

Forms & Reports

Part 2 of 2

IS240 – DBMS

Lecture #10 – 2010-03-29

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Topics

- Report Design
 - Terminology
 - Types
 - Layout
 - Computations
 - Wizard
- Applications
 - Design
 - Organization
 - Structure
 - Custom Menus
 - Help

In the words of the *Hitchhiker's Guide to the Galaxy*, DON'T PANIC. Although there are 51 slides, many of them are simply illustrations.

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Report Design

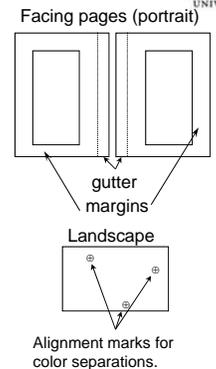
- Report usage/user needs.
- Report layout choices.
 - Tabular
 - Columns/Subgroups
 - Charts/graphs
- Paper sizes.
- Printer constraints.
- How often is it generated?
- Events that trigger report?
- How large is the report?
- Number of copies?
- Colors?
- Security controls
 - Distribution list
 - Unique numbering
 - Concealed/non-printed data
 - Secured printers
 - Transmission limits
 - Print queue controls
- Output concerns
 - Typefaces
 - ✓ Readability
 - ✓ Size
 - ✓ User disabilities
 - OCR needs

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Terminology

- Page Layout
 - Landscape v. portrait
 - Margins
 - Gutter (binding space)
- Typefaces
 - Serif (Times New Roman)
 - Sans-serif (Arial)
 - Ornamental
 - Fixed width
- Font size
 - common: 10 - 12 point
 - 72 points approx. 1 inch
 - pica (1/6 inch) (12 points)



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Report Types: Tabular

Customer

CustomerID	Phone	FirstName	LastName	Address	ZipCode
1		Walkin	Walkin		
2	(808) 801-9830	Brent	Cummings	9197 Hatchet Dri	96815
3	(617) 843-6488	Dwight	Logan	1760 Clearview	02109
4	(502) 007-0907	Shatika	Gilbert	4407 Green Stre	40342
5	(701) 384-5623	Charlotte	Anderson	4333 Highland C	58102
6	(606) 740-3304	Searoba	Hopkins	3183 Highland C	40330
7	(408) 104-9807	Anita	Robinson	8177 Horse Park	95035
8	(606) 688-8141	Cora	Reid	8351 Locust Str	41073
9	(702) 533-3419	Elwood	Henson	4042 West Ridg	89125
10	(302) 701-7398	Kaye	Maynard	5085 Sugar Cro	19901

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Report Types: Labels

Dwight Parrish 9904 Plum Springs Road Worcester, MA 01613	Dwight Logan 1760 ClearviewStreet Boston, MA 02108	David Sims 6623 GlenviewDrive Boston, MA 02116
Hershel Keen 8124 Industrial Drive Nashua, NH 03060	Reva Kidd 5594 Halltown Road Bangor, ME 04401	Dan Kennedy 3108 Troon Court Burlington, VT 05401
Sharon Sexton 2551 Elementary Drive Barre, VT 05641	Kelly Moore 6116 ClearviewStreet Middlebury, VT 05753	Cassy Tuck 7977 Fairways Drive Clifton, NJ 07015

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Report Types

- Column.
- Column with groups.

MerchandiseOrder

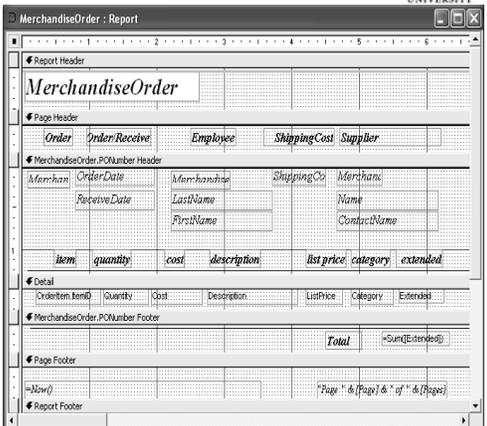
Order	Order/Receive	Employee	ShippingCost	Supplier		
1	08-Mar-04	4	\$33.54	10		
	08-Mar-04	Hopkins Alan		Rhodes Brad		
item	quantity	cost	description	list price	category	extended
27	8	\$24.65	Aquarium Filter & Pump	\$35.00	Fish	197.20
30	208	\$4.42	Flea Collar-Dog-Medium	\$7.00	Dog	919.36
Total						1116.56

