TEMPLE UNIVERSITY

Digital Systems

1.1 Introduction to MIS

FOX MIS

Welcome!

Spring 2023

FOX
MIS

Introduction to Instructor

Marie-Christine Martin

- 20+ years of experience in the IT industry
- E-mail: 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

PHOTOGRAPHY
www.kdphotography.net

2022 Winter break was fun!

Course Support: Information Technology Assistants (ITAs)

- **Rahman Mohammed**

Email:
rahman.mohammed@temple.edu

Office Hours: by appointment

- **Anna Boykis**

Email:
anna.boykis@temple.edu

Office Hours: by appointment

“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!!!**

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!**

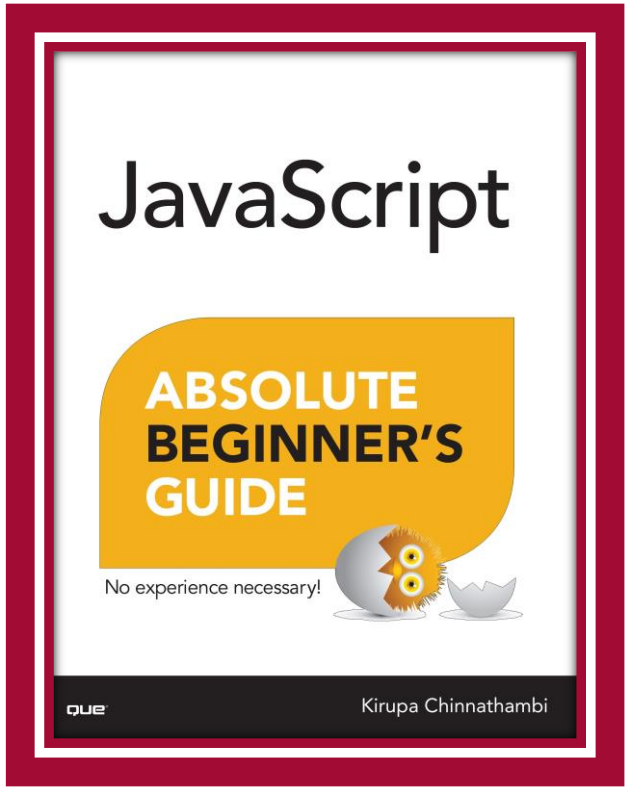
Readings & Videos – Part 1

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

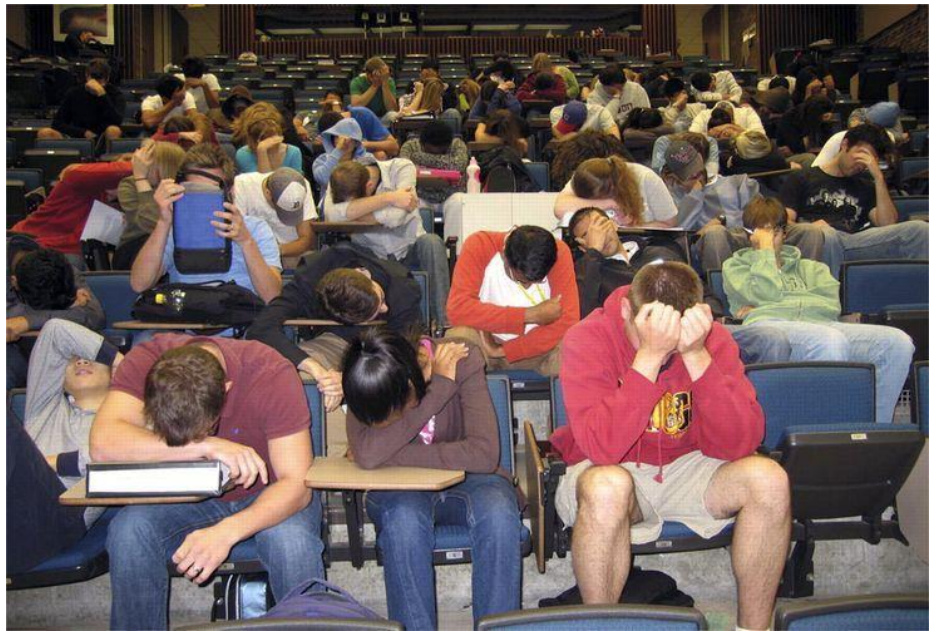
- **Engaging collection**
- **Current content**
- **Available for Free!!!**

