

# COMPUTER FORM FOUR FULL NOTES

# MANAGEMENT OF DATABASE INFORMATION SYSTEM

## Quering database

Queries are the fastest way to search for information in a database. A query is a database feature that enables the user to display records as well to perform calculations on fields from one or multiple tables.

You can analyze a table or tables by using:-

1. Select query or
2. An action query

Action query:-These are queries that are used to make changes in many records at once. They are mostly used to delete, update, add a group of records from one table to another, or create a new table from another table.

## Types of action query in Microsoft Access are:-

1. **Update**-update data in a table.
2. **Append query**-add data in a table from one or more tables.
3. **Make table Query**-Creates a new table from a dynaset
4. **Delete query**-Delete specified records from one or more tables.

## Select query

Is a type of query used for searching and analyzing data in one or more tables. It lets the user specify the search criteria and the records that meet those criteria displayed in a dynaset or analyzed depending on the user requirement.

## Creating a selected query

1. Ensure that the database you want to create a query for is open
2. Click the query tab, then new
3. In the new query dialog box, choose either to create a query from in Designing view or using Wizard

4. To design from scratch, click design view. The show table dialog box appears from which you can add a table or tables you wish to create in a query form.
5. Click the table from the table/query list and then click add
6. Click close to close the show table dialog box.
7. The query design grid opens. In Microsoft Access it is called query example (Q.BE)

### Specifying the search criteria

To search for a particular set of records, you have to enter a conditional statement or statements in the criteria row.

Example:-

If you have a table called employees with one of fields as salary, you can display all the employees earning more than shs.5000 by typing >5000 in the criteria row, salary column.

To define criteria, use either relational or logical operations, Relational operators include

Less than <

Greater than >

Greater than or equal to >=

Less than or equal to <=

Not equal to <>

Equal to =

Logical operators include AND, OR and NOT

AND-Is used to display values in a specific range.

Example:-If you type >4000 AND < 6000 on the criteria row in salary column. All employees who meet this condition will be displayed

OR-Is used to display either one of the two values eg: If you wish to get those employees either in Dar es Salaam or Morogoro.

TO-Display data in a particular range, use the word between.eg in steady of typing >4000 AND <6000, type between 4000 AND 6000.

NOT Is used to display all records except that you do not want to see.

Eg If you type NOT 8000 in salary column of the employees table. All employees' records will be displayed except those with the salary 8000.

### **Modifying and updating a query**

#### **To delete fields from the query grid.**

1. Open the a desired query in design view
2. Select the field column you want to delete
3. Choose delete from the edit menu.
4. Click the save button to save the changes

#### **To adjust the column query in a query**

1. Open the desired query in design view
2. Position the mouse pointer at the boundary that separates columns, then drag it to the required size. Alternatively, double click the boundary to auto fit cell content.
3. Click the save button to save the changes.

#### **To modify a criteria statement, select query:-**

1. Open the desired query in design view.
2. Modify the criteria statements as desired
3. Click the save button to save changes
4. To test whether the changes have been affected, click the run button to display the results of the query.

### **Generating Reports**

-Report is the flexible means of presenting and displaying your data in a database.

-In a report, data cannot be modified or deleted, you can only view data

-Report is used to summarize and present information from a database while tables are used for identify purpose. Good database software should enable to generate reports and labels.

### **Creating reports.**

Report layout is designed by placing control on the report designer parts of a report.

Report Header-This contain unbound controls that display title of the report

Page Header –Contains heading or tables data items to be displayed in every column.

Detail-Holds bound controls that display data items for the table or query it was created from.

Page footer-Holds the control that is to be displayed on every page such as the page number and date

Report footer-Used to display summary from a report such as the grand total for numerical data in a particular field column.

### **Creating a Report in a Design View**

1. In a database window, click the reports card then new
2. In the new report dialog box, click design view
3. Click the name of the table or query you want to generate a report from
4. Click the Ok button. You will get a report design grid where you can place data controls.
5. From the view menu, click Field list.
6. To design the layout, drag each field from the field list to the layout grid and drop it where you want the data column to appear.
7. Once you finish placing controls, click the save button.
8. In the save as dialog box, enter the name of the report and click ok

9. To view the report click the print preview button alternatively click Print preview from the file menu.

### **Modify a report layout**

#### **To modify header and footers.**

1. Open the report in design view
2. Click the report header or footer you want to modify
3. Make the necessary changes and then click modify.
4. Click the print preview button to view the changes

#### **To add more controls onto the report layout**

1. Open a report in design view.
2. Display the field list by clicking the field list button or using the view.
3. Select one or more fields in the field list and drag view to the report design view grid.

#### **To resize or move a control.**

1. Click the control to select it. Position the mouse pointer on the place holder, until the mouse pointer changes to a double sided arrow.
2. Drag the pointer to resize the control.
3. To move a control, select it and place the mouse pointer on the place holder until it changes to a hand then drag.

### **Printing the reports**

Before printing, you should set the page options i.e. Margins paper size and orientation.

1. Open the database that contains the report you want print
2. Click the reports tab, select the report you want to print, and then click the preview button.
3. On the file menu click print.

4. Set the printer options i.e. the printer type, print range and number of copies.
5. Click Ok to print.

Practical activity:-

You are the database manager Tanesco SACCOS society and you are expected to create a database called Tanesco.

1. Design two tables in the database, Employee and bill with the following fields.

Employees table
PNO (Primary key)
National ID
First Name
Middle Name
Last Name
Date Employed
Date of Birth (DOB)
Salary
Sex

Bill Table
PNO (foreign key)
Bill NO (Primary key)
Bill Date
Bill Amount

2. Enter the following records in the employees table.

PNO	NationalID	First Name	Last Name	Middle Name	Date Employed	DOB	Salary	Sex
502	33246	Rashid	Mwang'i	Ayoub	12.04.2003	1960	400,000	M
506	12454	Ester	Mapolu	Michael	12.04.2002	1954	370,500	F
507	12234	Glynnis	Maganga	Sitta	12.04.2002	1955	600,000	F
508	44734	Samwel	Matondo	Mruttu	12.04.2001	1953	380,000	M
509	52243	Richmond	Ogwal	Revival	12.07.2004	1955	700,000	M
510	00012	Amina	Mlacha	Osward	12.03.2001	1963	750,000	F
511	11155	Antia	Athmani	MMondu	12.03.2001	1963	603,000	F

3. Enter the following in the bill table

PNO	Bill NO	Bill Date	Bill Amount
502	1100	10.08.2010	40,000
506	1300	08.08.2010	30,000
507	2500	06.05.2010	65,000
508	1450	12.08.2010	31,000
509	1340	15.08.2010	65,000
510	1460	20.08.2010	70,000
511	1670	12.08.2010	35,000

Explain why duplicate PNO is acceptable in Bills table and not in the bills table.

4. Create a calculated query based on the two tables that will calculate and display the following.

(a)The total bill for Rashid in in the month of January and

(b)The total bill for all the employees

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## PRESENTATION

Microsoft presentation software (PowerPoint) includes text-editing and graphics tools that can create slides for public presentations. The presentations can be printed, projected, displayed on a monitor, saved and published as Web pages.

