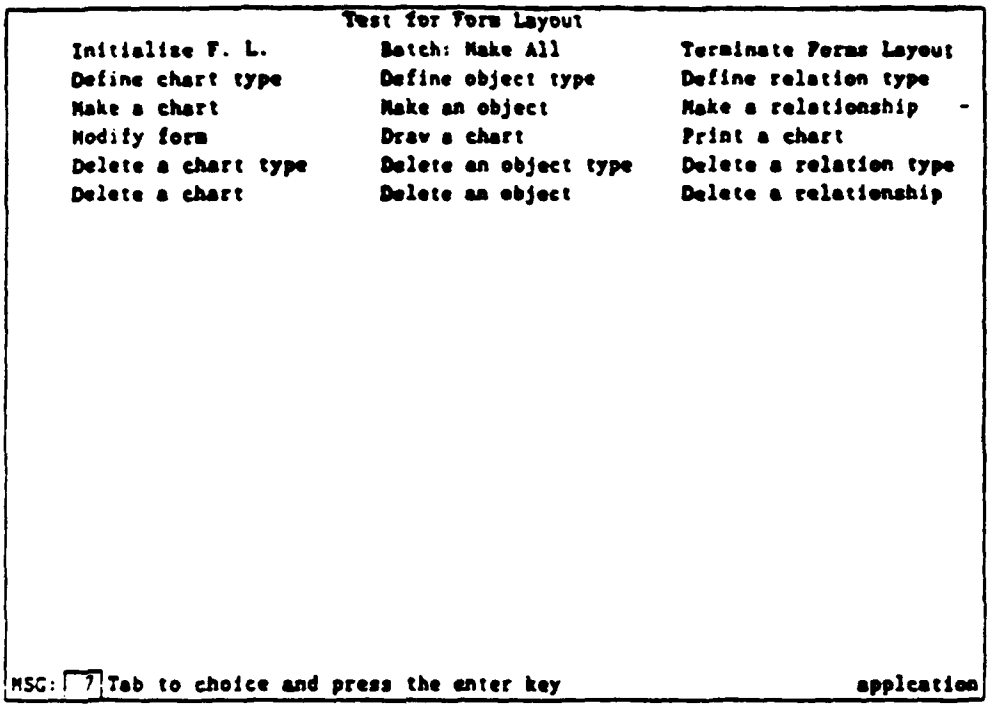


Figure 5-171 Test Screen 165

Tab to "Print a chart" and press <ENTER>.