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



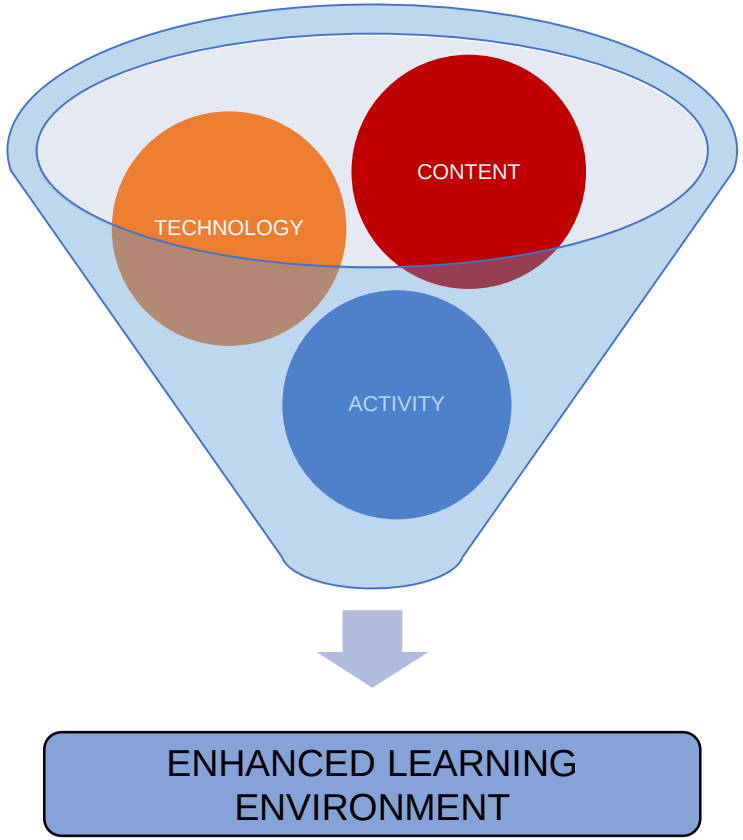
Source: https://www.theodysseyonline.com/11-things-college-lecture-hall