### How to start Ms – PowerPoint Program

- Open ‘Start’ menu
- Go to Programs
- Choose Microsoft – office
- Choose Microsoft – PowerPoint program
- Ms – window will appear

### Exploring Ms – PowerPoint Window

- Title Bar
- Menu Bar
- Standard Bar
- Formatting Toolbar
- Vertical and Horizontal Ruler Bars
- Working place
- Horizontal + Vertical Scroll Bars
- Status Toolbars
- Task bars

### Understanding PowerPoint Views

- Slide view
- Outline view
- Slide sorter
- Notes pages

### Starting a new presentation

- Open file menu
- Click new
- 

### Exercise 1

p Create a new blank presentation

### Entering text

- Choose the text layout i.e. title and subtitle
- Click to add title
- Type the title

- Click to add subtitle

#### Add a preset design

- Open format menu
- Choose 'slide design'
- Choose the design template you want in the look in section

#### Adding new slide

- From the slide layout dialog box, select the layout i.e bulleted list\
- Type the title
- Type the details

#### Changing the slide layout

- Open format menu
- Choose slide layout
- Choose the layout you want i.e text and clipart

#### Entering drawings

- Double click on the Clipart placeholder
- Choose the cartoon you want
- Click ok

#### Moving through the slides

- Use double arrows button on the scroll bar to move to the previous or next slide
- Or press the page up and page down keys on the keyboard

#### Deleting slides

- Move to the slide to be deleted
- From edit menu
- Select delete slide

#### Saving a presentation

- Open file menu
- Click "Save as"

Dialog box appears

- Choose the location of the file i.e. D:/
- Type the file Name
- Click Save

Opening the presentation

- Open the 'file' Menu
- Choose 'open'

Dialog box appears:-

- Specify the location of the file i.e. D:/
- Click 'Open'

Saving An Existing presentation

- Open 'File' menu
- Click 'SAVE'

Closing the presentation

- Open the file Menu
- Click close or click X button

Exit Ms – PowerPoint

- Open file Menu
- Click EXIT

Running a presentation

- Once you have made the slides for presentation, you can run it as a slide show.

- Go to slide 1
- Click on slide show button on the left of the window

### Entering a graph onto a slide

- Double-click on the graph placeholder
- Highlight all the information in the datasheet
- Press delete key on the keyboard to clear all the original data
- Type the sales data for each region as shown in the example
- Click outside the datasheet to return to PowerPoint
- The graph will be displayed on the slide

### Changing the order of slides

- Click the slide sorter view button
- Click on the slide you wish to move
- Hold down the left hand mouse button and drag the slide to the position required

### Creating notes pages

- In notes pages View, you create notes that you print and use as a guide during your presentation.
- In slide sorter view, select the slide
- Open view menu
- Choose 'notes page'
- Type the notes for the speaker

### Master Slides

- Open view menu
- Go to 'master'
- Choose slide master
- Go to insert menu
- Choose date and time
- Specify other attributes
- Click apply to all

## Drawing tools

p Using Autoshapes on the drawing toolbar to create different objects

## Page setup

- If you intend to use PowerPoint for anything other than on-screen slideshows , you will need to set the size of the slides you are producing
- Open file menu
- Click Page set up

## Printing the presentation

- Open 'file' menu
- Click 'Print'
- The dialog box appears
- Specify the printer type/Name, No. of Copies, no of slides / handouts etc.
- Click Print

## MULT-MEDIA (GRAPHICS,ANIMATIONS,SOUNDS AND VIDEOS)

Multimedia is *the combination of sound, graphics, animation, and video.*

In the world of computers, multimedia is a subset of hypermedia, which combines the elements of multimedia with hypertext so as to link the information.

### Overview

In this topic, we discuss issues concerned with using multi-media components. At the end of this section, you will be able to

- Discuss formats for graphics, sound and video and select the appropriate format for a specific purpose
- Compare formats for graphics, sound and video
- Have an appreciation for other technology tools for the display of information

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### 1. Graphics

There are many formats for storing pictures in digital format. Images associated with personal computer systems are stored in **pixel** format. A **pixel** is an individual dot or element with associated intensity and color information. Pixels are combined to form images. The size of each pixel is a function of the quality of the monitor. For most monitors, the pixel size is about 0.28mm.

### Color Depth

Some storage formats for pictures involve **compression**, a technique that reduces the amount of storage space required for the picture, often at the expense of quality. Other formats alter the **color depth** of the image, as less color will require less storage space. **Color depth refers to the number of unique colors used by the image.** Using more colors in a picture will require more storage space (bytes). For instance, a single bit can be either on or off. This would correspond to two colors, black and white. Using 8 bits for each pixel would result in a color depth of 256 colors. The more colors you have, the more realistic and natural the image looks. The following table shows the connection between color depth and the number of bits representing that color depth.

Color Depth (in pixels)	Number of Bits	Image	Image Size (in bytes)	Download Time (at 28.8Kbps)
2	1		1998	0.55
16	4		4666	1.29
256	8		10113	2.80
65536	16		22494	6.24
16.7 million	24			

You can observe a direct relationship between the quality of the image, color depth, and image size in bytes. The larger the image size in bytes, the longer it takes to download.

Image size is always expressed as x and y (width followed by height). The above image has a dimension size of 150 by 100. The larger the image size in pixels, the larger the file size is. For example, increasing the same file to double the pixel size (300 by 200) increases the file size of the image to 41,026 bytes.

Increasing the size of the image introduces distortion, as the graphics package must calculate what the new pixels should look like. The image on the right shows a portion of what this increased image size looks like, with the resultant distortion clearly visible.



From this we can draw some basic principles.

- work with images in large sizes and increased color depths
- when producing images for the web, reduce both the color depth and image size

### Image-size

How big should images be on a web page is a good question. A rough guide is to look at the print medium (such as books and newspapers). Seldom is the image size so big that it takes up all the space on the page. We would argue that the web is an entirely different medium, and some of the rules applicable to the print medium are not applicable here. However, one must keep in mind that some users may have limited bandwidth and others may be using monochrome monitors or systems that only display 256 colors. Other users may only have a screen size of 800 by 600 pixels. Designing for the web often means designing for the lowest common denominator. We would make the following suggestions.

- color depth of 256 colors
- image size on average no more than 320 by 240 pixels
- file size to be 15KB or less (the more images on a single page the more closely this needs to be monitored)

### Graphic Formats

There are a number of graphic formats available for the storage of images. The following table lists some of the more common graphic formats currently available.

Graphic Format	File Extension	Color Depth	Description
Bitmap	.bmp	All	Microsoft Windows format. Supported by all Microsoft operating systems. Not used for web pages.
GIF	.gif	8 bit	Graphics Interchange Format. Used for web pages.
JPEG	.jpg	24/16 bit	Joint Pictures Entertainment Group. Used for web pages.
TARGA	.tga	All	Used primarily for image creation, composing and editing.

Other image formats are available. It is worth saving an image in both JPEG and GIF format, then selecting the image based on your criteria (either the best quality or the smallest file size). JPEG offers varying levels of compression. The more compression applied, the smaller the file size, and the lower the image quality. This is illustrated in the images below.



