

**THE GAMES THAT PEOPLE PLAY!  
TWO ACTIVITIES TO LIGHTEN AND LIVEN AN AIS COURSE**

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By:

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## **THE GAMES THAT PEOPLE PLAY! TWO ACTIVITIES TO LIGHTEN AND LIVEN AN AIS COURSE**

### **Active Learning in Accounting Information Systems**

Games are becoming more popular in business and accounting courses as educators look for ways to promote active learning. I discuss two activities, in the form of games, which I have successfully incorporated into my Accounting Information Systems (“AIS”) course. I have witnessed greater student participation and advanced preparation when I employ these methods. Achieving greater student engagement is an especially daunting task in the Accounting Information Systems course because it is often one of the accounting major’s least favorite classes. Vatanasakdakul and Aoun (2011) cite numerous reasons why.

In Vatanasakdakul and Aoun’s (2011) paper titled, “Why don’t accounting students like AIS?” the authors discover that course structure, pre-existing knowledge of information systems, assessment of critical thinking, teaching style and the availability of academic assistance to students all significantly impact the students’ learning experience in Accounting Information Systems courses. In my experience teaching AIS, I have witnessed that the course structure and the level of technical knowledge make the students especially uncomfortable.

In the course, the nature of the material - conceptual rather than computational – can create uneasiness in accounting students who are used to classes with mathematical problems and computations. Moreover, without these computational problems to keep students engaged, the delivery of the material lends itself to more of a passive or traditional lecture-based approach.

Furthermore, most students have not been exposed to the wide range of content covered in an AIS class. Because of the complexity, diversity and volume of material covered in Accounting Information Systems courses (Dillon and Kruck 2008), preparation time can be great for AIS instructors. Class time tends to be precious as educators feel they must cover both accounting and information technology topics. Since instructors view traditional lectures as a low-cost, quick way of disseminating information to classes (Beegle and Coffee 1991), educators often default to lecture-based delivery.

However, our current student body, Millenials (born after 1980), insist on action-oriented learning (Faust et al. 2001). Studies show that students learn and retain more when students actively participate in problem-solving rather than passively absorbing information through lectures (Bligh 1972; Pascarella and Terenzini 1991; Hermanson 1994). Furthermore, Cook and Hazelwood (2002) point out that, by offering alternate teaching methods, students with different learning styles grasp the material better.

One learning activity that modifies the traditional lecture involves games. Hoffjan (2005) explains that instructors are increasingly using games in business courses because these games enhance the student’s ability to recall factual knowledge and require cooperation with other students. Accounting instructors have also recognized the usefulness of games. Murphy (2005) uses “Jeopardy!” in a government accounting course while Cook (1997) employs it when teaching revenue recognition concepts. Haywood, McMullen and Wygal (2004) use a Bingo game to demonstrate ethics and professionalism in several managerial and financial accounting

courses. Cook and Hazelwood (2002) successfully incorporate a derivation of “Who Wants to Be a Millionaire?” in a second semester accounting course. Cook and Hazelwood (2002) note that an added benefit to playing their game was that it created a relaxed atmosphere for their students.

The 2013 AACSB Standards also request active learning in the curriculum. From the AACSB website, it states that “curricula facilitate and encourage active student engagement in learning. In addition to time on task related to readings, course participation, knowledge development, projects, and assignments, students engage in experiential and active learning designed to improve skills and the application of knowledge in practice is expected.”

In this paper, I present two active learning approaches that instructors can easily embed into an AIS course. Neither of them requires significant preparation time or expense for the instructor, but the benefits can be everlasting when students look back and remember the “fun” they had while learning the material.

### **Family Feud (for Review)**

The first game mirrors the TV game show, “Family Feud.” I use this game as a review mechanism before tests. Accounting Information Systems is full of material about “lists” and this makes it easy to fit into the Family Feud format. I usually prepare 10-12 slides for each exam review, and this activity requires about 30 minutes of class time.

To simplify the game in class (in contrast to the actual game show), I do not assign points to each answer. In other words, each answer weighs the same. Using PowerPoint slides, I keep the slides in normal view (not slideshow view) so I can add the answers to the board as the class progresses through the game. I do not allow any open notes or books – students must recall the answers from memory. This forces them to start studying prior to the review session.

