

COMPUTER AIDED FACILITY LAYOUT DESIGN WITH BLOCPLAN FOR WINDOWS



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AGENDA

- | Facility Layout Basics
- | BLOCPLAN FOR Windows Basic Features
- | BLOCPLAN FOR Windows Capabilities
- | Program Operation
- | Demonstration of BLOCPLAN for Windows
- | Questions

FACILITY LAYOUT BASICS

- | Facility layout involves placing departments in an efficient, safe, manner that permits the optimization of production capabilities for a facility.
- | Its aim is to effectively utilize people, equipment, space and energy.
- | Layout problems can be computationally complex
 - n 9 departments = 20 million possible layouts
 - n 15 departments = 2.6 E 13 possible layouts
- | BLOCPLAN for Windows is a tool to be used in these situations

BLOCPAN FOR WINDOWS

BASIC FEATURES

- | Generates graphical and dimensional layouts of rectangular based departments and facilities
- | Utilizes Muther adjacency relationship values
- | Can automatically identify best layouts
- | Can manually exchange department positions
- | Overcomes DOS based program limitations

BLOCPLAN FOR WINDOWS

CAPACITY AND LIMITATIONS

- | Maximum of 18 departments.
- | Store up to 20 layouts in a single problem
- | Complex shapes can be generated using dummy rectangular department shapes