- 3 Hours of zzzzzzzzz's

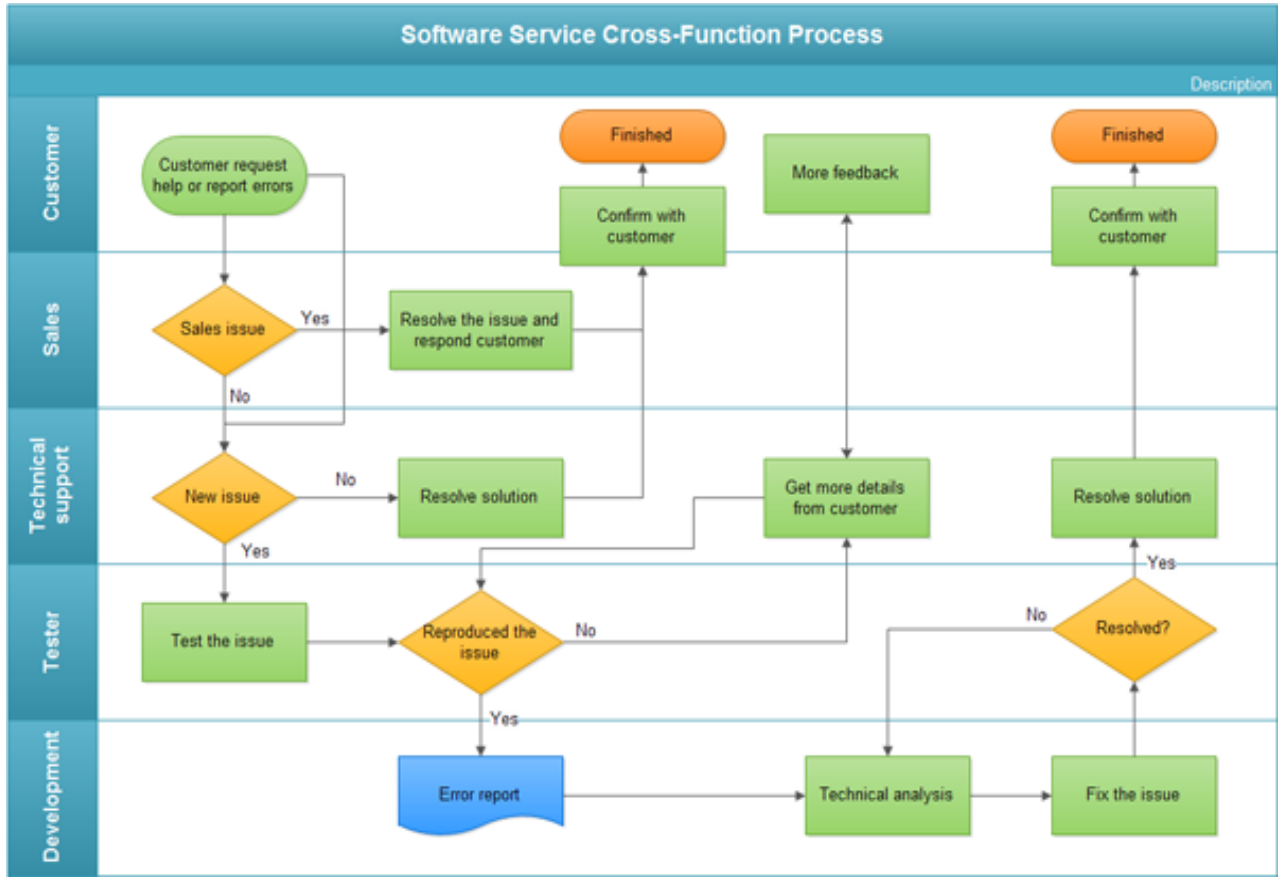
- 1 Hour Discussion
- 2 Hours of Activity