I first divide the class into two teams. I have class sizes that average 20 students and typically do not exceed 30 students. This makes it easy for teams to collaborate. If the class size is large, however, then I would suggest that the teacher pick volunteers to play the game at the front of the class while other students serve as the audience.

Two opposing team members face off to see which team will gain control of that question. The “buzzers” are call bells that I purchased at an office supply store. Just as in the original game, whoever buzzes first gains control of the game board.

For example, on my first test, I cover the topic of “Cloud Computing” and on the review, I ask, “What are the advantages of Cloud Computing?” The following screenshot shows the slide I created in PowerPoint.

[Insert Figure 1 here]

The person on one team that “buzzes” in (rings the bell) first provides an answer. For example, if that person chooses “Cost Savings,” as an answer, I type it into the PowerPoint slide as follows.

[Insert Figure 2 here]

That person then confers with his/her team whether to play the question or pass it to the other team. Whichever team plays the question, I only require that a total of five answers be revealed on the board – the initial response and four more. This allows for many review questions to be covered. Moreover, after the initial face-off, instead of the game requiring individual responses, I allow team members to collaborate and decide upon the next four answers.

When a team guesses an answer that is not on the board (or fails to respond within about a minute or so), it gets a “strike”; three strikes cause the team to relinquish control of the board. With three strikes, the other team gets the chance to steal by guessing one of the remaining answers. If that team guesses an answer correctly, it earns the point. If it does not, then no one gets the point. The point does not revert back to the other team (which differs from the original Family Feud.) I then reveal the remaining answers.

[Insert Figure 3 here]

When covering flowcharting symbols and acronyms (e.g., NFC = Near Field Communication) relating to systems, I use the “lightning” round. Here, I flash up individual slides with a symbol or acronym. I alternate between the teams – either asking individual team members or the teams to collectively answer. Here, usually four correct “lightning” round responses earn one point for the team.

[Insert Figure 4 here]

Some class teams become intensely competitive, but overall, there is a lot of laughter, and more importantly, realization of what the students do not yet know (and must study) for the test.

### **Scavenger Hunt (of the Inputs/Outputs of Business Processes)**

The scavenger hunt is an in-class opportunity (no students leave the room, to their chagrin) to “hunt” or locate source documents and reports related to the numerous business processes. Over the past three weeks, we have covered revenue, purchasing, fixed assets, human resources, conversion and financing cycles. This activity provides a nice summary of the relations between various forms and reports and the business processes. Students have also commented that it served as a helpful study tool for the test. However, this exercise also could be used as an introduction to business cycles or as a pre-test before one covers business processes or assigns a Systems Understanding Aid.

I prepare a comprehensive list of the various inputs and outputs covered in Excel and then alphabetize them so that those documents are not grouped in any particular order. I distribute a hard copy to the class of the following list.

[Insert Figure 5 here]

For this exercise, I do allow students to use books or notes, but not the internet. However, that would be up to the instructor’s discretion if he or she would like to add this type of resource.

I give students ten minutes to identify which document or report fits into a particular cycle. Obviously, certain inputs and outputs can be used in multiple cycles, and the students feverishly try to verify the appropriate cycle or cycles. After the time limit is up, students count up how many they found.

[Insert Figure 6 here]

We then go over them and they deduct points for any answers that were incorrectly labeled. From start to finish, this exercise usually requires about 30 minutes of class time.

### **Student Feedback**

I have been teaching Accounting Information Systems for the past five years and have had 15 different sections. Informally, students remarked on the effectiveness of these approaches through comments made in class and on teaching evaluations. However, I only began to formally assess their impact at the end of the Spring 2014 Semester through an anonymous, seven-question survey. Sixty-one students completed the survey on the Family Feud Game and 60 students on the Scavenger Hunt.

Question 1 was open-ended. Questions 2-6 required the students to rate their level of agreement/disagreement on various aspects of the exercises using an 11-point Likert Scale where -5 represented strong disagreement, +5 represented strong agreement. Question 7 asked the students to evaluate their interest in the approach by rating the game/activity as either poor, fair, good, very good or excellent.

