



## Unit 4 Discussion Topics

### Discussion Topic#1

David Delegate, the chief architect at the company where you are the new systems analyst, bursts into your office with sweat on his brow, "I think we lost the last contract because the information I needed was buried in a stack of paper on someone's desk!"

"And, good morning to you too, David," you respond.

David wipes his forehead, sits down and sips his Buckstar coffee. "What I need is instant information about how much a building with that square footage cost the last time we bid it; what the basic materials such as steel, glass, and concrete now cost from our three top suppliers; who our likely competition on this type of building might be and who comprises the committee that will be making the final decision on who gets the bid. Right now, it is in a hundred reports somewhere. I have to look all over for it."

1. Make a list of five to seven questions concerning the output's function in the organization that you would ask David and others before deciding to do away with any printed reports currently being used.
2. After forming the questions in #1 and given the limited details you have here, write a paragraph to suggest an output method for David's use that will solve some of his current problems. In a second paragraph, explain your reasons for choosing the output method you did. (Hint: Be sure to relate output method to output content in your answer.)

**David, I can fix that for you. Edward Jackson Email this Author 3/1/2014 2:43:46 PM**

My questions to David would be:

What does he do with this information?

- I ask this because I want to know the relevance and whether this should receive immediate attention.

What group of people needs access to this information?

- I ask this to see what the scope of access is. If it is only a couple of people, perhaps simple printing is the way to go. If it is a lot of people, I would suggest moving to electronic and using displays for output.



Does this information need to be secured?

- I ask this to see if security would be an issue. If security is an issue, that will have to be factored into the output solution. Perhaps, a username and password would be required to access the information.

Would this information be better accessed via printer, display screen, audio, CD-r/DVD-R, or web site?

- I honestly just want to know what he thinks would be the best method for information delivery. I like to listen to the needs of those using the technology.

How many times a day would the information need to be accessed, displayed, or printed?

- I ask this because I want to know would there be cost savings associated with staying with paper, or moving to the digital medium. If the information is accessed multiple times a day, it stands to reason a digital solution would be more practical.

After reviewing my questions and David's answers, I believe a display output system would be the most efficient and effective method for delivering building information. A fully electronic system would solve the problem that David reported. David would have instant access to building information via a display terminal, thus he would not lose contracts because he could not access the appropriate information quickly. Kendall and Kendall (2011) suggest that display screens are "interactive, online, quiet, and good for information that is accessed frequently" (Kendall & Kendall, 2011, p. 332). On a professional level, and having to deal with printers most of my 20 year career, I do not like printers. They do breakdown (quite a bit actually). Printers also have constant maintenance fees such as toner, rollers, and you have to pay for tech support. I know on page 332 of our text it says printers are affordable for most organizations, I would argue that point. The larger the company, the less affordable maintaining printers becomes. I prefer display output systems that use monitors, TVs, LCD screens, etc.

I would also like to point out printers have a tendency to be abused...as in employees printing off books at work (or other non-work material). If I have seen it once, I have seen it a thousand times, where I had to go to a printer to fix it and there was a stack of pictures, recipes, or a printed eBook (kind of defeats the purpose of an eBook). There are also huge security implications with using printers. Once the information is printed, it can easily walk out the door; not good. The best solution for David is to make

the information electronic through and through. If it needs to be secured, credentials can be required. If large groups of people will need access, this can be controlled via role-based security provisioning in Active Directory, or other user management software.

Reference:

Kendall, Kenneth. E., & Kendall, Julie. E. (2011). *Systems Analysis and Design Eighth Edition* Prentice Hall.



