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CHAPTER 1

CORELDRAW:

1.1 Definition

CorelDRAW is an intuitive and versatile graphics application for creating high-quality vector illustrations, logo designs, and page layouts.

CorelDRAW terms

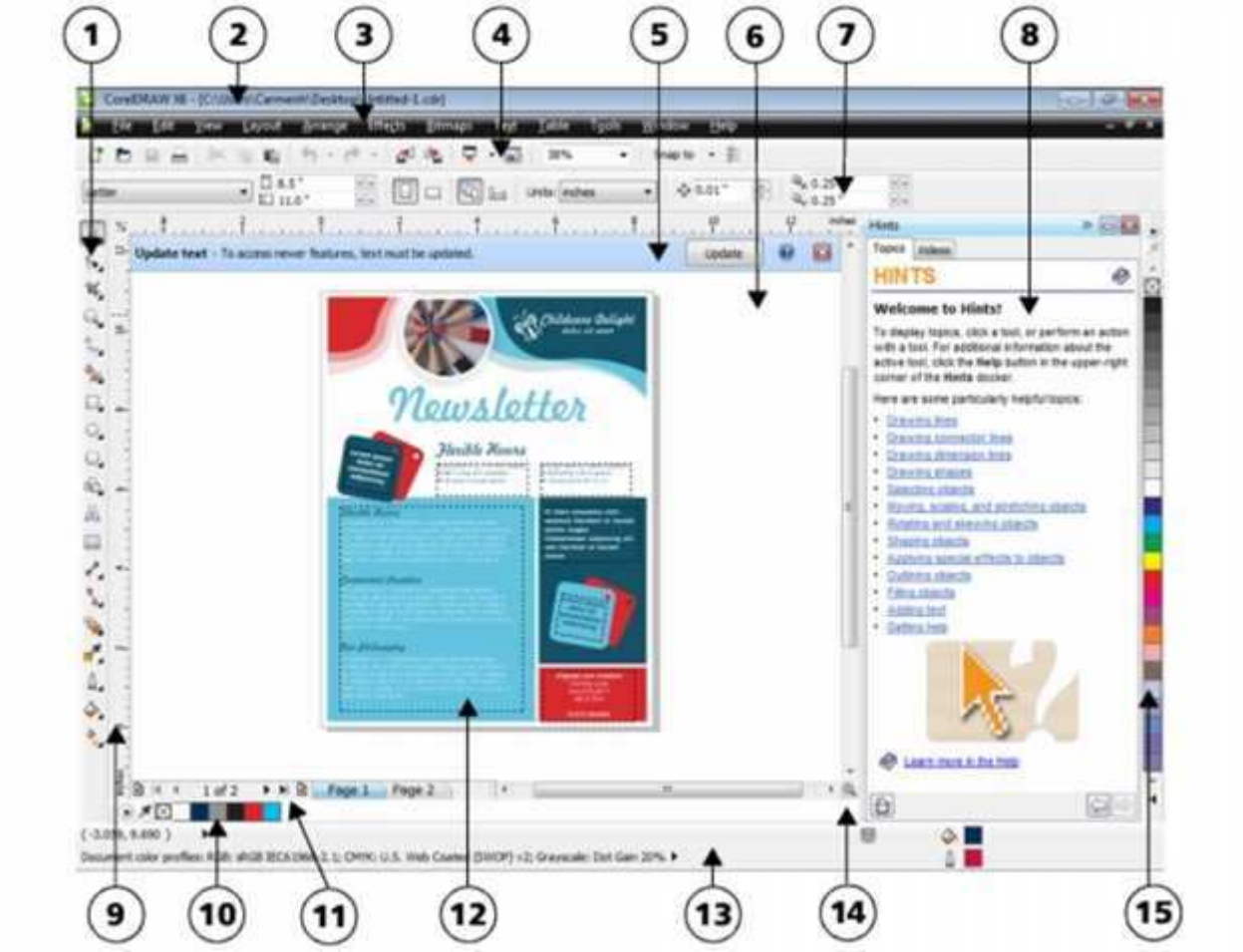
Before you get started with CorelDRAW, you should be familiar with the following terms.

Term	Description
Object	An element in a drawing such as an image, shape, line, text, curve, symbol, or layer
Drawing	The work you create in CorelDRAW; for example, custom artwork, logos, posters, and newsletters
Vector graphic	An image generated from mathematical descriptions that determine the position, length, and direction in which lines are drawn
Bitmap	An image composed of grids of pixels or dots
Docker	A window that contains available commands and settings relevant to a specific tool or task
Flyout	A button that opens a group of related tools or menu items
List box	A list of options that drops down when a user clicks the down arrow button
Artistic text	A type of text to which you can apply special effects, such as shadows
Paragraph text	A type of text to which you can apply formatting options, and which can be edited in large blocks

1.2 Application window

When you launch CorelDRAW, the application window opens containing a drawing window. Although more than one drawing window can be opened, you can apply commands to the active drawing window only.

The CorelDRAW application window appears below.



Circled numbers correspond to the numbers in the following table, which describes the main components of the application window.

Part	Description
1. Toolbox	A docked bar with tools for creating, filling, and modifying objects in the drawing
2. Title bar	The area displaying the title of the currently open drawing
3. Menu bar	The area containing pull-down menu options
4. Toolbar	A detachable bar that contains shortcuts to menu and other commands
5. Update text toolbar	A temporary toolbar that allows you to update legacy documents in order to edit the text using the CorelDRAW X6 text controls.

6. Drawing window	The area outside the drawing page bordered by the scroll bars and application controls
7. Property bar	A detachable bar with commands that relate to the active tool or object. For example, when the text tool is active, the text property bar displays commands that create and edit text.
8. Docker	A window containing available commands and settings relevant to a specific tool or task
9. Rulers	Horizontal and vertical borders that are used to determine the size and position of objects in a drawing
10. Document palette	A dockable bar that contains color swatches for the current document
11. Document navigator	The area at the bottom left of the application window that contains controls for moving between pages and adding pages
12. Drawing page	The rectangular area inside the drawing window. It is the printable area of your work area.
13. Status bar	An area at the bottom of the application window that contains information about object properties such as type, size, color, fill, and resolution. The status bar also shows the current cursor position.
14. Navigator	A button at the lower-right corner that opens a smaller display to help you move around a drawing
15. Color palette	A dockable bar that contains color swatches

1.3 Workspace tools

Application commands are accessible through the menu bar, toolbars, toolbox, property bar, and dockers. The property bar and dockers provide access to commands that relate to the active tool or current task. The property bar, dockers, toolbars, and toolbox can be opened, closed, and moved around your screen at any time.

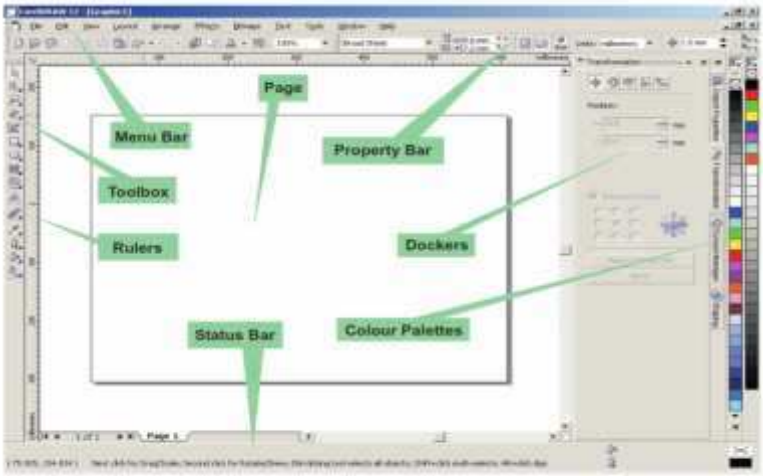
CorelDRAW has gone through many updates over the years and earlier versions will have some of the features located in different places to those described in this manual, however since Version 9 most of these have been standardised.

If you are entirely new to CorelDRAW or maybe you haven't had much opportunity to use it in the past the first thing to do is to familiarise yourself with the workspace.

At the top of the screen you will find the Menu Bar. The Menus contain a wide variety of commands to modify the characteristics of your workspace and the entities within it.
Beneath the Menu Bar you will find the property bar. This is adaptive dependent on the object you select or the tool you are using and you should note the various options you can control with each tool you use or shape you create.

On the left-hand side of the screen is the toolbox you use to create shapes and text with. At the bottom of the screen is the Status bar. This will tell you important details about the objects you select and is an invaluable guide to resolving problems.

A number of Dockers are available to allow you to manage your drawings and modify the components you create. A Docker is a toolbar that can be opened and closed as you wish and either kept floating or docked at the side of your workspace and collapsed to allow you greater screen space. I always have the following dockers open: Object properties, Transformations, Shaping. I frequently open the Object Manager and Undo Docker for advanced control of my drawing.

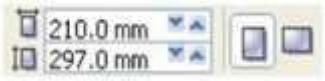


Configuring the Workspace

Defining the Page Size

You can create your drawings in any page size you find convenient however it is very important that when you print your file to the laser cutter that the page you print from represents the bed size of your machine.

If it doesn't you will have no control over where the file is being cut.
The page size can be set on the Property Bar:



As the bed of your Universal laser cutter has been built to Imperial measurements, you may find it simpler to set the Units to Inches first before entering the dimensions. These are the actual dimensions depending on the model you have.

This can be defined by double-clicking on the rulers and entering the value you set the page height to in the Vertical Origin. Note it is easier to keep the units in Inches when you do this.

Nudge Keys

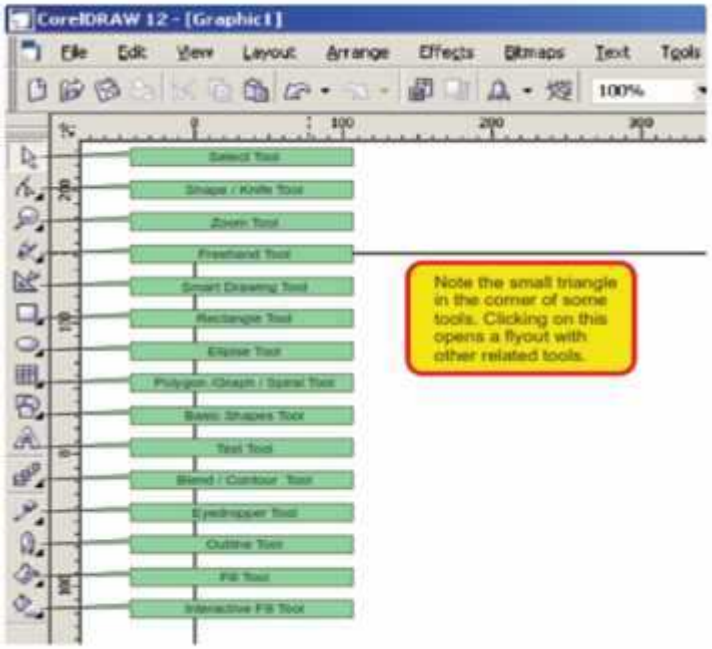
The Nudge Keys allow you to make quick precise incremental adjustments to the position of selected objects. Select objects and use the arrow keys on your keyboard to move them.

Nudge is a movement by a defined amount. Double-clicking on the rulers opens the ruler options dialogue where the nudge amount can be defined. I recommend a value of 1mm is entered.

You will also see options for Super Nudge and Micro Nudge. These will move a selection by a multiple of the Nudge value you defined. I recommend for practical purposes you set the Super Nudge to 10 and the Micro nudge to 2. A Super Nudge will then be 10mm and a Micro nudge will be 0.5mm. Depending on the version of CorelDRAW you have this can be set in the Property Bar **when nothing is selected** by entering a value in**:** 1.0 mm.

Note that the Super Nudge and the Micro Nudge factors cannot be set in the Property Bar and will be whatever factor has been defined in the ruler options.

To use Super Nudge, hold down the Shift key as you press the arrow keys.
To use Micro Nudge, hold down the Ctrl key as you press the arrow keys.

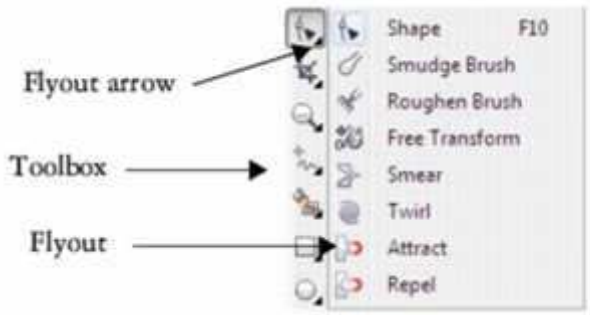


1.4 The Toolbox

Take a tour of the Toolbox. By default this resides on the left hand side of the screen but it can be moved anywhere else, sometimes inadvertently, particularly if you use a laptop computer with a touch mouse pad!

