



Digital Systems

1.1 Introduction to MIS

FOX
MIS

Welcome!

Fall 2021

FOX
MIS

Introduction to Instructor

- ❖ Leila Hosseini
- ❖ Assistant Professor of Management Information Systems (MIS)
- ❖ PhD in MIS
- ❖ University of Texas at Dallas (UTD) Alumni
- ❖ Teaches Undergraduate Courses in MIS
- ❖ 18+ Years of Programming Experience



Introduction to Instructor

Research Interests:

- ❖ Digital Systems
- ❖ Cloud Computing
- ❖ Digital Advertising
- ❖ Internet of Things (IOT)

Business Communities:

- ❖ Boston
- ❖ Dallas

Introduction to Instructor

Office Hours:

- ❖ Tuesdays and Thursdays 2:00 PM – 3:30 PM.
- ❖ And also, by appointment in-person or virtual. Please email me to schedule your meeting.

Email:

leila.hosseini@temple.edu

Office:

Speakman 206E

Introduction to Instructor

Email Policy:

- ❖ Make sure that you always place our course name and section in the subject line. See below for an example:

Subject: MIS 2101 sec 009

Course Support

Information Technology Assistants (ITAs):

- ❖ Nick Cornell
- ❖ Mona Younes

Diamond Peers:

- ❖ Ariella Izbinsky
- ❖ Quinten Powers
- ❖ Lauren Quinn
- ❖ Anna Boykis

Course Support: ITAs

Nick Cornell

❖ Email: Nicholas.cornell@temple.edu



Course Support: ITAs

Mona Younes

❖ Email: mona.younes@temple.edu



Course Support: Diamond Peers

[Diamond Peers Website](#)

Course Support: Diamond Peers

Ariella Izbinsky

- ❖ **Email:** ariella.izbinsky@temple.edu
- ❖ **Virtual Office Hours:** TH 5:00-6:00PM, F 10:00-11:00AM, or by appointment.
- ❖ **Zoom Link:**
<https://temple.zoom.us/j/8689285168>

Quinten Powers

- ❖ **Email:** quinten.powers@temple.edu
- ❖ **Virtual Office Hours:** M 10:00-11:00 AM, W 11:00AM-12:00 PM, or by appointment.
- ❖ **Zoom Link:**
<https://temple.zoom.us/j/5776650263>

Course Support: Diamond Peers

Lauren Quinn

- ❖ **Email:** lauren.quinn@temple.edu
- ❖ **Virtual Office Hours:** M 2:30-3:30 PM, W 2:30-3:30 PM, or by appointment.
- ❖ **Zoom Link:**
<https://temple.zoom.us/my/lauren.quinn>

Anna Boykis

- ❖ **Email:** anna.boykis@temple.edu
- ❖ **Virtual Office Hours:** W 10:00 - 11:00 AM, F 10:00 - 11:00 AM, or by appointment.
- ❖ **Zoom Link:**
<https://temple.zoom.us/my/anna.boykis>

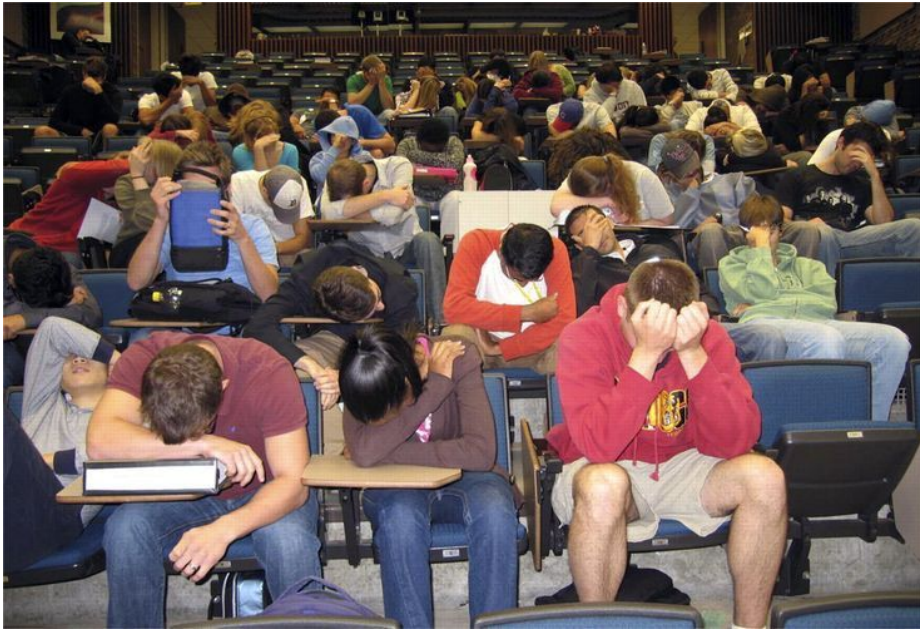
***“Tell me and I forget.
Teach me and I remember.
Involve me and I learn.”***

- Benjamin Franklin

Managing Expectations

- ❖ This class is unique!
- ❖ We will work through challenges together...plan on it!
- ❖ You will find the class engaging and fun!
- ❖ You will acquire knowledge and skills that you will use in future classes and your career!!!

