



# Digital Systems

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1.1 Introduction to MIS

**FOX**  
**MIS**

# Welcome!

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Spring 2023

**FOX**  
**MIS**

# Introduction to Instructor

## *Marie-Christine Martin*

- ❖ 20+ years of experience in the IT industry
- ❖ E-mail: [mcmartin@temple.edu](mailto:mcmartin@temple.edu)
- ❖ Office: Speakman 209J
- ❖ Office Hours:
  - By appointment



# My Background

- **Education**
  - ❖ BS Industrial Engineering
  - ❖ MBA, Finance
- **Pre-Temple**
  - ❖ IBM (Canada, USA & Singapore)
  - ❖ HP Global
  - ❖ Oracle, USA
  - ❖ Self Employed Consultant
- **Adjunct Faculty**
  - ❖ Temple University, MIS
- **Full-Time Faculty Temple University**
  - ❖ Undergraduate - MIS
  - ❖ Graduate - FOX Business School MBA and Master In Management (MiM)
  - ❖ Academic Director, ITACS BNAI Master Program, MIS
  - ❖ AIS Faculty Advisor





# 2022 Winter break was fun!



# Course Support: Information Technology Assistants (ITAs)

- **Rahman  
Mohammed**



Email:

[rahman.mohammed@temple.edu](mailto:rahman.mohammed@temple.edu)

Office Hours: by appointment

- **Anna Boykis**



Email:

[anna.boykis@temple.edu](mailto:anna.boykis@temple.edu)

Office Hours: by appointment

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

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- 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!!!**

# Course Highlights

- **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**
- **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**

# Graded Components

Component	Percentage
In-Class Activities & Worksheets (approximately 17) * must be present in class to earn credit	10%
Assignments (11) ** no late assignments accepted – no exceptions!	30%
Exam #1 (50 minutes)	20%
Exam #2 (50 minutes)	20%
Exam #3 (50 minutes – held during finals week)	20%

\*In-Class activities must be submitted while in class. ( Exceptions will be provided for Covid-19 mandatory quarantines)

\*\*Please note that two weeks after a grade is posted, the grade will be considered “final.”

# Extra Credit Opportunity

- **Onetime opportunity!!!**
- **Improve your final score**
- **Interact with an AI-powered interviewer.**
- **Practice your interview skills**
- **Includes a chance to win \$20 gift card too!**



**EARN  
EXTRA  
CREDIT**

# Readings & Videos – Part 1

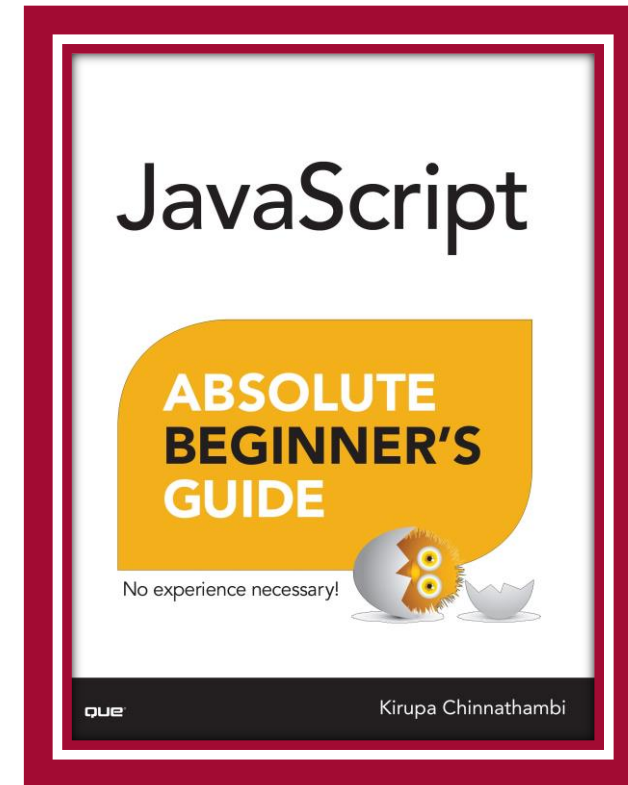
- **No required texts the first 2/3's of the semester!**