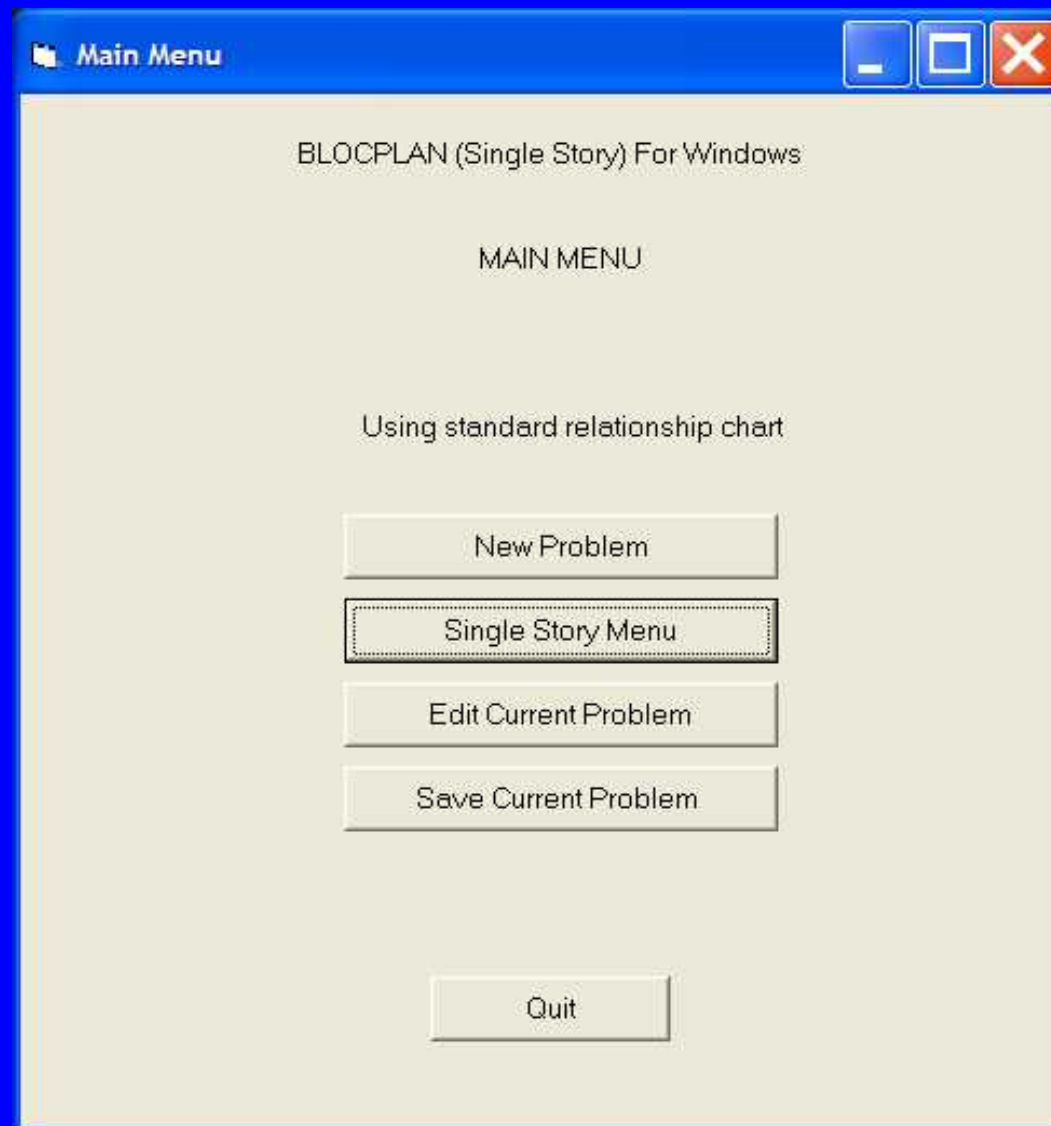
PROGRAM OPERATION

MAIN MENU

- | New Problem...
- | Single Story Menu...
- | Edit Current Problem...
- | Save Current Problem...
- | Quit

PROGRAM OPERATION

MAIN MENU



NEW PROBLEM



NEW PROBLEM FROM KEYBOARD

- | Department Information
 - n Name, area
- | Relationship Chart
 - n Muther adjacency codes
- | Muther adjacency code values
 - n Default values
- | Display of maximum possible Muther scores
- | Length to width ratio
 - n 1.35, 1, 2, 0.5, etc.

NEW PROBLEM FROM KEYBOARD

DEPARTMENT INFORMATION

The screenshot shows a software window titled "BLOCPLAN" with standard Windows window controls (minimize, maximize, close). The main area is a data entry form with a light beige background. It features a table with three columns: "Number", "Department", and "Area". The "Number" column contains a list of numbers from 1 to 18. The "Department" and "Area" columns are empty text boxes. To the left of the table, there are two labels: "New problem" and "Enter or modify problem data.". Below the table, there are three input fields: "Average" and "Std. Dev. Area" on the left, and "Total Area" on the right. At the bottom, there are three buttons: "Continue", "Print", and "Back".

