I.Ch 2 Application Software

A.Competencies

- 1.Discuss common features of most software applications
- 2.Describe browsers
- 3.Discuss word processors & their features
- 4.Describe spreadsheets & their features
- 5.Discuss database management systems & their features
- 6.Describe presentation graphics & their features
- 7.Discuss software suites and integrated software

B.Software Applications

- There are two major categories of software:
 - System software
 - Application software
- Application software includes:
 - Basic applications (*general-purpose applications*): widely used in nearly every discipline & occupation. Examples include:
 - Browsers
 - Word processors
 - Spreadsheets
 - Database management systems
 - Presentation graphics
 - Advanced applications (special-purpose applications): Narrowly focused on specific disciplines and occupations. Examples include:
 - Graphics programs
 - Audio/video editors
 - Multimedia creation
 - Web authoring
 - Virtual reality

Common features

- User Interface is the portion of the application that we work with.
- Graphical User Interface (GUI) displays information in **windows** and it has icons, pointers, windows, menus, menu bars, pull down or drop down menus, dialog boxes, other toolbars, and buttons.

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- Window is simply a rectangular area that can contain a document, message or a program.
- More than one window can be opened at one time.
- Windows can be *resized*, *moved* and *closed*.
- **Menus** have *commands* and menus are displayed in a *menu bar* at top of the screen.
- Selecting a menu item displays a *pull-down menu* which displays more *commands* or *options*.
- One of the commands on menu bar is **Help** that provides features like table of contents, a keyword index and a search feature to locate information needed.
- **Toolbars** are below the menu bar containing *buttons* and *menus* that provide quick access or *shortcuts* to commonly used commands.
- Most common toolbars are *standard* and *formatting*.

C.Browsers

- **Browsers** connect to Web sites and display Web pages, open and transfer files, and display text and images.
- Two most widely used browsers are Microsoft's Internet Explorer and Netscape's Navigator.

Features

- To connect to other resources, the location, or address, called Uniform Resource Locator (URLs) or Web site addresses must be specified.
- A web site has a file that contains **Hypertext Markup Language (HTML)** commands that is interpreted by the browser to display the Web page.
- The first page, referred to as **Home page**, contains information about the site and **hyperlinks** that connect to other documents or pages.

D.Word processors

- Word processing software is used to create text-based documents.
- Used to create and edit documents such as memos, letters, faxes, newsletters, manuals, brochures, and reports
- Common word processing programs include Microsoft Word, Corel Word Perfect, and Lotus Word Pro

Features

- Word wrap: automatically begins a new line of text once the current line is full
- **Editing**: allows the user to make and track changes to a document
- **Indent**: you can indent paragraph to set them off from rest of the document.

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- **Page Margins**: the blank space around the edge of the page: top, bottom, left and right.
- **Thesaurus**: provides synonyms and antonyms and related words
- Search or Find and replace: replaces a series of selected words or phrases
- **Spelling** and **grammar** checkers identifies misspelled words and incorrect grammar and proposes corrections.
- AutoText and AutoComplete: anticipate commonly used phrases and insert them upon request.
- AutoCorrect: identifies basic typing errors and automatically corrects them
- Format: changes the style of characters, paragraphs, and whole documents
- Font: also commonly referred to as a typeface is the *design* of a character
- Font size: the height and width of the character measured in "points"
- **Alignment**: how text is positioned on a line between the margins or indents. There are four types of paragraph alignment: left, center, right, and justified.
- Character effects including Bold, Italic, Colors
- **Bullets** and **numbered** lists to organize and make writing easy to read.

E.Spreadsheets

- Spreadsheets are used to organize, analyze, and graph numeric data
- Common uses for spreadsheets include planning and tracking budgets, consolidating financial reports, recording grades & calculating GPA, analyzing sales trends, evaluating and graphing stock market trends
- Common spreadsheet programs include Microsoft Excel, Corel Quattro Pro, and Lotus 1-2-3

Features

- Data and information is stored in workbook that can consists of one or more related worksheets (spreadsheets or sheets)
- Worksheet is a rectangular grid of rows & columns
- The intersection of a row & column is called a cell and information is entered into cells.
- Columns are identified by *letters* and rows are identified by *numbers*.
- For example, cell A7 is formed by intersection of column A and row 7.
- Cells may contain text entries or labels, numeric entries, and/or formulas and functions
- A group of cells is called a range.
- Formulas are instructions for calculations that use numbers in referenced cells.
- For example, the formula A25 B12 means to subtract the value in cell B12 from the value in cell A25.
- **Functions** are prewritten formulas that do calculations automatically.
- For example, =SUM(C10:C20) adds all the values in the range or series of cells C10 to C20.
- Spreadsheets are useful for creating analytic graphs or charts like pie chart, bar chart, or line graph.