Exploring the toolbox

The toolbox contains tools for drawing and editing images. Some of the tools are visible by default, while others are grouped in flyouts. Flyouts open to display a set of related CorelDRAW tools. A small flyout arrow in the lower-right corner of a toolbox button indicates a flyout. You can access the tools in a flyout by clicking the flyout arrow. After you open a flyout, you can easily scan the contents of other flyouts by hovering over any of the toolbox buttons which have flyout arrows. Flyouts function like toolbars when you drag them away from the toolbox. This lets you view all the related tools while you work.



*In the default workspace, clicking the flyout arrow on the **Shape** tool opens the **Shape edit** flyout.*

The following table provides descriptions of the tools in the CorelDRAW toolbox.

Pick tool

The **Pick** tool lets you select, size, skew, and rotate objects.

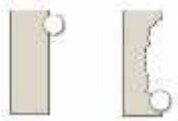
The **Freehand pick** tool lets you select objects by using a freehand selection marquee.

Shape edit tools

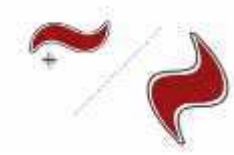
The **Shape** tool lets you edit the shape of obje

The **Smudge brush** tool lets you distort a vector object by dragging along its outline.

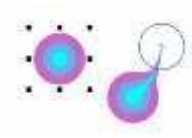
The **Roughen brush** tool lets you distort the outline of a vector object by dragging along the outline.



The **Free Transform** tool lets you transform an object by using the **Free rotation**, **Free angle reflection**, **Free scale**, and **Free skew** tools.

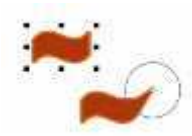


The **Smear** tool lets you shape an object by pulling extensions or making indents along its outline.



The **Twirl** tool lets you create swirl effects by dragging along the edge of objects.

The **Attract** tool lets you shape objects by attracting nodes to the cursor.



The **Repel** tool lets you shape objects by pushing away nodes from the cursor.

Crop tools

The **Crop** tool lets you remove unwanted areas in objects.

The **Knife** tool lets you cut through objects.

The **Eraser** tool lets you remove areas of your drawing.

The **Virtual segment delete** tool lets you delete portions of objects that are between intersections.

Zoom tools

The **Zoom** tool lets you change the magnification level in the drawing window.

The **Pan** tool lets you control which part of the drawing is visible in the drawing window.

Curve tools

The **Freehand** tool lets you draw single line segments and curves.

The **2-point line** tool lets you draw a straight two-point line segment.

The **Bézier** tool lets you draw curves one segment at a time.

The **Artistic media** tool provides access to the **Brush**, **Sprayer**, **Calligraphic**, and **Pressure** tools.

The **Pen** tool lets you draw curves one segment at a time.

The **B-spline** tool lets you draw curved lines by setting control points that shape the curve without breaking it into segments.

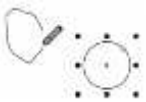
The **Polyline** tool lets you draw lines and curves in preview mode.

The **3-point curve** tool lets you draw a curve by defining the start, end, and center points.

Smart tools

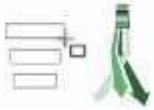
The **Smart fill** tool lets you create objects from enclosed areas and then apply a fill to those objects.

The **Smart drawing** tool converts your freehand strokes to basic shapes and smoothed curves.



Rectangle tools

The **Rectangle** tool lets you draw rectangles and squares.



The **3-point rectangle** tool lets you draw rectangles at an angle.

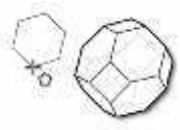
Ellipse tools

The **Ellipse** tool lets you draw ellipses and circles.

The **3-point ellipse** tool lets you draw ellipses at an angle.

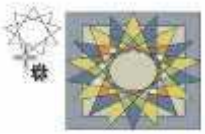
Object tools

The **Polygon** tool lets you draw symmetrical polygons and stars.

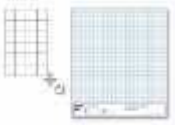


The **Star** tool lets you draw perfect stars.

The **Complex star** tool lets you draw complex stars that have intersecting sides.



The **Graph paper** tool lets you draw a grid of lines similar to that on graph paper.



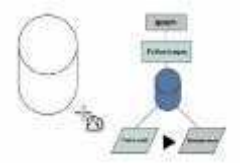
The **Spiral** tool lets you draw symmetrical and logarithmic spirals.

Basic Shapes tools

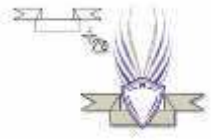
The **Basic shapes** tool lets you choose from a full set of shapes, including hexagram, a smiley face, and a right-angle triangle.

The **Arrow shapes** tool lets you draw arrows of various shape, direction, and number of heads.

The **Flowchart shapes** tool lets you draw flowchart symbols.



The **Banner shapes** tool lets you draw ribbon objects and explosion shapes.



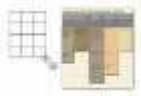
The **Callout shapes** tool lets you draw callouts and labels.

Text tool

The **Text** tool lets you type words directly on the screen as artistic or paragraph text.

Table tool

The **Table** tool lets you draw and edit tables.



Dimension tools

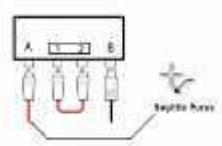
The **Parallel dimension** tool lets you draw slanted dimension lines.

The **Horizontal or vertical dimension** tool lets you draw horizontal or vertical dimension lines.

The **Angular dimension** tool lets you draw angular dimension lines.

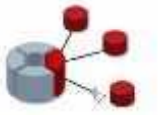
The **Segment dimension** tool lets you display the distance between end nodes in single or multiple segments.

The **3-point callout** tool lets you draw a callout with a two-segment leader line.

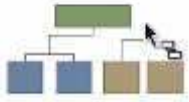


Connector tools

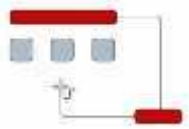
The **Straight-line connector** tool lets you draw a straight connector line.



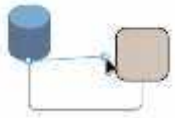
The **Right-angle connector** tool lets you draw a right angle connector line.



The **Right-angle round connector** tool lets you draw a right-angle connector line with curved corners.



The **Edit anchor** tool lets you modify connector line anchor points.



Interactive tools

The **Blend** tool lets you blend two objects.

The **Contour** tool lets you apply a contour to an object.

The **Distort** tool lets you apply a Push or Pull distortion, a Zipper distortion, or a Twister distortion to an object.

The **Drop shadow** tool lets you apply a drop shadow to an object.

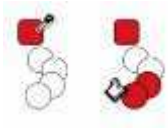
The **Envelope** tool lets you shape an object by dragging the nodes of the envelope.

The **Extrude** tool lets you apply the illusion of depth to objects.

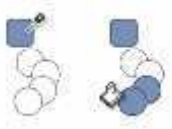
The **Transparency** tool lets you apply transparencies to objects.

Eyedropper tools

The **Color eyedropper** tool lets you select and copy a color from an object on the drawing window or the desktop.



The **Attributes eyedropper** tool lets you select and copy object properties, such as line thickness, size and effects, from an object on the drawing window.

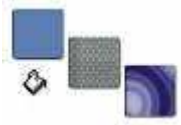


Outline tool

The **Outline** tool opens a flyout that gives you quick access to items such as the **Outline pen** dialog box and **Outline color** dialog box.

Fill tool

The **Fill** tool opens a flyout that gives you quick access to items such as the fill dialog boxes.



Interactive fill tools

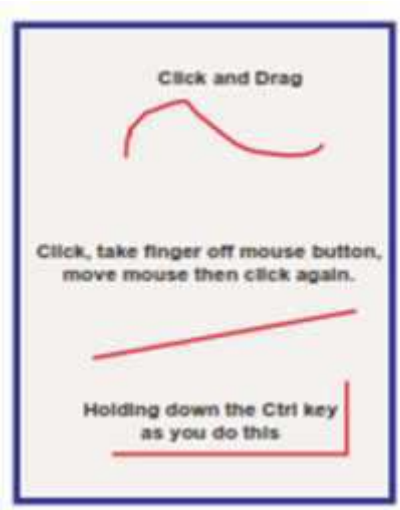
The **Interactive fill** tool lets you apply various fills.

The **Mesh fill** tool lets you apply a mesh grid to an object.

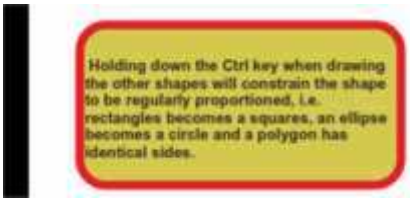
1.5 Drawing Basics

Drawing with CorelDRAW is best achieved by breaking the items you are creating down into a series of discrete components that are then sized using the Transformation Docker and shaped with the shape tool and the Weld and Trim tools in the Shaping Docker.

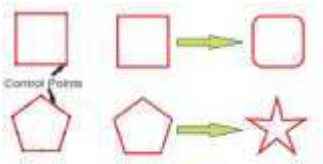
There are 4 basic tools used to create shapes:
Freehand Tool
Rectangle Tool
Ellipse Tool
Polygon Tool



Select any one of these tools and click and drag your mouse to draw.



The rectangle and polygon objects you draw can be modified in these ways: You can radius the corners of a rectangle and you can turn a polygon into a star shape. If you select the shape you will see control points where the lines connect and at the mid point of the polygon lines. Using the Shape Tool, click and drag these.



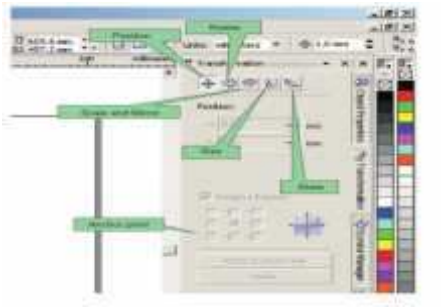
Dockers

A Docker is a type of dialogue box that can reside on the screen to allow you quick access to commands, provide information about your work, to allow you to modify your work, to control your drawing in many ways.

There are a number of dockers that you may choose to keep open at all times. They can be minimized to keep your workspace as large as possible but are readily accessible, and can be closed down if you don't use them very frequently.

Dockers that are particularly useful and worth keeping open all the time are: the Object Properties Docker; the Transformation Docker; the Shaping Docker; the Undo Docker and the Object Manager Docker.
Dockers are opened through the Window drop-down menu.

The Transformation Docker
The Transformation Docker enables us to modify the objects we create or import in a precision way. Wecan move objects to a precise location, rotate, mirror, size and skew accurately.



The Shaping Docker
The **Shaping Docker** lets you achieve the following things;

Weld, Trim and Intersect. Latest versions of CorelDRAW have added more functions to the shaping Docker that advanced users may find useful but of all the functions Weld and Trim will be found to be powerful tools that are the most useful.

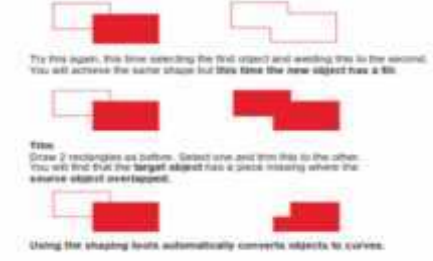
In each function you are given the option to leave the original Source object and/or Target object. Checking these tick-boxes when you use these functions will create duplicate objects. This is useful for advanced users with good planning skills and enables better productivity.

It is advised that you leave these tick-boxes unchecked until you are fluent with using the Shaping tools.

The **Source Object** is the object you originally select to weld or trim.
The **Target Object** is the object you subsequently act upon.
It is important to understand that using these tools will affect the properties of the objects you are working with. The source object will take on the properties of the target object.

The best way to understand how these tools are used is by example.

Weld.
Draw a rectangle. Now draw a second rectangle that overlaps the first.
Apply a colour fill to the second rectangle.
With the second rectangle selected,

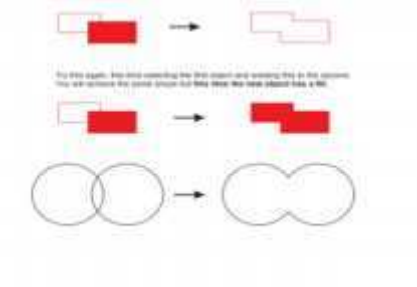


click Weld and with the arrow cursor that appears click on the first rectangle.
You will find the two rectangles have combined into a single object **without a fill.**

The Weld Command

The Weld command creates a single curve from 2 or more components.
The components may overlap, sit next to each other or be some distance apart.