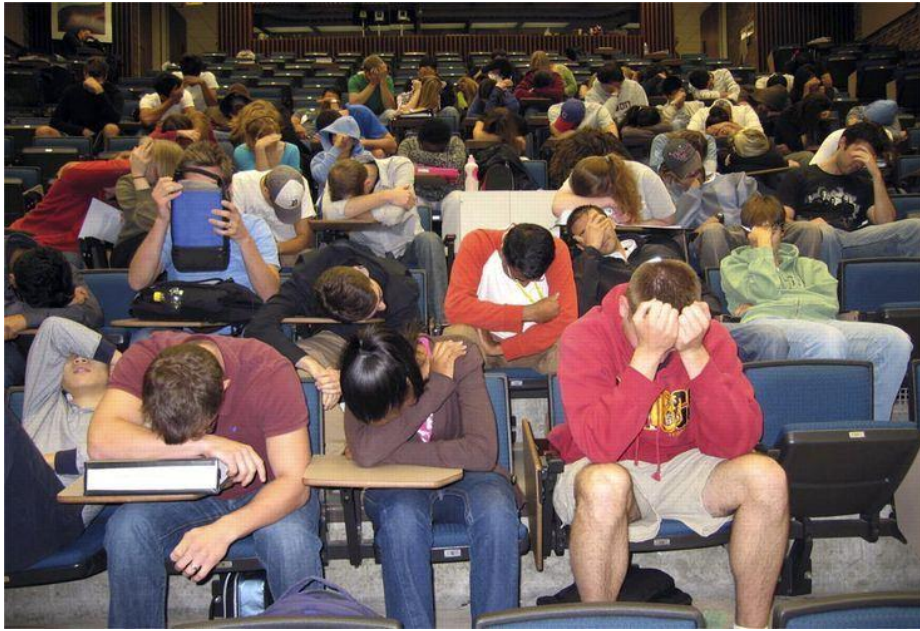
- **Engaging collection**
- **Current content**
- **Available for Free!!!**

# Readings & Videos – Part 2

- **JavaScript**
  - Create simple JavaScript programs
  - Prompt users for input
  - Utilize loops
  - Process Information
  - **JavaScript Absolute Beginner's Guide, 2nd Edition**