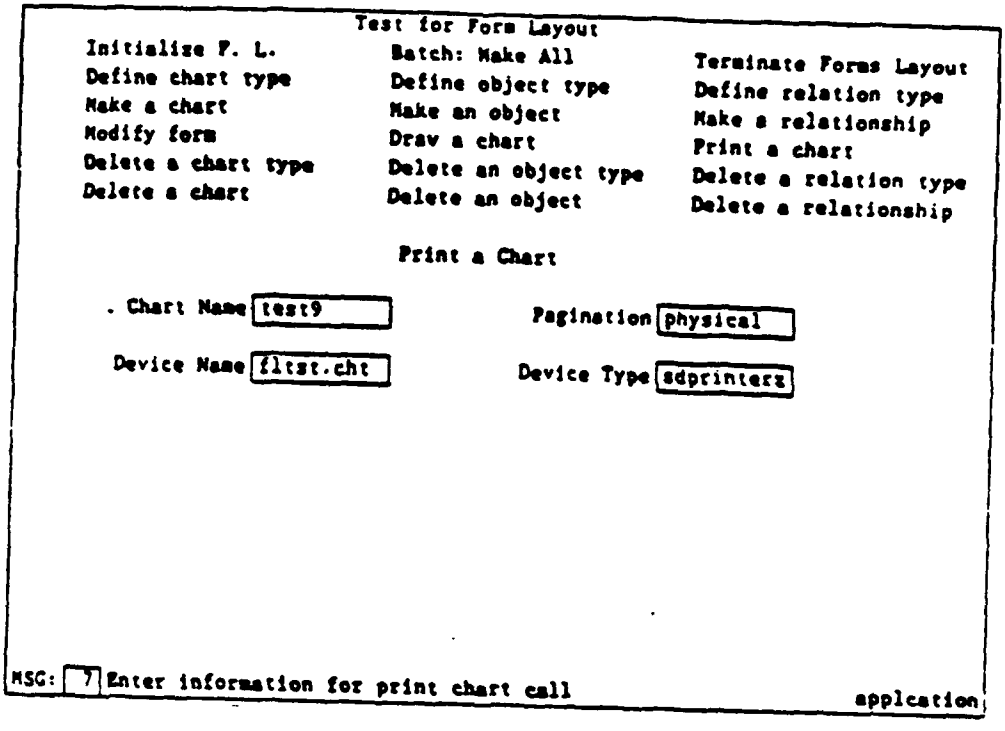


Figure 5-172 Test Screen 166

Enter the screen as shown and press <ENTER>. Return to the main menu by pressing <QUIT>.

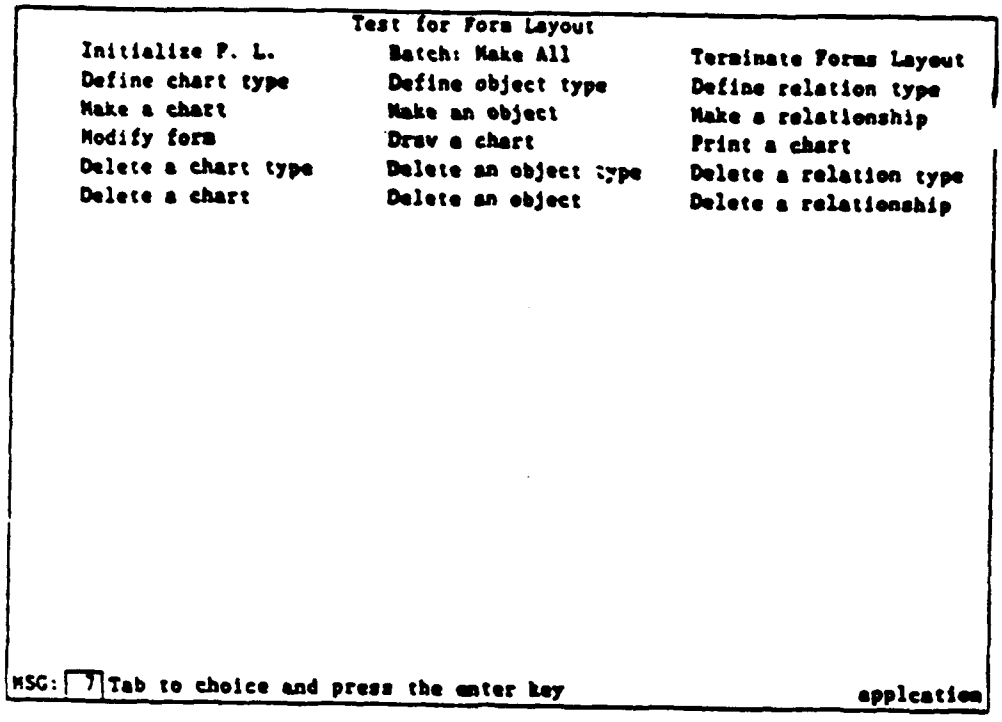


Figure 5-173 Test Screen 167

Tab to "Terminate Forms Layout" and press <ENTER>.