If you change values in one or more cells of your worksheet, all related formulas will recalculate automatically. This is useful for performing **what-if analysis**, e.g. What if sales increase by 10% - what will happen to profits?

F.Database management systems

- A database manager *organizes* a *related collection of data* so that information can be retrieved easily.
- A database is a collection of related data.
- A **Database Management System (DBMS)** is a program that structures or sets up the database. It also provides tools to enter, edit, retrieve data from database.
- Relational database is most widely used database structure.
- Data is organized into related tables.
- Tables are made up of rows called records, each containing a number of columns called fields.
- For example, in a table containing information on employees, a record would contain fields of data such as person's last name, first name, and street address.
- Uses for DBMS include: teachers recording grades, police officers checking criminal histories, universities keeping student records, and organizations maintaining employee databases
- Common desktop DBMS programs include Microsoft Access, Corel Paradox, and Lotus Approach

Features

- A basic feature of all database programs is the capability to **locate** and **display** just the needed information from the tables of data.
- DBMS Tools include those for sorting, analyzing data using built-in formulas, building queries (questions or requests for specific data), making forms (giving users the ability to enter or change data one record at a time), and creating reports (typically used to list many records on the screen or paper)
- Also most database management programs include a **programming control** language to create sophisticate applications. One such language is **structured** query language (SOL).
- **Primary key**: a filed that uniquely identifies each record.
- **Field**: smallest unit of information about a record and is stored in a tables' column.
- **Record**: contains all the information about one person, thing, or place.
- **Form**: displays a record on screen making it easy to enter new records or to modify existing records.
- **Report**: printed output generated from tables or queries.
- **Sort**: rearrange a table's records in different orders.
- **Query**: a request for particular data contained in database. Queries can retrieve data from single or multiple tables.
- **Join**: association or link between a field in one table or query and a field in another table or query.

G.Presentation graphics

- Presentation graphic programs combine visual objects to create interesting and professional presentation for communicating a message
- Common programs include Microsoft PowerPoint, Corel Presentations, and Lotus Freelance Graphics

Features

- Layout files: include sample text for many different types of presentations.
- **Template**: a file that include predefined settings that can be used to create many common types of presentations. These settings can be about title placement, size of fonts, bullet styles, background design and color, patterns, borders etc.
- **Animations**: include special visual and sound effects like moving pictures and transitions between presentations, record and play voice.
- Slides: may include text, clip art, photos, sounds, any multimedia message
- AutoContent Wizard: takes you through the process of creating a presentation
- Master Slide: a special slide that controls the format and placement of all slides in a presentation

H.Software suites

- A **Software suite** is a group of application programs.
- The main advantage is they are *less expensive* than buying each individual application separately and the applications work exactly the same whether purchased in a suite or separately.
- **Microsoft Office** is the most popular software suite which is available in many versions that includes Word, Excel, Access, and Powerpoint.
- Other software Suites are Corel WordPerfect OfficeSuite, Lotus SmartSuite

Object Linking and Embedding (OLE):

- a most powerful feature of many application programs that can be used to share information or objects between files created in *different applications*
- For example, a chart created in Excel can also be used in Word document.
- With **object linking** a *copy* of the object from the **source file** (file where it was created) is inserted into **destination file** (the file receiving the object) and a **link** or **connection** between the two files is established.
- If the object is changed in source file, it is automatically updated in destination file also.
- With **object embedding**, the object from the source file is embedded or *added* to destination file and becomes part of the destination file and the changes can be made to the embedded object by opening it using the source application, but those changes are not made to the object in the source file.