# 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**



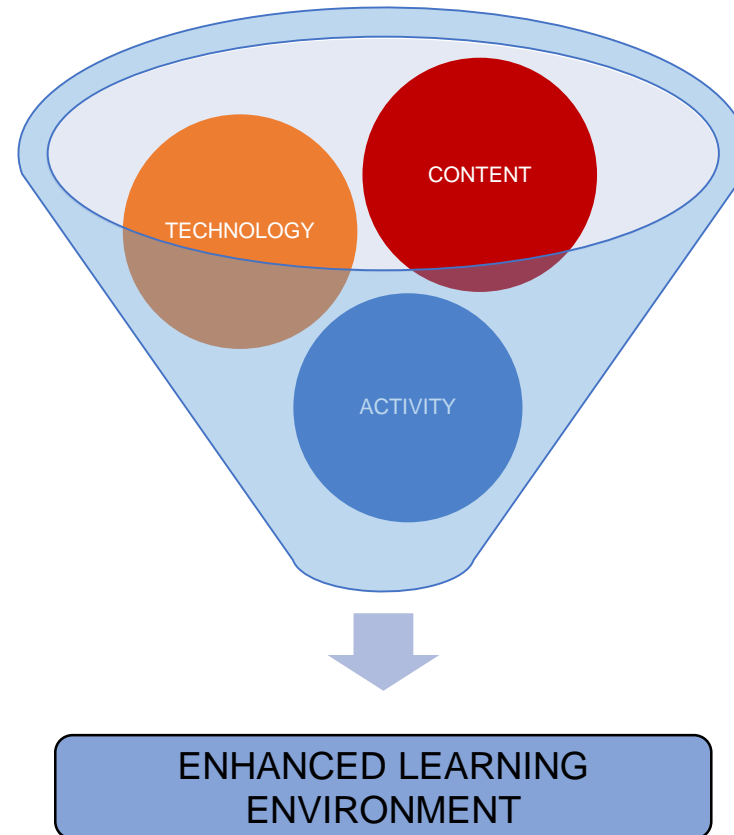
# Active Learning Components

TECHNOLOGY

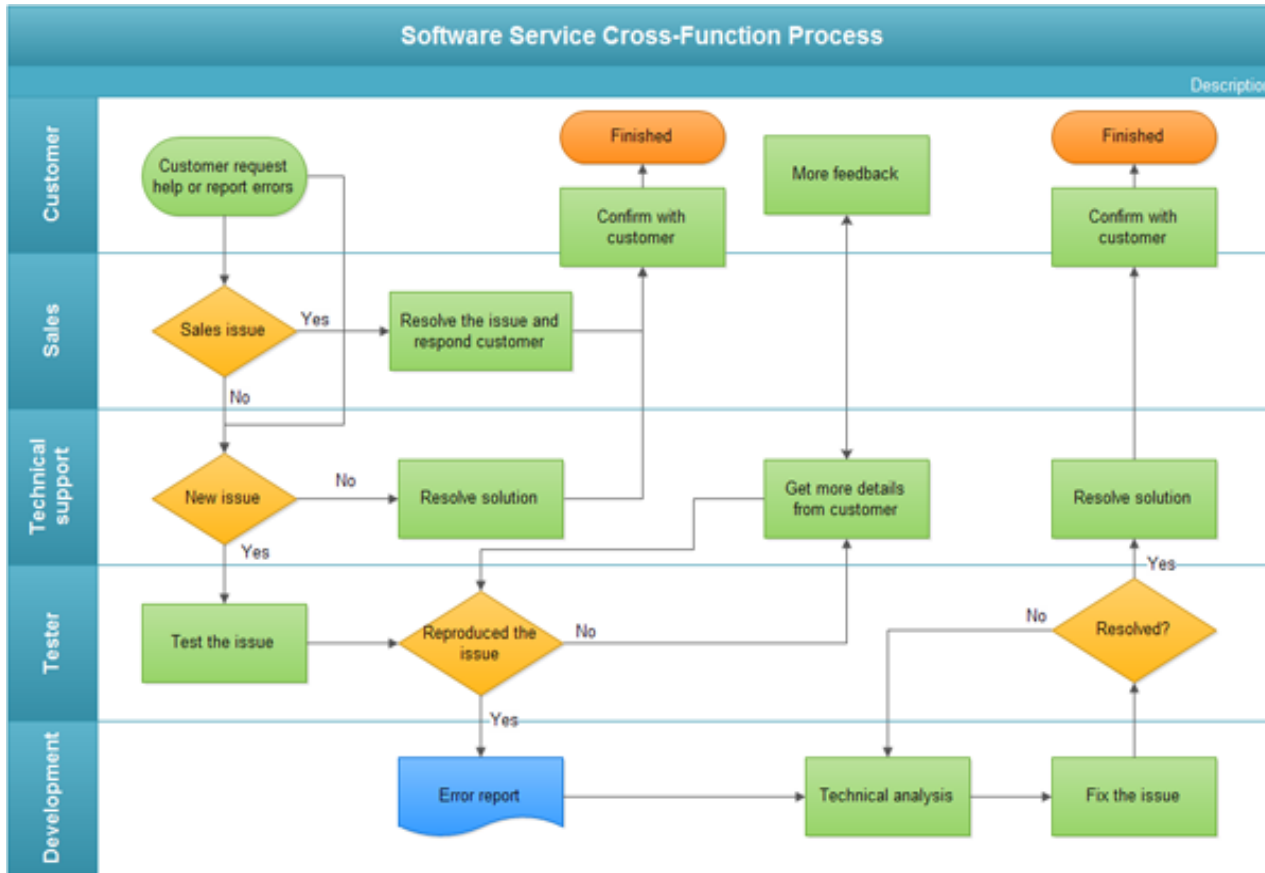
CONTENT

ACTIVITY

# The Active Learning Funnel



# The In-class Activity



- Process Diagrams
  - Swim lane diagram
- Real life scenarios
- Knowledge Application
- Problem Solve
- Synthesize & Optimize Solutions

# The In-class Activity – Canvas

**Quiz Instructions**

After completing this activity you will be able to:

- State a key fact about this course, its instructor, and its subject
- List basic questions that can be applied to nearly any situation

Question 1 0 pts

Step 1: Prepare three questions (individually)

1. A question about this course
2. A question about the instructor
3. A question about Information Systems (IS)

HTML Editor

B I U A A I [List Icons] [Table Icon] [Link Icon] [Image Icon] [Video Icon] [Globe Icon] [YouTube Icon] [Dropdown] 12pt Paragraph [Link Icon]

0 words

- **Reinforce assigned materials**
  - Readings
  - Videos
  - Lecture
- **Exam Preparation**
- **Work in teams**
- **Must be present in class**



ASSOCIATION FOR  
INFORMATION SYSTEMS

# Information Systems Job Index

*Careers in Information Systems*



Fox School of Business  
TEMPLE UNIVERSITY®



Read the full report at [isjobindex.com](http://isjobindex.com)

Based on 1408 recent graduates from 36 universities across the U.S.

## THE 2022 IS JOB MARKET IS RED HOT



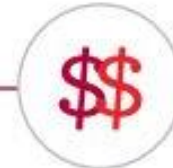
### JOB PLACEMENT RATE

	At Graduation	6-Months after Graduation
BACHELOR'S:	<b>81%</b>	<b>91%</b>
MASTER'S:	<b>65%</b>	<b>92%</b>