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Report Layout

- Report Header
- Page Header
- Group Header1
 - ◆ Group Header2
 - ◆ ...
 - ◆ Detail
 - ◆ ...
 - ◆ Group Footer2
- Group Footer1
- Page Footer
- Report Footer



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Report Layout/Common Use

- Report Header
 - ❑ Title pages that are printed one time for entire report.
- Page Header
 - ❑ Title lines or page notes that are printed at the top of every page.
- Group Header
 - ❑ Data for a group (e.g., Order) and headings for the detail section.
- Detail
 - ❑ Innermost data.
- Group Footer
 - ❑ Subtotals for the group.
- Page Footer
 - ❑ Printed at the bottom of every page--page totals or page numbers and notes.
- Report Footer
 - ❑ Printed one time at the end of the report. Summary notes, overall totals and graphs for entire data set.

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Report Layout/Groups

- Often use groups/breaks for one-to-many relationships.
- Use a query to join all necessary tables.
 - ◆ Can include all columns.
 - ◆ Use query to create computed columns (e.g., Extended:Price*Quantity).
 - ◆ Avoid creating aggregates or subtotals in the query.
- Each one-to-many relationship becomes a new subgroup.
 - Customer(C#, Name, ...)
 - Order(O#, C#, Odate, ...)
 - OrderItem(O#, Item#, Qty, ...)

Report of Orders

Group1: Customer H1: Customer name, address, ...
Group2: Order H2: Order#, Odate, Salesperson. Detail: Item#, Qty, Extended
F2: Order total: Sum(Extended)
F1: Customer total orders:

Rpt footer: graph orders by customer

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Report Computations

- Query
 - ◆ Same row computations.
 - ◆ Extended=Price*Quantity
- Report
 - ◆ Group subtotals.
 - ◆ Page and report totals.
 - ◆ Mixed, e.g., commission = rate * total
 - ◆ Scope depends on location
 - ◆ Group footer: subtotal
 - ◆ Page footer: page total
 - ◆ Report footer: report total

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Report Graphs

- ◆ Separate query.
- ◆ Detail
 - ◆ Locate in detail or group footer section.
 - ◆ Avoid aggregation and groups in query.
 - ◆ Include column that links to detail query in report.
- ◆ Subtotals and totals
 - ◆ Typically located in report footer or header.
 - ◆ Compare group totals
 - ◆ Relies on Group By and aggregation.
 - ◆ Be sure query groups match report groups.

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Report Graph for Group

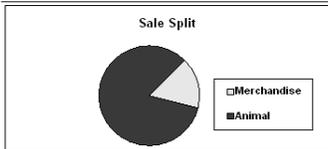


Sales Report

Sale	4	8/14/2004	Customer	18	Employee	3
			(414) 331-5679		Katy	Reazoner
			David Lawrence			
			9326 Halltown Road		53916	

Animal	Name	Category	Breed	Born	Gender	Registered	Color	ListPrice	SalePrice
8	Miranda	Dog	Norfolk Terrier	5/4/2004	Female	AKC	Red	\$203.75	\$183.38

Merchandise	Description	Quantity	ListPrice	SalePrice	Extended	
1	Dog	DogKennel-Small	1	\$45.00	\$16.00	\$16.00
36	Dog	Leash	1	\$22.00	\$19.80	\$19.80



Merchandise Total	\$35.80
Animal Total	\$183.38
SalesTax	\$14.62
Total	\$233.90

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Using the Access Report Wizard