Active Learning Components

The Active Learning Funnel

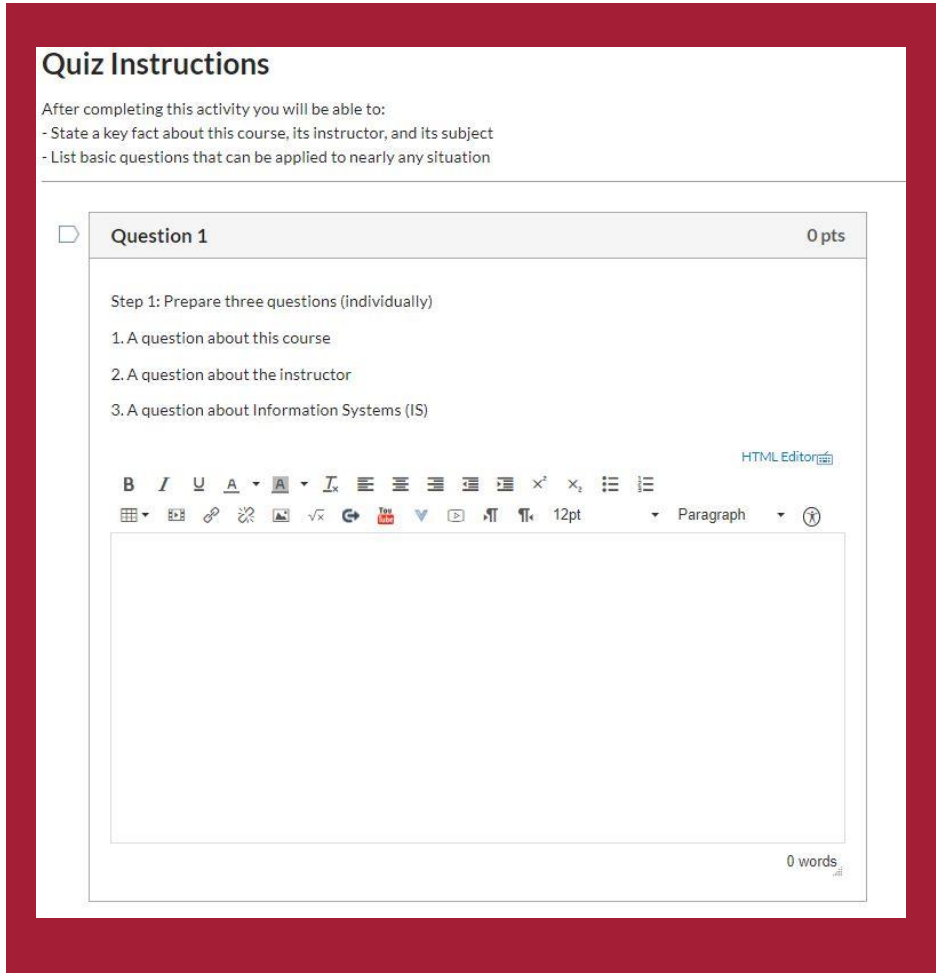


The In-class Activity

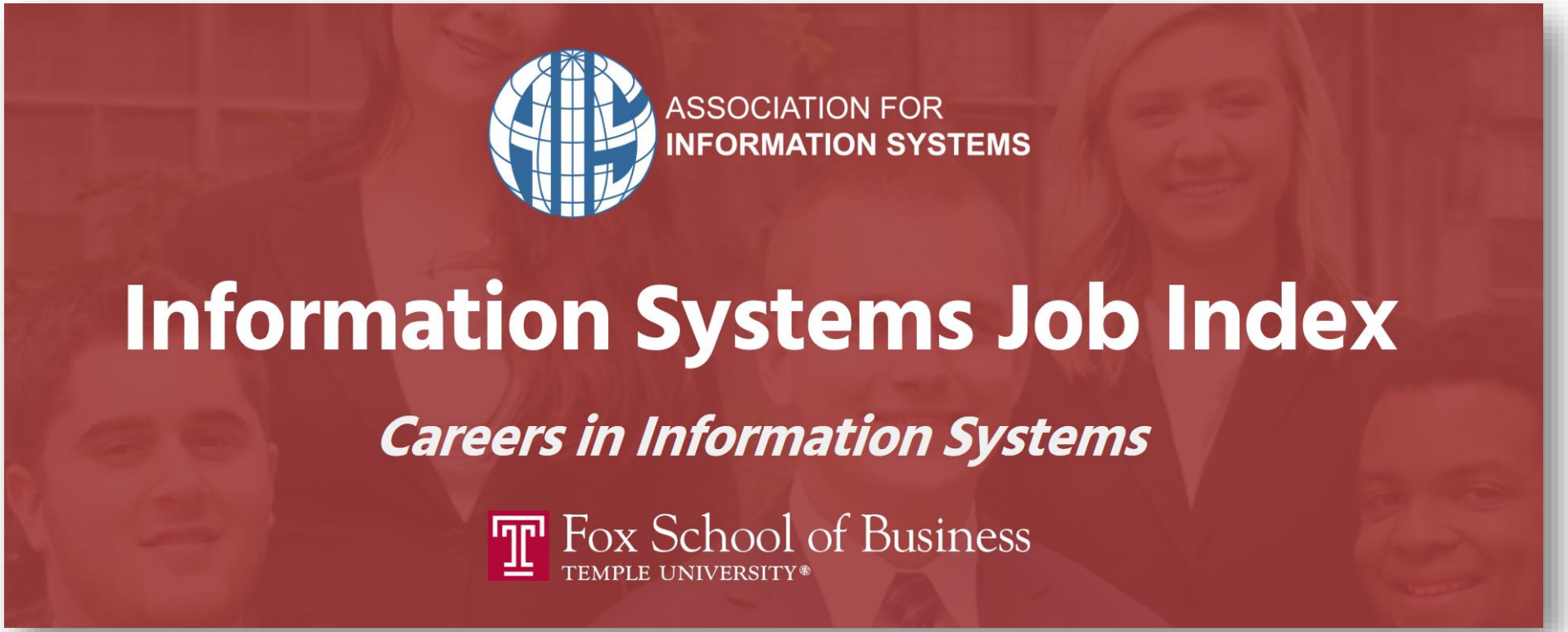


- **Process Diagrams**
  - **Swim lane diagram**
- **Real life scenarios**
- **Knowledge Application**
- **Problem Solve**