Best	Quality	Medium	Quality	Low	Quality
20%	compression	70%	compression	90%	compression
22494 bytes		3340 bytes		1988 bytes	

### Altering the image contrast and brightness

There are times that images should be manipulated for better results. Some images are better displayed as grayscale (shades of gray with no color). Examples of these are related to the medical profession, such as x-rays. Often, detail can be hidden in an image, and adjustment of the image characteristics will reveal this hidden information. Consider the following image on the left. It was taken with a digital camera. The image on the right has been enhanced by image processing software (Microsoft Image Composer), and shows more detail than the original image.



### Special Effects

In general, most image editing software provide special effects that can be applied to an image. A web designer should consider these effects carefully. What is the desired message that the author wishes to convey to the receiver by using such effects? Every element, time and bandwidth is precious. Effects should be used sparingly so that the receiver does not become desensitized to their use. The following images illustrate some of the effects possible with Microsoft Image Composer.



### Summary

Images are an important part of any multi-media project. Images are manipulated in color depth, size and other aspects before they are saved in a format suitable for inclusion on web pages. Consideration should be given to image size and file size when producing images for the web. The two most popular image formats for the web are JPEG and GIF. A good designer will manipulate the image to extract the best parts of the image in order to maximize its impact on the receiver. This can involve altering the image size, adding special effects, cropping the image (selecting only a part of the image) or combining the image with other image elements.

## 2. Animations

Animations are moving graphic images (normally without sound) that consist of a series of images played one after the other. These images are stored in a single file. The current format of these animations (for the web) is **animated GIF**. The following is an example of an animated GIF.



This animation comprises a series of 10 frames, each slightly different from each other. When played as a sequence, they simulate movement. The ten frames that make up this animation are shown below.



Each image is displayed for a specified time interval, and then replaced by the next image. The persistence of the images on the screen and perceived by the human eye give the impression of smooth movement. This is identical to the way that cinema movies are viewed.

Images must be the same size and should use the same color depth. There are a large number of sites on the Internet dedicated to animated GIF files. In addition, many CD-ROM can be purchased from computer stores that are full of animated GIF's for use on web pages.

### Construction of animated GIF images

In order to construct animated GIF images, special tools are required. Two such tools are Microsoft GIF animator and "GIF construction set for Windows XP. These tools allow you to

- import a sequence of GIF files
- specify the duration in time that each image will be displayed
- specify the total time duration of the image or the number of repetitions
- rearrange the order of the images
- apply transparency rules (specify how the background will appear)
- specify the output image size
- save the image to an animated GIF file



This is a screen capture of the Microsoft GIF animator program. The program is currently supplied with Microsoft Frontpage (as of December 1998). It is simple to use and creates effective animations.

### Other Issues

Animated GIF's can be large in size. The more animations that are included on a web page, the longer the page will take to download. The larger the animation size, the larger the file size will be. It is important when creating animated GIF's to keep the file size at a minimum.

Too many animated GIF's on a web page can be distracting. In addition, the major use of animated GIF's appears to be primarily a method of trying to improve the look of the page. Flashy graphics may not add to the recall or effectiveness of the message. However, a well thought out animation will aid recall and be very effective at communicating the idea or concept to the viewer.

### 3. Sounds

This section focuses on the technology of sound. An important aspect of multi-media applications, sound is very effective for **creating mood and dramatization**. In addition, certain types of music, namely from the Baroque period, have been shown to improve mental concentration and aid later recall.

We use sound every day in communication. Our early ancestors used sound to convey campfire stories, and aided by gestures and other dramatic effects, kept generations spellbound. The power of sound, used properly, should not be underestimated.

### Types of sound files

This is a brief discussion of the two main sound formats for personal computers.

- **MIDI**

The Musical Instrument Digital Interface was developed during the 1980's as a mechanism of controlling electronic musical instruments such as keyboard synthesizers. MIDI files support a wide range of synthetic instruments, such as drum, clarinet, violin, piano and guitar. Musical sequences can both be recorded as the instrument is played, or composed on the PC and then downloaded to the instrument for later playing.

To play MIDI on your computer, you must have a MIDI interface. Most modern sound cards support MIDI. MIDI files consist of information that relates to the instrument to be played, the note, and its duration. Files in MIDI format are significantly smaller in size than other formats such as WAV or AU.

- **WAVE:-**

Waveform Audio is the most popular format available today for the personal computer.

Waveform files consist of actual samples of the sound file. This tends to more accurately reflect the original sound, but file sizes are a lot larger. The more samples taken of the original sound, the better the quality is. Sound files consist of a header and a number of samples. The header defines the format of each sample and any compression technique that was applied to each sample. When the sound file is created, the sound is sampled at a regular rate and each sample converted into a digital number that represents the sound at the instant of sampling.

### Sample Rates

Sound is digitized (converted to digital format) and stored as a sound file. Sample rate refers to the number of times a second that the original sound was sampled. Higher sampling rates mean better quality of sound. However, as the sample rate increases, the file size increases also. You must make a decision to sometimes trade quality at the expense of file size. The following table lists three common sound qualities and their sample rates.

Sound Quality	Sample rate	Description
Telephone	11,025	Suitable for speech
Radio	22,050	Suitable for music
CD	44,100	Suitable for high quality music

Again, we are reminded of the fact that bandwidth is still scarce for most users of the Internet. This means designing for the lowest common denominator in mind. The highest percentages of users on the Internet are those with PC's, so this means that WAV format will be more common. In addition, due to bandwidth restrictions, you should ensure that sound files are kept short and are small in size. For instance, a telephone quality sound file using ten seconds of speech is 110KB. This will take a minimum of 30.55 seconds to download at 28.8Kbps.

### 8 bit and 16bit

This refers to the size of each sample. It is thus obvious that a 16-bit sample is twice as large as an 8-bit sample. The advantage of using 16-bit sampling is that a wider range of values is possible, so the resultant sound appears to have better tonal characteristics (it sounds more realistic).

Again, sound files sampled at 16-bit will be twice the size in bytes as the same sound sampled at 8-bit. You will need to be able to justify the larger sample size, and must remember the negative effect this will have on download times.

### Stereo and mono

We have two ears that we use to receive sound. The airwaves striking our eardrums are converted into electrical impulses and interpreted by our brain. Similarly, most computers use two speakers to generate sound, similar to the sound speakers of home sound systems. These are called left and right channels. They are designed to simulate the way we hear, by providing distance separation of sound.

Stereo uses two channels called left and right. The original sound is sampled as two separate channels and stored as two lots of information, one for the left channel, and one for the right channel. This means every sample contains both channels.

Mono refers to using a single sound sample. If you play this back on a stereo system, the single sound sample is sent to both channels. It is not possible to create the appearance of distance separation using mono. However, mono files are smaller in size (half the file size) compared to an equivalent stereo file.

Stereo files are twice the size in bytes as a mono file due to each sample containing left and right channel information. They have the advantage of appearing to give distance separation and are useful to create special effects. This must be traded against the available bandwidth and how long the file takes to download. Mono files are the most common format. The following table shows the comparative file sizes (approximate) for one second of recorded speech.