Lecture vs. Activities



Source: <https://www.theodysseyonline.com/11-things-college-lecture-hall>

- 3 Hours of zzzzzzzzz's



- 1 Hour Discussion
- 2 Hours of Activity

Course Highlights

First Two third of the semester:

- ❖ Systems Analysis
- ❖ Process Mapping (Modeling with swim lanes & entity relationship diagrams)
- ❖ Digital Product Management
- ❖ Information Systems CRM & ERP, Data Analytics & SCM
- ❖ Platforms & Digital Business models, including API's
- ❖ Cyber security and the Enterprise plus AI

Last third of the semester:

- ❖ Programming including: JavaScript, HTML & CSS

Course Objectives

- ❖ Explore the systems which organizations use to create their digital products
- ❖ Explore the platforms which these digital systems are built upon
- ❖ Explore the API ecosystems by which systems extend their reach and capability.
- ❖ Discuss cyber security including risks & responses surrounding digital products
- ❖ Introduction to the creation of software
- ❖ Learning the basics of programming in JavaScript

Course Sites

MIS Community Course Site (CCS):

<https://community.mis.temple.edu/mis2101sec009fall2021/>

Canvas Site (for graded components):

<https://templeu.instructure.com/courses/101822>

Graded Components

Component	Percentage
In-Class Activities & Worksheets * must be present in class to earn credit – no exceptions! * Students may miss up to two in-class activities. All activities are graded pass/fail based on due diligence.	10%
Assignments ** no late assignments accepted – no exceptions!	30%
Exam #1 (50 minutes)	20%
Exam #2 (50 minutes)	20%
Exam #3 (60 minutes – held during finals week)	20%

Link for Grading Webpage: <https://community.mis.temple.edu/mis2101sec009fall2021/about/grading/>

Grades will be available on [Canvas](#) and [Gradebook on CCS](#).

*In-Class activities must be submitted while in class.

**Completed assignments will not be returned in class. Grades will be posted to the gradebook. Please note that two weeks after a grade is posted, the grade will be considered “final.”

Readings & Videos (first 2/3's of the semester)

- No required texts the first 2/3's of the semester!



- Engaging collection
- Current content
- Available for Free!!!

Link for Readings: <https://community.mis.temple.edu/mis2101sec009fall2021/>

Link for Videos: <https://community.mis.temple.edu/mis2101sec009fall2021/video-vault/>

Readings & Videos (first 2/3's of the semester)

The Max Labs Assignments

The fee associated with the MaxLab assignments is \$19.99. You will be required to pay the fee as you start the first Lab. DO NOT skip ahead and pay for the Max Lab. Listen carefully in-class to your instructor for additional details.



Readings & Videos (last 1/3's of the semester)

JavaScript Absolute Beginner's Guide

Author: Kirupa Chinnathambi

Series: Absolute Beginner's Guide

Paperback: 416 pages

Publisher: Que Publishing; 2nd edition

Language: English

ISBN-13: 978-0-13-650289-0

ISBN-10: 0-13-650289-X



Technology Requirements

- ❖ A laptop is required for this course, see the [Fox Laptop Policy](#) for minimum specifications.
- ❖ [Fox Laptop Support](#) is available. You are responsible for attending all classes with a fully functional Fox Laptop.

Technology Requirements

- ❖ Limited resources are available for students who do not have the technology they need for class. Students with educational technology needs, including no computer, should submit a request outlining their needs using the [Student Emergency Aid Fund](#). The University will endeavor to meet needs, such as with a long-term loan of a laptop or Mifi device, or a refurbished computer.

