



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 002

Course Support

Information Technology Assistants (ITAs):

- ❖ Alexander L Vottero
- ❖ Alanis Mattia

Diamond Peers:

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

Course Support: ITAs

Alexander L Vottero

❖ Email: alexander.vottero@temple.edu



Course Support: ITAs

Alanis Mattia

❖ Email: alanis.mattia@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>

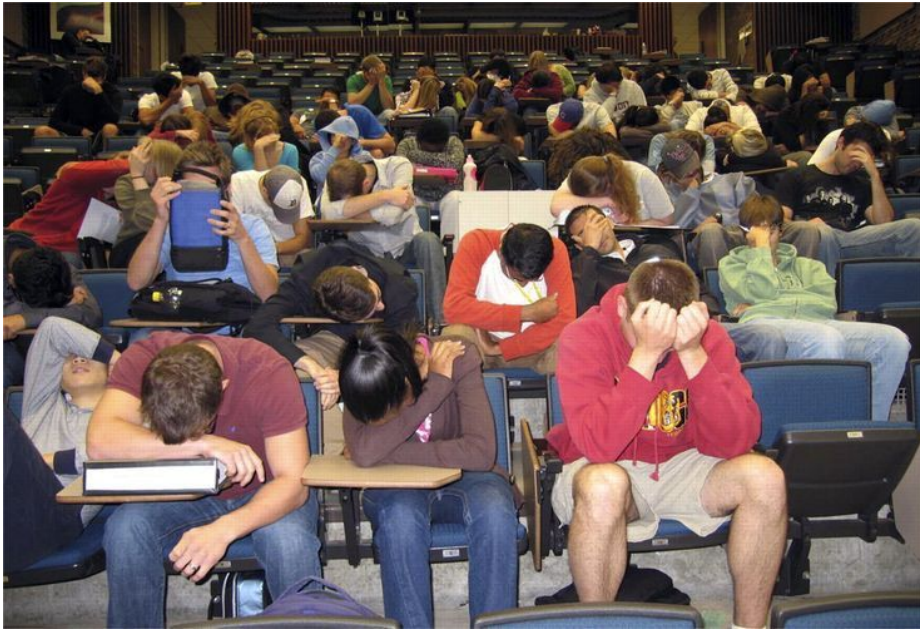
***“Tell me and I forget.
Teach me and I remember.
Involve me and I learn.”***

- 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/mis2101sec002fall2021/>

Canvas Site (for graded components):

<https://templeu.instructure.com/courses/100900>

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/mis2101sec002fall2021/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/mis2101sec002fall2021/>

Link for Videos: <https://community.mis.temple.edu/mis2101sec002fall2021/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

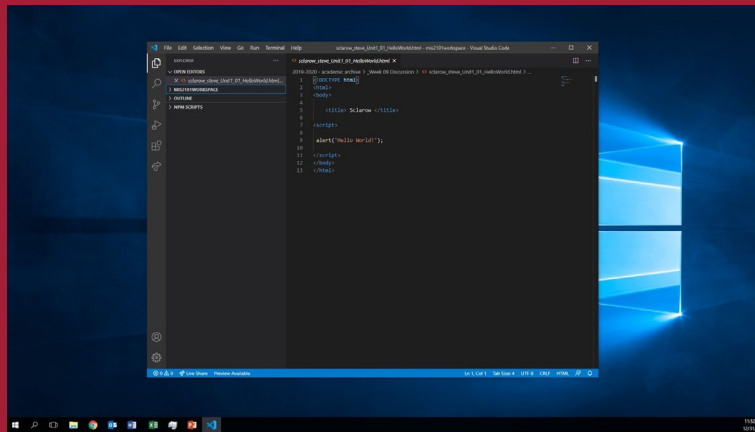


- ❖ [Installing-VS-Code-Windows](#)
- ❖ [Installing-VS-Code-Mac](#)

Class Captures

Link for Class Captures:

<https://community.mis.temple.edu/mis2101sec002fall2021/zoom-virtual-classroom/>



Assignment 1: Course Intro Video

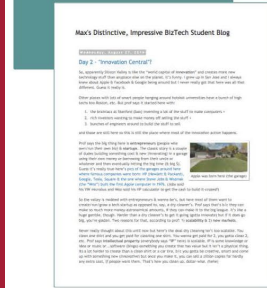
Fall 2021

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

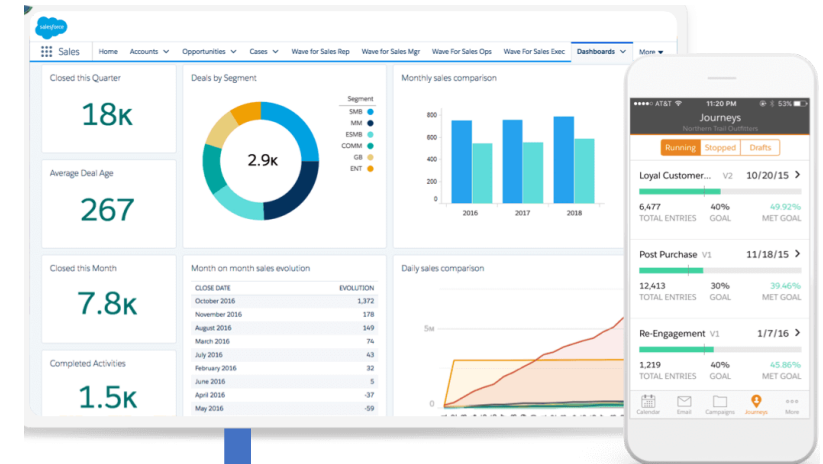
- ❖ Management Information Systems (MIS)
- ❖ System Definition
- ❖ System Development/Design
- ❖ System Architecture

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 a "Stock up for college" banner. Below the search bar, there is a "1 result for 'javascript absolute beginner's guide / kirupa chinnathambi'" notification. The main content area is divided into a left sidebar and a main product listing area. The sidebar includes a "Department" section with a list of categories such as "JavaScript Programming", "Introductory & Beginning Programming", and "Computers & Technology". It also includes an "Avg. Customer Review" section with star ratings and a "Condition" section with options for "New" and "Used". The main product listing area displays three sponsored results. The first result is "JavaScript Absolute Beginner's Guide" by Kirupa Chinnathambi, published in July 2016. It is available in paperback for \$19.06 (down from \$29.99) and on Kindle for \$14.39 (down from \$23.99). The second result is "JavaScript: Programming Basics for Absolute Beginners (Step-By-Step) (Volume 1)" by Nathan Clark, published in August 2017. It is available in paperback for \$16.38 and includes a note: "Want to start coding in JavaScript but have no idea where to start? This step-by-step guide will have you creating programs from scratch in no time!". The third result is "Programming for Beginners: 3 Books in 1- HTML+CSS+JavaScript (Basic Fundamental Guide for Beginners)" by MG Martin, published in September 2018. It is available in paperback for \$24.99 and includes a note: "A Powerful blueprint and compilation for those who are starting their journey in Computer Programming".

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 from 29 reviews. The paperback price is \$19.99 (originally \$29.99), and the Kindle price is \$14.39 (originally \$23.99). The listing includes a "prime" logo and a "FREE One-Day. Get it Tomorrow, Jul 23" offer. 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 from 33 reviews. The paperback price is \$16.38, and the Kindle price is \$11.99. The listing includes a "prime" logo and a "FREE Delivery Wed, Jul 24" offer. 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 from 13 reviews. The paperback price is \$24.99, and the Kindle price is \$14.99. The listing includes a "prime" logo and a "FREE Delivery Wed, Jul 24" offer. The page also features a sidebar on the left with navigation options such as "Department", "Books", "JavaScript Programming", "Introductory & Beginning Programming", "Computers & Technology", "Web Development & Design Programming", "Web Services", "Programming Languages", "Kindle Store", "JavaScript Programming", "Computer Programming", and "Web Programming".