**RE: Week 4 DB 1**

**Edward Jackson Email this Author**

**3/1/2014 5:53:34 PM**

You are right; the display method would provide immediate information to David (and other users). David's main problem, which lost the company the contract, was that there "was" information----it just was sitting on someone else's desk. A fully electronic system, where the information was typed into a database, could be queried or accessed by those with proper access, and would provide nearly real-time availability; as soon as it gets put into the system, it will be accessible. There will be no need to go hunting for a printout...or another person. Honestly, I do not like printers, due to a long list of issues. The number one issue is probably cost. Printers can really drain a department's budget, especially if that printer is malfunctioning or requires expensive administration fees. The number two reason would be security; once a document has been printed, it can literally walk out the door undetected.



**RE: Discussion 1 - Chris Bailey Edward Jackson Email this Author 3/2/2014 1:30:55 PM**

You made a good case for using the display output method. Display output allows for ease of use and convenience, but also does not negate the use of printing. If someone needs a hardcopy, that option can be added to the system. I also like the fact that David will not have to depend upon another person to deliver the information to him. If security ever was concern, making the process fully electronic allows the info sec team to track the access, usage, and even printouts much easier. I am not a big fan of printers, so the display output methods seems to be the most efficient way to first enter the data, and then to display that data to the end-user.

## **Discussion Topic #2**

Discuss the guidelines for creating good eCommerce websites. List guidelines for using graphics in designing websites. Be sure to include information about good display and web forms design.

**Mark as Unread RE: Best foot forward Edward Jackson Email this Author 3/1/2014 5:24:39 PM**

From the very beginning of the graphical web, I have been dabbling in web design, though I really would not call myself a web designer. According to Kendall and Kendall (2011), there are numerous design elements that must be thought about when designing a web site---such as having a feedback button, easy navigation, the way the content is presented, font types, colors, layouts, appropriate graphics, and factoring-in user input (Kendall & Kendall, 2011). The communication at the website must also be clear and meaningful.

### **The guidelines for using graphics are:**

The graphic should be relative to the content. Posting graphics that do not make sense, or that are inappropriate can confuse the user and are not professional.

The graphic should have a roll-over description to provide the exact meaning. If graphics have labels, they can provide extra information to the user, especially in the case where the graphic has an embedded hyperlink.



Graphics should also be small enough to allow the page to load in an acceptable timeframe. If a page takes minutes to load, the user could just go to another site.

Graphics should also be professional, thus size, color, and relevance should always be considered.

Do not use watermarked graphics, as this just adds to the clutter on the web page.

Do not use animation just to use it; animation should serve a purpose, or make a point.

(Nielsen, Jakob, 2001)

**The guidelines for presenting displays and web forms are:**

Always remember to keep the design simple and minimalistic. Maintaining a simple design will insure users do not confused about the usage of the form (thus, they are more likely to complete and submit the form).

Also, offering a level of consistency throughout the form, as well as the site, will allow users to quickly orient themselves with the form, which will result in a higher rate of usage (and collection of data).

Another great guideline to remember while designing web forms is navigation and movement. By creating a form that is easily navigable, and provides well-known or common ways to move between the forms, you are providing the user with the very best interface to complete the form.

One final guideline is to make the form look nice. Just because the form is to be simple in design, does not mean it cannot be attractive.

\* There is something important to remember about displays and forms (and the whole web site): you want the user to have an enjoyable experience, so that perhaps this will compel them to want to use the process over and over again; you want them to come back.

(Kendall & Kendall, 2011)

I have seen web designers use arrows, hyperlinks, and even graphics (with the navigation terms inside them) to move between forms (and web pages). I would like to point out, a web page or web site is a direct reflection of the company thereof. I find it hard to believe that many organizations are still using 1990's technology, but they are. One of the very first things I look at when a company contacts me trying to sell me software or hardware (or other solutions), is that I go to their web site. I have come across numerous sites that look like they were made in MS Word.

References:

Kendall, Kenneth. E., & Kendall, Julie. E. (2011). Systems Analysis and Design Eighth Edition Prentice Hall.