Software

Google Chrome



- ❖ [Download and Install Google Chrome](#)

Visual Studio Code

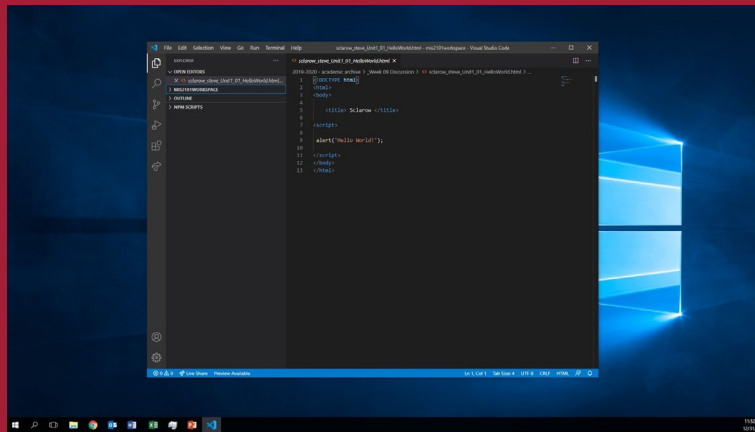


- ❖ [Installing-VS-Code-Windows](#)
- ❖ [Installing-VS-Code-Mac](#)

Class Captures

Link for Class Captures:

<https://community.mis.temple.edu/mis2101sec009fall2021/zoom-virtual-classroom/>



Assignment 1: Course Intro Video

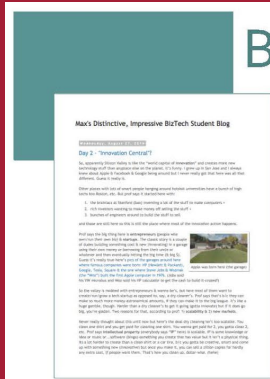
Fall 2021

Deadline: Friday

Aug 27 by 11:59 PM

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Business Systems Innovation Labs Pre-lab Pre-flight Checklist



“Distinctive, Impressive BizTech Student Blog” (Backstory)

SJSU Business Systems student Max sets out to blog her class, stumbles into a startup adventure, and invites you to follow along.

Prep: What do you need to start?

To get the most out of this pre-lab, you need a healthy curiosity, a sense of humor and a little imagination. Focus, read for understanding, and put yourself in Max’s shoes so you don’t just read it—you *experience* it.

Assignment 2: Max Labs Pre-Flight

Fall 2021

**Deadline: Monday
Aug 30 by 11:59 PM**

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Digital Systems

1.2 What are Systems?

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ROADMAP

START

Week 1:

Introduction & Systems Analysis

- Course Description
- Systems Thinking

Week 2:

Digital Product Management & Introduction to Process Mapping

- Max Labs 1a & 1b
- Systems & Processes
- Swim Lane Diagrams

Week 3:

Data Modeling with Entity Relationship Diagrams

- Swim Lane Diagrams
- ERD Diagrams

Week 4:

Digital Systems – Learn IT! #1

- ERD Diagrams
- Learn IT Kickoff

Week 5:

Exam #1, Max Labs & Information Systems: Part I & II

- CRM & ERP

Week 9:

Exam #2 & JavaScript Unit #1 - Part I & II

- Hello World, Variables

Week 8:

Cybersecurity & AI – Part I & II

- Protection Protocols
- Artificial Intelligence

Week 7:

Platforms & Digital Business Models: Part I & II

- Platforms & Digital Models
- APIs

Week 6:

Information Systems: Part III & IV

- Data Analytics
- SCM

Week 10:

JavaScript Unit #2 Functions

- Operator types
- Strings

Week 11:

JavaScript Unit #3 Logical Operators & Conditional Logic

- Logical Operators
- Conditional Types

Week 12:

JavaScript Unit #4 Loops

- Intro to Loops
- While and Do

Week 13:

JavaScript Unit #4 Working with Loops

- Writing the code

Week 14:

HTML & CSS Unit

- HTML basics
- CSS basics
- Course Reflection

FINISH

Learning Objectives

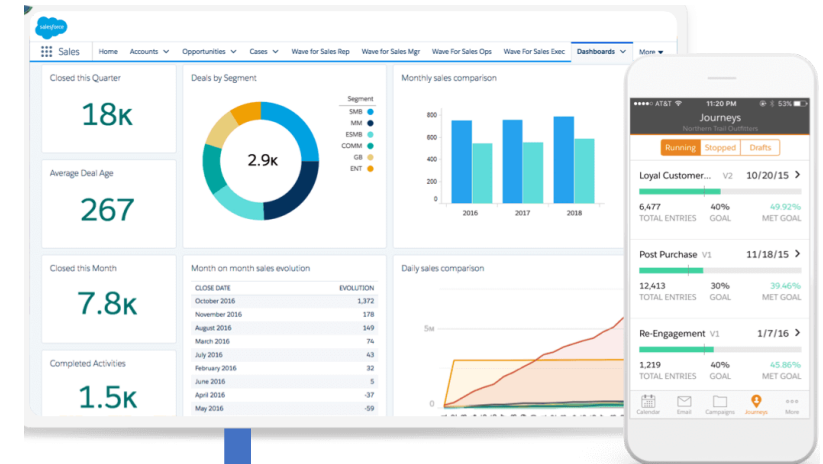
- ❖ Management Information Systems (MIS)
- ❖ System Definition
- ❖ System Development/Design
- ❖ System Architecture

Management Information Systems (MIS)

What is MIS?