- **Synthesize & Optimize Solutions**

The In-class Activity – Canvas



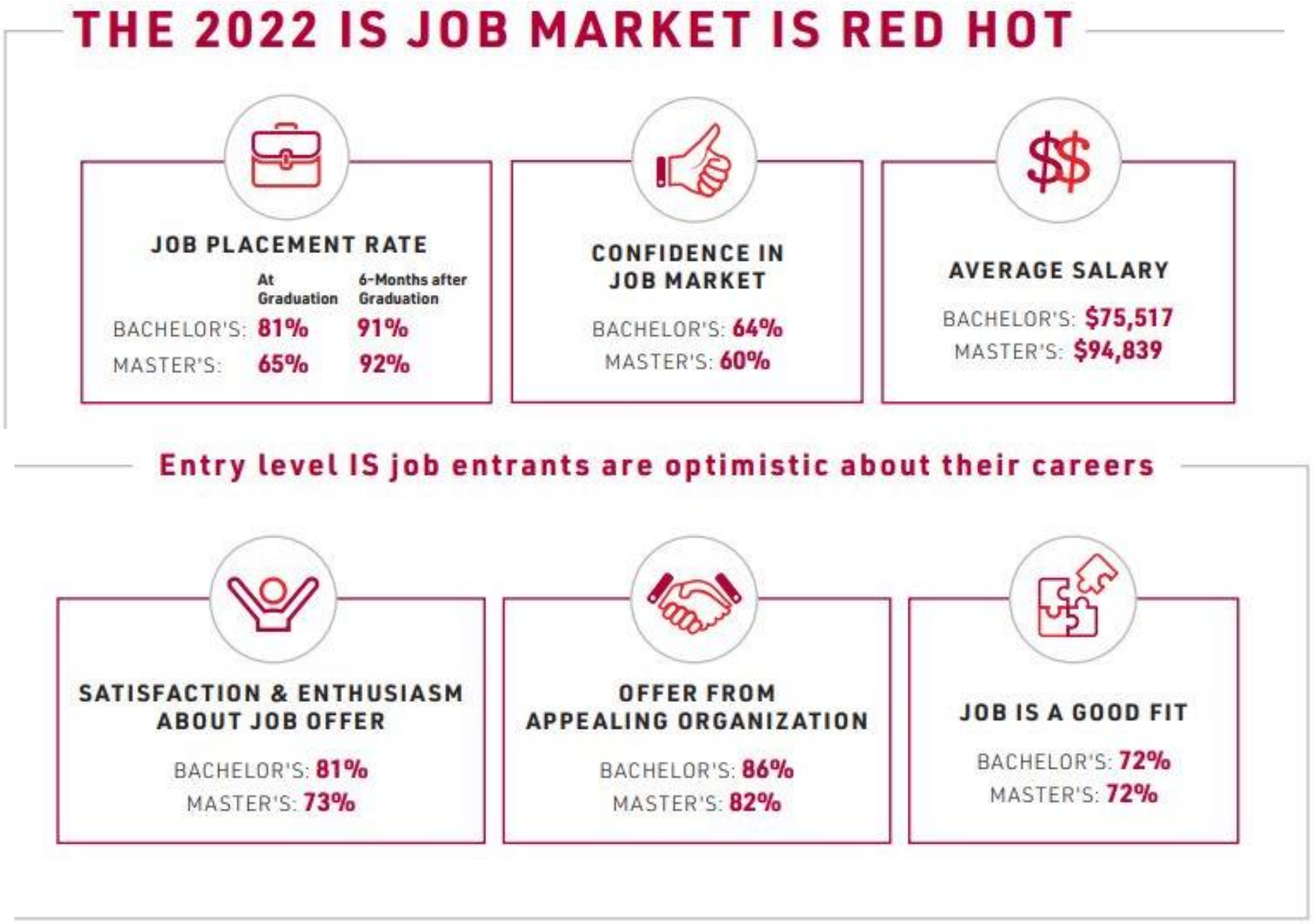
- **Reinforce assigned materials**
  - **Readings**
  - **Videos**
  - **Lecture**
- **Exam Preparation**
- **Work in teams**
- **Must be present in class**