I.Integrated packages

- Integrated software is an *all-in-one* application program.
- An Integrated package is a *single program* that provides the functionality of a word processor, spreadsheet, database management and more.
- The main disadvantage of an integrated package is the capabilities of each function *not as extensive* as stand alone packages.
- However, the main advantage is they are *cheaper* than software suites or individual application and are easier to use.
- They are typically found on low end PCs, popular with home users.
- Common programs include Microsoft Works and AppleWorks

J.Key Terms

analytical graph aka chart, a graphical display of numeric data in a spreadsheet, e.g. a pie chart, line graph, etc. special web sites that allow users to access common applications via the web application service providers **ASPs** application software one of the main categories of software, includes basic and special purpose programs utilized by end users AutoContent wizard presentation graphics feature that guides you through the process of creating a presentation aka general purpose applications, these include such things as word processors, spreadsheets, DBMS, and basic applications presentation graphics bulleted list list of items in a word processed document with small marks to make them easy to read aka Productivity suite; group of fully functional basic application software, e.g. Microsoft Office Suite contains business suite Word, Excel, and PowerPoint button a special place you can click on to navigate to a location, or perform an action in an application cell the intersection of a row and column on a spreadsheet - you can enter text, numbers, or formulas into it character effect changing the look of a typed character by boldfacing, italicizing, or changing it's color aka analytic graph, a graphical display of numeric data in a spreadsheet, e.g. a pie chart, line graph, etc. chart column all the cells in a vertical group in a spreadsheet, e.g. column A, column IV a collection of related data, e.g. a relational database, a hierarchical database database **DBMS** database management system a method to create and modify databases, e.g. Microsoft Access is a relational DBMS for desktop computers aka DBMS; a method to create and modify databases, e.g. Microsoft Access is a relational DBMS for desktop

database manager
destination file
the file or location that receives some copied data
dialog box
display additional options, or allow a user to provide additional input into an application

document an electronic file, typically produced by a word processor, such as a memo, letter, report, etc.

drop-down menu a list of options or commands associated with a selected menu

editing modifying the contents of a file or document

field an attribute in a database such as student name, student GPA - a column in a spreadsheet

find and replace changing several occurrences of an item several places within one document

font the design of a character, e.g. Arial or Times New Roman

font size the size of a character measured in points, e.g. an 8 point font, a 10 point font, etc.

form allow a user to create and edit one record in a database

format the appearance of a document, e.g. the style of characters, paragraphs, etc.

formula an expression to perform a calculation in a spreadsheet

graphics

function a "pre-built" formula in a spreadsheet, e.g. =AVERAGE() function

aka basic applications, these include such things as word processors, spreadsheets, DBMS, and presentation

general-purpose application

grammar checker feature in a word processor that verifies the capitalization, punctuation, and sentence structure

way for an end user to interact with computer software, typically contains icons, buttons, etc. that you can clic

with a mouse

graphical user interface Help

home suite

sort

a place to get additional information about an application

home software aka personal software; programs that someone might use at home rather than in a business

aka personal suite; contains personal software for home rather than business use, e.g. Works + Calendar, etc. icons graphic images that represent an application

GUI

a single program that provides some of the functionality of several basic applications at a low cost integrated package

label a text entry in a spreadsheet cell, consisting of alphanumeric characters

master slide an "un-displayed" slide that controls the format of all the other slides in a presentation

menu a list or group of buttons for a particular application

menu bar a group of menu items

numbered list list of items in a word processed document with numbers to make them easy to read

entering numbers or numeric formats in a spreadsheet cell numeric entry

object embedding dynamic copying of data so the destination can edit the results in place dynamic copying of data so the destination reflects any changes to the source object linking

OLE object linking and embedding a feature for making dynamic copies of data from one file/location to another

personal software aka home software; programs that someone might use at home rather than in a business

personal suite aka home suite; contains personal software for home rather than business use, e.g. Works + Calendar, etc.

pointer the cursor for a mouse as it appears on the screen

presentation graphic a type of software program that allows you to create and edit electronic slides for conveying a message

aka general purpose applications, these include such things as word processors, spreadsheets, DBMS, and productivity applications

aka Business suite; group of fully functional basic application software, e.g. Microsoft Office Suite contains productivity suite

Word, Excel, and PowerPoint

pull-down menu additional menu choices that appear when the main menu item is chosen

a question or request for specific information from a database, e.g. a query to pull all records where sales >