- ❖ In MIS, we use Information Technology to solve business problems.
- ❖ MIS is **NOT** Computer Science.

MIS is about business where we train people to do what? **Use technology to solve day-to-day business problems**



Sources:

https://c1.sfdcstatic.com/content/dam/web/en_us/www/images/products/what-is-salesforce/whatis-jumbo-astro-product.png

https://www.kindpng.com/picc/m/568-5683178_real-cash-stack-100-dollar-bill-hd-png.png

System Definition

World View – A collection of “Systems”

Systems = People + Process + Technology

- ❖ Manipulation of information = value
- ❖ Managed by MIS professionals
- ❖ Systems surround us 24/7
- ❖ Application Program Interface (API's)



Source: <https://www.aecom.com/ca/management-information-systems-mis/>

Understanding Systems

Case Study 1:

Buying textbooks on Amazon

The screenshot shows an Amazon search results page for the query "javascript absolute beginner's guide / kirupa chinnathambi". The page features a navigation bar at the top with the Amazon Prime logo, a search bar, and various account and list options. Below the search bar, there is a section for "Department" with a list of categories including JavaScript Programming, Introductory & Beginning Programming, Computers & Technology, Web Development & Design Programming, Web Services, Programming Languages, Kindle Store, JavaScript Programming, Computer Programming, and Web Programming. There is also an "Avg. Customer Review" section with star ratings and a "Computer User Books" section with "Beginners & Seniors" as a sub-category. The main content area displays three sponsored book listings:

- O'REILLY® Explore further Javascript resources**: A sponsored section featuring three books: "JavaScript: The Definitive Guide: Activate Your Web Pages (Definitive Guides)" (4.5 stars, 194 reviews), "Secrets of the JavaScript Ninja" (4.5 stars, 36 reviews), and "Rediscovering JavaScript: Master ES6, ES7, and ES8" (4.5 stars, 7 reviews).
- JavaScript Absolute Beginner's Guide** by Kirupa Chinnathambi | Jul 18, 2016: A sponsored listing for a paperback book priced at \$19.06 (original \$29.99) with a Prime One-Day offer. The Kindle version is priced at \$14.39 (original \$23.99).
- JavaScript: Programming Basics for Absolute Beginners (Step-By-Step) (Volume 1)** by Nathan Clark | Aug 16, 2017: A sponsored listing for a paperback book priced at \$16.38 with a Prime One-Day offer.
- Programming for Beginners: 3 Books in 1- HTML+CSS+JavaScript (Basic Fundamental Guide for Beginners)** by MG Martin | Sep 18, 2018: A sponsored listing for a paperback book priced at \$24.99 with a Prime One-Day offer.

Understanding Systems

Case Study 1: Buying textbooks on Amazon

❖ What was part of that system?

- ✓ Log-in (multiple steps)
- ✓ Search
- ✓ Shopping Cart
- ✓ Purchase (Multiple steps)
- ✓ What else???

The screenshot shows an Amazon search results page for the query "javascript absolute beginner's guide / kirupa chinnathambi". The page features a navigation bar at the top with the Amazon Prime logo, a search bar containing the query, and a "Stock up for college" banner. Below the navigation bar, there is a section for "1 result for 'javascript absolute beginner's guide / kirupa chinnathambi'" with a "Sort by: Price: Low to High" dropdown. The main content area displays several book listings. The first listing is "JavaScript Absolute Beginner's Guide" by Kirupa Chinnathambi, published on Jul 18, 2016. It has a 4.5-star rating and is available in Paperback for \$19.99 (originally \$29.99) and Kindle for \$14.39 (originally \$23.99). The second listing is "JavaScript: Programming Basics for Absolute Beginners (Step-By-Step) (Volume 1)" by Nathan Clark, published on Aug 16, 2017. It has a 4.5-star rating and is available in Paperback for \$16.38. The third listing is "Programming for Beginners: 3 Books in 1- HTML+CSS+JavaScript (Basic Fundamental Guide for Beginners)" by MG Martin, published on Sep 18, 2018. It has a 4.5-star rating and is available in Paperback for \$24.99. The page also includes a sidebar with navigation options such as "Department", "Avg. Customer Review", "Computer User Books", "Accessibility Features", and "Condition".

Understanding Systems

Describe the Process of Ordering

❖ What keeps info accurate?

✓ Data

❖ Who is involved?

✓ Customer ♦ Store ♦ Warehouse Mgr. ♦ Admin ♦ UPS driver...