Number	Department	Area
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		

Average

Std. Dev. Area

Total Area

NEW PROBLEM FROM KEYBOARD RELATIONSHIP CHART

RELFORM

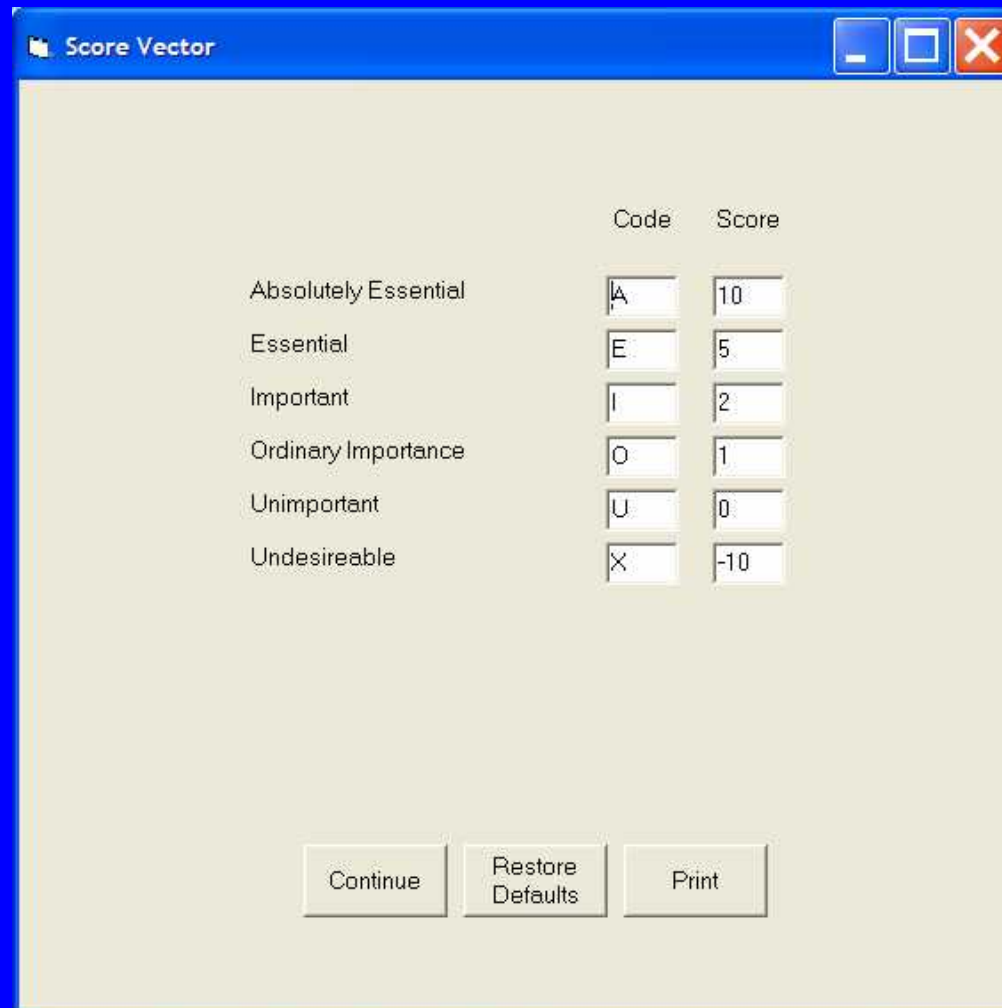
RELATIONSHIP CHART

		2	3	4	5
1	admin				
2	receiving				
3	shipping				
4	warehouse				
5	fabrication				

Enter or change code A = Absolutely I = Important U = Unimportant
 E = Essential O = Ordinary X = Undesireable