### CONFIDENCE IN JOB MARKET

BACHELOR'S: **64%**  
MASTER'S: **60%**



### AVERAGE SALARY

BACHELOR'S: **\$75,517**  
MASTER'S: **\$94,839**

## Entry level IS job entrants are optimistic about their careers



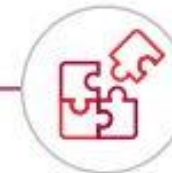
### SATISFACTION & ENTHUSIASM ABOUT JOB OFFER

BACHELOR'S: **81%**  
MASTER'S: **73%**



### OFFER FROM APPEALING ORGANIZATION

BACHELOR'S: **86%**  
MASTER'S: **82%**



### JOB IS A GOOD FIT

BACHELOR'S: **72%**  
MASTER'S: **72%**

# ROADMAP

START

## Week 1:

### Introduction & Systems Analysis

- Course Description
- Systems Thinking

Assignments #01 & 02

## Week 2:

### Digital Product Management & Introduction to Process Mapping

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

Assignment #03

## Week 3:

### Data Modeling with Entity Relationship Diagrams

- Swim Lane Diagrams
- ERD Diagrams

Assignment #04

## Week 4:

### Digital Systems – Learn IT! #1

- ERD Diagrams
- Learn IT Kickoff

Assignment #05

## Week 5:

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

- CRM & ERP

\*Exam: check course site  
Assignment #06

## Week 9:

### Exam #2 & JavaScript Unit #1

- Parts I & II
- Hello World, Variables

\*Exam: check course site

## Week 8:

### Information Systems & Cybersecurity

- Protection Protocols
- Artificial Intelligence

Assignment #08

## Week 7:

### Platforms & Digital Business Models: Part I & II

- Platforms & Digital Models
- APIs

## Week 6:

### Information Systems: Parts I - III

- Data Analytics
- SCM

Assignment #07

## Week 10:

### JavaScript Unit #2 Functions

- Values & Variables
- Operator types
- Strings

Assignment #9

## 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

Assignment #10

## Week 13:

### JavaScript Unit #4 Working with Loops & HTML & CSS Unit

- Writing the code
- HTML & CSS Basics

## Week 14:

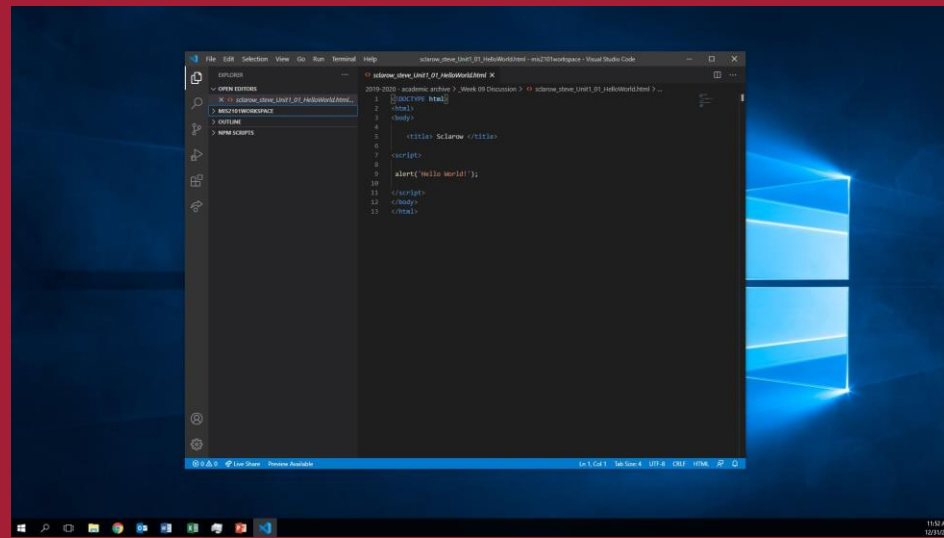
### HTML & CSS Unit (continued)

- HTML & CSS Basics
- Course Reflection

### Exam #3

Assignments #11

FINISH



# Course Overview Video Due tonight!!

Assignment #1

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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.