❖ How much effort?

✓ None...it's automated!

✓ Technology !!!

The screenshot shows an Amazon product page for JavaScript books. At the top, there's a blue banner that says "Discover the best books of 2019 so far". Below that, a section titled "bought together" shows three books: "JavaScript Absolute Beginner's Guide", "A Smarter Way to Learn JavaScript", and "jQuery: Interactive Front-End Web Development". The total price is \$67.83. Below this, there's a section "who viewed this item also viewed" with six book covers and their titles, authors, and prices. At the bottom, there's a section "products related to this item" with seven book covers and their titles, authors, and prices.

Report incorrect product information.

Discover the best books of 2019 so far

/ bought together

Total price: \$67.83
Add all three to Cart
Add all three to List

JavaScript Absolute Beginner's Guide by Kirupa Chinnathambi Paperback \$19.06
jQuery: Interactive Front-End Web Development by Jon Duckett Paperback \$30.81
Way to Learn JavaScript: The new tech-assisted approach that requires half the effort by Mark Myers Paperback \$17.96

who viewed this item also viewed

Page 1 of 9

Book Title	Author	Price
JavaScript: The Definitive Guide: Activate Your Web Pages (Definitive Guides)	David Flanagan	\$38.79 ✓prime
Learn JavaScript Visually	Ivelin Demirov	\$31.00 ✓prime
Head First JavaScript Programming: A Brain-Friendly Guide	Eric Freeman	\$35.50 ✓prime
Learning React: A Hands-On Guide to Building Web Applications Using React...	Kirupa Chinnathambi	\$32.42 ✓prime
A Smarter Way to Learn JavaScript	Mark Myers	\$17.96 ✓prime
JavaScript and JQuery: Interactive Front-End Web Development	Jon Duckett	\$30.81 ✓prime

products related to this item

Page 1 of 39

Book Title	Author	Price
Building Enterprise JavaScript Applications		
Web Development with ReasonML: Type-Safe, Functional Programming		
Google Apps Script for Beginners	Serge Gabet	
Eloquent JavaScript, 3rd Edition: A Modern Introduction to		
Learn JavaScript VISUALLY with Interactive Exercises: The Beautiful New Way to		
Getting Started with React Native	Ethan Holmes	
Quick Start Guide: Manage the client side of your React apps		

Understanding Systems

Case Study 2: Buying Lunch from Chop! Chop!



Understanding Systems

Case Study 2: Buying Lunch from Chop! Chop!

- ❖ What was part of that system?
 - ✓ Take the order
 - ✓ Hand order to cook
 - ✓ Prep to-go bag
 - ✓ Order cooked (multiple steps)
 - ✓ What else???



**“information system –
an integrated set of components for
collecting, storing, and processing data
and for providing information, knowledge,
and digital products.”**

- Encyclopedia Britannica

A collection of technologies

Including:

- ❖ Hardware
- ❖ Software
- ❖ Policies
- ❖ Education tools
- ❖ Application Programming Interface (API)
- ❖ Etc...



Source: <https://www.kisspng.com/png-laptop-computer-hardware-computer-repair-technicia-1180595/preview.html>

API's Case Study: UBER

Requesting a ride?

- ❖ Describe what happens...
 - ✓ What are these systems?
 - ✓ How do they work?



Source: <https://www.okta.com/security-blog/2019/05/how-uber-takes-advantage-of-the-api-economy/>

System Development/Design

Four Core Steps of Designing UX

- ❖ Problem Definition
- ❖ Documenting Business Processes
- ❖ Process Decomposition
- ❖ Data Modeling