Nielsen, Jakob. (10/31/2001). 113 Design Guidelines for Homepage Usability. Retrieved from <http://www.nngroup.com/articles/113-design-guidelines-homepage-usability/>



**"MY BRAND HAS AN ESTABLISHED PLACE IN THE INDUSTRY.  
UNFORTUNATELY, IT'S AT THE BOTTOM."**

[http://eddiejackson.net/web\\_images/mybrand.jpg](http://eddiejackson.net/web_images/mybrand.jpg)

I have also tried my hand at web designing, though I really never officially became a web designer. I have mostly done development for friends and family and of course myself. After reading the rules from the text, much of applies to pretty much any web site. I will say this, if you are an artist, musician, or some other creative person, I have seen web sites not quite adhere to standards. I have also seen web design, the non-professional, non-corporate sites, go way outside the box; they barely follow any of the rules at all. You can see what I mean by going to <http://coolhomepages.com/>. Many of the sites listed there really force the users to think creatively, and navigate the sites in weird and interesting ways. I do



like many of the sites there; however, I really would not consider them professional...not in the business sense.

The web design technology has always fascinated me, but I am just so involved in my own career to stay abreast in the cutting-edge techniques and design. I thought I was special last year when I learned WordPress, Drupal, and Joomla!.

**RE: Joseph's Discussion 2 Edward Jackson Email this Author 3/2/2014 1:58:17 PM**

You have quite a thorough post! You listed most of the rules that eCommerce web administrators and designers should follow. I particularly can relate to designing attractive sites that make the user want to come back. I have seen too many business sites that were either too plain, or just not laid out well. Poor design can deter users. Great web design (that is continually being updated) shows the user that some thought went into site, and can influence their decision to continue using the services offered by the site. Good examples of this can be seen at eBay and Amazon. You can tell a lot of thought went into the layout and design. They have simple, but effective navigation. They have feedback areas, as well as real-time comment sections. I use these sites regularly because of their layouts.

Outcomes addressed in this activity:

- Determine the elements of object-oriented systems analysis and design using UML
- Demonstrate the importance of user feedback
- Describe display input and output
- Construct an Class Diagram

Course Outcome:

- IT510-1 Identify system analysis methodologies and techniques
- IT510-2 Analyze the system requirements

Instructions:



For this assignment, you will modify and submit the COMPUTER CLASS diagram (source files located in Visio and PDF formats in Doc Sharing).

Following the case, you will need to:

1. Identify the classes.
2. Develop a list of attributes for each of the classes.
3. Draw a class diagram and document the methods with the appropriate cardinality and modality.

Modify the COMPUTER class diagram. Each computer may have one or more operating systems installed.

1. Move the Operating System class to the right of its current location and add a new class called Computer Operating System below the Computer class.
2. Change the connecting line from Computer to Operating System to connect the Operating System class to the Computer Operating System class.
3. Add a new relationship between the Computer class (the one end) to the Computer Operating System class (the many end).
4. Add the following attributes to the Computer Operating System class:  
HardwareInventoryNumber operatingSystemCode

## **Seminar**

In this session, we will explore object-oriented analysis and design, and Unified Modeling language models, and effective input/output. Come prepared, having read Chapter's 10, 11, and 12, to answer the following questions:

**Remember, if you do not participate in the weekly Seminar, to complete the Flexible Learning Activity Assignment.**

### **Unit 4 FLA Assignment:**

Review the PowerPoint presentation for seminar 4 and the required reading for this unit.  
[Read Object Modeling with UML.](#)





**Answer the following questions:**

1. What are the differences between OO analysis and OO design?
2. Discuss the benefits of having models?
3. How has the Object Management Group (OMG) contributed to the updating the OO systems analysis and design process?
4. In general, modeling methods can be described in four separate dimensions. List and define those dimensions.
5. Define the following generic UML facilities:
  - a. Notes
  - b. Stereotypes
  - c. Types vs. instances
  - d. Constraints
  - e. Tagged values
  - f. packages

The paper must be written in APA format and include at least one direct quote from the resources with proper citation and reference.