Continue Print

SPECIFY MUTHER VALUES

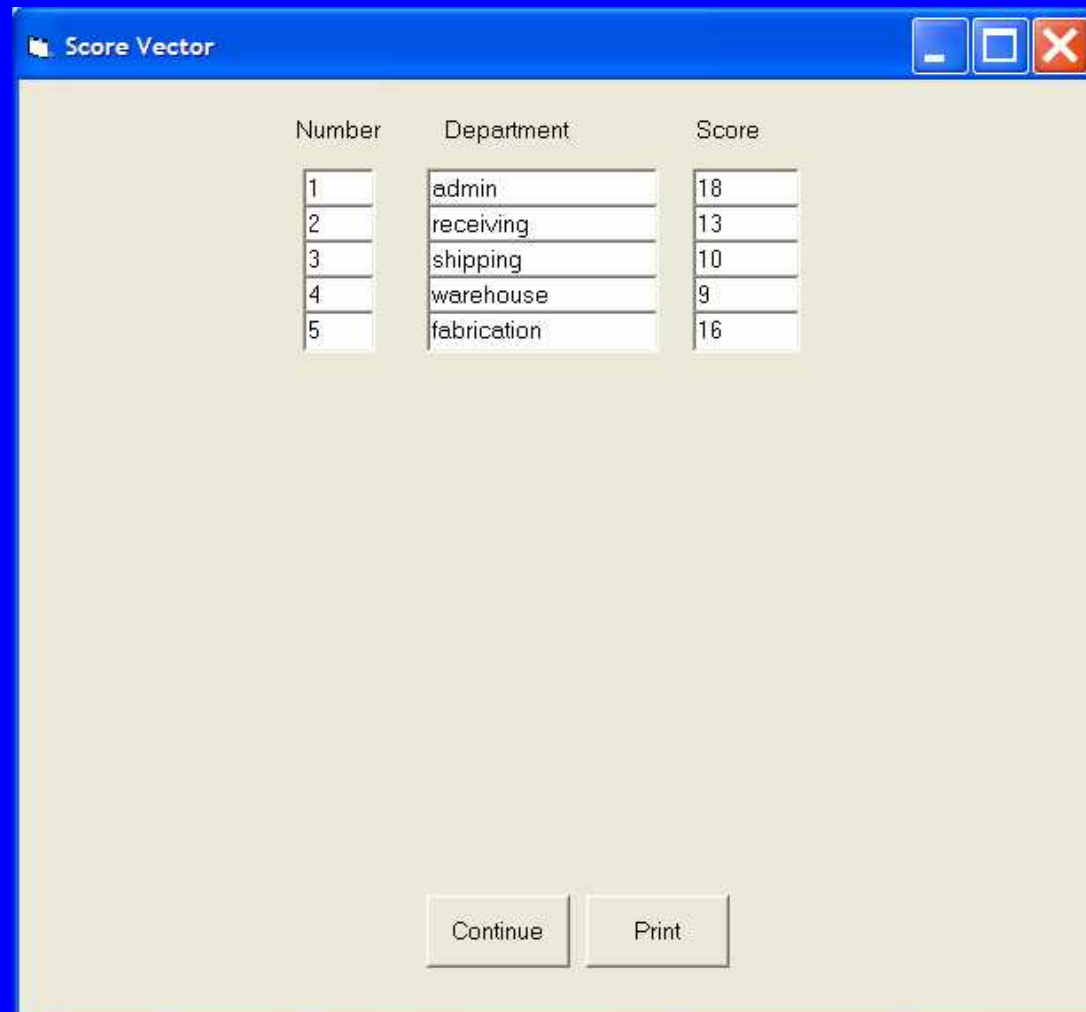


A screenshot of a software dialog box titled "Score Vector". The dialog box has a blue title bar with standard Windows window controls (minimize, maximize, close). The main area is light beige and contains a table for specifying Muth values. The table has two columns: "Code" and "Score". The rows are labeled with importance levels: "Absolutely Essential", "Essential", "Important", "Ordinary Importance", "Unimportant", and "Undesireable". Each row has input fields for the code and score. At the bottom of the dialog are three buttons: "Continue", "Restore Defaults", and "Print".

	Code	Score
Absolutely Essential	A	10
Essential	E	5
Important	I	2
Ordinary Importance	O	1
Unimportant	U	0
Undesireable	X	-10

Continue Restore Defaults Print

MAXIMUM POSSIBLE MUTHER SCORES

A screenshot of a software window titled "Score Vector". The window has a blue title bar with standard Windows window controls (minimize, maximize, close). The main content area is light gray and contains a table with three columns: "Number", "Department", and "Score". The table has five rows of data. At the bottom of the window, there are two buttons: "Continue" and "Print".

Number	Department	Score
1	admin	18
2	receiving	13
3	shipping	10
4	warehouse	9
5	fabrication	16