Source: <http://www.petraware.com/consulting/>

SDLC methodologies

SDLC stands for System Development Life Cycle



Image: <http://www.xanadutec.com/software-as-a-service.html>

SDLC methodologies

- ❖ Waterfall
- ❖ Agile
- ❖ Lean
- ❖ Scrum
- ❖ DevOps

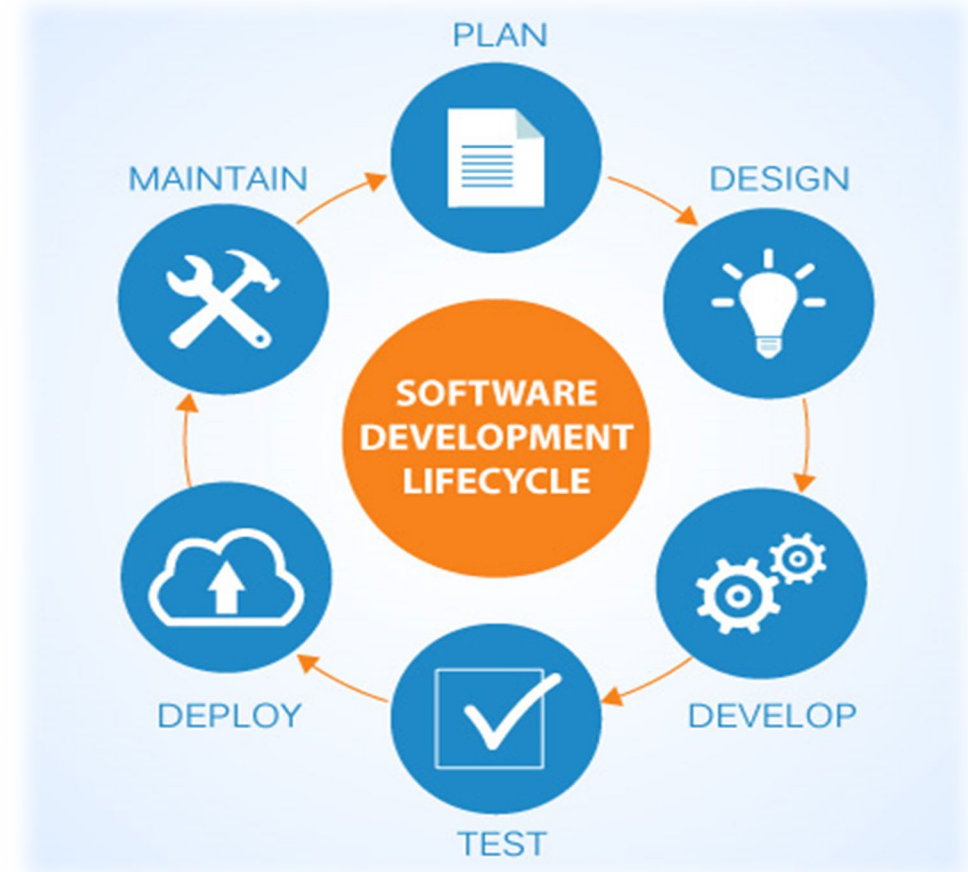


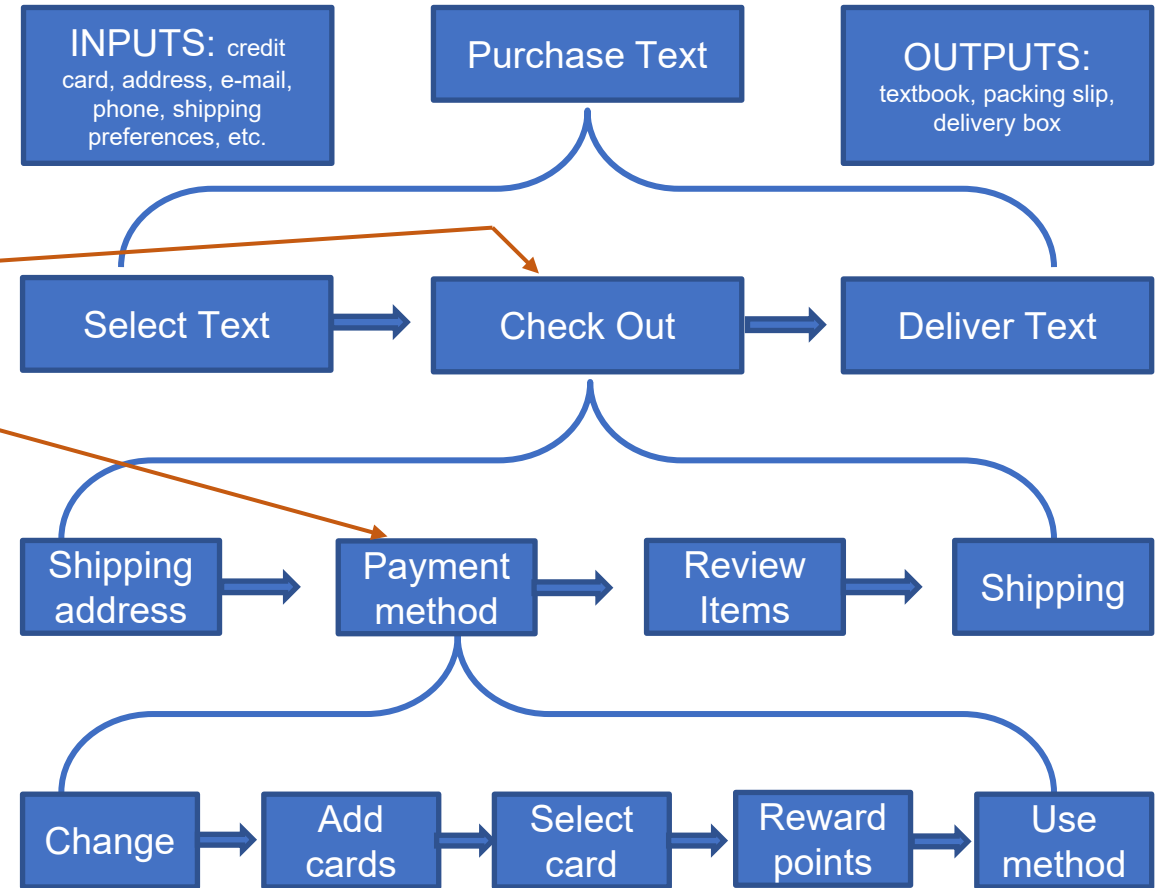
Image: <http://www.xanadutec.com/software-as-a-service.html>