Submit your completed paper to the Unit 4 Seminar Dropbox by the end of Unit 4.

## **The Essentials of Design Part I**

In Unit 4, you will learn about designing effective input and output, along with designing efficient databases.

We will look at the various elements of the design process in regards to developing forms, displays, and Web-based forms that will be used to gather end-user input. You will learn the importance of developing interfaces that promote accuracy, user-friendly operation, simplicity, and attractiveness.

### **Outcomes**

**After completing this unit, you should be able to:**



- Determine the elements of a professional and effective systems proposal, incorporating figures and graphs
- Demonstrate the importance of user feedback
- Describe display input and output
- Construct an Entity Relationship Diagram

### **Course outcomes practiced in this unit:**

IT510-1: Identify system analysis methodologies and techniques.

IT510-3: Design functional models

### **What do you have to do in this unit?**

- **Complete assigned Reading**
- **Respond to the Discussion Board**
- **Complete the Unit 4 Assignment**
- **Participate in Seminar or complete alternate assignment**

### **Read Kendall & Kendall text chapters:**

#### **Chapter 10: Preparing the Systems Proposal**

In Chapter 10, you will learn about object-oriented systems analysis and design using Uniform Modeling Language (UML). This language is standardized by the Object Management Group (OMG). Find out more at: [omg.org](http://omg.org).

The systems analyst must use systematic methods for acquiring hardware and software, identify and forecast future costs and benefits, and perform a cost-benefit analysis.

#### **Chapter 11: Designing Effective Output**

Chapter 11 discusses the importance of effective output design. Output is information delivered to users through information systems by the way of intranets, extranets, or the World Wide Web. Users rely on output to accomplish their tasks, and they often judge the merit of the system solely by its output.



## Chapter 12: Designing Effective Input

Chapter 12 focuses on the importance of designing effective input. The quality of the system input determines the quality of system output. It is critical that this relationship is kept in mind when designing input forms, displays, and interactive Web documents.

### Chapter 10

With regards to output, you will be introduced to many objectives for consideration. You will learn about the importance of designing output that is intended for the needed purpose, providing the right quantity of output to the end-user, providing the end-user with output in a timely manner, and, among other considerations, making sure the right output method or technology is used.

How to actually store the data we are getting (input) and returning this data to end-users (output) will require the use of database technology. You will be introduced to a comparison of data storage methods and introduced to many database concepts. Some of these concepts include the basic structure of all databases, how some of these structures (tables) can relate to each other, and how they are normalized.

Within the discussion of databases, it should be imperative to mention the concept that you are learning is merely the technical processes of storing and retrieving data, which will be illustrated in your readings through an eight-step process.

Output technologies differ in their accessibility, cost, durability, distribution, flexibility, transportability, and storage and retrieval possibilities. Electronic output includes fax, email, the World Wide Web, and bulletin board messages.

Pull technology allows the user to take formatted data from the Web. Push technology sends solicited or unsolicited information to a customer or client.

The system analyst should design output to serve the intended purpose, be meaningful to the user, deliver the right quantity of output, deliver it to the right place, provide output on time, and choose the right output method.

Analysts must be aware of sources of output bias, interact with users to design output, inform users of the possibilities of bias in output, create flexible and modifiable output, and train users to use multiple outputs to help verify the accuracy of reports.

General Guidelines for Designing Web Sites

Guidelines for display design are to keep the display simple, keep the presentation consistent, to facilitate user movement among displayed output, and to create an attractive and pleasing display.

There are many tools as well as examples that can guide you in designing Web sites.

Consult different Web design books. Some books on Web site design are:

- Flanders, V., and D. Peters. *Son of Web Pages That Suck: Learn Good Design by Looking at Bad Design*. Alameda, CA: Sybex, 2002.



- Pring, R. *www.type: Effective Typographic Design for the World Wide Web*. New York: Watson Guptill, 2000.