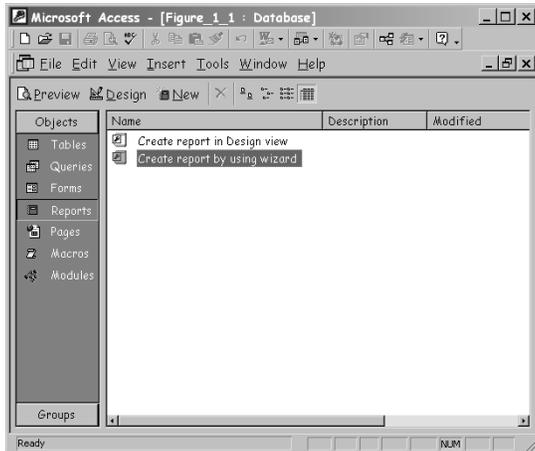


- Starting the Wizard
- Choosing Fields
- Choosing a Basic Format
- Defining Groups
- Sorting
- Group Statistics
- Choosing a Print Layout
- Embellishing the Appearance
- Adding a Report Title
- Default Report Layout
- Previewing the Print Job

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Starting the Wizard

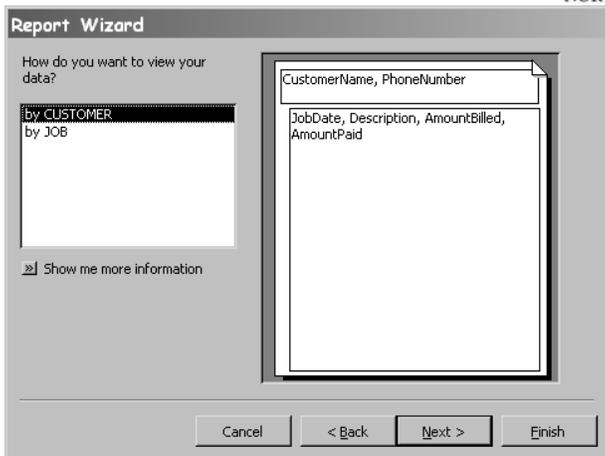


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Choosing Fields



Choosing a Basic Format



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Defining Groups



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Sorting

Report Wizard

What sort order and summary information do you want for detail records?

You can sort records by up to four fields, in either ascending or descending order.

1	JobDate	↓
2	Description	↓
3	JobDate	↓
4	AmountBilled	↓

Summary Options ...

Cancel < Back Next > Finish

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Group Statistics

Summary Options

What summary values would you like calculated?

Field	Sum	Avg	Min	Max
AmountBilled	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AmountPaid	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Show

Detail and Summary

Summary Only

Calculate percent of total for sums

OK

Cancel

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Choosing a Print Layout

Report Wizard

How would you like to lay out your report?

Layout

Stepped

Block

Outline 1

Outline 2

Align Left 1

Align Left 2

Orientation

Portrait

Landscape

Adjust the field width so all fields fit on a page.

Cancel < Back Next > Finish

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Embellishing the Appearance

Report Wizard

What style would you like?

Bold
 Casual
 Compact
 Corporate
 Formal
 Soft Gray

Cancel < Back Next > Finish

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Adding a Report Title

Report Wizard

What title do you want for your report?

CustomerJobHistory

That's all the information the wizard needs to create your report.

Do you want to preview the report or modify the report's design?

Preview the report.

Modify the report's design.

Display Help on working with the report?