Questions 2, 3 and 5 assessed the goal of enhancing student comprehension through active learning approaches. Questions 4 addressed how students viewed these approaches as compared to lecture-based delivery. Questions 6 asked about the students' perception of the efficiency of the approaches given the constraint of class time. These questions were:

1. What is your general reaction to the game?
2. The game/activity helped me to identify areas that I needed to study for the exam.
3. The game/activity enhanced my understanding of concepts and terminology covered on the exam. (Family Feud)

The activity enhanced my understanding of inputs and outputs of business processes.  
(Scavenger Hunt)

4. Compared to lecture-based delivery used to cover and review material, this game/activity was effective.
5. Compared to other active learning approaches (i.e., projects, cases, exercises) used to cover and review material, this game/activity was effective.

6. Employing this game/activity in class was an efficient use of class time.
7. How would you rate the game/activity overall?

In my experience with these activities, students became deeply engaged in the tasks at hand and the overall reaction has been extremely favorable. While a few responded that these approaches were “okay” or “so-so,” the majority of the students felt the exercises were beneficial and enjoyable. As shown in Table 1, 84% of the students rated the Family Feud Game as either “Excellent” or “Very Good,” while 65% ranked the Scavenger Hunt as either “Excellent” or “Very Good.” None of the students rated either as “Poor.”

[Insert Table 1 here]

Responses to Question 1 (General Reaction to Game/Activity) with respect to the Family Feud Game included: “Fun, definitely interactive and entertaining.” “I enjoy being active because I retain information better.” “Helped me see what I needed to study. Fun.” “Good to know what I need to study, but can be slow moving if we didn't look over the material beforehand.”

I witnessed similar reactions with the Scavenger Hunt with student comments such as: “Challenging and engaging.” “I did horrible on this, but afterwards, I really liked having it to study from.” “Helped me get more familiar with the processes and was a good study tool after.”

The evidence also suggested quite strongly that both of the activities help students to gain a better understanding of the material through active-learning methods. Responses to Questions 2, 3 and 5 resulted in means of 3.69 or higher. All means were statistically different from the neutral response of zero at  $p < .0001$  level. These findings were reinforced by the written responses above.

To assess the students' views on these games as compared to lecture-based delivery, the mean response was 3.85 ( $p < .0001$ ) for the Family Feud Game and 3.88 ( $p < .0001$ ) for the Scavenger Hunt, asserting that the students preferred the active method to traditional disseminations of material through lectures.

Student responses to Question 6, which addressed the efficiency of the Family Feud Game and Scavenger Hunt given class time, included means of 4.19 and 3.98, respectively. Again, these means are statistically different from the neutral response at  $p < .0001$  level.

[Insert Table 2 here]

## **Conclusion**

The paper describes two active learning approaches used in my Accounting Information Systems course: a Family Feud Review game and a scavenger hunt for inputs and outputs of business processes. While these exercises target specific course content, instructors could apply or expand on them to almost any setting where they want to infuse active learning. Students

benefit from the alternate delivery methods and cite that learning is enjoyable. Indeed, it is a “win-win” situation for all involved.

**Table 1**  
**Student Rating of Activities**

**Panel A: Family Feud: How would you rate this game overall?**

<b>Rating</b>	<b>Percentage</b>
Poor	-
Fair	3%
Good	13%
Very Good	49%
Excellent	35%
Total	100%