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

products related to this item

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Book Title	Author	Format	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

SDLC methodologies

SDLC stands for System Development Life Cycle

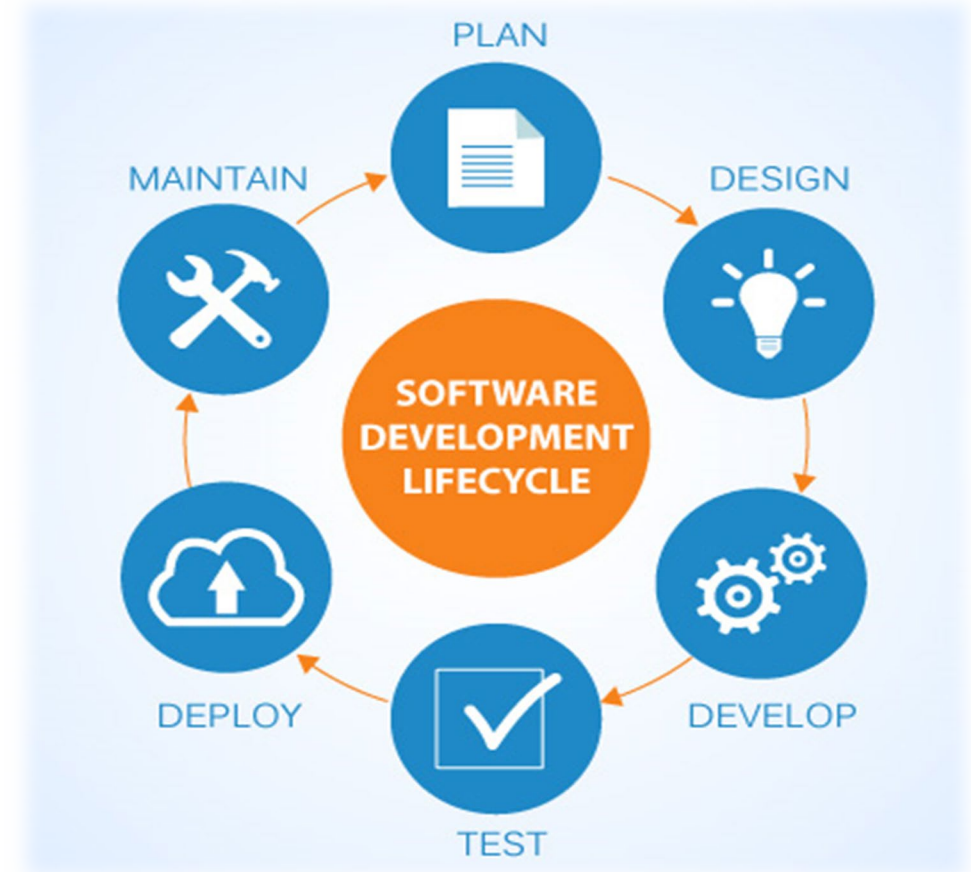


Image: <http://www.xanadutec.com/software-as-a-service.html>

SDLC methodologies

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

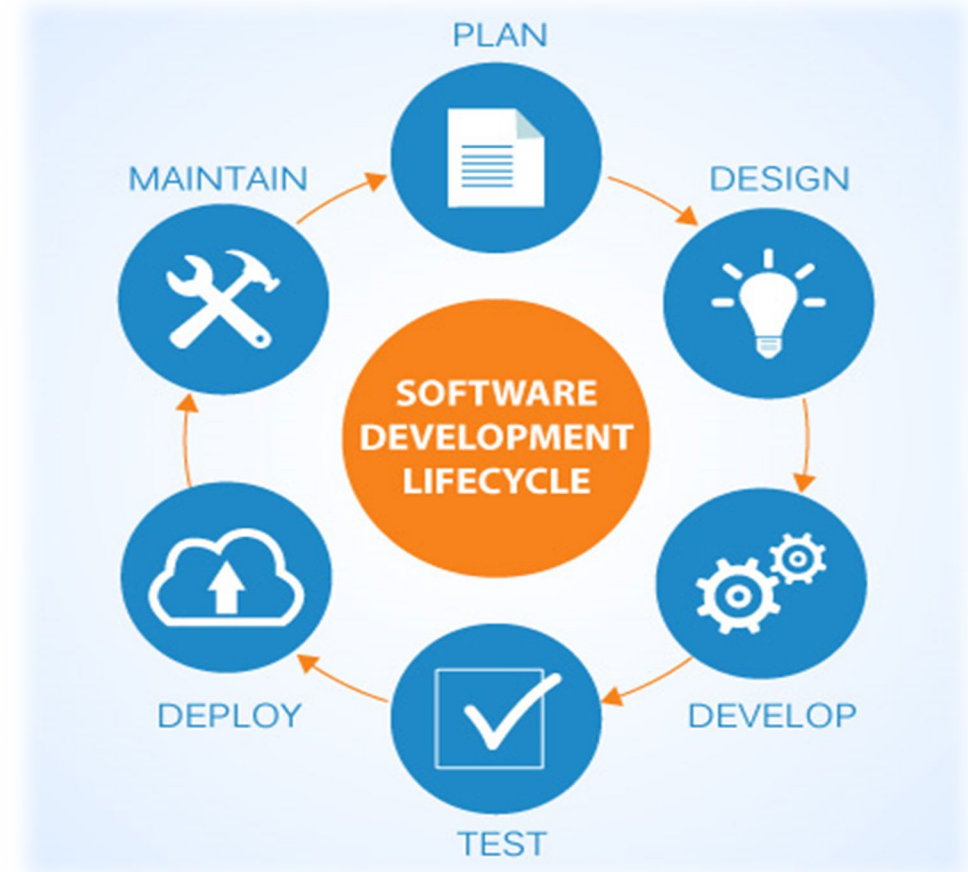


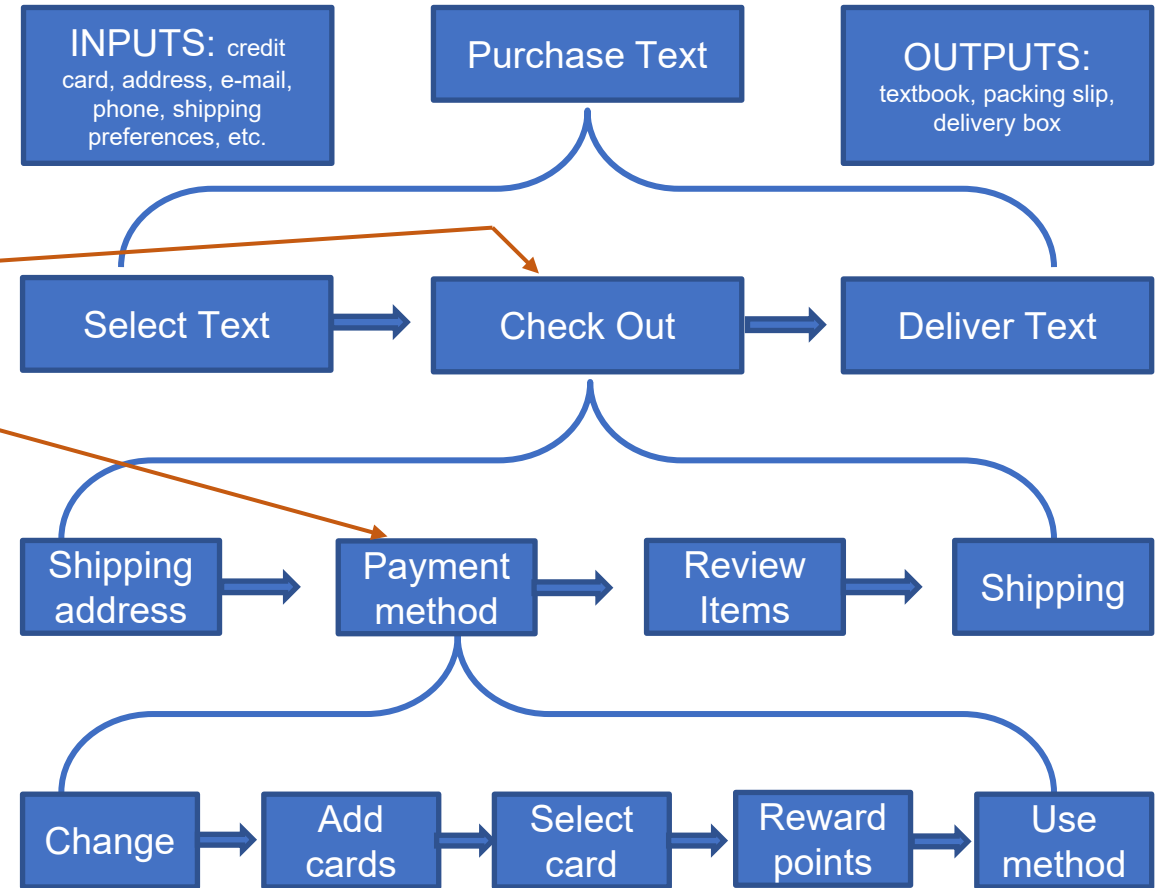
Image: <http://www.xanadutec.com/software-as-a-service.html>