Cancel < Back Next > Finish

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Default Report Layout

Design View

CustomerJobHistory			
CUSTOMER_ID Header			
CustomerName	CustomerName	PhoneNumber	PhoneNumber
JobDate	Description	AmountBilled	AmountPaid
JobDate	Description	AmountBilled	AmountPaid
CUSTOMER_ID Footer			
Sum:	=Sum([AmountBilled])	=Sum([AmountPaid])	
Page Footer			
Page:	=Page	of:	=Pages
Report Footer			
Grand Total:	=Sum([AmountBilled])	=Sum([AmountPaid])	

NUM

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Previewing the Print Job



Microsoft Access - [CustomerJobHistory]

File Edit View Tools Window Help

CustomerJobHistory

CustomerName Wu, Jason
 PhoneNumber (303) 555-0089

JobDate	Description	AmountBilled	AmountPaid
2000-03-03	Paint exterior in 794 White	\$2,750.00	\$2,750.00
2001-04-03	Paint exterior doors in 6333 Rte	\$895.00	\$895.00
Summary for 'CUSTOMER_ID' = 1 (2 detail records)			
Sum		\$3,645.00	\$3,645.00

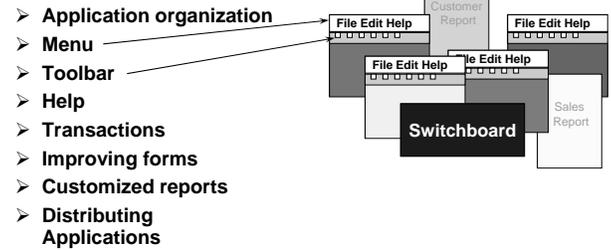
CustomerName Mayles, Marilyn
 PhoneNumber (303) 777-5698

JobDate	Description	AmountBilled	AmountPaid
2000-06-14	Paint and prep interior wood tr	\$1,200.00	\$1,200.00
2000-07-07	Paint dining room and kitchen	\$1,778.00	\$1,778.00
Summary for 'CUSTOMER_ID' = 2 (2 detail records)			
Sum		\$3,077.00	\$3,077.00

CustomerName Jackson, Chris
 PhoneNumber (549) 388-1243

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Application Features



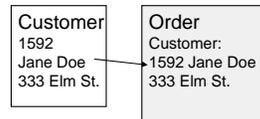
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Application Design



- Customer Form
- Order Form
- Bad design:
 - ❑ Enter data twice.
- Poor design:
 - ❑ Memorize data (ID) on one form to enter on second.
- Better design:
 - ❑ Automatically transfer data across forms.



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Application Importance (1)



- User interface
 - ❑ Make users' jobs easier.
 - ❑ Tie input forms and reports.
 - ❑ Automate basic tasks
 - ❑ Tie to external data collection devices.
 - ❑ Help system.
- Ensure data integrity
 - ❑ Validate data.
 - ❑ Perform computations.
 - ❑ Verify totals.
 - ❑ Control user access.
 - ❑ Maintain related transactions.
 - ❑ Backup and recovery.

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Application Importance (2)



- Decision Support
 - ❑ Monitoring of events.
 - ❑ Analysis, Graphs, Reports.
 - ❑ Statistical analysis and optimization.
 - ❑ Forecasts and simulation.
 - ❑ Linking to other software.
- Expert Systems & Intelligence
 - ❑ Logic and forward chaining.
 - ❑ Analysis and decisions in code.
 - ❑ Databases of cases, situations and solutions.

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Application Organization (1)



- Organized by user needs.
 - ❑ Identify user.
 - ❑ Outline tasks.
 - ❑ Organize forms and reports.
- Direct users to tasks.
- Potential drawbacks
 - ❑ Too many layers makes it difficult for users to find anything.
 - ❑ Poor organization confuses users and requires additional support and training.

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Application Organization (2)

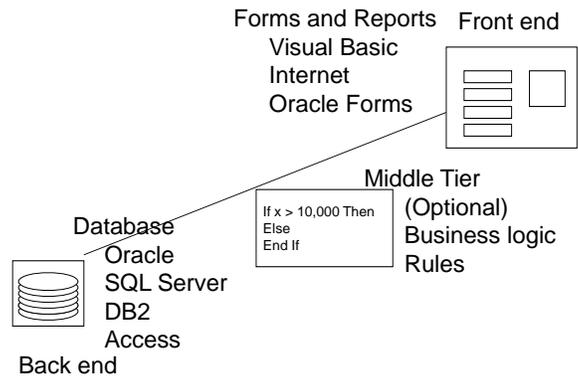


- Build forms and reports.
- Start with a core concept.
 - ❑ Identify most important features. Get them correct.
 - ❑ Add features, forms and reports.
 - ❑ Issue application updates--number and date!
- Use menu stubs for incomplete and future work.
 - ❑ Make them invisible to the user with the *Visible* property.
 - ❑ Be sure they are disabled.

