

# Connecting IS Across Disciplines: Building the Modern Knowledge Worker

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# Always on, always connected

- ▶ Web 2.0 has created greater cultural expectations for 24/7 access to information
- ▶ Enterprise Systems (ES) integrate the processes and activities of all components of the firm, supporting a “real time” picture of organizational activity
- ▶ For firms, this “real time” access is delivered by ES to executives, managers, and customers

# Our Research Question

- ▶ What are the critical knowledge areas from information and communications technology (ICT) needed by accounting professionals that will work in firms support by 24/7 information flows?
  - Enterprise Systems (ES)
  - Modeling business processes and controls for this environment

# Knowledge Workers

- ▶ Knowledge workers “use information communications technology (ICT) to create, acquire, process, synthesize, disseminate, analyze, and use information to be more productive,” (Magal, 2009, p. 5)
- ▶ Interdisciplinary programs with a strong technology component are designed to deliver skill sets needed by knowledge workers

# Interdisciplinary Programs

- ▶ Interdisciplinary programs use a knowledge view and curriculum approach that consciously applied methodology and language from more than one discipline
- ▶ (Campbell, 2010) shows these lead to better student outcomes

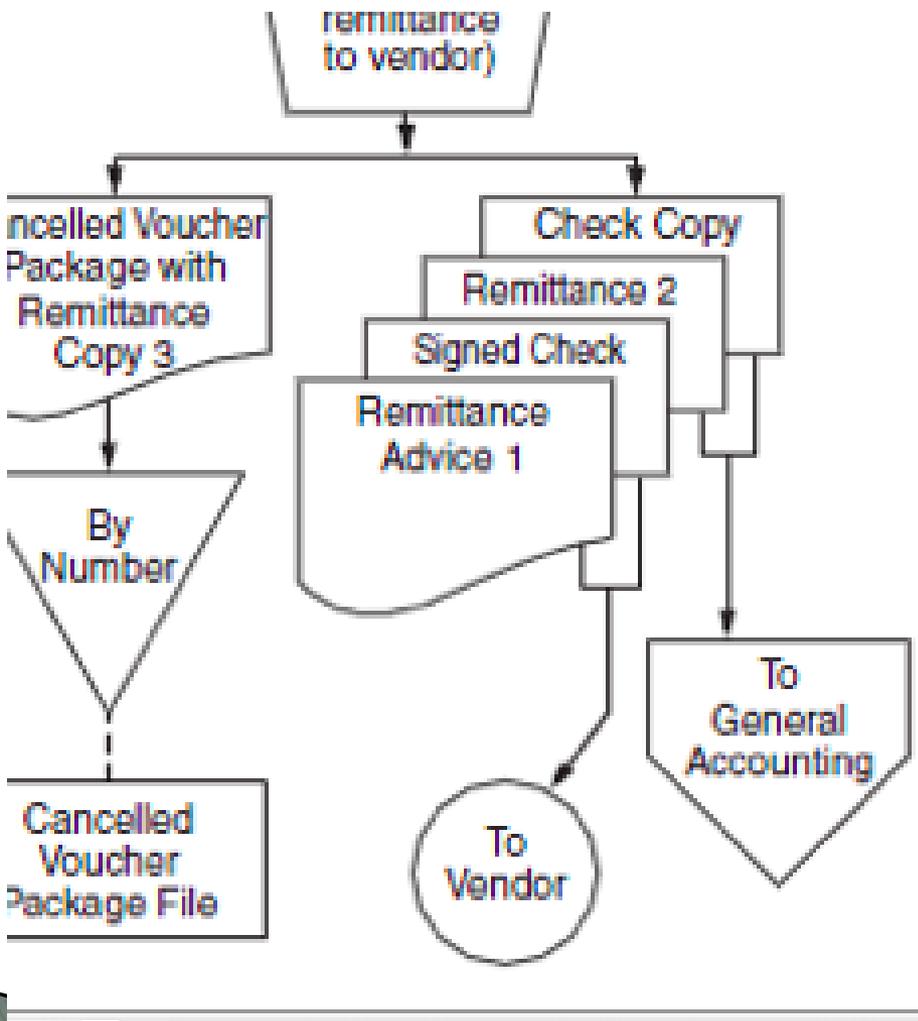
# Knowledge of Enterprise Systems and the CPA Exam