You are given the option to leave the original Source object and/or Target object. Checking these tick-boxes will create duplicate originals. This is useful for advanced users with good planning skills and enables better productivity. It is advised that you leave these tick-boxes unchecked until you are fluent with using the Shaping tools. The Source Object is the object you originally select to weld or trim. The Target Object is the object you subsequently act upon.
It is important to understand that using these tools will affect the properties of the objects you are working with. The source object will take on the properties of the target object. The best way to understand how these tools are used is by example.

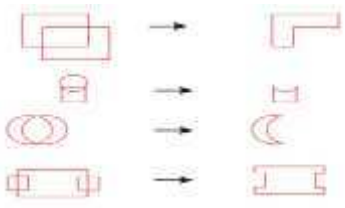


Draw a rectangle. Now draw a second rectangle that overlaps the first. Apply a colour fill to the second rectangle. With the second rectangle selected, click Weld and with the arrow cursor that appears click on the first rectangle. You will find the two rectangles have combined into a single object **without a fill.**

The Trim Command

The Trim command creates a single curve from 2 or more components.
The components must overlap. Trim forms the shape of the selected object (Source Object) into the object you trim to where it overlaps. (Target Object).
You are given the option to leave the original Source object and/or Target object. Checking these tick-boxes will create duplicate originals. This is useful for advanced users with good planning skills and enables better productivity. It is advised that you leave these tick-boxes unchecked until you are fluent with using the Shaping tools. The Source Object is the object you originally select to weld or trim. The Target Object is the object you subsequently act upon.
It is important to understand that using these tools will affect the properties of the objects you are working with. The source object will take on the properties of the target object. The best way to understand how these tools are used is by example.

Draw a rectangle. Now draw a second rectangle that overlaps the first. With the second rectangle selected, click Trim and with the arrow cursor that appears click on the first rectangle.

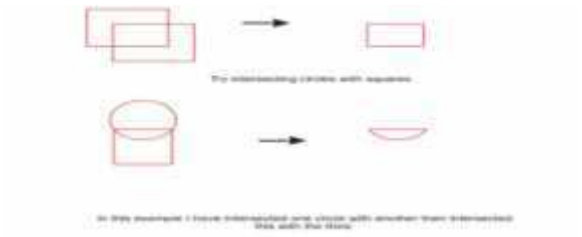


The Intersect Command

Intersect creates the shape that is formed by the overlap of 2components.

You are given the option to leave the original Source object and/or Target object. Checking these tick-boxes will create duplicate originals.

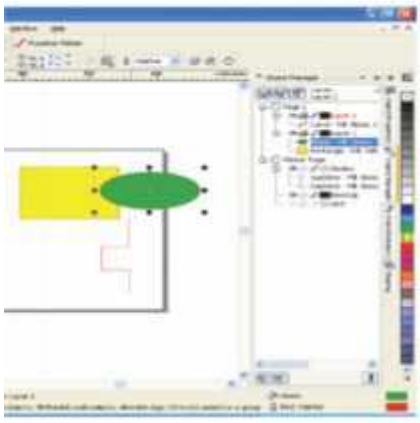
Draw a rectangle. Now draw a second rectangle that overlaps the first. With the second rectangle selected, click Intersect With and with the arrow cursor that appears click on the first rectangle.



The Object Manager Docker

Advanced CorelDRAW users make much use of the **Object Manager Docker**. Each item you have created can be identified, accessed and modified in the Object Manager.

New layers can be created in your drawing in the Object Manager and it allows you to move objects between layers and pages. You can do this by dragging the item to another layer or page. Dragging objects within the layer they are on will change the order within the drawing.



Each page you create within your drawing will appear in the Object Manager and selecting objects within these pages will
automatically switch the view to the page they are on. You can give names to the layers and pages here too. Right-click on the layer or page and click on rename.

Layers

Layers allow you to manage your pages efficiently and productively.

You can turn on viewing, printing and editing of individual layers. An example would be in the production of a printed carton. Images that are to be printed on the carton will be created on one layer. A second layer is used for the creation of the vector cutting and scoring part of the file.Turn off printing of the cuttinglayer when you are printing the images, reverse this when printing to the laser cutter.

Master Page

Each new file has one Master Page that contains and controls three default layers: the **Grid**, **Guides**, and **Desktop** layers. The Grid, Guides, and Desktop layers contain the grid, guidelines, and objects outside the borders of the drawing page. The **Desktop** layer lets you create drawings you might want to use later. You can specify settings for the grid and guidelines on the Master Page. You can specify settings, for example colour, for each layer on the Master Page.

You can add one or more master layers to a Master Page. This layer contains information that you want to display on every page of a multipage document. For example, you can use a master layer to place a header, footer, or static background on every page.

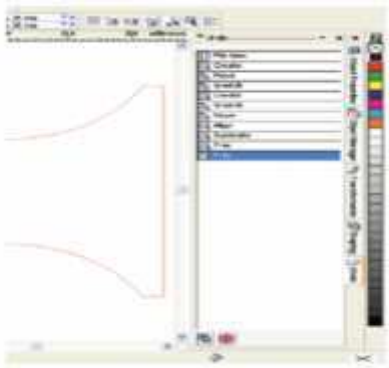
The Undo Docker

This lists the sequence of events that you have made in your drawing and allows you to get back to a specific point without losing the work you have done. It is particularly useful for teachers as it will let you see how your students have constructed their drawings. You can use this to go back to a point in your drawing where you constructed an item and copy this item to the clipboard. Then go to the last event and paste the item from the clipboard into your drawing again.

If you go back to a previous point and then change something you will lose the other work you did from that point on.

It is important to remember that the number of undo steps available has to be configured in the CorelDRAW setup. The default is around 20 steps but you will find this limiting at times.

If you have a reasonable amount of RAM on your computer I would suggest you increase this to around 50 steps or more.



Outlines and Fills
When you create drawings to be cut or engraved on the laser you have to ensure the following criteria are applied:

Outlines need to have a line weight of **hairline**.
They need to have a colour that the laser driver recognises as a command, i.e the precise colour as defined in your laser manual.

Filled areas of your drawing can only be engraved.

simply **right-clicking** on a colour in the colour pallette. It can also be set We can set the **outline** colour by using the Outline Tool in the Object Properties Docker.simply **left-clicking** on a colour in the colour pallette.

We can set the **fill** colour by sing the Fill Tool in the Object Properties Docker. You will only be able to see and print a fill in a closed path however the object will own fill properties if these were applied. Once the path is closed the fill will be visible and can be printed. For information about closing paths refer to the section on curve editing.

You will have received a CorelDRAW colour pallette with your laser driver. The colours in this pallette are the specific colours that the driver recognises and which you can assign tasks for the laser to do. This palette needs to be copied to the CorelDRAW palettes folder and opened using Window - Colour Palettes - Open Palette then locating the palette from its location.

In the Universal Laser Systems colour pallette there are 8 primary colours and 19 shades of grey. The grey colours will apply a percentage of the power you set the black colour to corresponding to the percentage of grey you use, i.e. 50% grey applies 50% of the power you set for black.

Aligning Objects
As you build your drawing you will find it necessary to arrange components so that they align with other components. There is a variety of ways to do this and CorelDRAW has some quick methods.

Select the objects you wish to align then go to the Arrange dropdown menu Align and Distribute then select the method of alignment you need. Note the shortcuts listed to the right of the options:

L aligns the objects to the left of their bounding box

R aligns the objects to the right of their bounding box
T aligns the objects to the top of their bounding box
B aligns the objects to the bottom of their bounding box
E aligns the objects to the to their centres Vertically
C aligns the objects to the to their centres Horizontally
P aligns the objects to the centre of the page

Remembering these shortcuts will speed up the production of your drawing. Just select the objects and press the keyboard character corresponding to the alignment mode.

A few things to note:

All the components you select will be aligned in the same way and this may not be quite what you intended. Imagine the example below for a simple keyring. The keyring shape has been drawn, a hole for the ring has been drawn and you are ready to place the text to be engraved.

About Curves

A curve is a series of line segments, each line segment have a node at each end. Line segments can bestraight or curved and they need not be connected to each other within a single curve.

Curve objects can be modified in different ways to the other objects you create. Each simple shape you draw using the tools in the toolbox can be modified in its own particular way. Rectangles can have their corners radiused, ellipses can be converted to arcs or pies, polygons to stars etc and text can be edited.

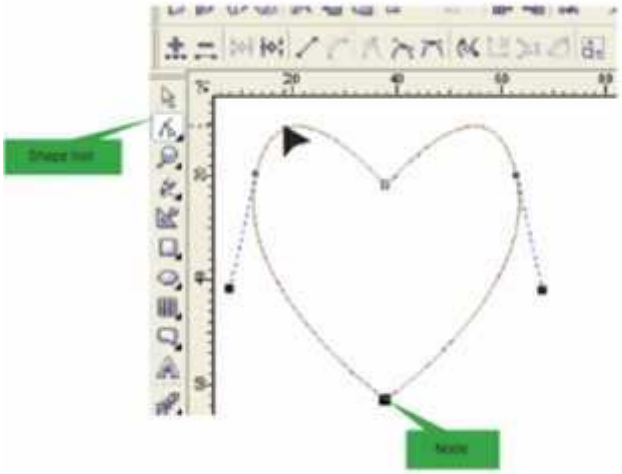
Converting any of these to curves loses that ability but gives you the ability to infinitely modify the shape of the object.

Certain commands automatically convert objects to curves. An example is when using the Shaping Docker tools. Converting to curves is a one-way street so make sure your object is exactly as you want it to be before you do this. You will not be able to correct a spelling mistake once you convert text to curves and the process of changing the radius on a rectangle is much more complicated.

One of the great assets CorelDRAW has is the powerful curve editing capability. This is provided by the Shape tool in the Toolbox (Not to be confused with the Shaping Docker tools). See the section on Curve Editing for more information.

Curve Editing

We have almost infinite ability to change the shape of the curves we create. The position and type of nodes can be controlled, whether the line relating to the node is straight or curved, whether adjoining nodes are connected, whether nodes exist at all.



Node editing is achieved with the Shape tool in the Toolbox. You can use this to select the curve you are editing, pick up individual nodes and move them around, drag the line segment to change its form, move the node control points to alter the form of line segments, add and remove nodes.

There are four node types: cusp, smooth, symmetrical, or line. Nodes can be changed from one type to another.

Cusp nodes make the node's intersecting line take on the shape of a corner or point when you adjust the position of the node's control points.

Smooth nodes make the node's intersecting line take on the shape of a curve. Each control point can be shortened or lengthened independently, giving you smaller or larger angles to work with.

Symmetrical nodes make the node's intersecting line take on the shape of a curve as well as intersect the node at exactly the same angle.

Line nodes let you shape objects by changing the shape of their segments. You can make a curve segment straight or a straight segment curved.

The more nodes there are in a curve, the greater degree of control is possible with its shape however beware of adding too many as this will increase the work your laser has to do and may slow down its operation.

Nodes can be added by clicking on the point of the curve you wish to add the node then clicking on the **+**icon on the Property Bar. They can be removed by selecting them and pressing delete, clicking on the icon on the property bar or by double-clicking on the node.

Selecting a node and clicking on the Break Curve icon separates adjoining nodes. You can also use the shape tool to click on a line segment then click on the Break Curve icon to break the curve at that point. If the path has 2 separations it is possible to break the curve apart using the Break Curve Apart command in the Arrange dropdown menu. This will produce 2 separate curves.

Selecting 2 adjoining nodes and clicking on the Join 2 nodes icon connects them.

You do not have the ability to define an absolute position for nodes directly but you can get them to snap to guidelines or to a grid to achieve this. You can also get their control points to snap to guidelines.

Combining and Breaking Apart

Terminology that applications use can sometimes be confusing and misleading especially when it is in conflict with our usual appreciation of the same terminology. In the case of CorelDRAW a curve for example may consist of only straight lines. It may also be comprised of several seemingly separate entities. This can often be a difficult concept to grasp because the tendency is to think of these entities as a group.

Individual components can be combined into a single curve. This provides very useful properties regarding fills and editing capability. The process of separating them is called breaking apart. A number of commands we apply to our work automatically combine curves and it may be necessary to break these curves apart before we can continue editing them.

A simple way of understanding this is to think of text characters. The letter A for example comprises an outlineshape with a triangle inside. The fill surrounds the triangle **but the triangle itself is not filled.**

Try the following. Draw the letter A using the text tool. It may help if you enlarge it to a size you can see clearly.