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

- Mart Doyle

Process Decomposition

- Single entity
- Subsystem



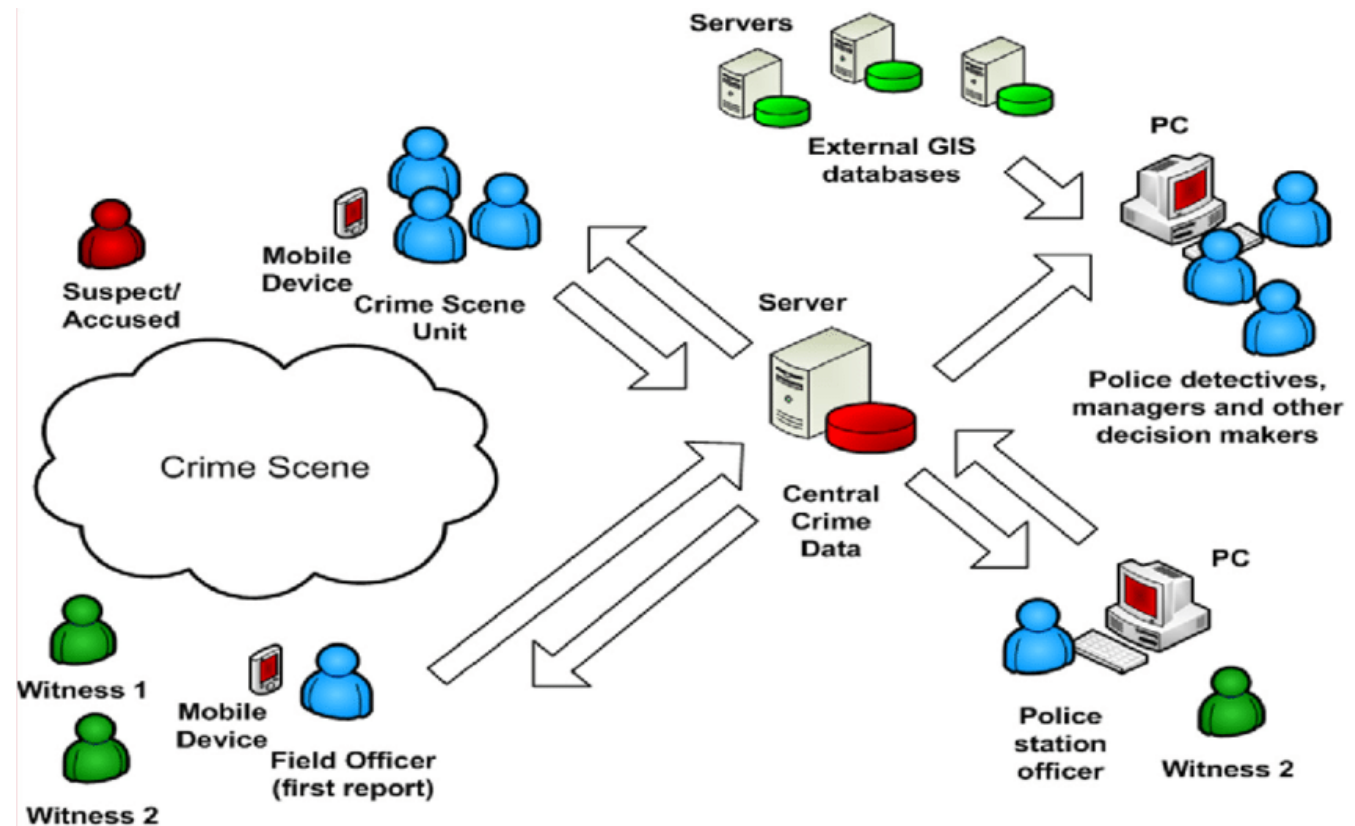
System Architecture

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

- Boris Golden