**Panel B: Scavenger Hunt: How would you rate this activity overall?**

Poor	-
Fair	3%
Good	32%
Very Good	40%
Excellent	25%
Total	100%

**Table 2**  
**Results of Debriefing Questions 2-6**

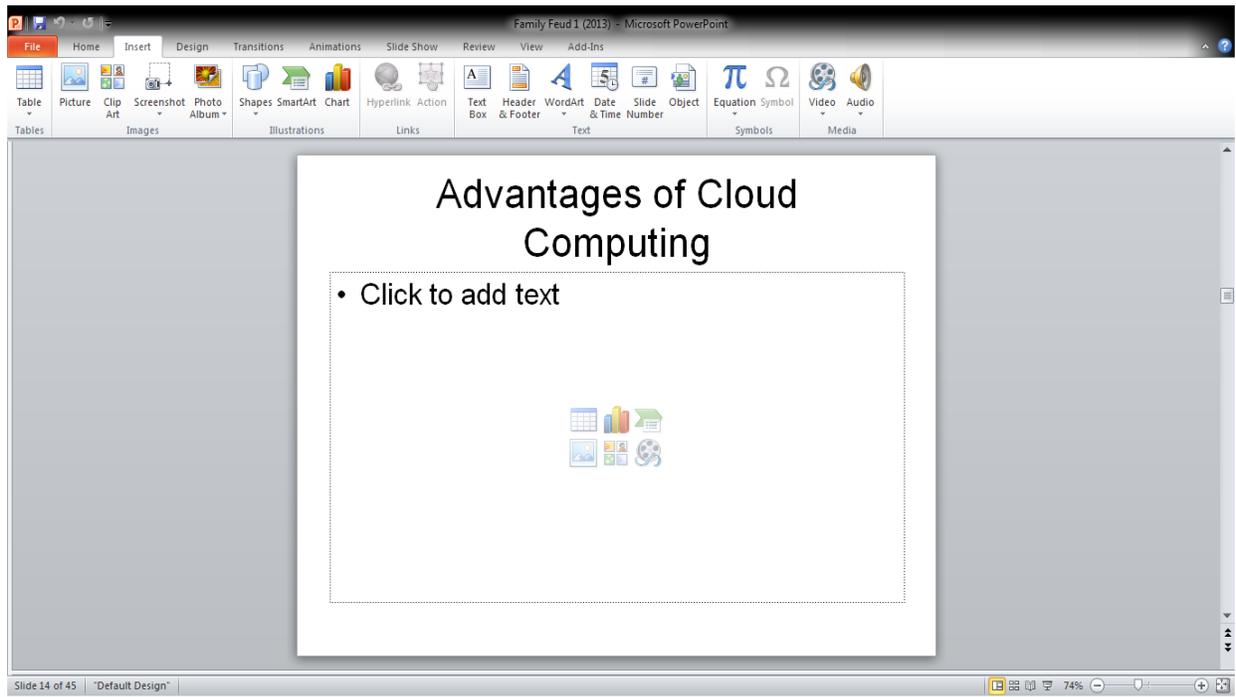
**Panel A: Results from Family Feud Review Game**

<b>Question #</b>	<b>N</b>	<b>Mean</b>	<b>Std Dev</b>	<b>t Value</b>	<b>p-value</b>
2. The game helped me to identify areas that I needed to study for the exam.	61	4.20	1.08	31.46	<.0001
3. The game enhanced my understanding of concepts and terminology covered on the exam.	61	3.69	2.41	18.56	<.0001
4. Compared to lecture-based delivery used to cover and review material, this game was effective.	61	3.85	2.24	20.12	<.0001
5. Compared to other active learning approaches (i.e., projects, cases, exercises) used to cover and review material, this game was effective.	61	3.75	2.70	17.85	<.0001
6. Employing this game in class was an efficient use of class time.	61	4.19	1.32	28.54	<.0001