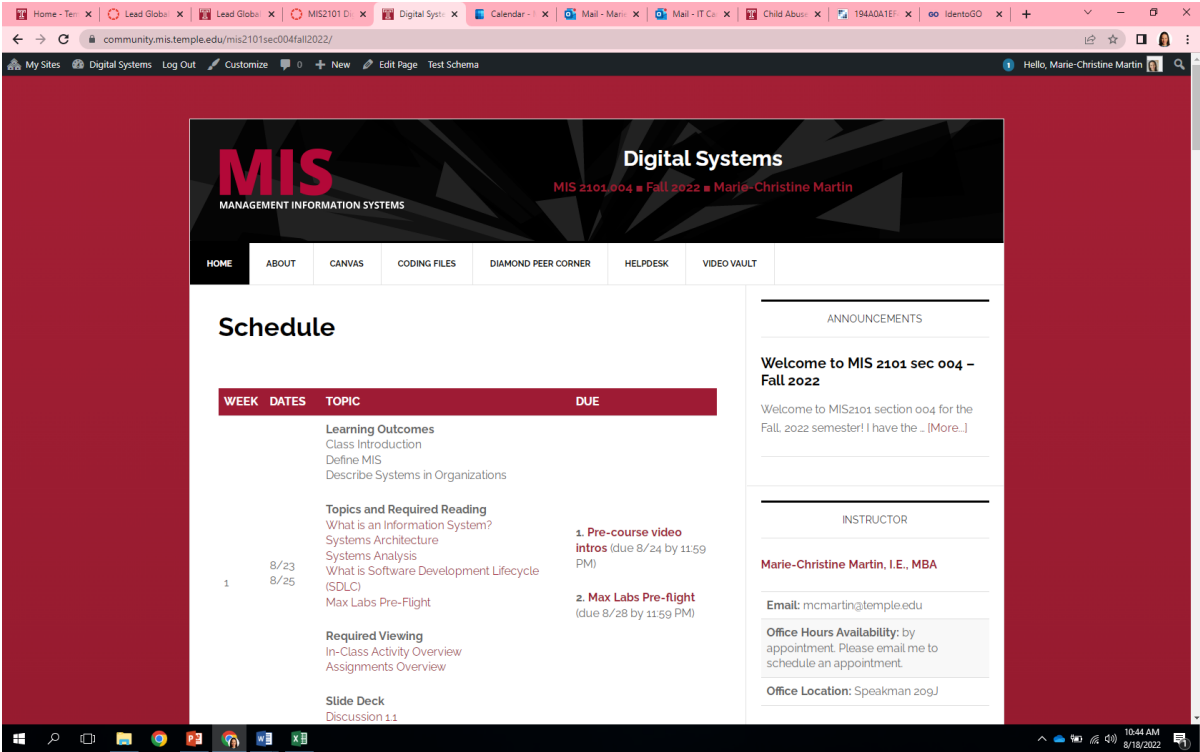
# Max Lab Pre-Flight Assignment due by EOD Monday

Assignment #2



# Class Site Review

- <https://community.mis.temple.edu/mis2101sec003spring2023/>





# Information Systems in Organizations

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1.1 Intro to Information Systems in Organizations  
In-Class Activity

**FOX**  
**MIS**



# Digital Systems

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1.2 What are Systems?  
Focus this week: System Analysis

**FOX**  
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### HTML & CSS Unit (continued)

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### Exam #3

Assignments #11

FINISH

# Business Systems Innovation Labs Pre-lab Pre-flight Checklist



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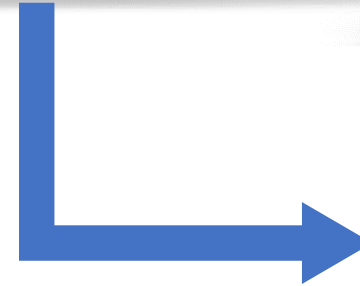
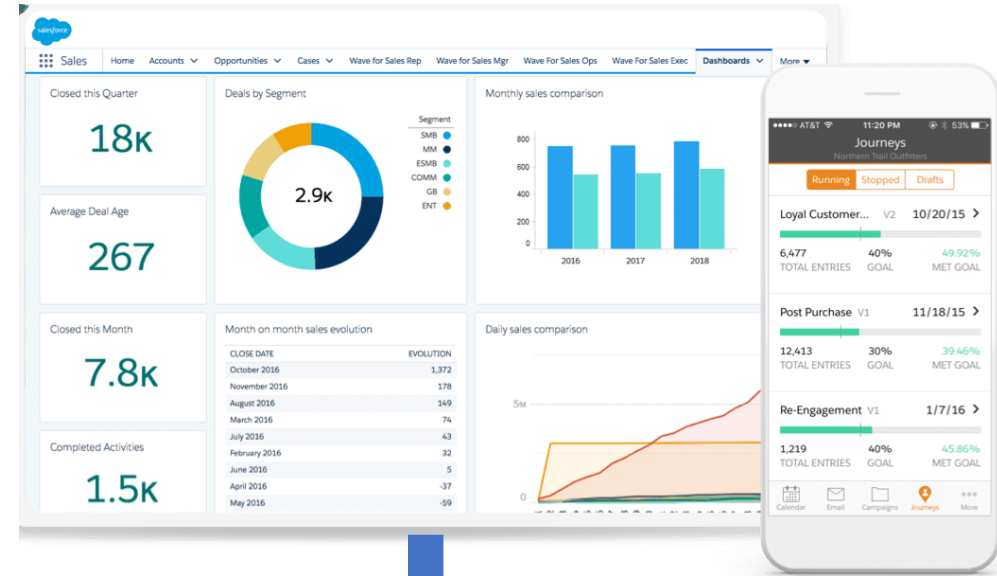
Assignment #2



# What is MIS?

Using Information Technology to solve business problems.