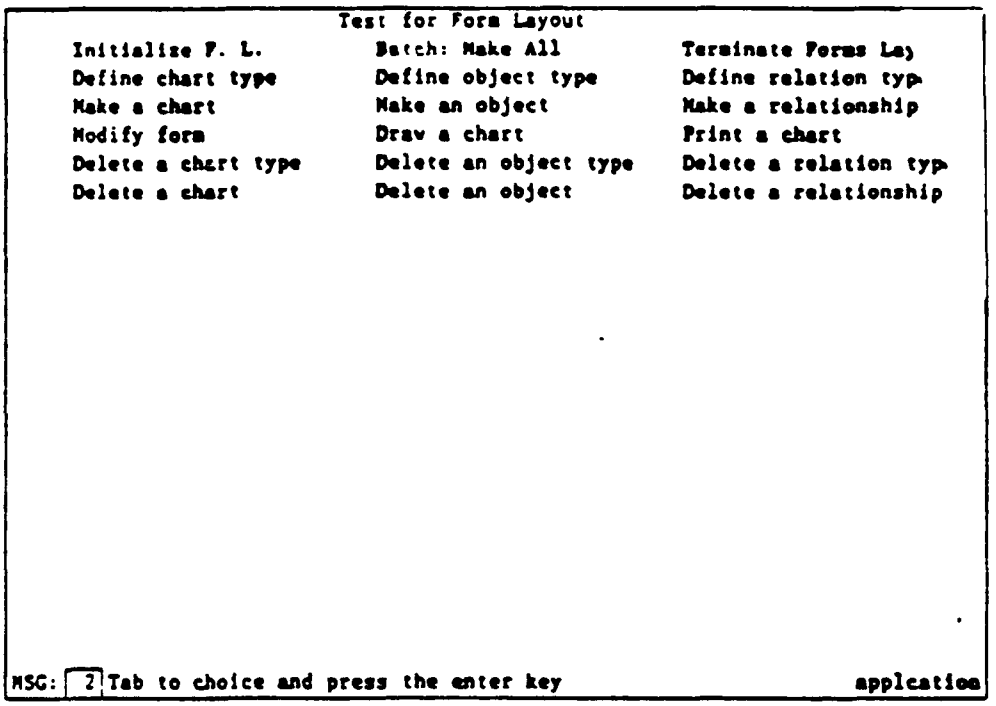


Figure 5-174 Test Screen 168

Press <QUIT> to exit test program.

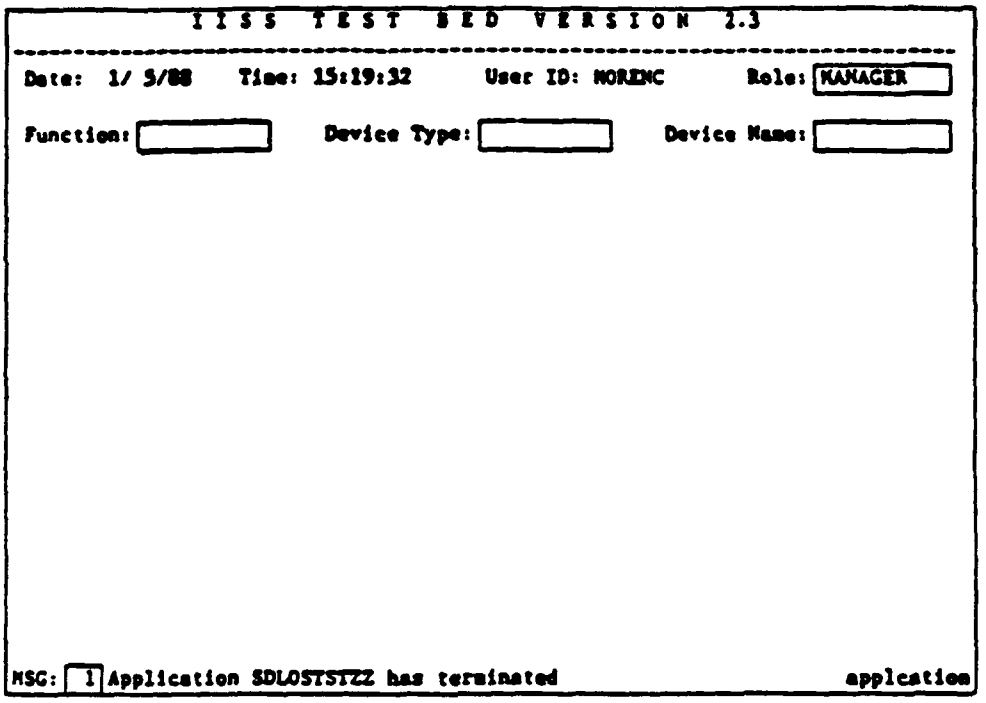


Figure 5-175 Test Screen 169

Press <QUIT> to terminate test.

The charts produced by this test exist in the file FLTST.CHT and can be printed using the command PRINT/FORM=WIDE.


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