CHAPTER 2

Adobe PageMaker

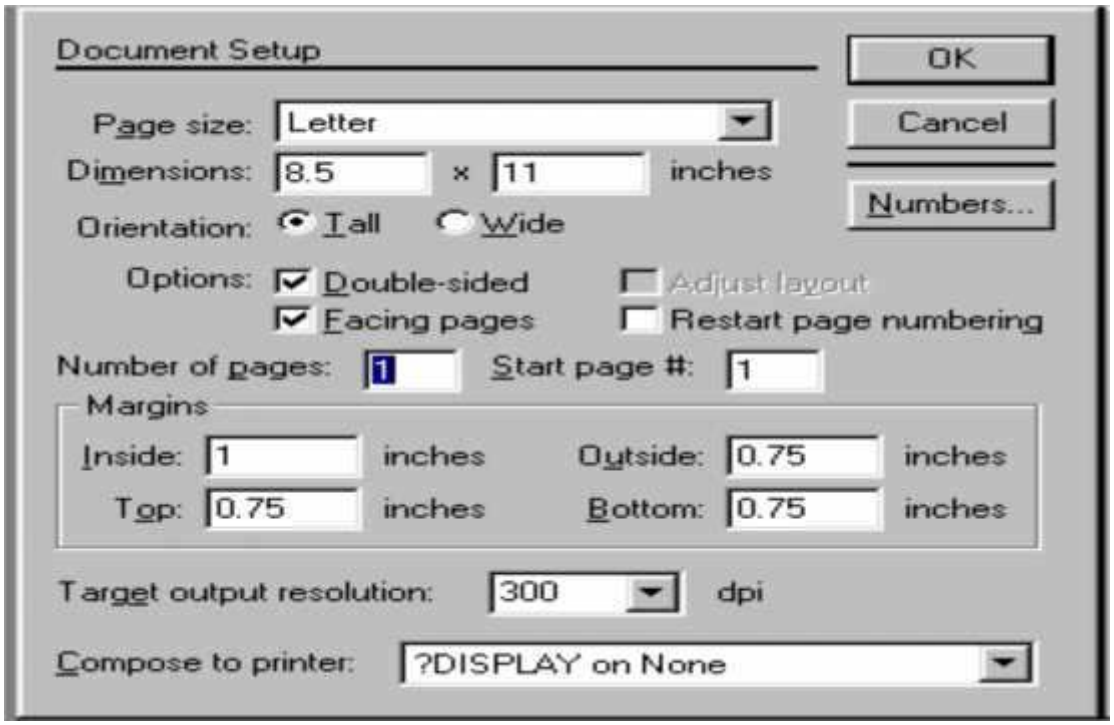
2.1 Introduction

Adobe Page maker is graphic software that can be used in arranging typing and graphics works. It is usually used in printing industries. E.g Newspaper Company.

To start Adobe PageMaker, click**Start** menu, choose **Programs**, and then choose **Adobe PageMaker**

From the **File Menu** choose **New**.

The **Document Setup** dialogue box allows you to specify publication page characteristics including: paper size, orientation, margins and printing options.



Click OK to use the default settings.

2.2 The Publication Window

PageMaker opens a **Publication Window** which contains an empty page centered on the pasteboard.

The **Pasteboard** is workspace that stores items for later use. Items on the pasteboard are visible from any page, but do not print. At the center of the pasteboard is the **Publication Page**.

The **Horizontal Ruler** and **Vertical Ruler** aid you in aligning text and graphics on the page.

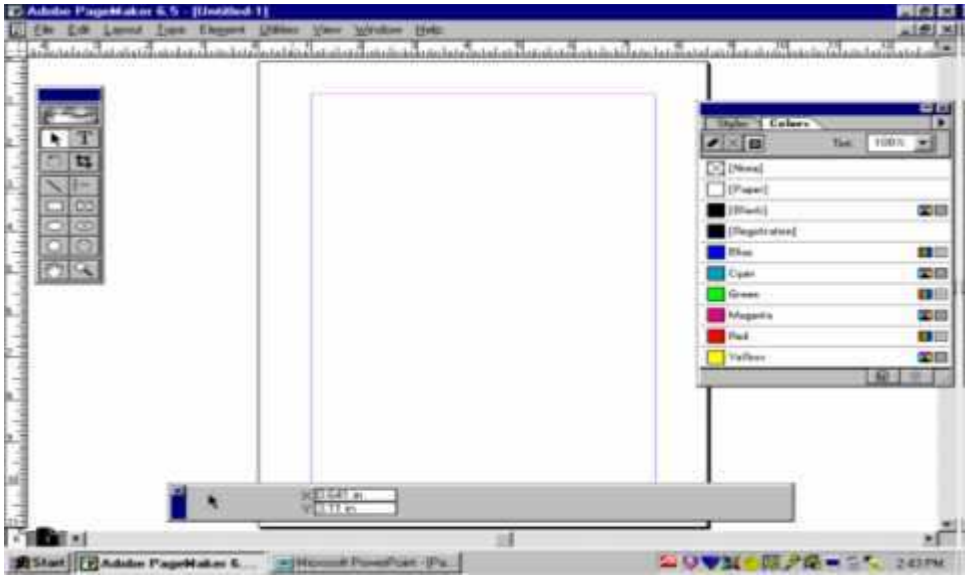
Page Icons (bottom left corner of the publication window) indicate the master pages as well as the number of pages in the publication.

The icons in the **Toolbox** represent the tools that you may use to create or edit objects and view a publication.

Margins appear as dotted or pink lines.

The **Colors and Styles Palettes** are used to add, delete, and edit colors and styles.

The **Control Palette** lets you make precise changes to text and graphics.



Toolbox, Page Icons, Vertical Ruler, Horizontal Ruler, Pasteboard

Publication Page

Control Palette Colors and Styles Palette

The Toolbox Tools

Pointer Tool is used to select, move and resize text, objects and graphics.

Rotating Tool is used to select and rotate text blocks and graphics.

Line Tool is used to draw straight lines in any direction.

Rectangle Tool is used to draw squares.

Ellipse Tool is used to draw circles.

Polygon Tool is used to draw basic polygons.

Hand Tool is used to scroll the page.

Text Tool is used to type, select and edit text.

Cropping Tool is used to trim graphics.

Constrained-Line Tool is used to draw lines at multiples of 45 degrees.

Zoom Tool is used to magnify or reduce a specific area of the publication page.

2.3 Using Frames

PageMaker 6.5 includes special objects called **FrameTools**.

A frame can hold content - either text or graphicsor serve as a placeholder for content.

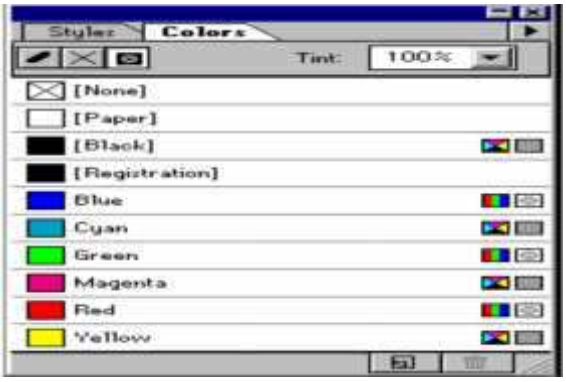
Frames are used as placeholders for content in structured documents such as newspapers and newsletters.

Frame Tools

Introducing Palettes

PageMaker includes several palettes for the purpose of helping you save time.

From the **Window** menu, choose the appropriate.

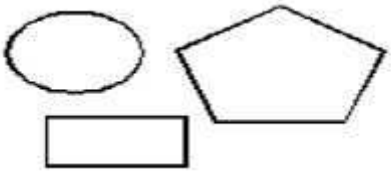


Show or **Hide command**.

You may show or hide all palettes by pressing the **Tab** key. To hide all palettes excluding the Tools palette, press **Shift + Tab** keys.

To move a palette, drag it's title bar to a convenient location on your desktop.

2.4 Drawing Objects



To Draw an Object:

Select a **Drawing Tool** from the toolbox.

On the publication page, **Click, Hold and Drag** the **Crossbar** to draw the object.

When finished, **Release** the mouse button.

Selecting an Object

You must use the **Pointer Tool** to select objects. You may select a single object, or multiple objects and modify them all at once.

Three Ways to Select Objects:

To select a single object, choose the **Pointer Tool** from the toolbox and **Click** on the object.

To add objects to a selection, press the **Shift** key as you **Click** other objects.

To select several objects at once, **Click, Hold and Drag** the **Pointer Tool** around multiple objects. When an item is selected, a **Bounding Box** (consisting of *8 Handles*) surrounds the item.

Moving, Resizing and Deleting Objects

Moving an Object:

Select the **Pointer Tool** from the toolbox.Click on the object to select it.

Click, **Hold** and **Drag** (inside the Bounding Box) the object to a new location.

Resizing an Object or Graphic:

Select the **Pointer Tool** from the toolbox. Click on the object to select it.

Click on one of the Bounding Box **Handles** surrounding the object.

Drag the **Two Way Arrow** *in* or *out* to resize the object.

Deleting an Object:

Select the **Pointer Tool** from the toolbox.

Click on the object to select it. Press the **Backspace** key or the **Delete** key.

Drawing Unique Objects

Creating a Sunburst Using the Polygon Tool:

Select the **Polygon Tool** from the toolbox.

Draw a polygon.

With the polygon selected, go to the **Element Menu** and choose **Polygon Settings**.

You may change the **Number of Sides** and **Star Inset** options while viewing the **Preview**. When finished, **Click OK**.

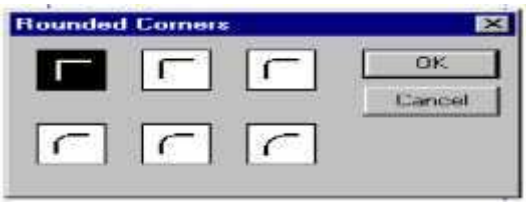
Drawing Unique Objects...

Rounded Corners with the Rectangle Tool:

Select the **Rectangle Tool** from the toolbox.

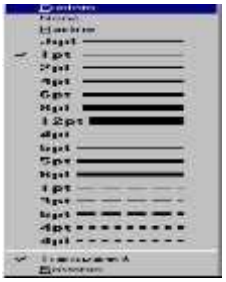
Draw a rectangle. With the rectangle selected, go to the **Element Menu** and choose

Rounded Corners.



Make the appropriate selection. **Click OK**.

Editing Objects: Changing an Objects Line Attribute:



Select the **Pointer Tool** from the toolbox. Select the object.

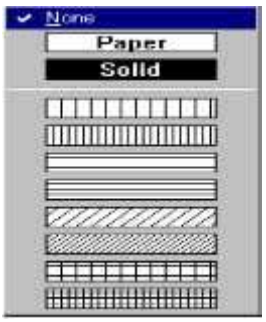
From the **Element Menu** choose **Stroke**. Select the appropriate option.

Editing Objects...

Giving an Object a Fill:

Select the **Pointer Tool** from the toolbox. Select the object.

From the **Element Menu** choose **Fill**. Select the appropriate option.



Changing the Color of Lines and Fill:

Select the **Pointer Tool** from the toolbox. Select the object.

From the**Element Menu** choose **Fill and Stroke**. Select the appropriate option.

Viewing Pages

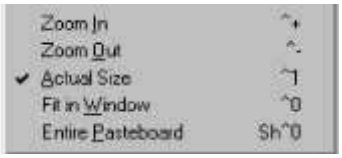
The **Zoom Tool** may be used to magnify or reduce a specific area of the publication page.

Select the **Zoom Tool** from the toolbox.

Position the magnifying glass in the center of the area to be magnified.**Click** to zoom.

Press the **Ctrl** key and **Click** to decrease the magnification of an area.

Viewing the Pages with PageMaker's Preset Views: From the **View Menu**, select the appropriate option.



To change the part of the page or pasteboard that displays at the current view or magnification level, you may also scroll within the window using the **Hand Tool** or scroll bars.

Typing Text

Select the **Zoom Tool** from the toolbox. Zoom into an area of white space on the Publication Page.Select the **Text Tool** from the toolbox.**Click the I-beam** where you would like to insert text. This creates a text block the width of the page.

Type: You've probably heard the expression "life's not a dress rehearsal." Unfortunately, many of us unconsciously act as if it were. Like anactor or actress just going through the motions in order to conserve our creative energy and focus for opening night, we hold back…None of us can be expected to perform every minute of our lives.

But a lot of us might tap into the power, excitement, and glory of Real Life more frequently if we cast ourselves as the leading role in our ownlives. ~ Sarah Ban Breathnach You may view the boundaries of the text block by choosing the **Pointer Tool** from the toolbox and **clicking** anywhere on the text.

Editing Text in Layout View:

Select the **Text Tool** from the toolbox.Click inside the text to edit.

Selecting Text with the Text Tool:

Select the **Text Tool** from the toolbox.To select a word, double click on the word.

To select an entire paragraph, triple click on the paragraph.