Continue Print

SPECIFY LENGTH TO WIDTH RATIO

Length to Width Ratio

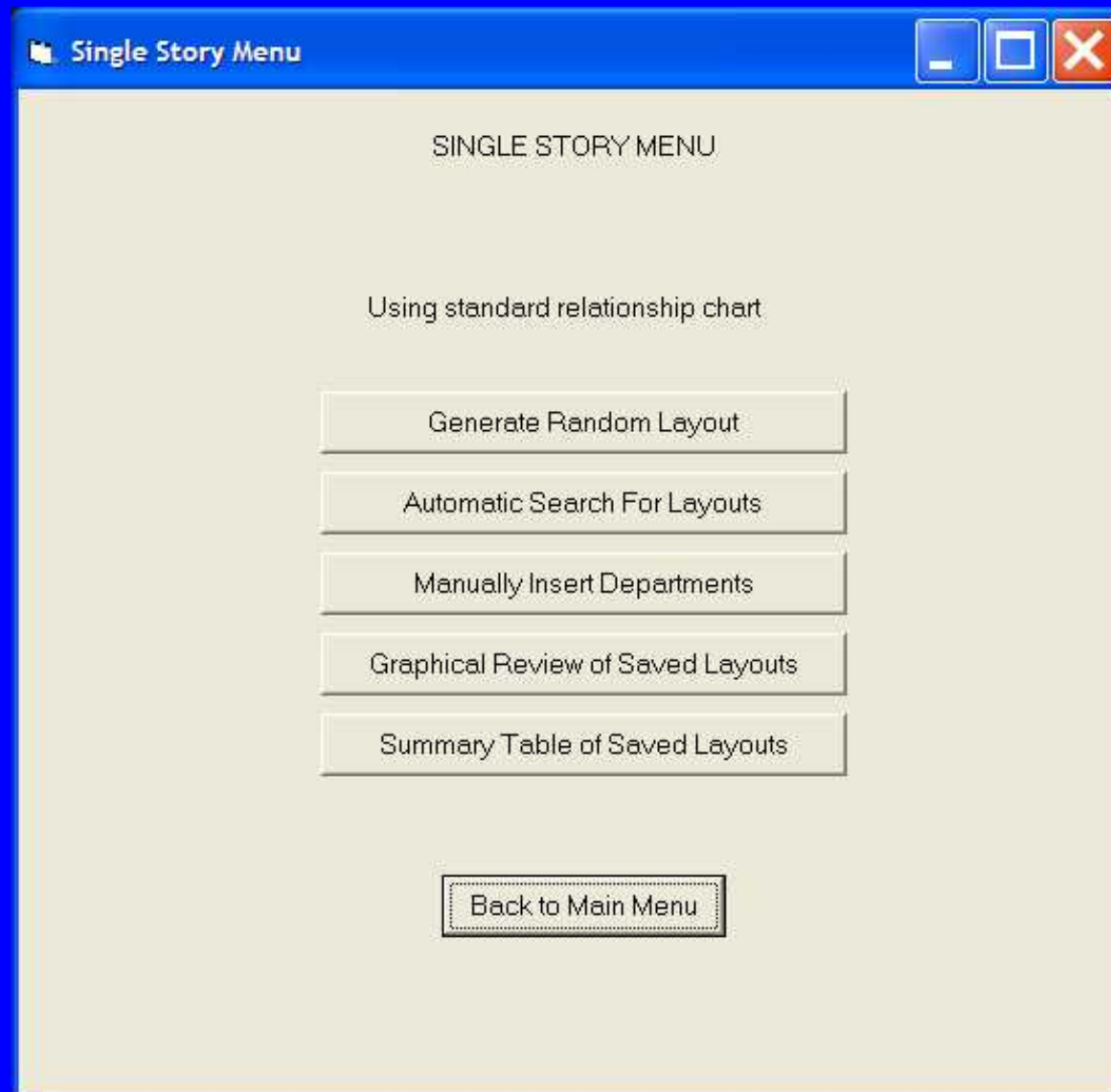
Select a length (horizontal) to width (vertical) ratio.