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Application Structure



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User Orientation



- Database application is a model of the organization.
 - ❑ Applications based on user jobs.
 - ❑ Flexibility and user control.
- Application organization
 - ❑ User tasks.
 - ❑ User control over sequence.
- Forms
 - ❑ Minimize user entry.
 - ❑ Anticipation.
- Reports
 - ❑ Easy access from forms.
 - ❑ User selection of scope and conditions or filters.

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Initial Menu / Switchboard



- Starting point for users.
 - ❑ Identify the user.
 - ✓ From network if possible.
 - ✓ Separate log in if needed.
 - ❑ Customized for users.
 - ✓ Hide restricted options.
 - ✓ Different forms as needed.
- Avoid cluttered screens.
 - ❑ Use graphics and color to enhance the presentation.
 - ❑ Limit the number of options.



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Switchboard Uses

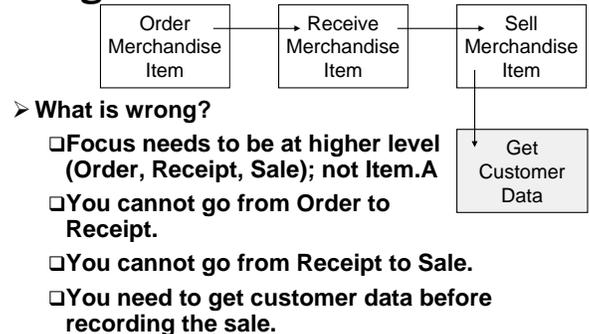


- Acts as a directory for the application.
- Identifies users.
- Contains startup and shutdown code.
 - ❑ Can preload forms in background.
 - ✓ Make them invisible.
 - ✓ Speed up later usage.
 - ❑ Can initiate transaction and security logs.
 - ❑ Can establish network connections.
- Contains copyright and usage notes.

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Sally's Pet Store: Poor Organization

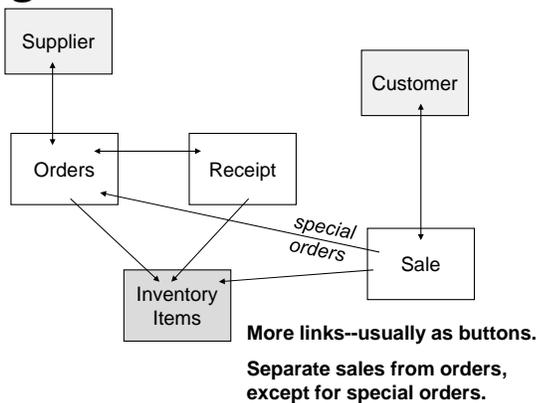


- What is wrong?
 - ❑ Focus needs to be at higher level (Order, Receipt, Sale); not Item.A
 - ❑ You cannot go from Order to Receipt.
 - ❑ You cannot go from Receipt to Sale.
 - ❑ You need to get customer data before recording the sale.

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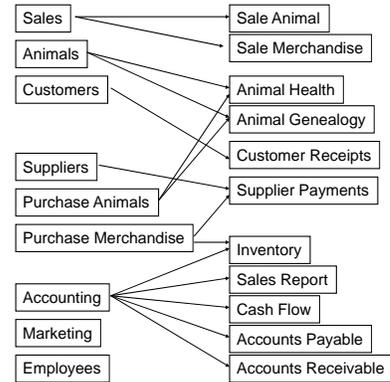
Sally's Pet Store: Better Organization



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Sally's Pet Store: Initial VTOC*



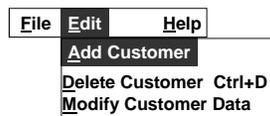
38 *Volume Table of Contents

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Benefits of Custom Menus



- Limit user actions.
- Simplify user interface.
- Add custom actions.
- Menus can be activated by keystrokes.
 - ❑ Accessibility
 - ❑ Touch-typists and heads-down data entry.
- Sometimes need different menus for each form.