- MIS is not Computer Science
- It's 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://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](https://www.kindpng.com/picc/m/568-5683178_real-cash-stack-100-dollar-bill-hd-png.png)

# World View – A collection of “Systems”

## Systems = people + process + technology

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



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



# Understanding Systems

## Buying textbooks on Amazon

- What is 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 is divided into a left sidebar and a main product list. The sidebar includes a "Department" section with a tree view of categories like "Books", "JavaScript Programming", and "Computer User Books". It also features an "Avg. Customer Review" section with star ratings and an "Accessibility Features" section with a checkbox for "Screen Reader Supported". The main product list displays three sponsored items: "O'REILLY Explore further Javascript resources", "JavaScript: The Definitive Guide: Activate Your Web Pages (Definitive Guides)", and "Secrets of the JavaScript Ninja". Below these, the primary search result is "JavaScript Absolute Beginner's Guide" by Kirupa Chinnathambi, published on Jul 18, 2016. It has a 4.5-star rating from 29 reviews and is available in paperback for \$19.06 (originally \$29.99) and Kindle for \$14.39 (originally \$23.99). Other sponsored items include "JavaScript: Programming Basics for Absolute Beginners (Step-By-Step) (Volume 1)" by Nathan Clark, published on Aug 16, 2017, with a 4.5-star rating from 33 reviews, and "Programming for Beginners: 3 Books in 1- HTML+CSS+JavaScript (Basic Fundamental Guide for Beginners)" by MG Martin, published on Sep 18, 2018, with a 4.5-star rating from 13 reviews. Each product listing includes a small image of the book cover, the title, author, publication date, star rating, and price information.

# Understanding Systems (cont.)

## Buying lunch

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



# Understanding Systems (cont.)

## 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 !!!

Report incorrect product information.

Discover the best books of 2019 so far

Frequently bought together

Total price: \$67.83

Add all three to Cart

Add all three to List

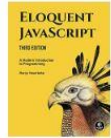






This item: JavaScript Absolute Beginner's Guide by Kirupa Chinnathambi Paperback \$19.06

JavaScript and JQuery: Interactive Front-End Web Development by Jon Duckett Paperback \$30.81

A Smarter Way to Learn JavaScript. The new tech-assisted approach that requires half the effort by Mark Myers Paperback \$17.96



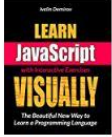




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**“information system –  
*an integrated set of components for  
collecting, storing, and processing data  
and for providing information, knowledge,  
and digital products.*”**

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- Encyclopedia Britannica

# 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/>

# SDLC methodologies

- **Waterfall**
- **Agile**
- **Lean**
- **Scrum**
- **DevOps**



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

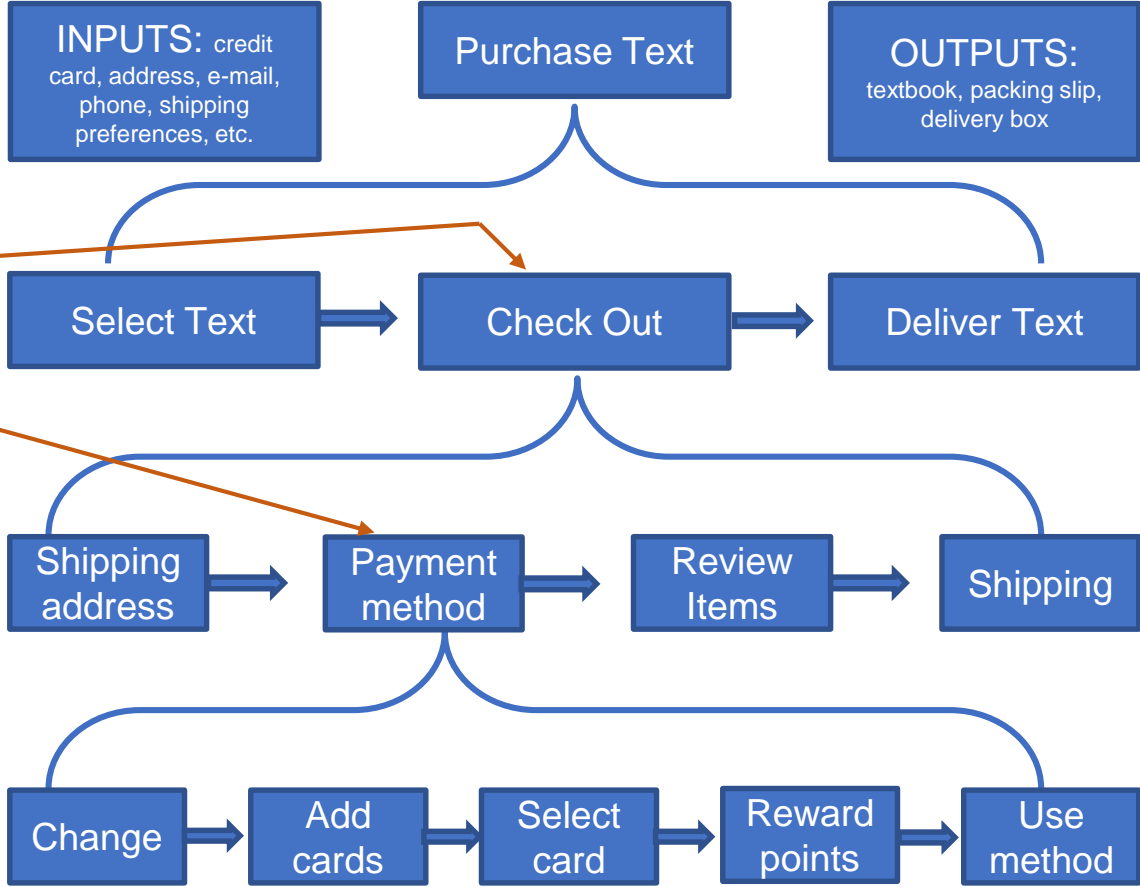
**“Once a Product Manager / Technologist understands the *business problem*, they can architect a solution.”**