<div>1.35 x 1.00</div> <div>Sel. 1</div>	<div>1.00 x 1.00</div> <div>Sel. 3</div>	<div>Length</div> <div>Specify Ratio</div> <div>Width</div> <div>Sel. 5</div>
<div>2.00 x 1.00</div> <div>Sel. 2</div>	<div>1.00 x 2.00</div> <div>Sel. 4</div>	
<div>Back</div>		

SINGLE STORY MENU

- | Generate layouts
- | Analyze layouts
- | Review saved layouts

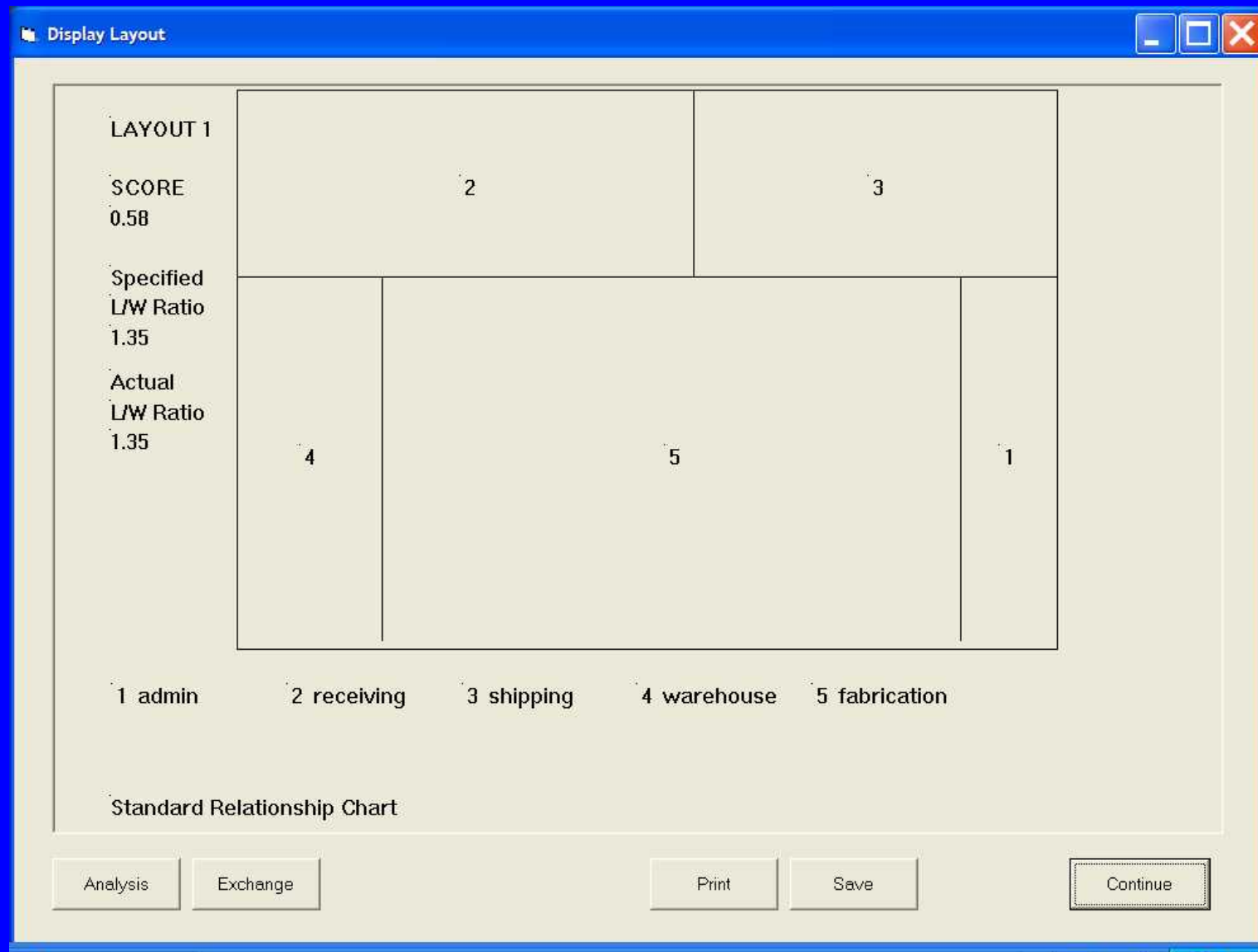
SINGLE STORY MENU



GENERATE RANDOM LAYOUT

- | Displays and scores layout
- | Analysis of layout
- | Exchange departments
- | Print
- | Save