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Creating Menus



- View | Toolbars | Customize
- Drag and Drop
 - ❑ Multilevel menu.
 - ✓ Sublevels/hierarchy.
 - ✓ Each level is a separate menu with its own name.
 - ❑ Menu choices
 - ✓ Each entry has a name.
 - ✓ Access key: & (e.g., &File).
 - ✓ Status Bar Text
 - ❑ Actions
 - ✓ Submenu.
 - ✓ Run any code.

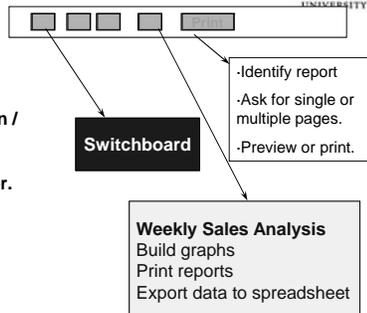
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Toolbars



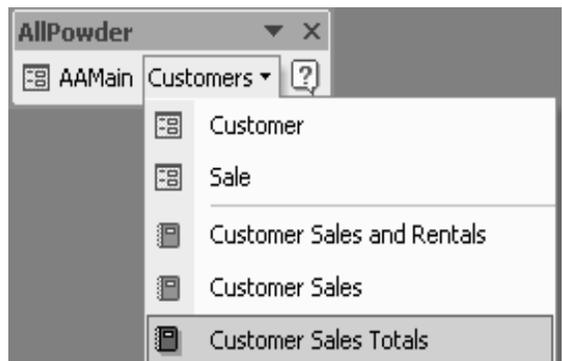
- Why toolbars?
 - ❑ Single click for complex actions.
 - ❑ Commands available across the application / shortcuts.
 - ❑ Position and customization by user.
- Toolbar components
 - ❑ Button
 - ✓ Text
 - ✓ Icon/graphic (bitmap)
 - ❑ Tool Tip
 - ❑ Status Bar description
 - ❑ Action



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Menus and Toolbars



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Creating Toolbars

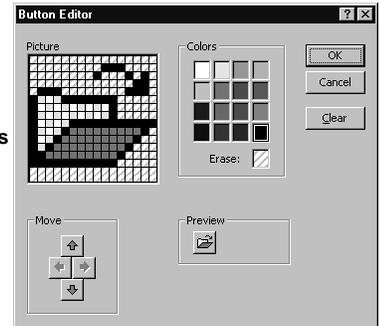
- View | Toolbars | New
- Customizing
 - ❑ Add new button.
 - ✓ Select from DBMS list.
 - ✓ Bring up query/form/report.
 - ✓ Run code.
 - ❑ Change icon.
 - ✓ Modify existing icon.
 - ✓ Replace icon.
 - ✓ Create your own icon and paste it on the button.
 - ✓ Place text label on button.
- Tool tips are vital.
- Status bar for description.

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Icons

- 16 by 16 pixels
- 16 colors
 - ❑ Bright and shaded
 - ❑ Dither to mix colors
- Outline in black



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Activating Toolbars and Menus

- Install a menu
 - ❑ Form: Attach a bar using the form properties.
 - ❑ Code
 - ✓ On Activate
 - ✓ On Deactivate
 - Modify from code
 - ❑ Add or remove options
 - ❑ Enable/Disable (dim)
- ```

Set myBar = CommandBars("Custom1")
If user = "Clerk" Then
 myBar.Visible = True
Else
 CommandBars("Database").Reset
 myBar.Enabled = False
End If

With myBar
 .Controls.Add Type:=msoControlButton, Id:=3
 .Controls(1).Enabled = False
 .Controls.Add Type:=msoControlButton, Id:=3
End With
myBar.Visible = True

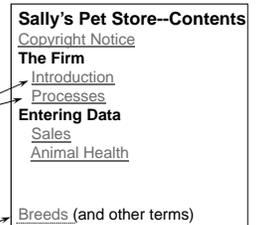
```