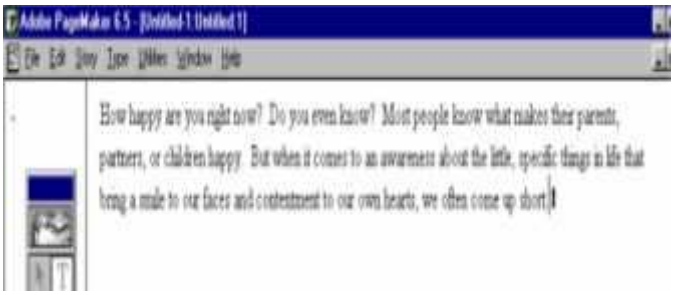
To select a range of text, click, hold and drag the I-beam over the text that you would like to select.To select an entire text block, click in the text block, from the **Edit Menu** choose **Select All**.

To deselect text, click an insertion point anywhere in the text or select any tool from the toolbox.

2.5 Creating a Story in Story Mode:

From the **Edit Menu** choose **Edit Story**.

Once you are in story mode, from the **Story Menu** choose **New Story**.



Type: How happy are you right now? Do you even know? Most people know what makes their parents, partners, or children happy. But when itcomes to an awareness about the little, specific things in life that bring a smile to our faces and contentment to our own hearts, we often come upshort. ~ Sarah Ban Breathnach When finished typing, from the **Story Menu** choose **Close Story**.

Choose **Place**, to place the story onto the publication page.

Editing a Story in Story Mode:

Select the **Pointer Tool** from the toolbox.Select the text by clicking on the text block.

From the **Edit Menu** choose **Edit Story**.

Edit the text as you would using a word processing program. **Type:** Let us each grasp a new idea this year. Let us grasp the awarenessof what it is that makes us truly happy. Let us

consider our personal preferences and learn how to recognize, then embrace, moments of happiness that are uniquely our own.

Check Spelling in Story Mode:

Place the cursor at the top of the page.From the **Utilities Menu** choose **Spelling**.

Choose **Start** to start the spell check feature.

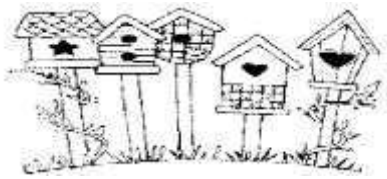
If the spell check finds a misspelled word, it will suggest the correct spelling or look for alternate spellings.

To exit the story mode, from the **Story Menu** choose **Close Story**.

2.5 Placing Text and Graphics

When you have text or graphics to place on a page,PageMaker displays a loaded text/graphic icon. When you click the icon, text and graphics are placed onto the publication page.

Text flows into a defined area that you create on a page.Graphics may be resized, moved and cropped.



Placing a Graphic:

From the **File Menu** choose **Place**.

Specify the graphic file, that you would like to place onto the publication page, by double clicking on it.

After PageMaker imports the graphic file, the mouse pointer becomes a loaded graphic icon.

Position the cursor anywhere on the page and **Click** to place the graphic.

You may resize, move and crop the graphic on the publication page.

Placing Text...

You may Designate the Flow of Text in One ofThree Ways:

Automatically - PageMaker adds pages until all of the text is placed.

By Column - One column at a time

By Defined Space - You define the space on the page by clicking, holding and dragging.

Placing a Text File:

From the **File Menu** choose **Place**.

Specify the text file, that you would like to place onto the publication page, by double clicking on it.When the mouse pointer becomes a loaded text icon, you may **Click**to place the text.

Understanding Text Blocks

All text in PageMaker is contained in **Text Blocks**.

When you click text with the **Pointer Tool**, the text block's border is displayed. A text block can be moved and resized.

A **Corner Handle** indicates the point at which you may **Click, Hold** and **Drag** to resize the text block.

An **Empty Windowshade Handle** at the top of the text block indicates the beginning of a story.

An **Empty Windowshade Handle** at the bottom of the text block indicates the end of a story.

A **Red Down Arrow** indicates that there is more text to be placed on the publication page.

A **Plus (+) Sign** indicates that text from the same story is contained in another text block.

Drawn Objects, Frames and Text Blocks

PageMaker's drawn objects can have a fill and stroke, have eight (8) selection handles, and **cannot** contain content other than fill colors or patterns. Frames can be any shape, can have fill and strokeattributes and have eight (8) selection handles. Frames can contain content - either text or graphics.A story can flow to the previous or next frame.

Frames act as placeholders for content and are marked with a non-printing "X" if empty. Text Blocks do not have fill or stroke attributes, mustbe rectangular, and have four (4) selection handles. A story can flow to the previous or next text block. Drawn Object Frame

Adding Pages to the Publication:

Go to the place where you would like to insert pages.

From the **Layout Menu** choose **Insert Pages**.Type the number of pages that you would like to add.Click **Insert**.

Two Ways to Move from Page to Page:

Click a Page Icon along the bottom left corner of the Publication Window.

From the **Layout Menu** choose **Go to Page** and select a page number.

Deleting Pages

To Delete Pages from the Publication:

From the **Layout Menu** choose **Remove Pages**.

Type the range of pages that you would like to remove.

Click OK.

Aligning and Grouping Objects

You may align objects in relation to one another, and then evenly distribute the spaces between the objects.

To Align and Distribute Object

Select multiple objects that you would like to align.

From the **Element Menu** choose **Align Objects**.

Select the appropriate options and **Click OK**.

You may combine several objects into a “group,” so that objects can be treated as a single unit.

Grouping Multiple Objects

Select multiple objects that you would like to group.

From the **Element Menu** choose **Group**.

CHAPTER 3
DATABASE MANAGEMENT

3.0 Introduction

What is a Database?
A database is a collection of information that's related to a particular subject or purpose, such as tracking customer orders or maintaining a music collection. If your database isn't stored on a computer, or only parts of it are, you may be tracking information from a variety of sources that you're having to coordinate and organize yourself.

For example, suppose the phone numbers of your suppliers are stored in various locations: in a card file containing supplier phone numbers, in product information files in a file cabinet, and in a spreadsheet containing order information. If a supplier's phone number changes, you might have to update that information in all three places. In a database, however, you only have to update that information in one place — the supplier's phone number is automatically updated wherever you use it in the database.

What is a Relational Database?
A relational database is a powerful tool which can help you store and manage large amounts of information of various kinds. Databases enable you to organize and reorganize information, quickly and flexibly retrieve information, and print quite a variety of reports.
By and large, a database is a collection of information. Common collections of information include: the telephone book, the card catalog, Medline (online database), or your personal list of phone numbers and addresses.

The beauty of a relational database system is that you can store related data in separate tables. Then through defining relationships between the tables you can retrieve the information in the tables to use for making queries and writing reports.
A database program like Access is software specially designed for managing a database.
The four main elements of a relational database include.

- **TABLES** for storing data
- **FORMS** for entering and viewing data on the screen
- **QUERIES** for extracting specific information from the data (asking questions)
- **REPORTS** for printing query results

Databases themselves are made up of files. To make the database, records made up of fields are entered by the database owner or by people specially trained to do data entry. Fields are discrete pieces of information, such as a name, a journal name or publisher name. Fields are made up of types of data which limits the information which can go into them. Fields may be text, an autonumber, a number, a date, a memo and so on.

Data in the database can be sorted and the order of fields can be re-arranged without affecting the actual data. Reports and labels can be generated through generating an ordered list of fields and records.

One more important concept to keep in mind is that when you are creating a database, you must strive for complete uniqueness. In other words, no data in your database should be redundant. Redundant information lends itself to errors, plus it adds to the size of the database unnecessarily and is hard to keep up to date.

Relational Database Management System

A relational database is one in which records are linked so that changes in one table are reflected in another. The tables are related together in a one to one, one to many (most common) or many

A Relational Database Management System is "a type of database management system (DBMS) that stores data in the form of related tables. Relational databases are powerful because they require few assumptions about how data is related or how it will be extracted from the database. As a result, the same database can be viewed in many different ways."

3.1 Microsoft Access

What is Access?

This course teaches the fundamentals of **Microsoft Access** .**Access** is a relational database management program; it allows you to create and manage desktop and client/server database applications.

Content

With **Microsoft Access** , you can create:

- Tables **to contain your information**.
- **Queries** to retrieve information from the tables.
- **Forms** to make the information available to users in various ways.
- **Reports** to make the information available to users in various ways.

Access Workspace

Using the Menu bar

- The **Menu bar** contains all of the **Access** menu options. With these menu options, you can access most of the **Access** features. The options available in each menu often depend on the object you are working with and the mode of **Access** .
- By default, the **Menu bar** appears at the very top of the screen. However, you can place this bar wherever you want on the screen.
- To move the **Menu bar**, find the small gray lines at the far left of the menu bar. Place your mouse on these lines. The mouse indicator changes to a four-arrow symbol. This means you can drag the bar to your desired location:

Using the Database toolbar

The **Database toolbar** is a bar of buttons that act as shortcuts to many of the Access features that are most often used. This toolbar is very similar to other applications' **Standard toolbar**.

By default, the **Database toolbar** appears at the top of the screen, just below the **Menu bar**. Like the **Menu bar**, though, you can place this bar wherever you want it on the screen.

To move the **Database toolbar**, find the small gray lines at the far left of the Database toolbar. Place your mouse on these lines; the mouse indicator changes to a four-arrow symbol. This means you can drag the bar to your desired location:

3.2 Planning Your Access Database

Before we begin the design process, we need to know what kind of database we are going to be creating in today's workshop and we need to have a clear idea of what we are going to use the serials database for.

We are going to be designing an Access database to track the ordering and management of the periodicals we receive in our resource centers. The database we are going to be creating is a relatively simple database but it does have a enough interesting features to make the design process interesting.

Planning a database is a lot harder and more time consuming than creating a PowerPoint presentation for an eight hour workshop. But planning is something which must be done carefully and with much consideration. Do not assume you can start creating tables and their relationships without having done some serious thinking ahead of time. It is much better to thoroughly plan the database and make your mistakes ahead of time than to have to redo the database later on because the design is poor. It is not very difficult to change the structure of a table once you have entered data into it, but it is better to avoid making any changes once you have entered data into a table.

It is inevitable that you will need to make some changes. Be sure to back up your database before you make changes to the table structures just to be on the safe side.

By the way, we will use several terms when we speak of journals. We may use the word journal, periodical or serial. All three terms pretty much mean the same thing, although the format might be slightly different. Another term used in public libraries is magazine. Examples of journals include the New England Journal of Medicine, Science, Nature, Milbank Quarterly, Medical Care, and so on.

Journals appear in a number of formats including hard copy, CD-ROM, and virtual (on the World Wide Web).

Common Mistakes

A common mistake people make is to create one large table with all the fields in it. Use Access to create many tables and the relationships between the tables. Another common mistake is to create a table in which the same information is repeated in each table. For example, you do not need to repeat the name of the person in each table. Use the relationships between the person and any other information to link information in two tables together. Remember not to repeat information and avoid redundant data. Don't type in anything more than you have to.

General Questions to Ask Yourself Before You Begin

There are a number of questions you need to ask yourself before you start.

Why do I think I want a database? Does the information I have lend itself to fields and records? (Most information lends itself to some kind of structure). What kind of data do I have? What is the best way to organize it? (These questions help you define your tables).

If I need to enter data into a table, how can I simplify the process to make it as easy as possible for someone to do data entry? (This question helps you define the forms you may need).

When I have the data entered into the database, what kinds of questions do I think I'll want to ask about it later on? (This question will help you define the queries and reports you will want to make based on your data).

Collecting Information on the Database

Be sure to identify and talk to potential users, even if you spend your days working in the area of the database you're going to create. You would be surprised as how often you forget important elements. Be certain to record the suggestions. Professionals who create databases for a living generally use Requirement Collection Forms to capture requests for data elements from the people they interview.

Functions of a Serials Database

A serials database has many functions. We will be discussing the functions of a serials database in this section of the handout.

The Design Process

- Determine the purpose of our database
- Determine the tables we need for the database
- Determine which fields we will need
- Determine how each of the tables is related
- Refine and redefine the design

Determine the Purpose of our Database

Before we do anything else, we need to ask the following questions: What do we need to know from our database and what will this information allow us to do?

What do we need to know from our database?

We'll need to know a lot. This database is going to track a lot of information and should be able to answer any serials-related questions we have.

Relationships

Once you have built tables, you need some method of bring the information in the tables back together. You need a relationship between the tables and those relationships need to be defined. Once you get the relationships built, you can create queries, and forms and reports. from several tables at once.

Building relationships is frustrating even if you understand the theory of building entity relationship diagrams. (We will not be covering the theory for this workshop). For those who have not been trained in computer science, it can sometimes be a nightmare. As mentioned elsewhere, I spend a good deal of my time gnashing my teeth, muttering under my breath, and even crying tears of frustration as I try to figure out what the relationships are. (They are as difficult as human relations and about as complex).