“Once a Product Manager / Technologist understands the *business problem*, they can architect a solution.”

- Mart Doyle

Process Decomposition

- Single entity
- Subsystem



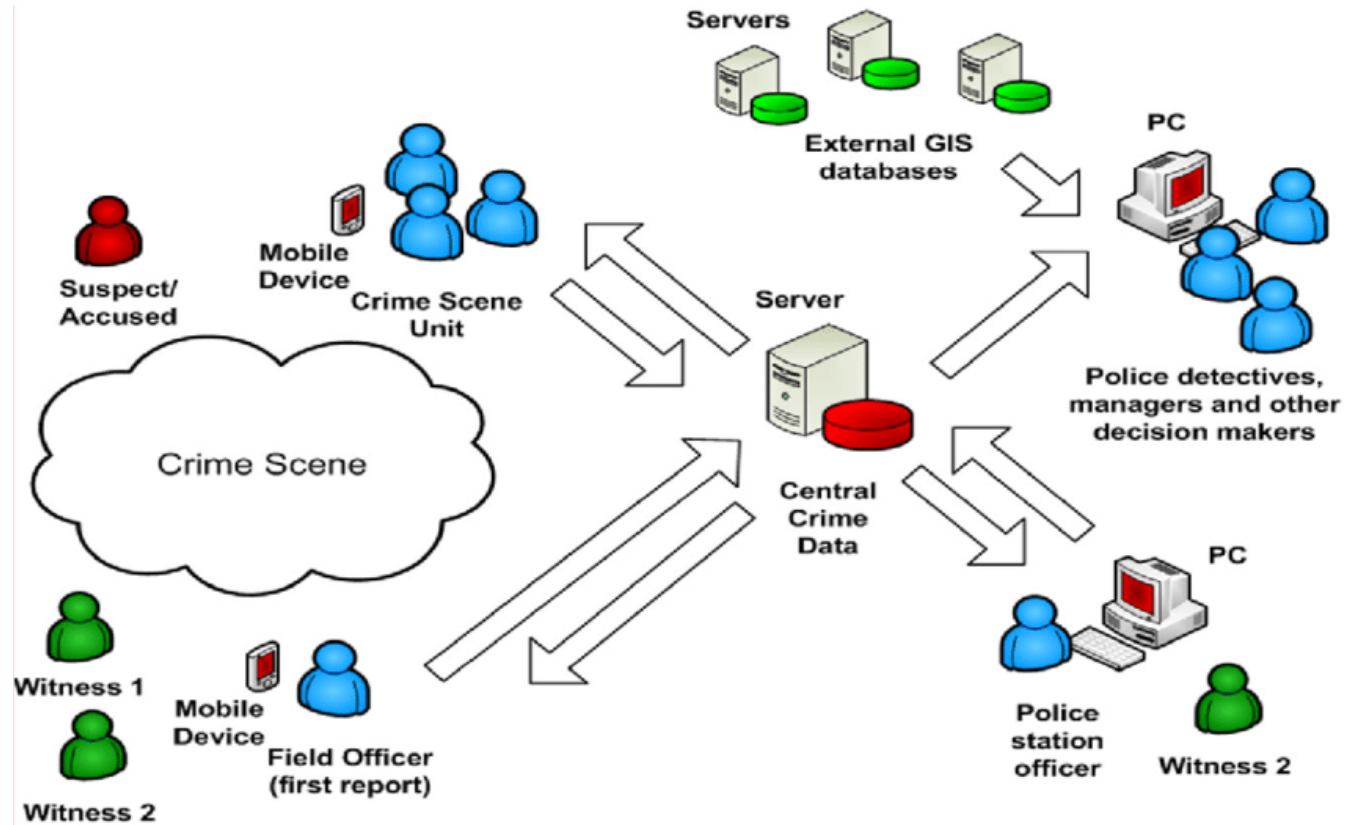
System Architecture

“Systems Architecture is a response to the conceptual and practical difficulties of the description and the design of complex systems.”