50,000 auerv

range a group of cells in a spreadsheet, e.g. range of cells B1:C15

feature to automatically re-compute all the formulas in a spreadsheet recalculation

record a group of related field values, e.g. a customer record - synonymous to a row in a spreadsheet

particular structure of a database using related Tables of data such as a customer table, a product table, an

relational database order table

the output of many records from one or more database tables report

all the cells in a horizontal group in a spreadsheet, e.g. row 1, row 65536 row

sheet aka spreadsheet; a 2-D set of cells in a spreadsheet, consisting of rows and columns of cells

slide one part of a larger presentation graphic file, which can contain multimedia data to display some content

software suite generic term for a collection of separate application programs bundled to be sold at a lower cost

the ability to re-sequence a series of records based on a particular field value, e.g. sort customers by their zip

source file the file or location where you copy some data from

specialized application aka special-purpose applications - specific, occupation oriented software such as video and audio editing tool

specialized suite group of specialized applications, e.g. a graphics suite or financial planning suite

special-purpose application aka specialized applications - specific, occupation oriented software such as video and audio editing tools

speech recognition gives you the ability to use speech for controlling menu options and/or dictating text

spelling checker feature in a word processor to correct the spelling in a document

spreadsheet aka sheet; a 2-D set of cells in a spreadsheet, consisting of rows and columns of cells

standard toolbar contains buttons for File Open, Save, Print, etc. in a Microsoft application

system software on e of the main categories of software, includes operating systems, etc. to keep the computer running

a group of related records, such as a student table, a course table, and a faculty table table

a label in a spreadsheet cell, consisting of alphanumeric characters text entry Thesaurus feature in a word processor to help find synonyms and antonyms

toolbar group of common buttons, e.g. format toolbar

user interface allows the user to interact with computer applications, typically character based or graphical user based

group of individual utility programs, e.g. Norton System Works utility suite

a common application such as a word processor that can be accessed via the web rather than just the client

spreadsheet feature to recalculate a number of different scenarios, e.g. what happens to profits if sales falls

Web-based application

what-if analysis

10%

window a rectangular area that displays an application or dialog box in a Microsoft Windows GUI

word processor software application to create electronic documents such as letters, memos, etc.

word wrap feature in a word processor so you don't need to hit a carriage return to go to the next line

workbook file a collection of several sheets in a spreadsheet document

worksheet aka sheet; a 2-D set of cells in a spreadsheet, consisting of rows and columns of cells

K.Chapter Review

1.Crossword

a)Across

Database Manager **DBMS RANGE** Series of cells

OLE Dynamically shares data between files

DATABASE Collection of related data

SOFTWARESUITE Collection of individual applications

TOOLBAR Contain buttons and menus (note: mistake on 10 down)

QUERY Question or request for data in a database **DOCUMENT** Flyer, report, newsletter, Web page

HELP Menu that provides access to online assistance

b)Down

DIALOGBOX Requests user input **TABLE** Has records and fields

CELL Formed by intersection of row and column

SORT Rearranges records using a field **MASTERSLIDE** Controls format and placement of slides

WIZARD Make up a presentation **MENU** List of commands

WINDOW Rectangular area that contains messages

WORDWRAP Moves insertion point to next line

2. Multiple Choice

1 C Basic applications	
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2	Α	Special-purpose applications
3	A	Functions
4	D	Tables
5	Α	Fields
6	В	Templates
7	С	Integrated package
8	Е	Business
9	В	Linked
10	Е	Source file

3.Matching

TERM	MATCH	NUMBER	HINT
general-purpose applications	E		Word processors are one type
Window	S		Area that contains a document, program, or message
Toolbar	Р		A feature that contains buttons
ASP	Α		Site that provides access to Web-based applications
Utility	Q		Type of suite that makes computing easier and safer
grammar checker	mar checker F Checks for problems with capitalization and punctuation		Checks for problems with capitalization and punctuation
integrated package G Includes the functionality of a word processor, spreadsheet, database manager, and n		Includes the functionality of a word processor, spreadsheet, database manager, and more	
word processor	processor T Software that creates text-based documents such as reports		
spelling checker	N		Identifies incorrectly spelled words and suggests alternatives
Find	Find C		Locates any character, word, or phrase in a document
Cell	В		The intersection of a row and a column in a spreadsheet
Range	J		A collection of two or more cells in a spreadsheet
Formulas	D		Instructions for calculations
what-if analysis	R		Spreadsheet feature in which changing one or more numbers results in automatic recalc
relational database	K		Database structure that organizes data into related tables
Sort	M		Arranging objects numerically or alphabetically
presentation graphics	1		Programs used to communicate a message or to persuade
Templates	0		Model presentations provided in a presentation graphics program
software suite	L		Individual application (programs) that are sold as a group
OLE	Н		Feature used to share information between applications