Sample Rate	8 bit Mono	8 bit Stereo	16 bit Mono	16 bit Stereo
11KHz	11KB	22KB	22KB	44KB
22KHz	22KB	44KB	44KB	88KB
44KHz	44KB	88KB	88KB	166KB

### Compression(Codecs)

A codec is a "**compression decompression**" device. It is often implemented in software, though many new accelerated cards have codecs implemented in hardware for faster coding and decoding of signals. A codec is used to alter the signal in order to reduce the bandwidth requirements (i.e., the size of the file is compressed making it smaller and thus quicker to transfer or download). The codec converts the file format to a format suitable for playing on the destination hardware.

The following is a brief discussion on two popular speech codecs

- **ADPCM (Adaptive Differential Pulse Code Modulation)**  
This codec reduces the file size by over 50%. However, any compression causes loss of sound quality. There is no generally accepted standard for ADPCM, with codecs generally provided by manufacturers of sound cards that are installed using a software install program.
- **PCM (Pulse Code Modulation)**  
Another common codec supported by all Windows operating systems.

### Streaming Audio

The major problem associated with the previous format of waveform audio is the file size. When you use a waveform audio file on a web page, the browser must download the entire file before it can be played. For files of reasonable size, this leads to long delays for the receiver.

Streaming audio addresses the issue of this delay by allowing the file to be played whilst it is still being downloaded. Special players are required for viewing and playing streaming audio clips.

Streaming audio is primarily associated with Real Networks. "Real Player" supports the playing of streaming audio over the Internet. The advantages of using streaming audio are

- the use of a special codec that reduces the bandwidth requirements for audio down to about 5Kbps
- instant playing of the audio clip
- suits limited bandwidth connections (i.e., a dial-up user with a 28.8Kbps modem)

When a user selects a streaming audio clip, the streaming audio player contacts the server and establishes the bandwidth and delays between the user computer and the host server. A few seconds of the clip is then downloaded into temporary buffer storage before the clip begins to play. As the clip begins to play, more content is downloaded and placed into temporary storage. If there is a congestion delay in the Internet connection, the clip continues to play using the contents of the buffer storage. Hopefully, before the buffer storage is exhausted, the congestion delay will cease and thus the buffer storage will fill up again. In this manner, the streaming player tries to achieve smooth playback of the clip. Without using storage, gaps or breaks in the audio would be evident when a congestion delay occurred.

A special content provider program is necessary for producing streaming audio clips. A limited free version can be downloaded from the Real Networks web site. In addition, to provide streaming audio clips from a server requires the use of a streaming server.

	Sample audio file (8KHz, 8 bit mono WAV file, 12.4KB, 1.55 seconds duration)
	Converted sound file from the WAV file above. (Streaming audio format, 4.45KB, 1.55 seconds duration)

### Recording and editing of sound files

To record WAV sound files you need a microphone (or sound source such a tape recorder), sound card, and sound recorder program.



The Windows operating system provides the program "Sound Recorder". This program is simple to use and can create short WAV files. The sample rate is adjustable and it can record in mono or stereo. Simplistic editing of the sound file (delete before cursor, delete after cursor) is provided.

For more sophisticated sound recording and editing, a program such as "Cool Edit for Windows" is necessary. This program has many more features and is a good tool for producing quality sound WAV files.



To create streaming audio files, you need a program such as "Real Encoder" from Real Networks. This takes an existing sound WAV file or a live sound source and converts it to a streaming audio file. It is possible to specify a number of parameters such as Internet bandwidth when creating the file.

### Other considerations

As always, bandwidth is a premium for the Internet. This means that you must tradeoff quality and size for quick download speed and fast display. New technology like streaming audio can deliver more content utilizing the same or less bandwidth.

However, streaming audio content is not currently supported (as at Dec 1998) within a web browser. This means using streaming audio poses the problem of requiring the receiver to have the streaming player installed on their computer. For this reason alone, you should ensure that an Internet link to where the player can be downloaded from is available on the web page.

In addition, using a separate player rather than the browser (which supports WAV format) means greater memory requirements. This is because the player needs to be started and loaded into memory, in addition to the web browser.

This also raises a contextual issue, as the user is now interfacing with two packages, the browser and the player. This can lead to confusion and reduce the effectiveness of the presentation or learning experience.

If producing for a CD-ROM, many of the issues related to sound file sizes and sampling rates do not apply to the same extent. A CD-ROM can provide information at a much faster rate than a dial-up modem. Typically, a 2X CD-ROM can transfer data at 300KB per second. This means higher quality sound can be used due to the larger available bandwidth.

#### 4. Videos

Video Recording is the process of recording still or moving images electronically, rather than photochemical as in photographic film.

The delivery of video on web pages has till recently been fraught with difficulty. Lack of standards and support a few years ago were major issues. The reality of the Internet and lack of available bandwidth means that delivery of video content is severely restricted to simple slow moving content (such as people speaking face to face or teachers delivering lectures) and in very small frame windows (of 320x240 or less). The **frame rate** (the number of images displayed per second) has also been a problem, with a lot of real-time video (such as net meeting or video conferencing software) achieving rates of 10 frames per second (fps) or less. Around 15fps is the minimum frame rate required for smooth movement. Television frame rates are 30fps for NTSC (American standard) and 25fps for PAL (Europe, NZ standard).

The more frames per second the more realistic movement appears. However, this requires greater bandwidth. With video we are stretching the limits considerably. The features of video are

- content keeps changing so we need a reasonable frame rate else the motion appears jerky
- the window size needs to be a reasonable size to ensure enough detail is perceived
- sound is added for maximum effect

Every increase in a video parameter means you require more bandwidth. For instance, more frames per second require more bandwidth. Larger window sizes require more bandwidth. A video with audio needs more bandwidth than a video that has no audio.

Just what are the bandwidth requirements of a video image? Well, that depends on the size of image, the color depth, the frame rate and a number of other factors. Consider a 15fps video using 256 color (8-bit color depth) of 320x240 in size, lasting 10 seconds in duration. The bandwidth per second required for this is

$$15 * ((320 * 240) * 8) = 9.216\text{Mbps}$$

This does not even include audio yet. As you can see, this video cannot be played over the Internet using a dial-up 28.8Kbps connection. In fact, it would not even play on some personal computers. What is needed is a mechanism of reducing the information in the video to a much smaller size

(i.e., reduce the bandwidth required). This is achieved by eliminating redundant information from the video, and compressing what's left. This is called compression. The device (either in software or hardware) that does compression of the video and decompresses it ready for playing is called a **codec**.

### Frame Sizes and Formats

There is a number of common video formats for personal computers. The three most common formats available today are

- MOV (Developed and supported by Apple Inc.)
- AVI (Developed and supported by Microsoft.)
- MPEG

Video has standardized on a 4:3 ratio. This ratio is an accepted standard. Typical video sizes are

- 320 x 240
- 160 x 120

When producing video for multi-media productions such as CD-ROM and the Internet, you should adhere to common standards. This means using commonly accepted frame sizes, frame rates, color depths, compression codecs and video formats. Using a non-standard format may cause problems in playback on the client computer, such as the inability to play the video.

### Codec

Codec is the hardware that can convert audio or video signals between analog and digital forms.

Codec compresses and decompresses the video stream. When a codec is applied, it looks at the original video stream and changes it, saving the result to a file. When the file is played back, the codec interprets the changes and attempts to reconstruct the original video stream.