Microsoft Help says that a "relationship works by matching data in key fields, usually a field with the same name in both tables. In most cases, these matching fields are the primary key from one table, which provides a unique identifier for each record, and a foreign key in the other table".

Types of Relationships

You can create several types of relationships between tables:

- one to many
- one to one
- many to many

One to Many Relationship

A one-to-many relationship is the most common type of relationship. In a one-to-many relationship, a record in Table A can have many matching records in Table B, but a record in Table B has only one matching record in Table A. For example, one publisher can publish many journals, but it's highly unlikely that a journal would have more than one publisher. Simularly, one bindery could receive many volumes each year to be bound, but each volume would only go to one bindery.

One to One Relationship

In a one-to-one relationship, each record in one table can have only one matching record in a second table, and each record in the second table can have only one matching record in the first table. This type of relationship is fairly uncommon, because most information related in this way would be in one table. We do not have any examples of a one to one relationship in our serials database.

Many to Many Relationship

In a many-to-many relationship, a record in one table (table 1) can have many matching records in a second table (table 2), and a record in table 2 can have many matching records

in table 1. This type of relationship is only possible by defining a third table (called a junction table) whose primary key consists of two fields - the foreign keys from both Tables 1 and 2. A many-to-many relationship is really two one-to-many relationships with a third table.
We have one example of a many to many relationship in our serials database.

3.3 Creating Files (Databases)

About Access Files

Microsoft Access lets you create two main types of files: database files (with an **.mdb**extension) and project files (with an **.adp**extension).

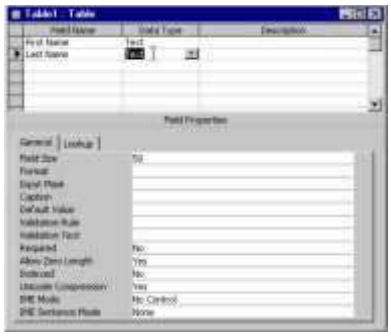
• A **database file** is the actual information repository - it is a collection of related data that has to do with a particular subject. For example, if you owned a retail chain, you might want to place all sales and store information in a database. You could organize this data into tables; you could group employee information in one table, customer information in another, and store information in yet another.
• A **project file** is a file that connects to the database - it is the basis for client/server applications. For example, a project file might contain forms, reports, or modules; it would not contain any data or data-definition-based objects (like tables). Think of a project as an "in-between" file: it serves as the interface for an actual database file. Creating a new database file
• From the menu bar, choose **File > New *OR*** press the **Ctrl + N** key combination to open the **New File** task pane which appears on the right of your screen:

New File task pane which appears on the right of your screen:

• Click **Blank Database**. In the **File New Database** dialog box, specify a location and a name for your new database file. Then click **Create**:
Page

Data Access Page option

The **Blank Data Access Page** option lets you create a new data access page from scratch. A data access page is a Web page that is connected directly to the data in your database. You can use a data access page to view, edit, update, delete, filter, group, and sort information in the database:



Create a Table

About creating a table in Design view

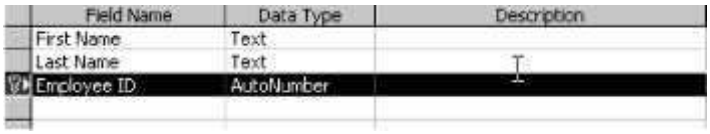
You can create a table in Design view or with a wizard.

• **Design view** is a window that lets you configure the table columns (also called fields). Think of this view as a blueprint for the table: it doesn't show you actual data in each row, but it does define how the rows need to look:

The concept of "row" has a slightly different meaning in Design view: a "row" in Design view actually represents one column in the table (as opposed to one record). For example, if in Design view you name a row "First Name", the table will have a column called "First Name" and each record in the database will need to have a "First Name" field entry.
• All fields have two main characteristics: **Field Name** and **Data Type**. **Field Name** refers to the name of the column. **Data Type** refers to the type of information a field can contain (e.g., text instead of numbers).

For each field, you can also define other properties, such as how many characters they can hold, or how they should be presented to users (e.g., as a drop-down list instead of a text box).

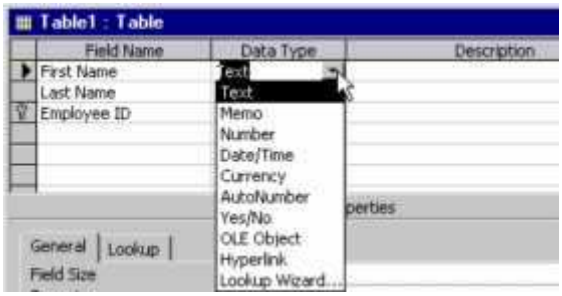
• It's usually a good idea to define one field in the table as a **primary key**. A primary key is a field whose value uniquely identifies each record in the table. Access provides an **AutoNumber** feature that can assign a unique number to each record for this purpose. For example, if you are creating an Employees table, you can create an Employee ID field, define it as the primary key, and use the AutoNumber feature to give each employee record a unique ID. Primary keys are used as the basis for relationships to foreign keys of other tables. A primary key cannot allow Null values:



You can use the **Tab** key to move from field to field.

Creating a Table in Design View

Click the **Tables** button along the left side of the Database window.



• In the right pane, double-click **Create table in Design view**. A blank design view window opens.
• Begin creating fields: input a name and type for each. When you place the cursor in the **Data Type** field, a drop-down arrow lets you choose a type:

For each field, use the tabs at the bottom of the window to further define field properties. If you need more information about these properties, place your cursor in each; the lower right corner of the window tells you how that property works:

Use the **Insert Rows** or **Delete Rows** buttons on the toolbar at the top of the Access window to add new rows above your current row or delete your current row:

• Use the **Primary Key** button on the toolbar at the top of the Access window to make the current row the primary key. If you want to remove primary key status from that row, select it and click the **Primary Key** button again.

Note: You can also right-click a row and choose **Primary Key** from the context menu:

When you are finished creating fields and setting up the table as desired, choose **File > Save** and type a name for your table.

3.4 Working with Data Types

Choosing Appropriate Data Types

Determining which **data type** to use for a field is a very important step in designing a table. The available data types are **Text, Memo**, **Number**, **Date/Time**, **Currency**, **AutoNumber**, **Yes/No**, **OLE Object**, and **Hyperlink**. The following are some important considerations when deciding which data types to use:

Storage requirements: For example, the **Number** data type can use 1, 2, 4, 8, or 16 bytes.

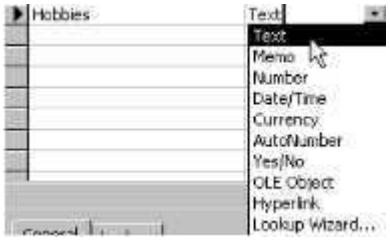
• **The domain of the data:** This refers to what can be stored in the column. For example, **Text** cannot be stored in a **Number** field.

• **Establishing relationships:** Generally, it is more efficient to establish relationships between **Number** or **Text** columns.

• **Sorting requirements:** Sorting **Text** values may return unexpected results and **OLE Objects** cannot be sorted.

• **Indexing requirements:** Indexing **Memo** fields can create very large indexes and **OLE Objects** cannot be indexed.

• **Calculation requirements:** Certain calculations cannot be performed on fields defined as **Text** or **OLE Objects**.



etting Column Data Types

Open a table in **Design** view.

Create a new field.

Select the desired data type from the **Data Type** drop-down menu:

• **Close** the table.

ormatting Data Types

Open a table in **Design** view.

Select an existing field.

• Set the desired field size in the **Field Size** text box.

3.5 Forms

Using and Creating Data Entry Forms

About Forms

• Forms can be used for data entry, displaying data in a user-friendly format, and as a navigational tool.

Using Forms

• A form is a type of interface you can create between you (or any user) and the database. Forms can be as simple or complicated as you want.

• The simplest type of form is a **data-entry** form. This type of form simply displays data from the database. For example, if you had a query that returned a set of values, you could display these values in a form.

• Another type of form is a **switchboard** form. This type of form can have links to (and open) other forms, and it can open reports.

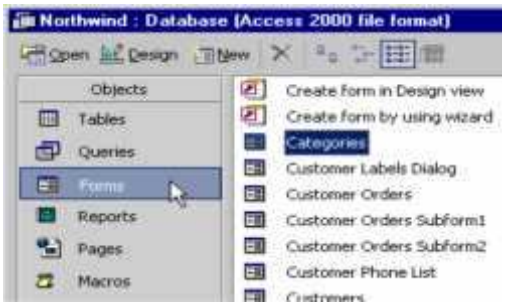
• The third type of form is a **custom dialog box**. This type of form can accept user input and execute an action based on the input.

A **bound** form is a form that is bound to one or more tables in the database. The data is stored in the underlying table (called the record source) and referenced into the form; the form's organizational information (like title, date, and page number) is stored in the form's design.

• You can change the form's appearance by adding graphics, lines, text, or other types of appearance-oriented features. For example, if you need to include a company logo on form to apply a uniform and standard look to your database, you can easily do so.

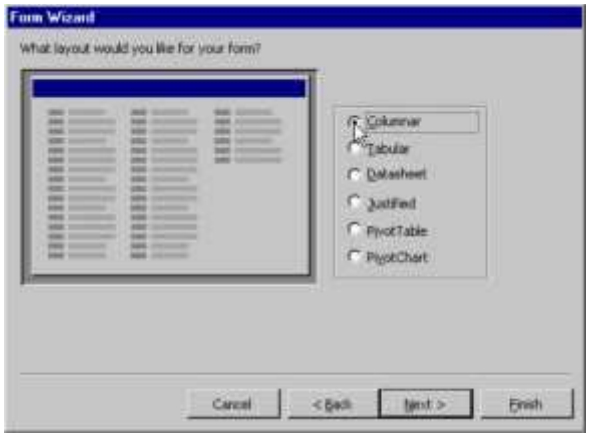
The easiest way to create a form is to use the wizard that Access provides. This wizard lets you choose the fields or records from a table or a query that you have saved. Once the wizard places the appropriate data in the form, you can use Design view to customize the form's appearance. If you want, you can also create a form from scratch in Design view.

When the form is finished and you open it, it appears in its own window. You can click the arrow buttons in the bottom left of this window to move through various records.



Forms can have different sections to them. Usually, the data (presented in text boxes or other user interface objects) appear in the Details section. You can also add a Header or Footer section to the form, In the Database window, click the **Forms** button on

On the first

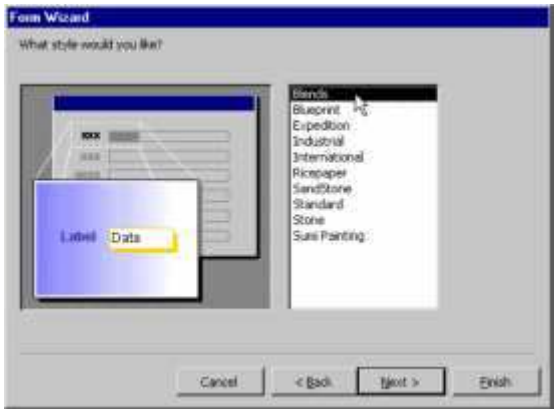


page of the form, specify where you want the data for the form to come from. The **Tables/Queries** drop-down list shows all table and queries you have created; when you select one of these, the fields from that table or query appear in the **Available Fields** list.

• Double-click fields in the **Available Fields** list to move them to the **Selected Fields** list. **Note:** You can also select a field and use the arrow buttons to move them back and forth between the lists.
• When the **Selected Fields** list contains all the fields you want to be part of the form, click **Next**.

• On the next page of the wizard, choose one of the layout options. When you select the option, Access shows you a preview of that presentation option in the left side of the dialog box. When you are done, click **Next**:
On the first page of the form, specify where you want the data for the form to come from. The **Tables/Queries** drop-down list shows all table and queries you have created; when you select one of these, the fields from that table or query appear in the **Available Fields** list.

• Double-click fields in the **Available Fields** list to move them to the **Selected Fields** list. **Note:** You can also select a field and use the arrow buttons to move them back and forth between the lists.



• When the **Selected Fields** list contains all the fields you want to be part of the form, click **Next**.
• On the next page of the wizard, choose one of the layout options. When you select the option, Access shows you a preview of that presentation option in the left side of the dialogbox.

On the last page of the wizard, specify a name for the form. After you are finished with the wizard, this

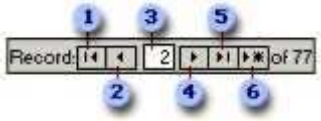
name will appear in the Database window when you select the **Forms** button:

Tell the wizard what to do when it closes. You can display the form immediately, or you can view the form's design in Design view.