4.Open Ended

a) Explain the difference between general-purpose and special-purpose applications:

- General purpose are used by many users in many different professions
- Examples include word processing, spreadsheet, DBMS, and presentation graphics
- Special purpose are focus on a particular occupation or task
- Examples include video editing, etc.

b) What is the difference between a function and a formula? How is a formula related to what-if analysis?

- Functions and formulas are used in spreadsheets
- A function is a "built in" formula, e.g. =SUM() to total up a range of cells

• A formula is a function the user enters, e.g. =A3^B10 will raise the number in cell A3 to the B10 power

c) What are presentation graphics programs? How are they used?

- Presentation graphics programs are used to create a set of electronic, multimedia slides for conveying a message
- One of the most popular software packages is Microsoft PowerPoint

d)Explain the difference between a linked object and an embedded object? What are the advantages of OLE?

- A linked destination object reflects changes in the source
- An embedded object does not reflect the changes in the source, but allows the destination to be edited in place.
- OLE is a way to copy something and establish a dynamic rather than a static link

e) What is the difference between an integrated package and a software suite? What are the advantages and disadvantages of each?

 Integrated packages are cheaper, yet lack the full functionality of a software suite

II.Concept Check at a glance

A.Ch 3

1. What is the difference between basic and specialized applications?

a)Basic

- Typically used by every discipline and occupation
- Includes: Word processors, Spreadsheets, Database management systems, Presentation graphics

b)Specialized

- Narrowly focused on specific disciplines and occupations
- Includes: Graphics programs, Audio/video editors, etc.

2. What are Web-based applications?

- Typical applications are owned by users
- Web-based apps are "leased" from ASPs

Advantages: No upgrade hassles, Always available from Web

3.List some common features of application software

- Have a GUI to control access including: Icons, Pointers, and Windows
- Use menus to control functions
- Toolbars have common shortcuts for Opening, Saving and Printing files
- Speech recognition is found on newer versions

B.Ch 3

1.What do word processors do?

• They create text-based documents for such things as memos, letters, faxes, newsletters, brochures, reports, etc.

2.Describe editing features.

 Typical editing features include word wrap, a Thesaurus, find and replace features, spelling and grammar checking, etc.

3. Describe formatting features.

 Allow you to improve the appearance of the document by changing the font type and size, using character effects such as **boldfacing** and *italicizing* text, and adding bullets or numbered lists.

C.Ch 3

1. What are spreadsheets used for? What is a workbook? What is a worksheet?

- Spreadsheets are used to organize, analyze, and graph numeric data
- You can create budgets, grade reports, chart stock prices, etc.

2.Define cells, ranges, text, and numeric entries

- Cells: the intersection of a row and column in a worksheet
- Ranges: a series of continuous cells
- Text entries: describe the contents of rows and columns entered in a cell
- Numeric entries: can be a number or formula entered into a cell

3.Describe the following spreadsheet features: formulas, functions, charts, recalculation, and what-if analysis.

- Formulas: an instruction to calculate or process, e.g. =A4*B5
- Functions: a prewritten formula, e.g. =SUM()
- Charts: visual representation of data in a worksheet
- Recalculation: automatically re-compute the formulas in a worksheet
- What-if analysis: change one cell to see the results in other cells e.g. find the effect of a rent increase on a monthly budget

D.Ch 3

1. What is a database? What is a DBMS? A relational database?

- A database is a collection of related data.
- It is the electronic equivalent of a file cabinet
- A DBMS (Data Base Management System) is a program that sets up or structures, a database.
- A relational database is the most widely used database structure.
- It differs from other structures such as flat file systems, hierarchical databases or network databases in that it uses data that is organized into related tables.