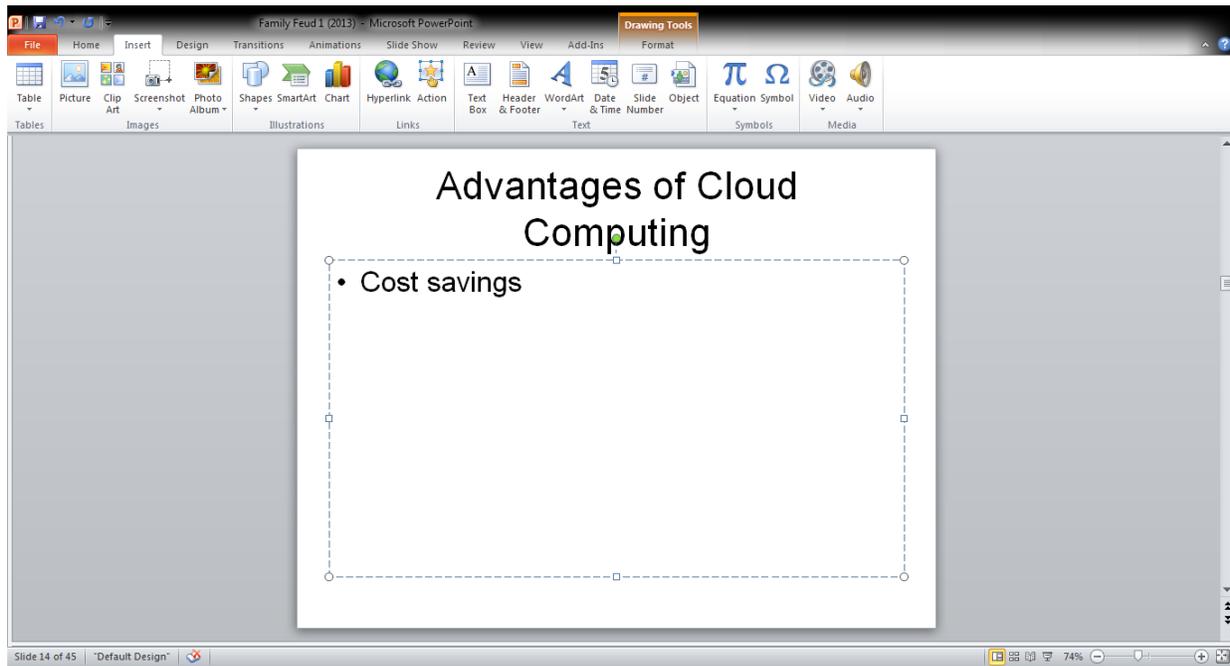
**Panel B: Results from Scavenger Hunt of Inputs/Outputs of Business Processes**

<b>Question #</b>	<b>N</b>	<b>Mean</b>	<b>Std Dev</b>	<b>t Value</b>	<b>p-value</b>
2. The activity helped me to identify areas that I needed to study for the exam.	60	3.80	1.32	25.58	<.0001
3. The activity enhanced my understanding of inputs and outputs of business processes.	60	3.89	1.30	26.38	<.0001
4. Compared to lecture-based delivery used to cover and review material, this activity was effective.	60	3.88	1.39	25.49	<.0001
5. Compared to other active learning approaches (i.e., projects, cases, exercises) used to cover and review material, this activity was effective.	60	3.80	1.36	25.25	<.0001
6. Employing this activity in class was an efficient use of class time.	60	3.98	1.35	26.58	<.0001

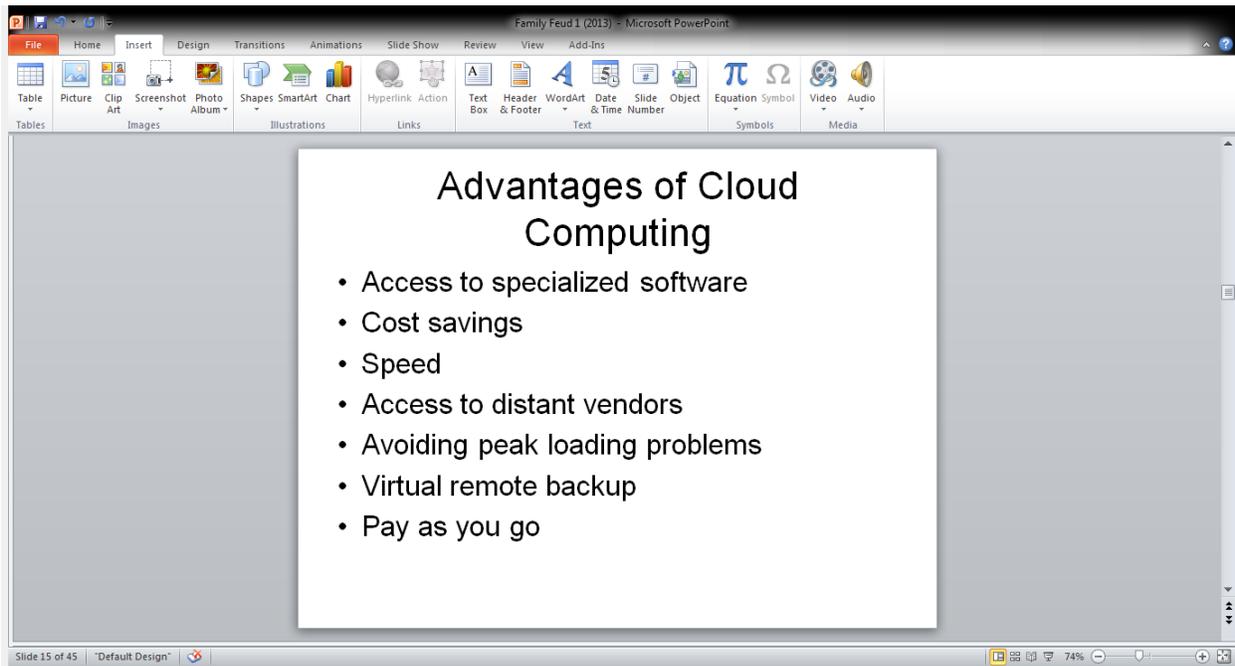
**Figure 1**  
**“Blank” PowerPoint Slide in Family Feud Game**