A **lossless compression** scheme preserves the original data, so that the resultant video after decompression looks the same as that before it was compressed. Most lossless compression schemes use run length encoding (RLE). This works well with computer generated images, but is not very effective when applied to digitized video. The reason for this is because RLE works by discarding continuous regions that have the same colors. Computer generated images tend to have more solid colors than digitized video, so RLE is more effective for these.

A **lossy compression** scheme removes data from the video stream that the viewer is unlikely to notice. The amount of information that is lost depends on how much compression is applied.

A **spatial compression** scheme compresses the information in every frame. This can result in blurring, blockiness (small blocks of the same color) and streaking (lines of the same color).

A **temporal compression** scheme compresses the data by comparing frames over time. Frame differencing is a type of temporal compression that stores data for only the frames that contain changes. This can result in blockiness.

The following is a summary of the more common video codecs supported by personal computers (as at Dec 1998).

Video Codec	Description
RLE	Run length encoding is a technique that discards continuous regions that have the same color. It is suitable for 8-bit (256) color video.
Indeo	Use this codec to compress 24-bit color for playback from CD-ROM, or for the original digital video capture.
Cinepak	Use this codec to compress 24-bit video for playback from CD-ROM. The codec is much faster at decompressing than compressing so is good for playback of moving video content.
Microsoft Video 1	This codec is a lossy, spatial compressor. It supports 8-bit and 16-bit color.

### Key frames

A key frame contains the entire image information and is used as a reference for subsequent frames in a sequence. In the illustration below, key frames are repeated every seven frames. Intermediate frames that occur between key frames only contain the changes between that frame and the key frame. This method reduces the file size of the video.



The intermediate frames are called **delta** frames.

### AVI (Audio Video Interleave)

AVI is a format Microsoft introduced with the Windows 3.1 operating system. It intermixes both audio and video content within the file. The video and audio streams in the file are stored sequentially, without time stamps. A header in the file indicates the rate at which the video and audio streams are to be played. The audio stream is stored as a WAV file.

### MPEG (Moving Picture Experts Group)

The MPEG-1 standard was adopted in 1991. The goal of MPEG-1 was to develop a way of compressing a video signal and then play it back using a CD-ROM or telephone line. A digital bit rate of less than 1.5 Mbps was considered necessary. The standard specifies 352x240 pixels at 30 frames per second. The quality is acceptable for the home consumer market.

The MPEG-2 standard was designed to deliver better quality images and larger video size, suitable for broadcast quality. MPEG-2 specifies a data rate of 6.0Mbps.

The MPEG-4 standard is currently under development (as at Dec 98).

- Compression of both audio and video
- encodes changes in image motion that occurs from frame to frame
- audio is split into 32 sub-bands
- video compression levels of 50:1 to 200:1
- audio compression levels of 5:1 to 10:1
- MPEG-1 data rate up to 1.5Mbps
- MPEG-2 data rate up to 10Mbps

### Streaming Video

Streaming video is very similar to streaming audio. We are faced with the same problem of file size and the delay involved in downloading the entire video file before it can be played on the client computer. Streaming video addresses the issue of this delay by allowing the file to be played whilst it is still being downloaded. A special player is required for viewing and playing streaming video.

Streaming video is primarily associated with Real Networks. "Real Player" and "Real Player G2" support the playing of streaming video (and audio) over the Internet. The advantages of using streaming video are

- the use of a special codec that reduces the bandwidth requirements for video
- instant playing of the video clip
- suits limited bandwidth connections (i.e., a dial-up user with a 28.8Kbps modem)

When a user selects a streaming video clip, the streaming video player contacts the server and establishes the bandwidth and delays between the user computer and the host server. A few seconds of the clip is then downloaded into temporary buffer storage before the clip begins to play. As the clip begins to play, more content is downloaded and placed into temporary storage. If there is a congestion delay in the Internet connection, the clip continues to play using the contents of the buffer storage. Hopefully, before the buffer storage is exhausted, the congestion delay will cease and thus the buffer storage will fill up again. In this manner, the streaming player tries to achieve smooth playback of the clip. Without using storage, gaps or breaks in the video would be evident when a congestion delay occurred.

A special content provider program is necessary for producing streaming video clips. A limited free version can be downloaded from the Real Networks web site. In addition, to provide streaming video clips from a server requires the use of a streaming server.

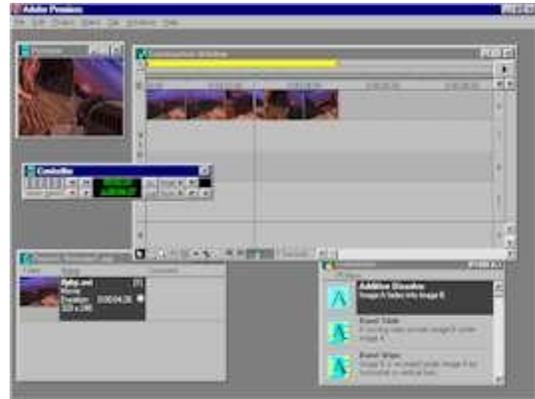
### Video Production tools

The following is a very brief description of three common video production tools for the creation and conversion of video content suitable for CD-ROM or Internet production.

#### Adobe Premiere

This video editing and production software is excellent for designing and producing video content.

Any number of video streams and audio channels can be combined with transition effects (how one video stream is changed to a different video stream) into a single video. It supports a wide variety of frame formats, frame sizes and codecs. It is ideal for producing video content for CD-ROM.



### XING MPEG Encoder

This package converts an AVI file to MPEG format.



Often, AVI files can be further reduced in file size by conversion to MPEG format. The XING encoder is relatively inexpensive and should be considered as an option for any serious multi-media developer. This package cannot be used to create AVI or MPEG content. It can only convert existing AVI files to MPEG format.

### Real Producer G2

This package converts an existing AVI file to streaming video format.

It is a free download from Real Networks. A player is required to play the generated video stream. In addition, a streaming server is recommended to handle the delivery of streaming video content over the Internet. It is possible to place limits on the data rate of the video content when it is created.

This product can also produce live streaming video content and slide shows (graphics plus optional audio).



### Other Considerations

The following is a video file (© J. Winchester) of just over 4 seconds duration. It comprises a 320x240 animation. The common settings for each AVI file has been set to 15fps, 80% compression level with key frames every 15 frames. The data rate has been limited to 100KB/s. The audio has been set to 11KHz 8-bit mono.

	Video Type	File Size		
	<a href="#">flybyc.avi</a>	493KB	Cinepak codec	CD-ROM only
	<a href="#">flybym.avi</a>	491KB	Microsoft Video 1	CD-ROM only
	<a href="#">flybyi.avi</a>	1287KB	Intel Indeo(R) Video 3.2	CD-ROM only
	<a href="#">flyby.mpg</a>	747KB	Converted with XingMPEG encoder	CD-ROM only
	<a href="#">flyby1.rm</a>	25KB	Data rate set to 28.8Kbps, smoothest motion	
	<a href="#">flyby2.rm</a>	13KB	Data rate set to 28.8Kbps, sharpest image	
	<a href="#">flyby3.rm</a>	31KB	Data rate set to 56Kbps, smoothest motion	CD-ROM only
	<a href="#">flyby4.rm</a>	24KB	Data rate set to 56Kbps, sharpest image	CD-ROM only

View each of the video files as shown above. Compare them for quality of image and smoothness of motion. One observation you will find is that for streaming video, smoothest motion is best for content that is moving, but the image quality is lower. This illustrates that tradeoffs are made in compression between motion and quality. Compare also the data rate of 28.8K versus 56K. Is there a discernable difference between the two clips?