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- Mart Doyle

# Process Decomposition

- **Single entity**
- **Subsystem**





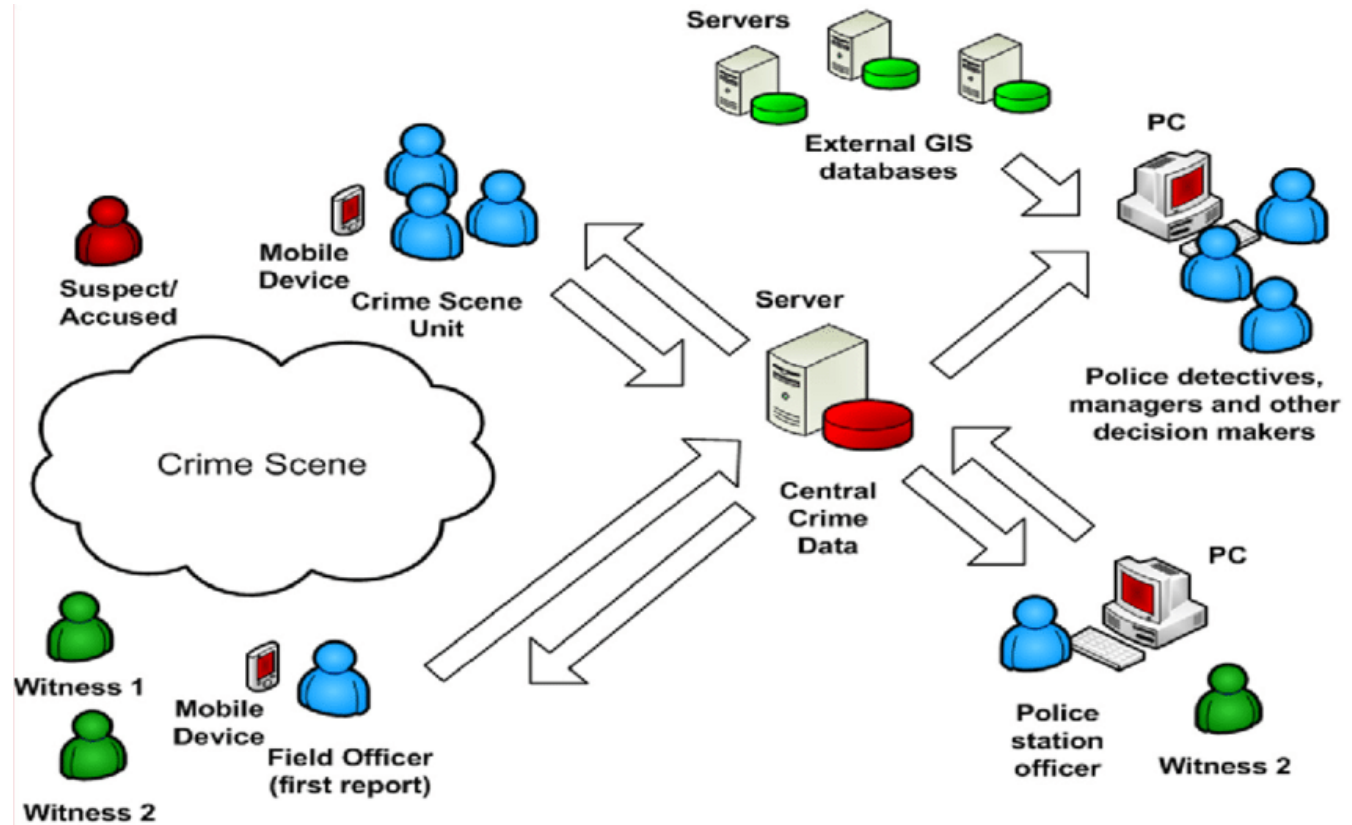
**“Systems Architecture is a response to the conceptual and practical difficulties of the description and the design of complex systems.”**