Systems Architecture

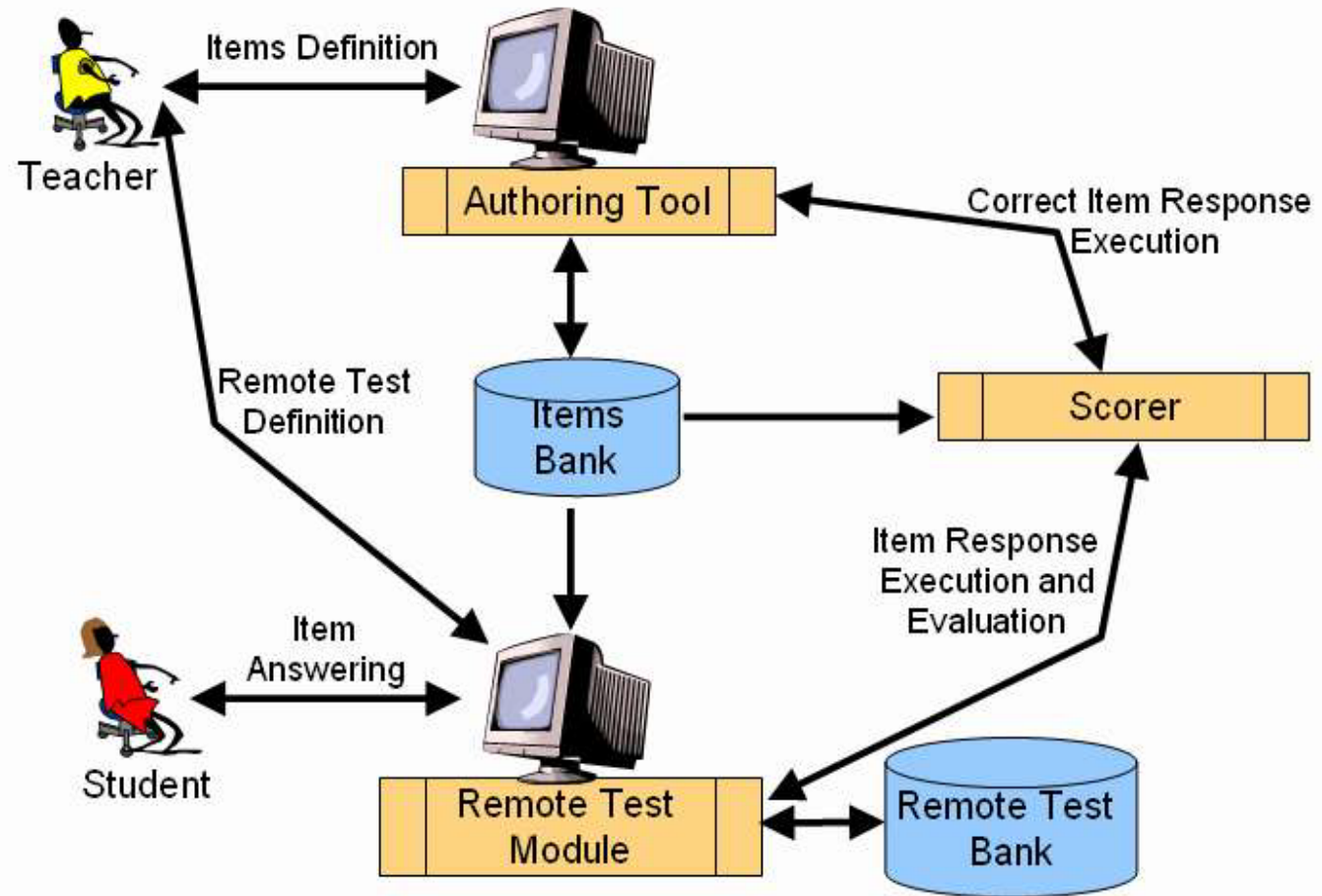
- ❖ Conceptual Diagram
- ❖ Structural components
- ❖ Identify/Solve Problems
- ❖ Existing or New
- ❖ Communication tool



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!!!