2. What are records, tables and fields?

- A record is a row in a database table. For example, you might have a student database with a record for each unique student, or a customer database with a record for each unique customer.
- A table is a collection of records. For example, you might have a customer table, product table, supplier table, etc. in a database.
- A field is a column in a database table. For example, the student database would contain fields for name, address, major, GPA, etc.

3.Describe the following DBMS features: sort, query, and report.

- The sort feature allows you to rearrange the database records in order of a selected field, e.g. sort the student records by GPA in descending order.
- A query is a question or request for specific data contained in a database, e.g. a query to select all the students who have a GPA below 2.0.
- A report may look similar to a traditional printed report. They are typically used to display data from a table or several tables. For example, you might design a report to display student names and addresses from the student table.

E.Ch 3

1. What are presentation graphics programs? What are they used for?

- Presentation graphics programs combine a variety of visual objects to create attractive, visually interesting presentations.
- They are excellent tools to communicate a message and to persuade an audience
- Common programs are Microsoft PowerPoint, Corel Presentations, and Lotus Freelance Graphics

2. What are slides? What is a master slide?

- Slides are the electronic pages in a presentation. You can have slides that contain text, images, sounds, tables, etc. to convey the information you want to present.
- A master slide can control the format of all the slides in a presentation.

3. What is the AutoContent Wizard? What is it used for?

- The AutoContent Wizard is used in Microsoft PowerPoint to step you through the process of creating a presentation.
- It provides you with hints for structuring the presentation, as well as for including specific content on each slide.
- Examples of content include: recommending a strategy, communicating bad news, training, etc.

F.Ch 3

1. What is an integrated package?

- An integrated package is a single program that provides the functionality of a word processor, spreadsheet, database manager, and more.
- An example would include Microsoft Works.

2.Describe the advantages and disadvantages of an integrated package.

- The key advantages of an integrated package are they are inexpensive, and they are generally simple to use.
- The key disadvantage of an integrated package is that they lack the capabilities of each component included in the package, e.g. they lack the full power of the word processor, spreadsheet, etc.

G.Ch 3

1. What is a software suite? What are the advantages to purchasing a suite?

- A software suite is a collection of separate application programs bundled together and sold as a group.
- They typically include word processing, spreadsheet, database management and presentation graphics applications.
- They differ from integrated packages in that they have "fully functioning" components, and they typically cost more.

2. What are the four types of software suites?

 Productivity suites: also known as business suites, such as Microsoft Office.

- Personal suites: also known as home suites contain personal applications for home use, such as Microsoft Works bundled with Calendar and Streets&Trips.
- Specialized suites focus on specialized applications, such as a financial planning suite.
- Utility suite designed to make computing safer and easier, such as Norton's System Works or their Internet Security Suite.

3. What is the best-known productivity suite? What is the best-known personal suite?

- The best-known productivity suite is Microsoft Office.
- The best-known personal suite is Microsoft Works Suite.

H.Ch 3

1.Discuss three ways to share data between applications.

- Three common ways to share data include:
- Copy and Paste it is a static copy: if you change the source, the destination is not affected.
- Object linking keeps a link with the source if you change it, it will change the destination. This is good to use if you have a spreadsheet linked to a word processing report. If you change the spreadsheet data, it will automatically be updated in the report.
- Object embedding the source is copied into the destination, and you can
 manipulate the data in the destination by clicking on it. This is good if
 you don't need the destination to reflect the original source data, and you
 want to be able to manipulate it.

2. What are OLE, source files, and destination files?

- OLE is the acronym for Object Linking and Embedding.
- The source file is the original file that you copy the data from.
- The destination file is where you put the source.

3. What is the difference between object linking and object embedding?

- See the definition above.
- This would be a good place for an example. Open a word processor and spreadsheet program.
- In the spreadsheet, enter a small table of data, e.g. Sales 5000, Expenses 3000, and Profits (sales expenses).
- In the word processor, make three entries: this is copy and pasted info, this is linked info, and this is embedded info. Then make these three types of copies from the spreadsheet to the word processing program. Finally, change the data in the spreadsheet, and show how it affects the word processing document.

• Example:

Copy & Paste

Sales \$ 5,000 Expenses \$ 3,000 Profits \$ 2,000

• Linked data Error! Not a valid link.

	Sales	\$ 5,000
	Expenses	\$ 3,000
Embedded data	Profits	\$ 2,000