- ▶ Accounting is one of the largest programs at Pace University
- ▶ Concern about CPA pass rate
- ▶ Business Environment and Concepts (BEC) section includes material related to the structure of ICT and the management of audit controls
- ▶ Many students at Pace have difficulty passing the BEC section

# Course Content

- ▶ CIT396B – Advanced Information Technology for Accounting Applications
- ▶ All class meetings took place in a computer lab
- ▶ Classwork included hands on exercises with ACL (enterprise audit software)
- ▶ Course also include instruction in modeling business processes using UML (Unified Modeling Language)

# Limitations of Flowcharts

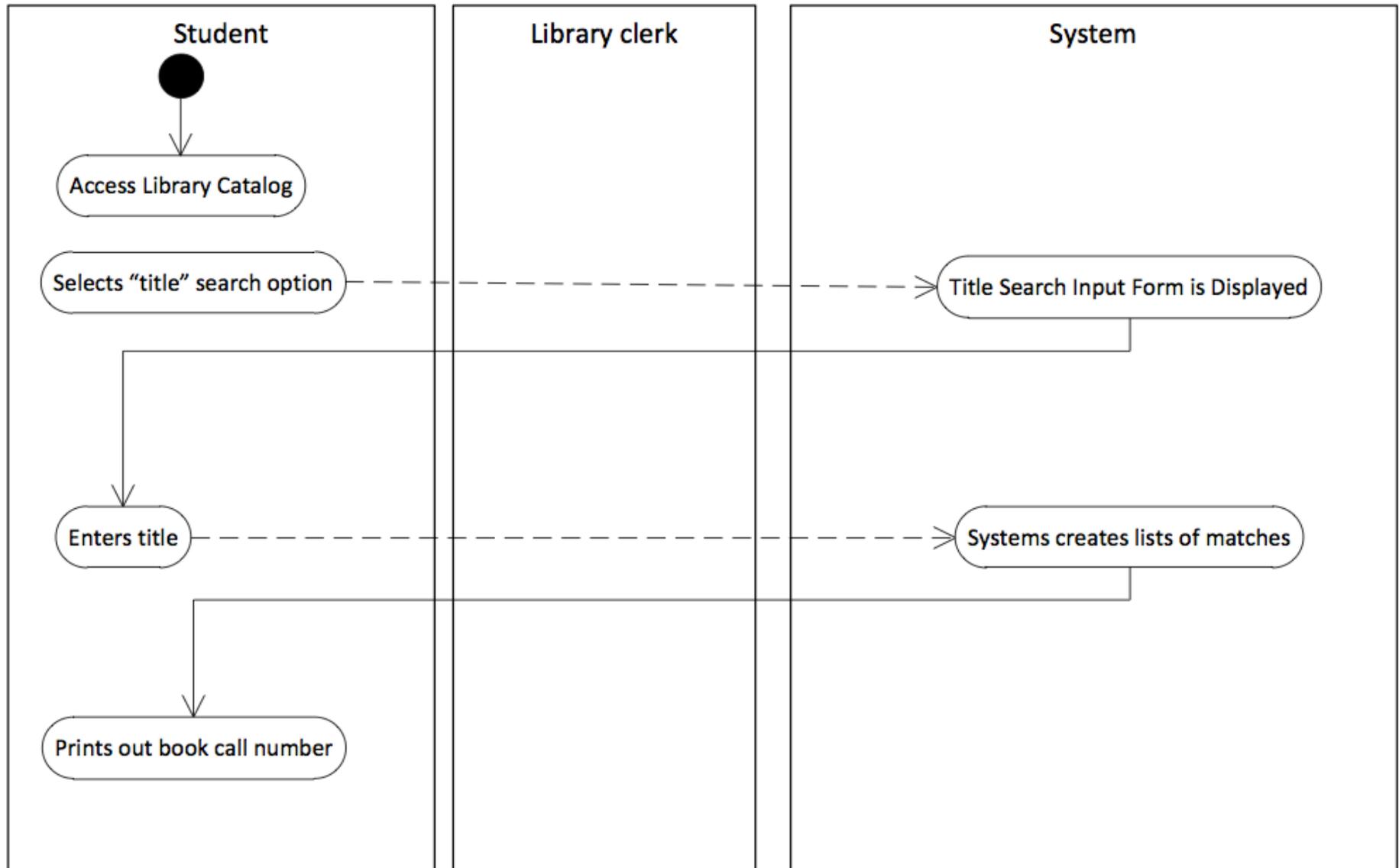


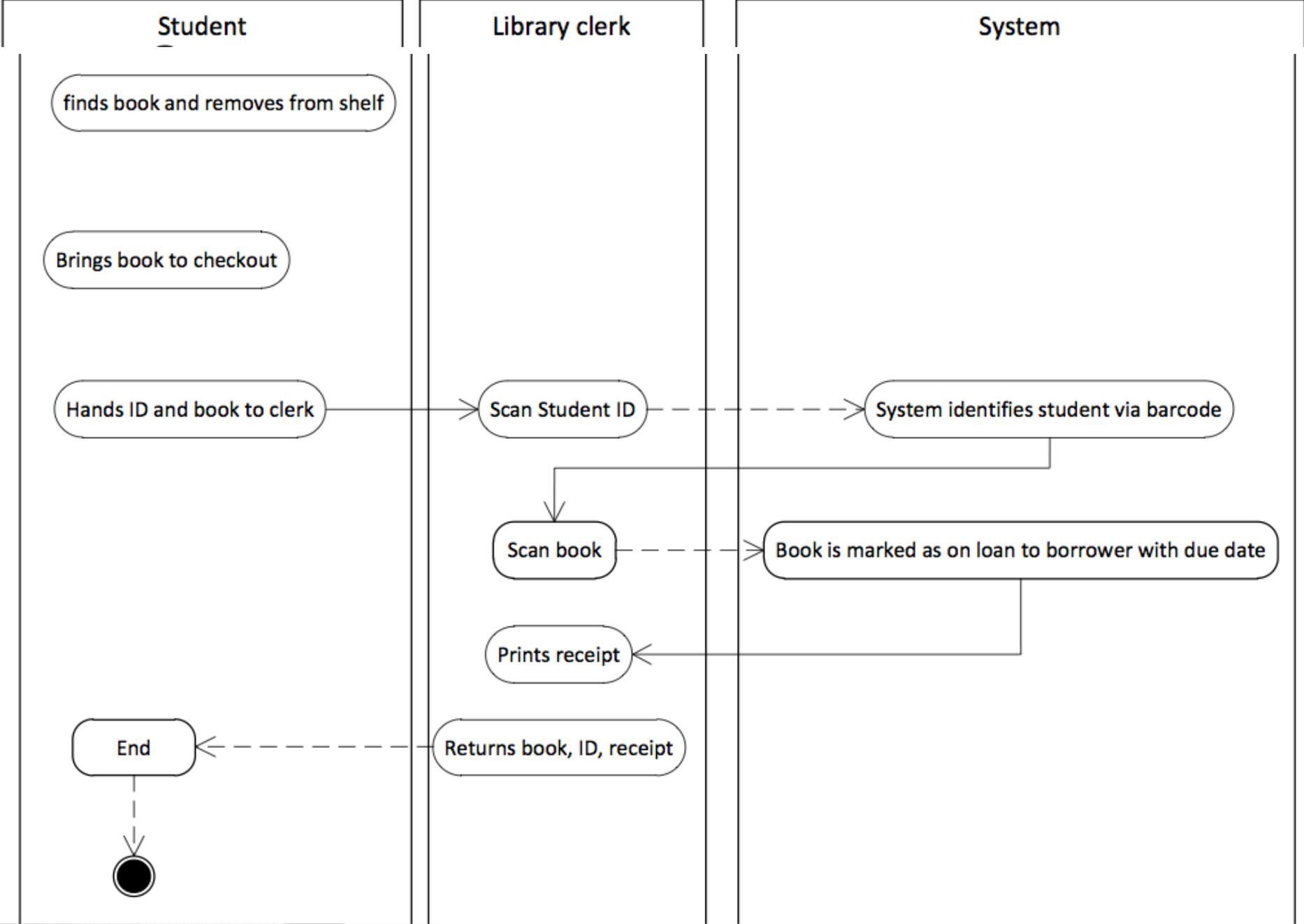
- ▶ Does not distinguish steps taken by different actors
- ▶ Does not segregate the actions taken by information systems

# UML

- ▶ UML is a set of multiple diagrams, it has become the standard modeling language for software development
- ▶ It has the ability to capture multiple actors and document where and how information systems act within a process
- ▶ Model Driven Architecture – UML can create models that can be converted to executable code
- ▶ Therefore the operations of the software are bound to the model