The type of options and codec you choose directly relate to the content of the video you are generating.

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## DESKTOP PUBLISHING

**Microsoft Publisher** is a software application developed by Microsoft Corporation to help businesses create high-quality marketing and business material. A part of the Office product family, Publisher provides business users with design options for a variety of publications, such as newsletters, flyers, brochures, and Web pages.

The term desktop means that all the publishing process can no be done on a desk in the office or at home using a personal computer.

Difference between publisher and word processor:-

The difference between desktop publisher and a word processor is that desktop publisher software gives the user more tools and controls of the page layout, text manipulation and graphic design than a word processor.

NOTE:-

Some word processor today has also been incorporated with text and graphic formatting and editing tools thus a tiny difference exist between them and the desktop publisher.

Examples of DTP software are:-

-Adobe page maker

-Microsoft Publisher

-Quark express

-Adobe in design

-Ventura

-Serif page plus and

-Apple page 2

Purpose of desktop publishing software:-

1. Using desktop publishing software a typesetter can create and edit very complex text and graphical objects like picture to the finest details.
2. With a desktop publish the user can be able to design a page layout by setting consistent picture and object locations, dividing a page is a number of columns and creating layers.
3. Desktop publishing software helps the user to prepare what a referred to as at work in commercial circles for printing.

### **ADVANTAGE OF DTP's OVER WORD PROCESSORS**

1. Every item on a page is contained in a frame and can be edited and formatted independently.
2. Master pages are used to set a common layout which may be repeated on several pages e.g. logo, page number etc.
3. Strong can be contained in a single frame or threaded between several frames.
4. Multiple stones from different authors can be handled with ease.
5. Publication can be printed in a form suitable for commercial printing e.g. using colour separations.
6. Wide range of templates is available eg. Brochures, booklets, posters, business cards etc.
7. Frame need not flow in logical sequence. Eg a story on pages may be continued on page.

### **TYPES OF DESKTOP PUBLISHING SOFTWARE**

Desk top publishing software can be classified into two broad categories which are:

1. **Graphic - based:** These are specifically developed to edit and format graphic objects such as picture and vector drawings.
2. **Layout – based:** These are specifically developed to create different page layout designs for text and pictures.

#### a)Newsletter

A newsletter is a periodically distributed publication generally with one main topic that is of interest to its subscribers (e.g. institutions, business firm, government agency etc.)

#### b)Brochures

A brochure (also referred to as a pamphlet) is a type of leaflet. Is a publication with brief necessary information addressing a particular institute e.g. School.

#### c)Flyers

A flyer (also spelled flier or called a circular, handbill or leaflet) is a single-page leaflets with information for advertising an organization, event, service, or other activity. Flyers are typically used by institute, individuals or businesses to promote their products or services. They are in form of mass marketing or small scale, community communication

#### d)Business cards

Business cards are cards bearing business information about a company or individual. They are shared during formal introductions as a convenience and a memory aid. A business card typically includes the giver's name, company affiliation (usually with a logo) and contact information such as street addresses, telephone number(s), fax number and e-mail addresses; website

#### e) Postcard

A postcard or post card is a rectangular piece of thick paper or thin cardboard intended for writing and mailing without an envelop

#### f) Calendar

A calendar is a system of organizing days for social ,religious, commercial, or administrative purposes

#### g) Label

A label is a piece of paper, polymer, cloth, metal, or other metal affixed affixed to a container or article, on which is printed a legend , information concerning the brand name ,product ingredient and contacts e.t.c. A label may also be printed directly on the container or article.

#### h)Banner

A banner id flag or other piece of cloth bearing a symbol, logo, slogan or other message to be displayed so that the stakeholder concerned with the message to informed

#### i) Advertisements

Advertisement is a form of communication used to persuade an audience (viewers, readers or listener)to take a certain matter. Intention of advertising is to drive consumer behavior with respect to commercial offering, although political and ideological advertising are also common

#### j) Greetings card

Is a illustrated publication, folded card featuring an expression of friendship or other relationship. Although greeting cards are given on special occasions such as birthdays, Christmas or other holidays, they are also sent to convey thanks or express other feeling.

## Graphic Design

Involves the creative process of coming up with the concept and ideas and arrangements for visually communicating a specific message. It involves designing of objects, images, pictures in the different shape and colors to suit the needs of users.

## Creating a publication

Creating a publication with a publication wizard

1. On the **File** menu, click **New**.
2. In the **New Publication** task pane (task pane: A window within an Office application that provides commonly used commands. Its location and small size allow you to use these commands while still working on your files.), under **New from a design**, do one of the following:
  - To create a publication that you want to print, click **Publications for Print**. Then, under **Publications for Print**, click the type of publication you want to create.
  - To create a Web site or a publication you plan to send as an e-mail message, click **Web Sites and E-mail**. Then click **Web Sites** or **E-mail**, and click the type of publication you want.
3. In the **Preview Gallery**, click the design you want.
4. Do any of the following:
  - To change the publication's overall design, click **Publication Designs** in the task pane.
  - To change the publication's color scheme, click **Color Schemes** in the task pane.
  - To change the publication's font scheme, click **Font Schemes** in the task pane.
  - If you are creating a Web page, newsletters, or catalog, to change page content options, click **Page Content**.
  - Change or select any additional options in the task pane for the type of publication you have created.
5. In your publication, replace the placeholder text and pictures with your own or with other objects.
6. On the **File** menu, click **Save As**.
7. In the **Save as** box, select the folder where you want to save the new publication.
8. In the **File name** box, type a name for your publication.
9. In the **Save as type** box, select **Publisher Files**.
10. Click **Save**.

## Creating a publication from a design set

1. On the **File** menu, click **New**.
2. In the **New Publication** task pane (task pane: A window within an Office application that provides commonly used commands. Its location and small size allow you to use these commands while still working on your files.), under **New from a design**, click **Design Sets**.
3. In the task pane, select the design set you want.
4. In the **Preview Gallery**, click the type of publication you want.
5. Do any of the following:
  - To change the publication's overall design, click **Publication Designs** in the task pane.
  - To change the publication's color scheme, click **Color Schemes** in the task pane.

- To change the publication's font scheme, click **Font Schemes** in the task pane.
  - If you are creating a Web page, newsletters, or catalog, to change page content options, click **Page Content**.
  - Change or select any additional options in the task pane for the type of publication you have created.
6. In your publication, replace the placeholder text and pictures with your own or with other objects.
  7. On the **File** menu, click **Save As**.
  8. In the **Save as** box, select the folder where you want to save the new publication.
  9. In the **File name** box, type a name for your publication.
  10. In the **Save as type** box, select **Publisher Files**.
  11. Click **Save**.