Look at Web sites you and other user's thing are engaging. Analyze what design elements are being used and see how they are functioning, then try to emulate what you see by creating prototype pages.

Critique poor Web pages and remember to avoid those mistakes. Examine the Web site found at [www.webpagesthatsuck.com](http://www.webpagesthatsuck.com)

Use professional tools to help you create Web sites. Using software such as Macromedia Dreamweaver will allow you to be more creative, and you will be able to view the pages as they are created.

When designing graphical output, the analyst must determine the purpose of the graph, the kind of data that need to be displayed, the audience, and the effects on the audience of different kinds of graphical output.

XML (extended markup language) may be transformed using cascading style sheets (CSS) or extensible style language transformations (XSLT) to create output. Cascading style sheet output may be designed for different types of output media, such as print, Web pages, or handheld devices. The quality of system input determines the quality of system output. To keep display screens simple, systems analysts may divide the screen into three sections: heading, body, and comments and instructions.

Displaying a few necessary basic commands using windows or hyperlinks is another way to keep screens simple. For the occasional user, only 50% of the screen should contain useful information. Window size may be maximized or minimized as needed. A context-sensitive menu is often used to display more options for the window. By displaying information in the same area or by grouping information logically, systems analysts can keep the screen consistent. To make it easy to move from one screen to another, systems analysts may use one of the following methods: scrolling the screen back and forth, using context-sensitive pop-up menus, and using onscreen dialogue.

Web pages may use hyperlinks to facilitate scrolling and screen movement. The three clicks rule says that users should be able to get to the screens they need within three mouse or keyboard clicks. To make the screen more attractive, systems analysts may use different thicknesses of separation lines between subcategories, inverse video and blinking cursors, icons that are pictorial, on-screen representations symbolizing computer actions, different combinations of colors, and different type fonts.

Icons are used in graphical screens to run programs and execute commands. Graphical User Interfaces (GUI) are used in conjunction with a mouse for making selections and



entering data.

Dynamic Web pages change themselves as the result of user action. By using JavaScript, a Web form may morph or change itself to add new fields or remove old fields, or change field attributes, such as the length of a field or a radio button changing into a check box.

Ajax involves using both JavaScript and XML to obtain small amounts of data, either plain text or XML, from a server without leaving the Web page.

This allows Web developers to build a Web page that works more like a traditional desktop program. As new data are needed, the browser sends a request to the server, and the server sends a small amount of data back to the browser, which updates the current page.

Tab control dialog boxes help organize GUI features (controls) for users. Each tab dialog box should have three basic buttons: OK, Cancel, and Help.

A new type of dialogue box has the look and feel of a Web page. Buttons are called places and are hyperlinked to items a user would wish to access.

There are two approaches to the storage of data in a computer-based system.

1. The first method is to store the data in individual files, each unique to a particular application.
2. The second approach to the storage of data in a computer-based system involves building a database, which is a formally defined and centrally controlled store of data intended for use in many different applications.

A file can be designed and built quite rapidly, and the concerns for data availability and security are minimized. Entities are objects or events for which data is collected and stored. An entity subtype represents data about an entity that may not be found on every record.

Relationships are associations between entities. They may be one-to-one, one-to-many, or many-to-many.

Relationships are shown with a either a zero on the relationship line (representing none), a small vertical line crossing the relationship line (representing one), or a crow's foot symbol, representing many.

A self-join is when a record has a relationship with another record on the same file.

Attributes are a characteristic of an entity, sometimes called a data item.

**Records** are a collection of data items that have something in common.

**Primary keys** based on an attribute are risky. If the attribute changes, the primary key would change. Some databases allow the developer to use an object identifier (OID), which uniquely identifies a record in the database regardless of the table on which it exists.

Files contain groups of records used to provide information for operations, planning, management, and decision making.

Files can be used for storing data for an indefinite period of time, or they can be used to store data



temporarily for a specific purpose.