# UML Activity Diagram





# Model Driven Architecture – <http://wiki.siframework.org/>

The screenshot shows the homepage of the Standards & Interoperability (S&I) Framework's Wiki. The page has a blue header with the S&I Framework logo and navigation links for 'guest', 'Join', 'Help', 'Sign In', and 'wikispac'. Below the header is a navigation bar with 'home', 'Page', 'Discussion (1)', 'History', and 'Notify Me'. A 'PROTECTED' badge is visible in the top right. The main content area features a welcome message, a row of buttons for 'Register for the Wiki', 'Getting Started as a Volunteer', 'Explore the S&I Initiatives', 'FAQs', and 'Contact', and a link for 'Quickly Access This Week's Key Activities'. There are sections for 'Announcements' and 'Working together to solve healthcare interoperability challenges'. A sidebar on the left contains navigation links like 'Wiki Home', 'Join this Wiki', 'Recent Changes', and 'Manage Wiki', along with a search box and social media icons. The footer of the sidebar lists various initiatives such as 'Community-Led Initiatives', 'Cross-Initiative Functions', and 'Certificate Interoperability'.

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**S&I FRAMEWORK**

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**General Information**  
(Click '+' to Expand)

+ Getting Started

**Initiatives**  
(Click '+' to Expand)

+ Community-Led Initiatives

+ Cross-Initiative Functions

+ Cross-Initiative Workgroups

+ Certificate Interoperability

+ Data Segmentation

+ esMD

+ Laboratory Results Interface

+ Provider Directories

+ Query Health

+ Transitions of Care

★ home Page Discussion (1) History Notify Me

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## Welcome to the Standards & Interoperability (S&I) Framework's Wiki

Register for the Wiki · Getting Started as a Volunteer · Explore the S&I Initiatives · FAQs · Contact

[Quickly Access This Week's Key Activities](#)

### Announcements

- The LRI All Hands Call will be held from 3:30-4:30pm ET on Monday, November 7
  - [Join the WebEx](#) and Dial-in: 1-408-600-3600, Access Code: 662 246 907

### Working together to solve healthcare interoperability challenges

The Standards and Interoperability (S&I) Framework was launched on January 7th. ONC is looking for volunteers to collaborate on interoperability challenges critical to meeting Meaningful Use objectives for 2011. The Office of the National Coordinator for Health Information Technology (ONC) welcomes you and appreciates your interest in the Standards and Interoperability (S&I) Framework and our 2011 Framework initiatives. This wiki is designed to allow prospective and current S&I Framework participants to quickly reach the information they need.

### S&I Framework HITSC Presentation

On Wednesday, August 17th, Jitin Asnaani and several of our initiative members gave a presentation to the HIT Standards Committee on our progress and key findings. That presentation can be found [here](#).

### This Week's Key Activities

[Certificate Interoperability \(CI\) Initiative](#)

- The analysis conducted under the Certificate Interoperability Initiative has been completed. A summary of the report was delivered to the HIT Standards Committee on August 17th, 2011. To view the full final report, please click [here](#).

# Course Results and Assessment

- ▶ Included in final exam direct questions from the BEC section of the CPA exam
- ▶ We have evidence this material improves the pass rate, although it is a small sample (seven in the first class)
- ▶ However students had no other preparation other than taking the class and access to the CPA review book on reserve at the library

**Table 1: Pass Rate for BEC Section of CPA Exam (First time takers of the exam).**

<b>Population</b>	<b>BEC Pass Rate</b>
<b>National Average-All Jurisdictions-All Candidates</b>	<b>47.5%</b>
Average-New York State-All Candidates	41.0%
Pace University Undergraduates	<b>27.2%</b>
<b>Difference – New York State Average and Pace Average</b>	<b>13.8% Below</b>

**Table 2: Assessment of CIT396B Students Mastery of BEC Topics.**

<b>Topic</b>	<b>% <u>correct</u></b>
Business Continuity	75%
Database	45%
General Computing Concepts	88%
IT controls	65%
Security	83%
<b>Total</b>	<b>73%</b>



2008 Pass  
Rate for Pace  
Undergrads:  
27.2%

# ICT baseline skills for business professionals

- ▶ Curriculum must prepare students for fully connected workplace
- ▶ Fluent in their own discipline
- ▶ Strong grasp of the methods and advantages of ES
- ▶ Understand business processes at the transaction level and the aggregate level
- ▶ Understand what business logic is guiding automated processes

# Essentials of Business Processes and Information Systems



Magal, Simha, and Jeffrey Word. *Essentials of Business Processes and Information Systems*. Hoboken, NJ: Wiley/SAP, 2009.

# Questions?

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