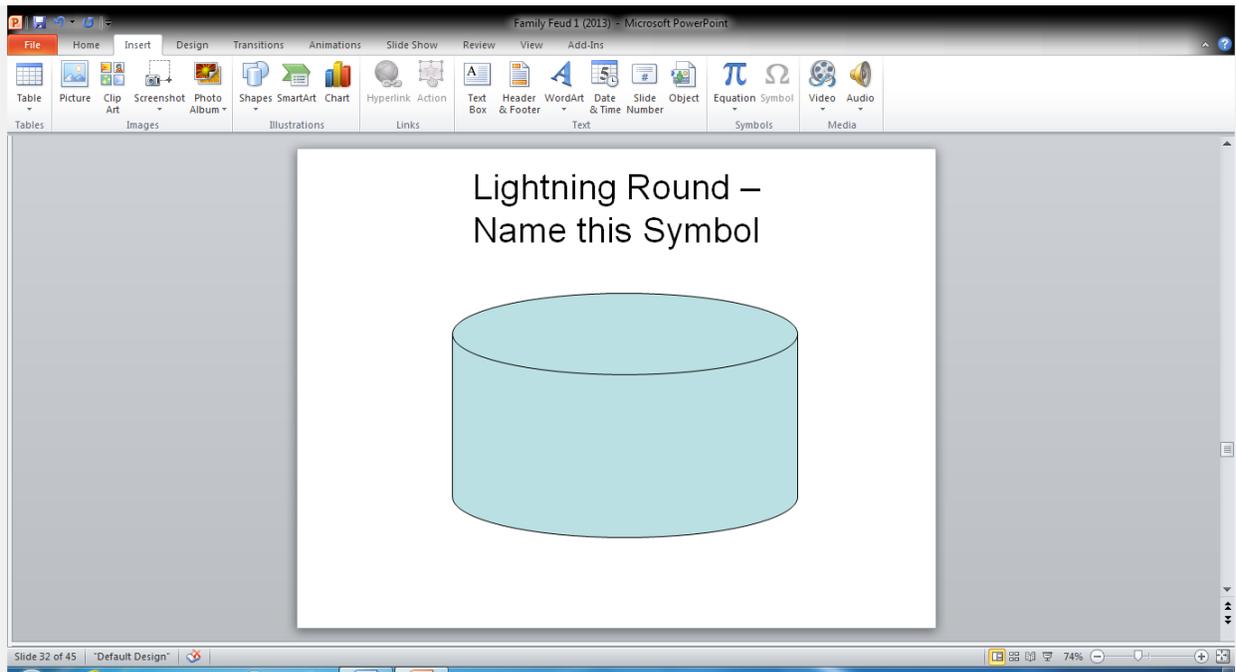
**Figure 2**  
**PowerPoint Slide in Family Feud Game with One Response**