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- Boris Golden

# Systems Architecture

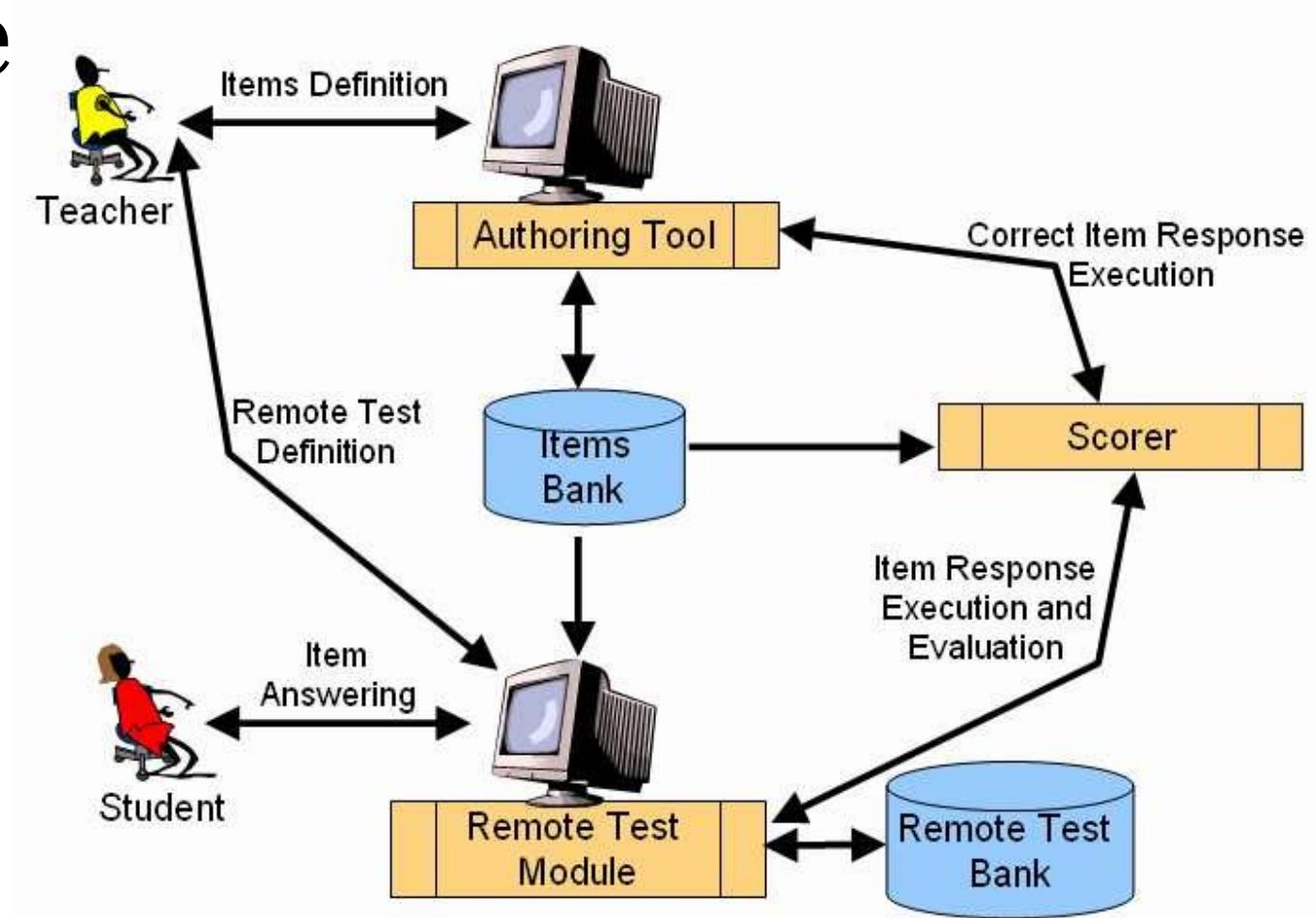
- Conceptual Diagram
- Structural components
- Identify/Solve Problems
- Existing or New
- Communication tool



Source: [https://www.researchgate.net/figure/Conceptual-System-Architecture\\_fig2\\_327987580](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/>

## Recap:

### 1. What is “Systems analysis?”:

Problem solving technique that “decomposes” a system into its component pieces for the purpose of studying how well these parts work & interact to accomplish their purpose

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### 2. What is “Systems Architecture?”:

Representation of the system & all of its parts/components



# Information Systems in Organizations

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1.2 What are Systems?  
In-Class Activity #2

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## Prepare for week 2 – complete before our next class:

- Read articles
  - Watch videos
  - Take notes!
-