- Boris Golden

Systems Architecture

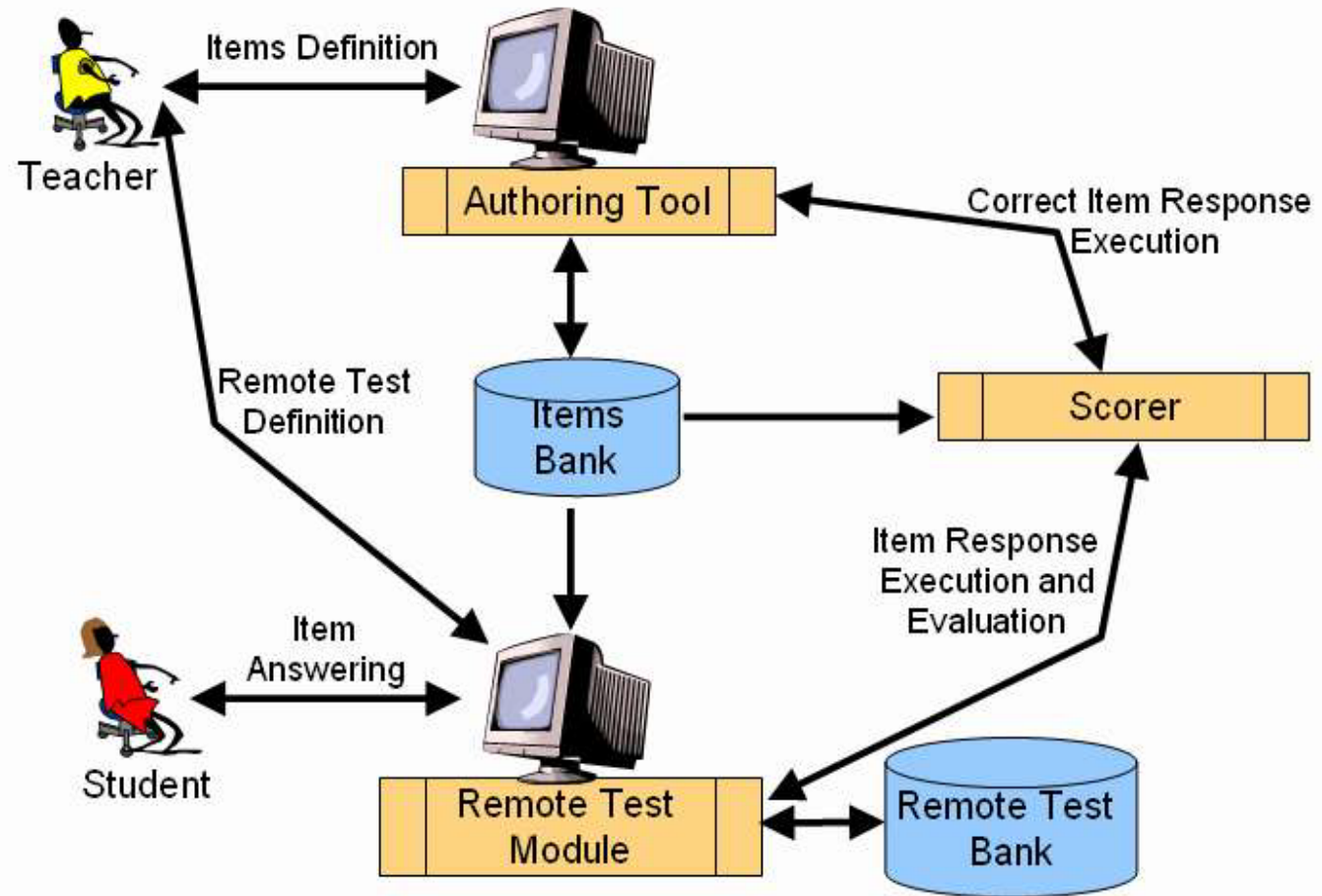
- ❖ Conceptual Diagram
- ❖ Structural components
- ❖ Identify/Solve Problems
- ❖ Existing or New
- ❖ Communication tool



Source: https://www.researchgate.net/figure/Conceptual-System-Architecture_fig2_327987580

Systems Architecture

- ❖ Test question defined
 - ✓ Authoring tool
- ❖ Remote test created
 - ✓ Test module
- ❖ Student responses
 - ✓ Test module
- ❖ Execution & Evaluation



Source: <http://spmarchitecture.com/systems-architecture/system-architecture-learning-environment-for-automatic-rating-64721-2/>

More to Come

Prepare with Readings & Videos before our next class!!!