• Click **Finish**.

Move between records or fields
Move between records by using navigation buttons in a form
The navigation buttons are located at the bottom of the window in Datasheet or Form view. You can use these buttons to move quickly between records.

1. First record
2. Previous record
3. Record number
4. Next record
5. Last record
6. New record



Modifying a form in Design view

f the form you want to modify is not already in Design view, do the following: in the Database window, with the **Forms** button selected, select the form and click the **Design** button on the Database window's toolbar. (You can also right-click the form and choose **Design View** from the context menu.) The form opens in Design view:

By default, a toolbox with various formatting options should appear alongside the form. If this does not happen, you can turn the visibility of the toolbox on or off by clicking the **Toolbox** button on the toolbar at the top of the screen. You can resize the toolbox if you want by dragging the corners or edges of the toolbox to the new dimensions.

• Use the options in the toolbox to add elements of design to the form. When you hold the mouse over each option, a **ToolTip** message tells you what that option does:

 After you select a toolbox item, move the mouse indicator over top of the form. You'll notice that the mouse indicator changes to show the tool that you have selected. Drag a box on the form to create the object.

• For example, if you want to add a label to the form, click the **Label** button in the toolbox. Move the mouse indicator over top of the form to the location where you want to type the label. Drag a box in the approximate shape of the label. As soon as you release the mouse button, a box will appear, with the cursor blinking in this box: this means you can start typing text for the label in the box. As soon as you are done, press the

Enter key, and the label is complete:

Choosing an Appropriate Control
Controls are objects that can be placed on forms, reports, or data access pages that display data, perform actions, or can be used for visual display. Controls shipped with ACCESS include:

Text Boxes: Used to display data on a form. Text boxes can be **bound** to a data source or **unbound** to accept input or display a calculation.

Labels: Used to display text on a form. Labels are useful for descriptive of instructional text. Labels are not associated with a data source.

List Boxes: Used to display a pre-determined list of values. List boxes are useful when limiting selection choices or when enforcing data integrity.

Command Buttons: Used to execute a pre-defined set of actions in a macro or event procedure written in visual basic.

Check Boxes: Used to set **Yes**/**No** values from an underlying query or table.

Option Groups: Used to select a limited list of choices. Sometimes interchangeable with **List Boxes** when selecting from only a few pre-defined options.

Toggle Buttons: Used to set **Yes**/**No** values from an underlying query or table. Useful when combined with an **Option Group** to select values that are **Yes**/**No**.

Image: Used when displaying a digital image on a form. An example would be the display of a company logo.

Tabbed Pages: Used when presenting different sections of information as one logical set. Useful when separating levels of information related to a common topic such as employee, company, or personal information.

Rectangles and Lines: Used when displaying limited geometric shapes. Useful when displaying breaks between fields or sections within a form.

Subform: An advanced control that displays child data that is related to data on the parent form. **Subforms** are discussed later in this training manual.

3.6 Queries - *Create a Query*

About queries

• A query is similar to the idea of filters discussed earlier: it is a way to search for data in your database. Unlike filters, though, which can only work within a single datasheet (or table) at a time, queries can let you search multiple tables at once.
• Access lets you create five main types of queries: **Select** queries, **Parameter** queries, **Crosstab** queries, **Action** queries, and **SQL** queries.

• A **Select** query is the most common type of query. You can use it to find and return data from one or several tables, displaying the found data in a datasheet. When creating a **Select** query, you can instruct Access how to group the records it retrieves and calculate sums, counts, averages, or other types of operations on the retrieved data.

• Think of a query as a set of instructions from you (the user) to the database: "Database, give me all records from the **Employees** table where the **Last Name** field of the record equals "Jones" and the **Phone Number** field contains the numbers '123'." It's possible that only one employee named Jones will be returned, or maybe the query will find no matching data: either there are no "Jones" employees in the table, or the "Jones" employees that were found do not have a '123' in their phone number.

• You can make the query as precise as you want, to return only very specific information, or you can make the query broad, to return multiple records.

• When creating the query, you can also tell Access how many fields of the records you want returned. For example, if you want to retrieve all employees with the last name "Jones", and you only want to see the **First Name** and **Last Name** fields of the records matching that criteria, you can specify only those two fields in the query. This lets you focus your results set on only meaningful data, so that the datasheet does not get too confusing.

The data that Access finds in response to your query is called the **results**. Some other database applications call this returned data a **results set**.

You can save queries to reuse them. This is a helpful feature if the data in the database continually changes, but you often search for the same type of information. For example, if you regularly need to search for sales in excess of $10,000 for any product, you can build and save a query to search the **Sales** fields when for values exceeding $10,000. You can then reuse this query each week or month; your search criteria doesn't change even though the data does.

When working with queries, you should be aware of some presentation conventions. First, table columns (or fields) are sometimes presented as *tablename.fieldname*. For example, the **Last Name** field in the **Employees** table might be shown textually as *Employees.Last Name*. This can help to avoid confusion if two tables have the same field name. Second, an asterisk

(*) can represent all fields in a table. For example, *Employees.** would mean all fields in the **Employees** table.

Creating a new query in Design view

In the Database window, click the **Queries** button on the toolbar along the left side of the window:

Double-click **Create query in Design view**. A query window opens. If you have multiple tables in your database, the **Show Table** dialog box also opens:

If the **Show Table** dialog box opens, on the **Tables** tab, select the table(s) that you want to query and click **Add**. A box listing that table's columns (or attributes) then appears in the pane at the top of the query window.

• Close the **Show Table** dialog box when you are finished with it.

• Choose the fields you want involved in the query. You can do this in one of two ways:

In the **Field** row of the bottom pane, continue to choose fields you want involved in the query. You may need to specify the table that field belongs to in the **Table** row, right below the **Field** row.

If you want to sort the results, in the **Sort** row of the bottom pane, click an entry under the field you want to sort by. For example, to sort by Last Name, click within the Last Name

column. A drop-down list appears; choose **Ascending**, **Descending**, or **Not Sorted**. You can only sort by one field.

• In the fourth row (**Show**), click in the check box (so that a check mark appears) to make that field appear in the results. Remember that if you choose not to show a field, the query will still use the search criteria for that field but just won't show the field in the results. For example, if you build the query to search for First Name of "Bob" and Last Name of "Jones",

but only show the Last Name field, Access will still look for records containing “Bob” and “Jones” but will only show the Last Name field of matching records.

• In the fifth row (**Criteria**), type the data that Access should be looking for (e.g., “Jones”). You can specify criteria for multiple fields if you want. You can also specify multiple criteria for a single field by typing a second string in the **r**row:

If you want the criteria to involve a mathematical operator (e.g., sales greater than $10,000), place the cursor in a **Criteria** field and click the **Build** button on the toolbar:

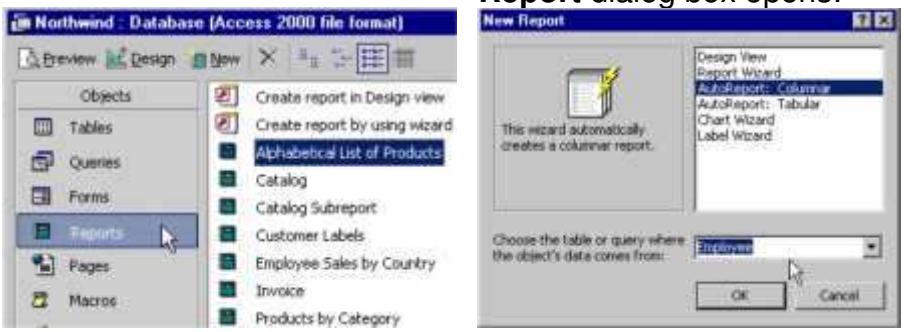
• The **Expression Builder** dialog box opens. In this dialog box, use the pane at the top to build the expression. You can add operators by clicking the buttons below this pane.
• You can have Access show you common expressions by clicking the folders in the bottom left corner of the dialog box and then double-clicking the entries that appear in the right panes to add them to the top pane:

3.7 Reports
Creating and Using Reports

Using Reports
• A report is a way to present information in a format that’s suitable for printing. You can rearrange the information and configure the presentation so that it best suits your purposes.
• Reports are an effective tool for analyzing information. You can create a report that summarize data from the database, and then print the report to analyze numbers and trends.
• Reports are generally bound to one or several tables (or queries) in the database. The data that appears in the report is linked in from the fields in the underlying table or query. Other information on the report, like labels or titles or page numbers, are saved with the report itself (not with any underlying data source.)
• A report does not need to contain fields from each of the tables or queries it’s based on.
• You can create links between a report and its underlying data source (e.g., tables or queries) by using graphical objects called **controls**. An example of a control is a text box: it displays data from a field in the underlying table.
• You can customize the report’s design to make it more attractive.
• There are three ways to create a report.
o**First**, you can create a report based on one table or query using a feature called AutoReport. AutoReport then creates a report that displays all the fields and records in the underlying table or query.
o**Second**, you can create a report using a wizard. This wizard guides you through the process of selecting tables (or queries) and fields to serve as the basis for the report.
o**Third**, you can create a report from scratch in Design view (similar to creating tables, queries, and forms in this way.)

Creating a report using AutoReport
• In the Database window, click the **Reports** button along the left side of the window:

On the toolbar at the top of the Database window, click the **New**button. The **New Report** dialog box opens:



In the **New Report** dialog box, select an AutoReport option. Choose **AutoReport: Columnar** to create a report in which each field appears on its own line with a label to its left. Choose **AutoReport: Tabular** to create a report in which the fields of each record appear on the same line, and the labels appear once at the top of each page.

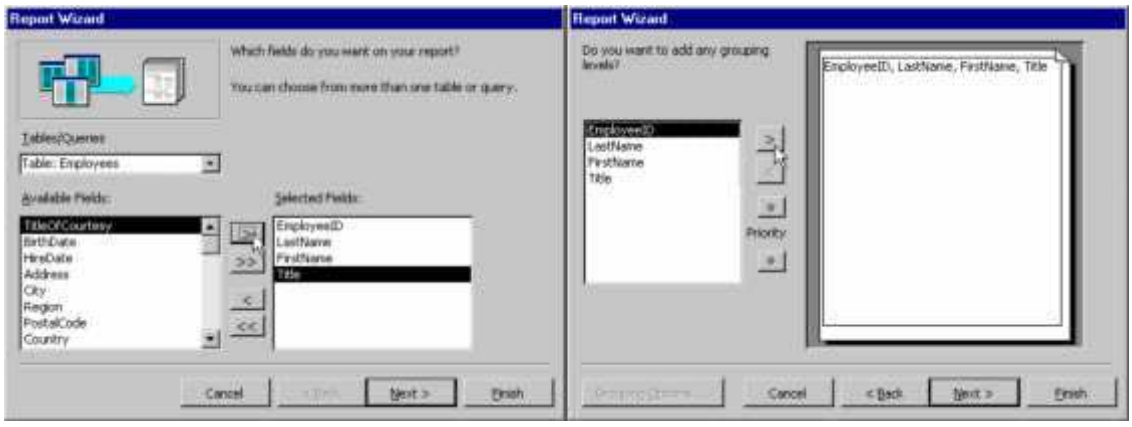
• At the bottom of the dialog box, choose a table of a query that you want to be the basis for the report. For example, if you want the report to present employee information, choose to base the report on the Employees table.
• When you are finished, click **OK**.

Access then creates the report, presenting the information in the format you specified.

Creating a report using a wizard
In the Database window, click the **Reports** button along the left side of the window.
Double-click **Create report by using wizard**.

From the **Tables/Queries** drop-down list, choose a table or query that you want to be the basis of the report.

The **Available Fields** list updates to show you the fields of the table or query you select in the **Tables/Queries** drop-down list. Double-click these fields to add them to the **Selected Fields** list. **Note:** You can also select fields and use the arrow buttons to move fields to or from the **Selected Fields** list:



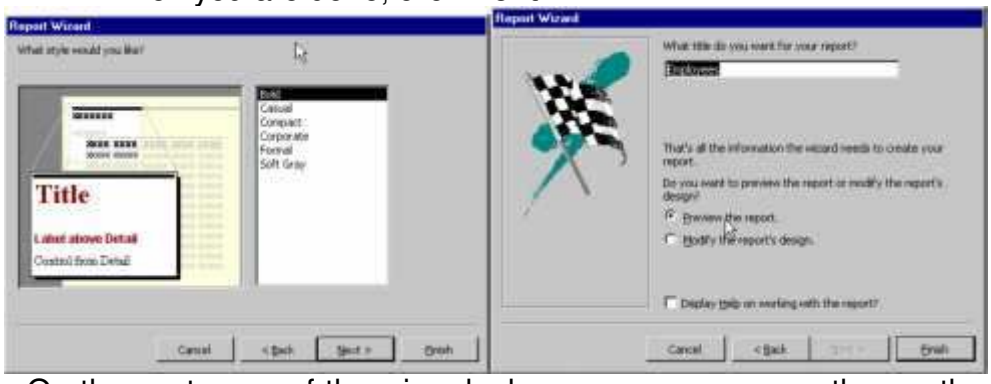
• Continue to add fields to the **Selected Fields** list until you have all the fields you want for the report. Then click **Next**.