GENERATE RANDOM LAYOUT



ANALYSIS

Layout Analysis 1							
Number	Dept.	X Cent.	Y Cent.	Length	Width	Area	L/W Ratio
1	admin	107.31	32.08	15.59	64.16	1000.00	0.24
2	receiving	31.67	81.15	73.60	33.97	2500.00	2.17
3	shipping	88.68	81.15	58.88	33.97	2000.00	1.73
4	warehouse	10.06	32.08	23.38	64.16	1500.00	0.36
5	fabrication	60.36	32.08	93.51	64.16	6000.00	1.46
Totals						13000.00	

MUTHER ADJACENCIES SATISFIED

Layout Analysis 2

ADJACENCIES SATISFIED

		2	3	4	5
1	admin	a.	O	i	E
2	receiving		I	U	O
3	shipping			i	E
4	warehouse				E
5	fabrication				

Upper Case = Adj.
Lower Case = Adj. Not Satisfied

A = Absolutely
E = Essential

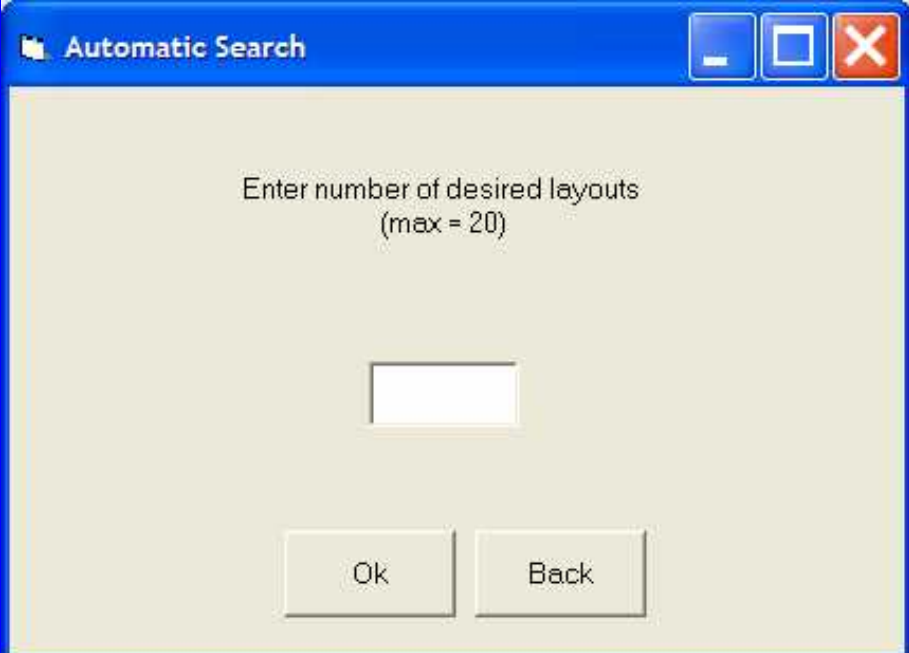
I = Important
O = Ordinary

U = Unimportant
X = Undesireable

Continue Print

AUTOMATIC SEARCH FOR LAYOUTS

- | Specify number of layouts to generate
- | Specify fixed departments
- | Performs calculations
- | Displays layout scores
- | Layouts viewed under graphical review of saved layouts



The image shows a screenshot of a software dialog box titled "Automatic Search". The dialog box has a blue title bar with standard Windows window controls (minimize, maximize, close). The main area is light gray and contains the text "Enter number of desired layouts (max = 20)". Below this text is a white rectangular input field. At the bottom of the dialog box are two buttons: "Ok" and "Back".