### Creating a publication based on an existing one

1. On the **File** menu, click **New**.
2. In the **New Publication** task pane (task pane: A window within an Office application that provides commonly used commands. Its location and small size allow you to use these commands while still working on your files.), under **New**, click **From existing publication**.
3. Click the publication you want to use as the basis for your new publication.
4. Click **Create New**.
5. Make the changes you want to create a new publication.
6. On the **File** menu, click **Save As**.
7. In the **Save as** box, select the folder where you want to save the new publication.
8. In the **File name** box, type a new name for your publication.
9. In the **Save as type** box, select **Publisher Files**.
10. Click **Save**.

### Creating a publication from a blank page

1. On the **File** menu, click **New**.
2. In the **New Publication** task pane (task pane: A window within an Office application that provides commonly used commands. Its location and small size allow you to use these commands while still working on your files.), under **New**, do one of the following:
  - To create a publication you want to print, click **Blank Print Publication**.
  - To create a Web page, click **Blank Web Page**.
3. In your publication, add text, pictures, and any other objects you want.
4. On the **File** menu, click **Save As**.
5. In the **Save as** box, select the folder where you want to save the new publication.
6. In the **File name** box, type a name for your publication.
7. In the **Save as type** box, select **Publisher Files**.
8. Click **Save**.

### Creating a publication from a template

This procedure works only if you've created a template yourself with Publisher (by choosing **Publisher Template** in the **Save as type** list when you saved the publication previously), or want to use a third-party template created for Publisher.

1. On the **File** menu, click **New**.
2. In the **New Publication** task pane (task pane: A window within an Office application that provides commonly used commands. Its location and small size allow you to use these commands while still working on your files.), under **New from a design**, click **Templates**.
3. In the **Preview Gallery**, click the template you want.
4. Make the changes you want to create a new publication.
5. On the **File** menu, click **Save As**.
6. In the **Save as** box, select the folder where you want to save the new publication.
7. In the **File name** box, type a name for your publication.
8. In the **Save as type** box, select **Publisher Files**.
9. Click **Save**.

## ABOUT BASELINE GUIDES

**You can use baseline guides to precisely align text lines across multiple columns.**

Baseline guides are one of the layout guides along with margin guides, column guides, and row guides. You can use baseline guides together with other layout guides to create an overall design grid that provides better structure and visual appeal to your publication.

You can set text to align to the baseline guides for a selected paragraph or in the paragraph settings for a style. Text that is aligned to the baseline guides automatically adds line spacing to equal the spacing of the baseline guides and aligns the baseline of a line of text with the baseline guide.

The following tips will help you use baseline guides most effectively:

**Plan ahead** Set up your baseline guides when you set up your publication, just as you would set up other layout guides. Remember that aligning text to the baseline guides adds line spacing to the text. If you already have your text flowed throughout your publication, setting your text to align to the baseline guides will likely cause it to reflow, which may cause some text to go into overflow.

**Create and use styles for the text in your publication** Like using layout guides, using styles gives you better control and consistency in formatting the text throughout your publication. Set alignment to the baseline guides in the style for your body text to ensure that all your body text will align.

**Set your measurement units to points instead of inches** Because the baseline guides spacing is always specified in points, coordinating other elements such as margin guides, grid guides, and line spacing with your baseline guides will be easier if you work in points.

**Match the baseline guides spacing to the line spacing of your body text** Make sure to set the line spacing of your body text in points with an exact value that is the same or less than your baseline guide spacing. If the line spacing of your text is greater than the baseline guide spacing, text that is aligned to the baseline guides will skip a line between lines of text.

**Coordinate your top and bottom margin guides with the baseline guides** As a design consideration; it's common for your last line of text to rest on the bottom margin guide. To ensure that your last baseline guide aligns with your bottom margin guide, you need to make the distance between your top and bottom margin guides an exact multiple of your baseline guides spacing. For example, if your baseline guides spacing is 14pt, make sure that the distance between the top and bottom margins is an exact multiple of 14pt.

**If you take your publication to a commercial printer, make sure they are using the current version of Publisher** In earlier versions of Publisher; you can't align text to the baseline guides. If you open a publication in an earlier version, any text that is aligned to baseline guides will lose that alignment and your text will reflow.

About positioning text in shapes

Some of the content in this topic may not be applicable to some languages.

Some types of shapes can include associated text. Shapes with this feature include most AutoShapes (except lines, connectors, and free forms), text boxes, and WordArt.

When you type text directly into an AutoShape or text box, the text is attached to the shape, and you can:

- Adjust and position the text within it.
- Make the text wrap in the shape or place it in the top, bottom, or middle of the shape.
- Change the margins between the text and the edge of the shape.
- Resize the shape to fit the text precisely.

If the shape is WordArt, you can create shadowed, skewed, rotated, and stretched text, as well as text that have been fitted to predefined shapes. Text in WordArt does not wrap or need margin settings, because the text is an object.

Fit text in a shape

1. Right-click the shape that contains the text that does not fit.
2. On the shortcut menu, click **Format AutoShape**.
3. In the **Format AutoShape** dialog, click the **Text Box** tab.
4. Under **Text autofitting**, select the option you want.

**Note** You can also reduce the size of the margin between the text and the border of the shape.

## How?

1. Right-click the selection rectangle of the shape you want to change.
2. On the shortcut menu, click **Format AutoShape**.
3. In the **Format AutoShape** dialog box, click the **Text Box** tab.
4. Under **Text Box Margins**, adjust the measurements to increase or decrease the distance between the text and the outer border of the shape.

## FORMATTING

Remove all text formatting

1. On the **Format** menu, click **Styles and Formatting**.
2. In the **Styles and Formatting** task pane, click **Clear Formatting**.

Change the color of text

1. Select the text you want to change.
2. On the **Formatting** toolbar, click the arrow next to the **Font Color** button.
3. Do one of the following:

### Apply a color from the palette

- Click the color you want in the **Font Color** palette.

### Apply a new color that is not in the palette.

1. Click **More Colors**.

1. In the **Colors** dialog box, select the color you want from either the **Standard** or **Custom** tab.
2. Click **OK**.

Publisher will apply the color to the selected text and add it to the **Font Color** and **Fill Color** palettes.

Add a shadow to text

Do one of the following:

### Add a shadow to or remove a shadow from text in a text box

1. Select the text you want to change.
2. On the **Format** menu, click **Font**.
3. Under **Effects**, click **Shadow**.

### Add a shadow to or remove a shadow from all of the text in a text box

1. Click in the text box that you want to change.
2. Press CTRL+A.
3. On the **Format** menu, click **Font**.
4. Under **Effects**, click **Shadow**.

### Insert WordArt with a shadow

1. On the **Object** toolbar, click **Insert WordArt**.
2. In the **WordArt Gallery**, click the WordArt with the shadow effect that you want, and then click **OK**.
3. In the **Edit WordArt Text** dialog box, type the text you want, and then select any options you want.

**Note:** You can also add a shadow to WordArt by selecting the WordArt that you want to change, and then clicking **Shadow Style** on the **Formatting** toolbar.

Add a dropped capital letter

Also called a drop cap, this formatting style is often used to mark the opening paragraph of a publication.

1. Click anywhere in the paragraph you want to change.
2. On the **Format** menu, click **Drop Cap**.
3. Click the **Drop Cap** or **Custom Drop Cap** tab, and then select the options you want.