**Figure 3**  
**PowerPoint Slide in Family Feud Game with All Answers Revealed**



**Figure 4**  
**PowerPoint Slide of Lightning Round in Family Feud Game**



**Figure 5**  
**Listing of Business Processes for Scavenger Hunt – Student Worksheet**

<b>Inputs (Source Documents) &amp; Outputs (Reports)</b>	<b>Business Process/Cycle</b>
Aging Report	
Bad Debt Report	
Bank Statements	
Bill of Lading	
Bill of Materials	
Cash Budgets	
Cash Receipts Register	
Cash Requirements Forecast	
Check Register	
Checks	
Construction Work Orders	
Customer Billing Statement	
Customer Listing	
Debit/Credit Memoranda	
Debt and Interest Reports	
Deduction Reports	
Depreciation Register	
Discrepancy Reports	
Employee Listings	
Financial Planning Model Reports	
Financial Ratios	
Fixed Asset Change Forms	
Fixed Asset Register	
Interest Data	
Inventory Reconciliation Reports	
Inventory Status Reports	
Investment Reports	
Job Time Card	
Manufacturing Status Reports	
Master Production Schedule	
Materials Price Lists	
Materials Requisition Form	
Packing Slip	
Paychecks	
Payroll Deduction Authorizations	
Payroll Summaries	
Periodic Usage Reports	
Personnel Action Forms	
Production Cost Reports	
Production Order	
Purchase Analysis Reports	
Purchase Order	
Purchase Requisition	
Purchase Requisition	
Receiving Report	

Remittance Advice	
Repair and Maintenance Records	
Repair and Maintenance Reports	
Retired Asset Report	
Sales Analysis Reports	
Sales Invoice	
Sales Order	
Shipping Notice	
Stock Market Data	
Supplier Invoices	
Tax (Regulatory) Reports	
Tax Withholding Forms	
Time Sheets	
Vendor Checks	
Vendor Listing	

**Figure 6**  
**Listing of Business Processes for Scavenger Hunt – Answer Key**

<b>Inputs (Source Documents) &amp; Outputs (Reports)</b>	<b>Business Process/Cycle</b>
Aging Report	Revenue
Bad Debt Report	Revenue
Bank Statements	Financing
Bill of Lading	Purchasing
Bill of Materials	Production
Cash Budgets	Financing
Cash Receipts Register	Revenue
Cash Requirements Forecast	Purchasing
Check Register	Purchasing, Human Resources
Checks	Financing
Construction Work Orders	Fixed Assets
Customer Billing Statement	Revenue
Customer Listing	Revenue
Debit/Credit Memoranda	Revenue, Purchasing
Debt and Interest Reports	Financing
Deduction Reports	Human Resources
Depreciation Register	Fixed Assets
Discrepancy Reports	Purchasing
Employee Listings	Human Resources
Financial Planning Model Reports	Financing
Financial Ratios	Financing
Fixed Asset Change Forms	Fixed Assets
Fixed Asset Register	Fixed Assets
Interest Data	Financing
Inventory Reconciliation Reports	Production
Inventory Status Reports	Production
Investment Reports	Financing
Job Time Card	Production
Manufacturing Status Reports	Production
Master Production Schedule	Production
Materials Price Lists	Production
Materials Requisition Form	Production
Packing Slip	Purchasing
Paychecks	Human Resources
Payroll Deduction Authorizations	Human Resources
Payroll Summaries	Human Resources
Periodic Usage Reports	Production
Personnel Action Forms	Human Resources
Production Cost Reports	Production
Production Order	Production
Purchase Analysis Reports	Purchasing
Purchase Order	Purchasing
Purchase Requisition	Purchasing
Purchase Requisition	Fixed Assets
Receiving Report	Purchasing, Fixed Assets

Remittance Advice	Revenue, Financing
Repair and Maintenance Records	Fixed Assets
Repair and Maintenance Reports	Fixed Assets
Retired Asset Report	Fixed Assets
Sales Analysis Reports	Revenue
Sales Invoice	Revenue
Sales Order	Revenue
Shipping Notice	Revenue
Stock Market Data	Financing
Supplier Invoices	Fixed Assets
Tax (Regulatory) Reports	Human Resources
Tax Withholding Forms	Human Resources
Time Sheets	Human Resources
Vendor Checks	Purchasing
Vendor Listing	Purchasing

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