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## Help

- On-line help replaces manuals
  - ❑ Context sensitive:
    - ✓ Pressing F1 key provides information on topic with current focus
  - ❑ Hypertext links to related topics
  - ❑ Sequential topics
    - ✓ Descriptions
    - ✓ Examples
  - ❑ Definitions / Glossary
  - ❑ Contents / overview
  - ❑ Index / keywords
  - ❑ Full-text search



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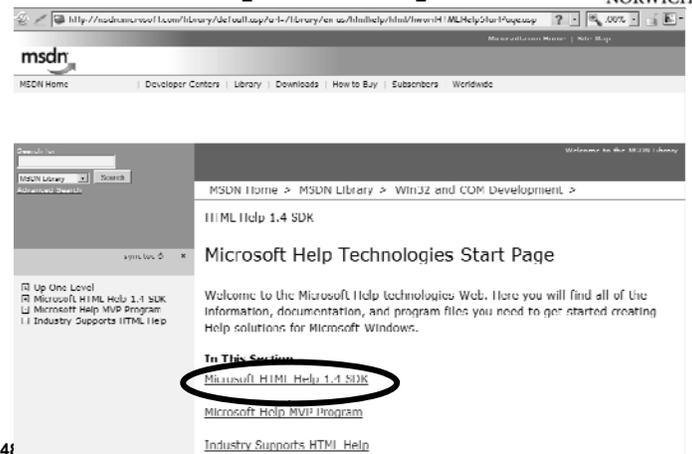
## HTML Help

- Microsoft HTML Help Workshop: <http://tinyurl.com/6eidu>
- Can create each of the following
  - ❑ Help project files
    - ✓ Use separate directory
  - ❑ HTML topic files
    - ✓ Standard HTML with some additions for keywords
  - ❑ Topic Header and Text File
  - ❑ Graphics and multimedia
    - ✓ Avoid monster sizes
  - ❑ Contents files
    - ✓ Can auto-generate from heading tags (<H1>, <H2>, ...)
  - ❑ Index files
    - ✓ Use Help Workshop to set keywords within each topic

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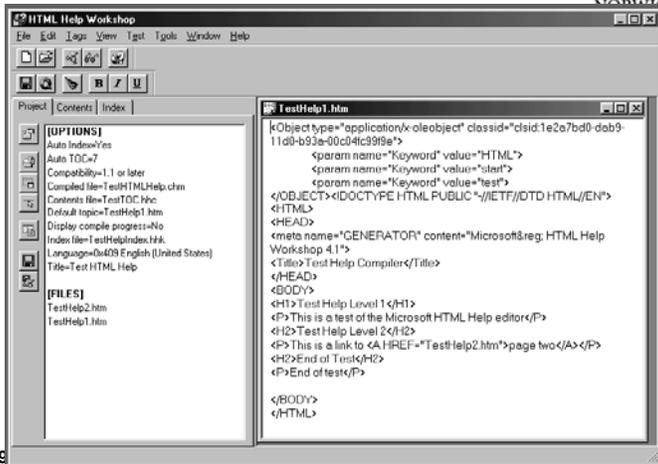
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## HTML Help Workshop Online



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## HTML Help Workshop



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## HOMEWORK & QUIZ



- Complete Lab Ch 6: All Powder Board and Ski Shop forms and reports
  - Keep your files for review
- Continue working on your term project
  - Will be the basis of your lab evaluation
- Friday 9 April 2010
  - Prepare for quiz we missed on 2 Apr 2010 due to Prof Kabay's horrible wretched equivalent to the bubonic plague:
  - Will cover
    - ✓ Advanced Queries (Lecture 8)
    - ✓ Forms & Reports (1) (Lecture 9)

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# DISCUSSION

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