**Note** When you create a custom drop cap, the custom style is added to the **Available drop caps** list on the **Drop Cap** tab. You can use this style to create other drop caps in the current publication.

Add a table of contents with leaders

Leaders are the dots, dashes, or lines that follow the chapter or section titles in a table of contents and link those titles to page numbers.

1. On the **Objects** toolbar, click **Text Box**.
2. In your publication, point to where you want one corner of the text to appear, and then drag diagonally until you have the box size you want.
3. Type the title of your table of contents, and then press ENTER.
4. Double-click the horizontal ruler where you want the page number to appear.
5. In the **Tabs** dialog box, under **Alignment**, click **Right**.

**Note** If support for a right-to-left language is enabled through Microsoft Office Language Settings and you are typing text in a right-to-left language, click **Trailing** instead of **Right**.

1. Under **Leader**, click the option you want, and then click **OK**.
2. In your table of contents, type the name of the first entry, and then press TAB.
3. Type the page number for that entry, and then press ENTER.
4. Repeat steps 7 and 8 until you complete the table of contents.

Add or replace a symbol or fraction

1. In your publication, do one of the following:
  - Click inside a text box or table cell where you want to add a symbol.
  - Select the symbol or fraction you want to replace.
2. On the **Insert** menu, click **Symbol**.
3. Select the settings you want from the **Font** and **Subset** lists.
4. Click the symbol you want, click **Insert**, and then click **Close**

## PARAGRAPH FORMATTING

### Keep text or paragraphs together

You can control how Publisher breaks paragraphs between connected text boxes or columns.

#### Keep lines of paragraph together in a text box or column

1. Select the paragraphs that contain the lines you want to keep together.
2. On the **Format** menu, click **Paragraph**, and then click the **Line and Paragraph Breaks** tab.
3. Select the **Keep lines together** check box.

#### Keep paragraphs together in a text box or column

1. Select the paragraph you want to keep with the next one in a text box.
2. On the **Format** menu, click **Paragraph**, and then click the **Line and Paragraph Breaks** tab.
3. Select the **Keep with next** check box.

#### Make a paragraph start in the next box

1. Select the paragraphs you want to start in the next text box.
2. On the **Format** menu, click **Paragraph**, and then click the **Line and Paragraph Breaks** tab.
3. Select the **Start in next text box** check box.

#### Control widow and orphan lines

Widows and orphans are single lines of text in a paragraph that print at the top or bottom of a text box or column. You can choose to avoid separating these lines from the rest of the paragraph.

1. Select the paragraphs for which you want to prevent widows and orphans.
2. On the **Format** menu, click **Paragraph**, and then click the **Line and Paragraph Breaks** tab.
3. Select the **Widow/Orphan control** check box.

## BULLETS AND TABS

### Automatically add bullets to list

1. On the **Tools** menu, click **AutoCorrect Options**.
2. Click the **AutoFormat As You Type** tab.
3. Select the **Automatic bulleted lists** box

Change bullets or numbers in list

### Change the look of bullets

1. Select the entire list.
2. On the **Format** menu, click **Bullets and Numbering**, and then click the **Bullets** tab.
3. Click **Character**.
4. Click the character you want, and then click **OK**.

If you don't see the character you want, select a different font from the **Font** list, and then click a character.

### Change the look of numbers

1. Select the entire list.
2. On the **Format** menu, click **Bullets and Numbering**, and then click the **Numbering** tab.
3. Click the arrow to the right of the **Format** box, and then click a format.
4. In the **Separator** box, click a separator.
5. In the **Start at** box, enter the number you want to begin the list.
6. Click **OK**.

### Change the color of a number or a bullet

1. If you cannot see the paragraph marker at the end of each line in the list, on the **View** menu, click **Special Characters**.
2. Select the paragraph marker at the end of the line for which you want to change the bullet or number.
3. On the **Format** menu, click **Font**.
4. Under **General**, click the arrow next to **Color**.
5. Click the color you want.

To see more choices, click **More Colors**, and then click the color you want.

1. Click **OK**.

### Change the color of all the numbers or bullets

It may be faster to retype your list using this procedure rather than changing the color for each number or bullet, as above.

1. In the text box, type a space at the beginning of a new line, and then press ENTER.
2. If you cannot see the paragraph marker you just created by pressing ENTER, on the **View** menu, click **Special Characters**.
3. Select the paragraph marker.
4. On the **Format** menu, click **Font**.
5. Under **General**, click the arrow next to **Color**.
6. Click the color you want for all the bullets or numbers in the list.

To see more choices, click **More Colors**, and then click the color you want.

1. Click **OK**.
2. Click at the beginning of the line, just to the left of the space you typed, so that no character is selected.
3. On the **Formatting** toolbar, click **Bullets** or **Numbering**.
4. Type your list, pressing ENTER at the end of each bulleted or numbered item.

The bullets and numbers will be the color you chose, while the other text retains its original color.

### Change list indents

1. Select the list.
2. On the **Format** menu, click **Bullets and Numbering**, and then click the **Bullets** or **Numbering** tab.
3. In the **Indent list by** box, type or select the amount of indentation you want.
4. Click **OK**.

Remove bullets or numbers from a list

### Remove a number or bullet from a single line in a list

1. Select the line you want to change.
2. On the **Formatting** toolbar, click **Bullets** or **Numbering**.

### Delete all bullets or numbers from a list

1. Select the entire list.
2. On the **Formatting** toolbar, click **Bullets** or **Numbering** to remove all bullets or numbers.

### Tip

To indent a line without a bullet or number in a list, press SHIFT+ENTER at the end of the preceding line, and then type the text.

Create a bulleted or numbered list

To create a list in Publisher, you need to work inside a text box.

### Create a text box

On the **Objects** toolbar, click the **Text Box** tool, and then click inside your publication.

### Create a bulleted list

1. On the **Format** menu, click **Bullets and Numbering**, and then click the **Bullets** tab.
2. Select the options you want, and then click **OK**.
3. Type the first item in your list, and then do one of the following:

To start a new line with a bullet, press ENTER.

To start a new line without a bullet, press SHIFT+ENTER.

1. To end a bulleted list, press ENTER twice.

### Create a numbered list

1. On the **Format** menu, click **Bullets and Numbering**, and then click the **Numbering** tab.
2. Select the formatting options you want, and then click **OK**.
3. Type the first item in your list, and then do one of the following:

To start a new line with a number, press ENTER.

To start a new line without a number, press SHIFT+ENTER.

To end a numbered list, press ENTER twice.

**Note** Publisher will automatically number the paragraphs in your list. If you add or delete paragraphs, Publisher will update the numbers.

Exercise:

By Using MS/Publisher create:

1. A nice Birthday card special for your best friend and then print your card. Hint:

- The card should contain (4) pages (use side fold card)
- The picture of your friend in a FrontPage
- Different font color and fill color

**Steps;**

- Open MS/Publisher
- Go to New publication
- Go to publication for print
- Click Birthday

Note that: to make (4) pages document:

- Click blank publication
- Select (double click) side fold card

2. A magazine that has (4) written pages and at least one picture to each page Hint: the following effect must be shown;

- Shadow, Bullets & Numbering, Font color, fill color, Drop cap, WordArt Texts and Pictures,
  - Use book fold.
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