On the next page of the wizard, specify whether you want to group your data according to certain fields. You can do this by selecting a field and clicking the arrow button to move it into the right half of the dialog box. To change the hierarchy of the group, click the **Priority** buttons. The right pane updates when you make changes, showing you how the grouping will affect the presentation of the data:

• When you are done, click **Next**.
On the next page of the wizard, specify a sorting order. For every field you have included in the report, this page will have a drop-down list. Select an option from the first drop-down list to make the second drop-down list available, and so on. For fields you are sorting, you can toggle the **Ascending** button to **Descending** or vice versa:

• When you are done, click **Next**.
• On the next page of the wizard, specify a layout. When you click an option, the left pane shows how that option will look in the report. If you want the report to be sideways on the page, click the **Landscape** option instead of **Portrait**:

When you are done, click **Next**.



• On the next page of the wizard, choose an appearance theme; the preview window shows you how that option will look in the report:

CHAPTER 4

Introduction to SPSS

Objectives

- Learn about SPSS
- Open SPSS
- Review the layout of SPSS
- Become familiar with Menus and Icons
- Exit SPSS

What is SPSS?

SPSS is a Windows based program that can be used to perform data entry and analysis and to create tables and graphs. SPSS is capable of handling large amounts of data and can perform all of the analyses covered in the text and much more. SPSS is commonly used in the Social Sciences and in the business world, so familiarity with this program should serve you well in the future. SPSS is updated often.

Opening SPSS

Depending on how the computer you are working on is structured, you can open SPSS in one of two ways.

1. If there is an SPSS shortcut like this 

on the desktop, simply put the cursor on it and double click the left mouse button.

2. Click the left mouse button on the 

button on your screen, then put your cursor on **Programs** or **All Programs** and left click the mouse. Select **SPSS 17.0 for Windows** by clicking the left mouse button. (For a while that started calling the program PASW Statistics 17, but they seem to have given that up as a dumb idea when everyone else calls it SPSS. The version number may change by the time you read this.) Either approach will launch the program.

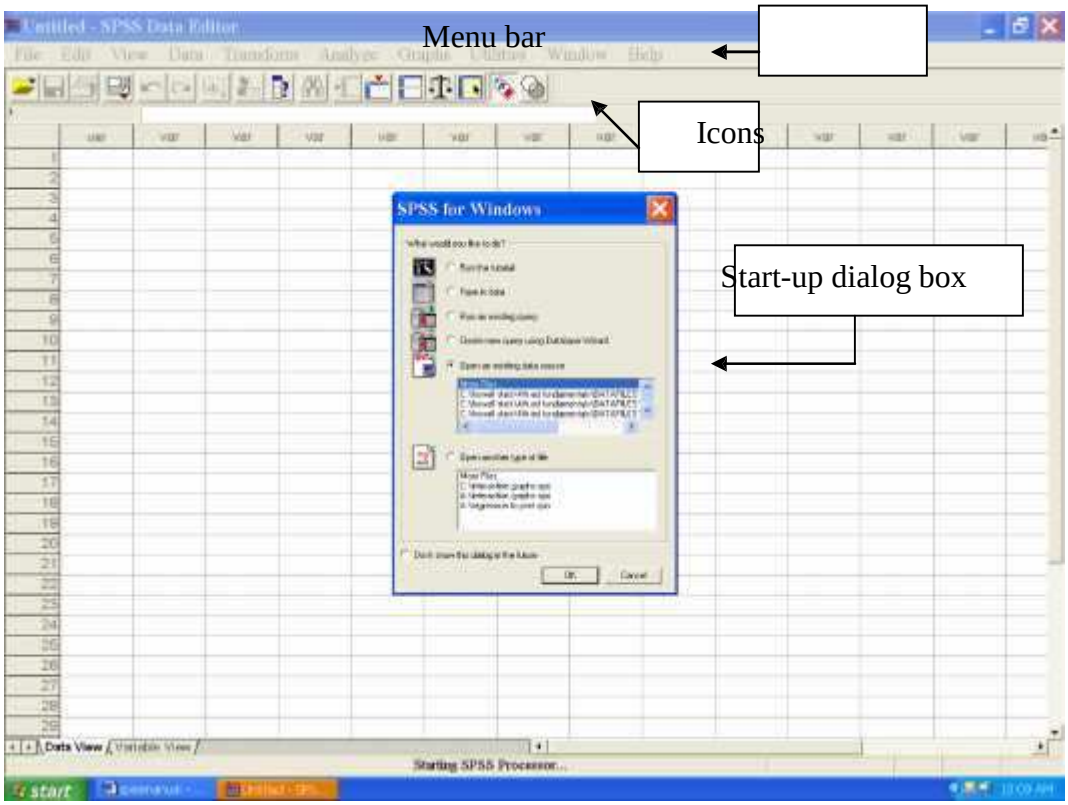
✔ Use one of these approaches to open SPSS yourself.

You will see a screen that looks like the image on the next page. The dialog box that appears offers choices of running the tutorial, typing in data, running queries, or opening an existing data source. The window behind this is the Data Editor window which is used to display the data from whatever file you are using. You could select any one of the options on the start-up dialog box and click OK, or you could simply hit Cancel. If you hit Cancel, you can either enter new data in the blank Data Editor or you could open an existing file using the File menu bar as explained later.

✔ Click **Cancel**, and we'll get acquainted with the layout of SPSS.

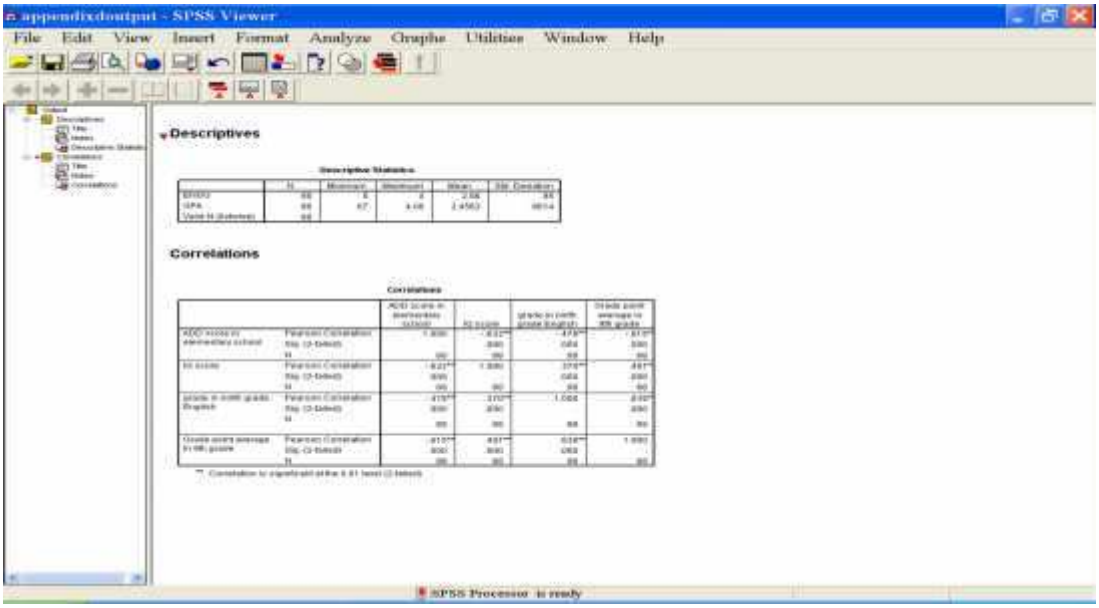
Layout of SPSS

The *Data Editor* window has two views that can be selected from the lower left hand side of the screen. *Data View* is where you see the data you are using. *Variable View* is where you can specify the format of your data when you are creating a file or where you can check the format of a pre-existing file. The data in the *Data Editor* is saved in a file with the extension .sav.



The other most commonly used SPSS window is the *SPSS Viewer* window which displays the output from any analyses that have been run and any error messages. Information from the Output Viewer is saved in a file with the extension .spo. Let's open an output file and look at it.

- On the **File** menu, click **Open** and select **Output.** Click **Ok**. The following will appear. The left hand side is an outline of all of the output in the file. The right side is the actual output. To shrink or enlarge either side put your cursor on the line that divides them. When the double headed arrow appears, hold the left mouse button and move the line in either direction. Release the button and the size will be adjusted.

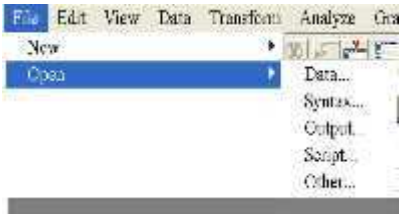


Finally, there is the *Syntax* window which displays the command language used to run various operations. Typically, you will simply use the dialog boxes to set up commands, and would not see the Syntax window. The Syntax window would be activated if you pasted the commands from the dialog box to it, or if you wrote you own syntax--something we will not focus on here. Syntax files end in the extension .sps.

SPSS Menus and Icons

Now, let's review the menus and icons.

✔ Review the options listed under each menu on the Menu Bar by clicking them one at a time. Follow along with the below descriptions.



File includes all of the options you typically use in other programs, such as open, save, exit. Notice, that you can open or create new files of multiple types as illustrated to the right.

Edit includes the typical cut, copy, and paste commands, and allows you to specify various options for displaying data and output.

✔ Click on **Options**, and you will see the dialog box to the left. You can use this to format the data, output, charts, etc. These choices are rather overwhelming, and you can simply take the default options for now. The author of your text (me) was too dumb to even know these options could easily be set.

View allows you to select which toolbars you want to show, select font size, add or remove the

gridlines that separate each piece of data, and to select whether or not to display your raw data or the data labels.

Data allows you to select several options ranging from displaying data that is sorted by a specific variable to selecting certain cases for subsequent analyses.

Transform includes several options to change current variables. For example, you can change continuous variables to categorical variables, change scores into rank scores, add a constant to variables, etc.

Analyze includes all of the commands to carry out statistical analyses and to calculate descriptive statistics. Much of this book will focus on using commands located in this menu.

Graphs includes the commands to create various types of graphs including box plots, histograms, line graphs, and bar charts.

Utilities allows you to list file information which is a list of all variables, there labels, values, locations in the data file, and type.

Add-ons are programs that can be added to the base SPSS package. You probably do not have access to any of those.

Window can be used to select which window you want to view (i.e., Data Editor, Output Viewer, or Syntax). Since we have a data file and an output file open, let's try this.

- Select **Window/Data Editor**. Then select **Window/SPSS Viewer**.

Help has many useful options including a link to the SPSS homepage, a statistics coach, and a syntax guide. Using **topics**, you can use the index option to type in any key word and get a list of options, or you can view the categories and subcategories available under contents. This is an excellent tool and can be used to troubleshoot most problems.

The Icons directly under the Menu bar provide shortcuts to many common commands that are available in specific menus. Take a moment to review these as well.

- Place your cursor over the Icons for a few seconds, and a description of the underlying command will appear. For example, this icon  is the shortcut for Save. Review the others yourself.

In the chapters that follow, we will review many specific functions available through these Menus and Icons, but it is important that you take a few moments to familiarize yourself with the layout and options before beginning.

Exiting SPSS

To close SPSS, you can either left click on the close button located on the upper right hand corner of the screen or select **Exit** from the **File** menu.

✔ Choose one of these approaches.

A dialog box like the one below will appear for every open window asking you if you want to save it before exiting. You almost always want to save data files. Output files may be large, so you should ask yourself if you need to save them or if you simply want to print them.

✔ Click **No** for each dialog box since we do not have any new files or changed files to save.

Exercises

1. Look up "ANOVA" in **Help/Help topics**. What kind of information did you find?

2. Look up "compare groups for significant differences" in **Help/ Statistics Coach**. What did you learn?

3. Open *appendixd.sav*. In the Data Viewer click **Grid Lines** in the **View** menu and note what happens.

4. While in the Data Viewer for *appendixd.sav*, click **Font** in the **View** menu and select the font style and size of your choice.

5. Using **Edit/Options/General**, under **Variable View** select **Display Labels** and **File**. In future this means that SPSS will list the variables in the order they appear in the file using the variable labels rather than variable names. As you are analyzing data in future exercises try to notice whether or not you like this option. If not, change it.

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