## **Chapter 11**

### **SUMMARY**

Output is any useful information or data delivered by the information system or decision support system to the user. Output can take virtually any form, including print, display, audio, microforms, CD-ROMs or DVDs, and Web-based documents.

The systems analyst has six main objectives in designing output. They are to design output to serve the intended human and organizational purpose, to fit the user, to deliver the right quantity of output, to deliver it to the right place, to provide output on time, and to choose the right output method.

It is important that the analyst realize that output content is related to output method. Output of different technologies affects users in different ways. Output technologies also differ in their speed, cost, portability, flexibility, accessibility, and storage and retrieval possibilities. All these factors must be considered when deciding among print, display, audio, electronic, or Web-based output, or a combination of these.

The presentation of output can bias users in their interpretation of it. Analysts and users must be aware of the sources of bias. Analysts should interact with users to design and customize output; inform users of the possibilities of bias in output; create flexible and modifiable output; and train users to use multiple outputs to help verify the accuracy of any particular report.

Printed reports are designed with the use of computer-aided software design tools that feature form design templates and drag-and-drop interfaces. The data dictionary serves as the source for necessary data on each report.

Designing output for user displays is important, especially for DSS and the Web. Aesthetics and usefulness are critical when creating well-designed output for displays. It is important to produce prototypes of screens and Web documents that encourage users to interact with them and make changes where desired.

## **Chapter 12**

This chapter has covered elements of input design for forms, displays, and Web fill-in forms. Well-designed input should meet the goals of effectiveness, accuracy, ease of use, simplicity,



consistency, and attractiveness. Knowledge of many different design elements will allow the systems analyst to reach these goals.

The four guidelines for well-designed input forms are the following: (1) make forms easy to fill in, (2) ensure that forms meet the purpose for which they are designed, (3) design forms to ensure accurate completion, and (4) keep forms attractive.

Design of useful forms, displays, and Web fill-in forms overlaps in many important ways, but there are some distinctions. Displays show a cursor that continually orients the user. Displays often provide assistance with input, whereas with the exception of preprinted instructions, it may be difficult to get additional assistance with a form. Web-based documents have additional capabilities, such as embedded hyperlinks, context-sensitive help functions, and feedback forms, to correct input before final submission. Skins can be added as an option to personalize a Web site.

The four guidelines for well-designed displays are as follows: (1) keep the display simple, (2) keep the display presentation consistent, (3) facilitate user movement among display screens and pages, and (4) create an attractive and pleasing display. Many different design elements allow the systems analyst to meet these guidelines.

The proper flow of paper forms, display screens, and fill-in forms on the Web is important. Forms should group information logically into seven categories, and displays should be divided into three main sections. Captions on forms and displays can be varied, as can font types and the weights of lines dividing subcategories of information. Multiple-part forms are another way to ensure that forms meet their intended purposes. Designers can use windows, pop-ups, dialog boxes, and defaults onscreen to ensure the effectiveness of design.

Event-response charts help the analyst to document what should happen when events occur. Dynamic Web pages modify the Web page in response to events. These can be constructed as three-dimensional Web pages. Ajax techniques request and receive a small amount of data from the server and use the data to modify the Web page on the fly. Web fill-in forms should be constructed with the following seven guidelines in mind as well as those in Chapter 11:

1. Provide clear instructions.
2. Demonstrate a logical entry sequence for fill-in forms.
3. Use a variety of text boxes, push buttons, drop-down menus, check boxes, and radio buttons.
4. Provide a scrolling text box if you are uncertain about how much space users will need to respond to a question.
5. Prepare two basic buttons on every Web fill-in form: Submit and Clear Form.



6. If the form is lengthy and the users must scroll extensively, divide the form into several simpler forms on separate pages.

7. Create a feedback screen that highlights errors in an appropriate color and refuses submission of the form until mandatory fields are correctly filled in.