AUTOMATIC SEARCH FOR LAYOUTS

Manual Departments

Fixed Depts

A	B	C
D	E	F
G	H	I

1 admin 2 receiving 3 shipping 4 warehouse 5 fabrication

Department: 1 - admin 2 - receiving 3 - shipping

Zone: A B C

Side: Left Right

Manually Locate Specified Department

Return

AUTOMATIC SEARCH FOR LAYOUTS

Layout Table

LAYOUT	ADJ. SCOR.	REL-DIST SCORES	PROD. MOVE.
1	0.97 - 1	0.59 - 3 2540 - 3	0 - 1
2	0.85 - 3	3.90 - 1 2000 - 1	0 - 1
3	0.97 - 1	0.59 - 3 2540 - 3	0 - 1
4	0.85 - 3	1.05 - 2 2219 - 2	0 - 1
5	0.85 - 3	0.04 - 5 2598 - 5	0 - 1

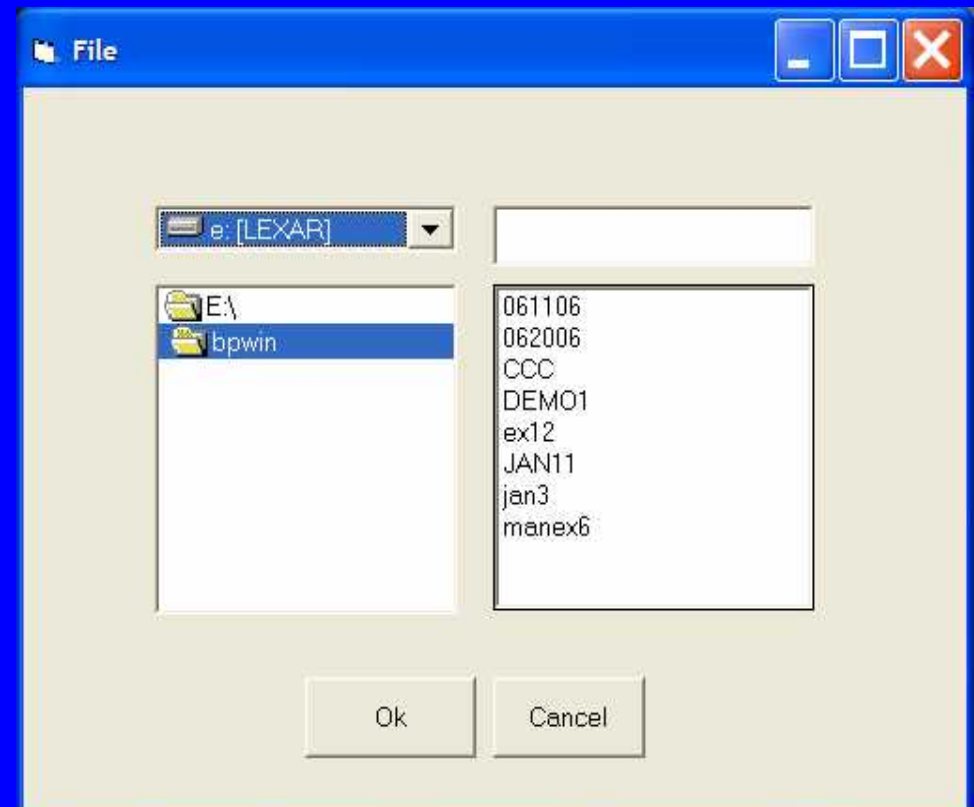
Continue Delete Print

EDIT CURRENT PROBLEM

- | Displays same screens as problem entered from keyboard

SAVE CURRENT PROBLEM

- Note all saved layouts must be saved as a complete problem from this screen



DEMONSTRATION

7 Department Example

- | Storage, 12000
- | Milling, 8000
- | Turning, 9000
- | Press, 11000
- | Plate, 8000
- | Assembly, 9000
- | Warehouse, 11000

DEMONSTRATION

Muther Adjacencies

	MILL	TURN	PRS	PLAT	ASSM	WARE
STOR	U	U	E	I	U	A
MILL		E	O	O	U	U
TURN			A	E	I	O
PRESS				U	E	I
PLATE					X	I
ASSM						O

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