Read the full report at **isjobindex.com**

FOX MIS

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



FOX MIS

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 6:
Information Systems: Parts I - III
- Data Analytics
- SCM

Assignment #07

Week 7:
Platforms & Digital Business Models: Part I & II
- Platforms & Digital Models
- APIs

Week 8:
Information Systems & Cybersecurity
- Protection Protocols
- Artificial Intelligence

Assignment #08

Week 9:
Exam #2 & JavaScript Unit #1
- Parts I & II
- Hello World, Variables

*Exam: check course site

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

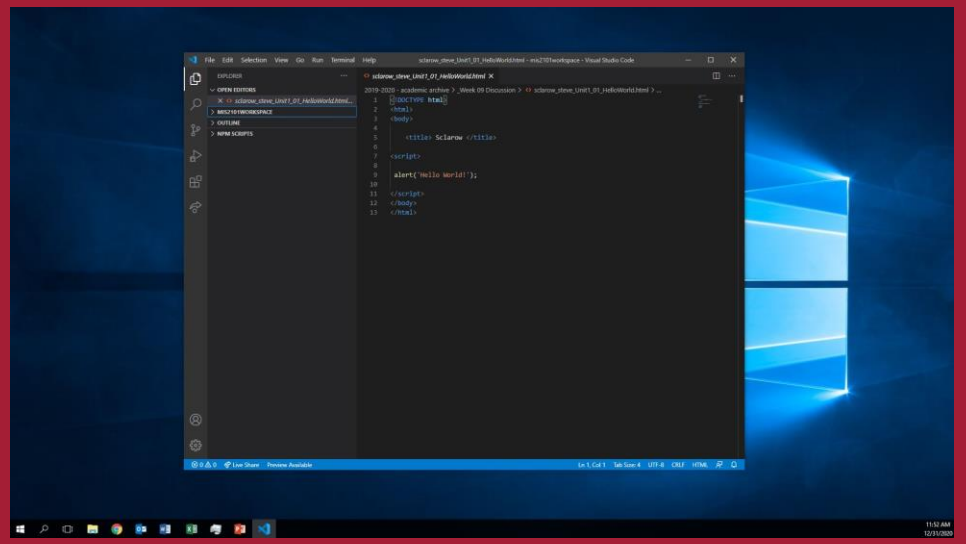
Week 13:
JavaScript Unit #4 Working with Loops & HTML & CSS Unit
- Writing the code
- HTML & CSS Basics

Week 14:
HTML & CSS Unit (continued)
- HTML & CSS Basics
- Course Reflection

Exam #3

Assignments #11

FINISH



Course Overview Video Due tonight!!

Assignment #1

FOX MIS

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*.

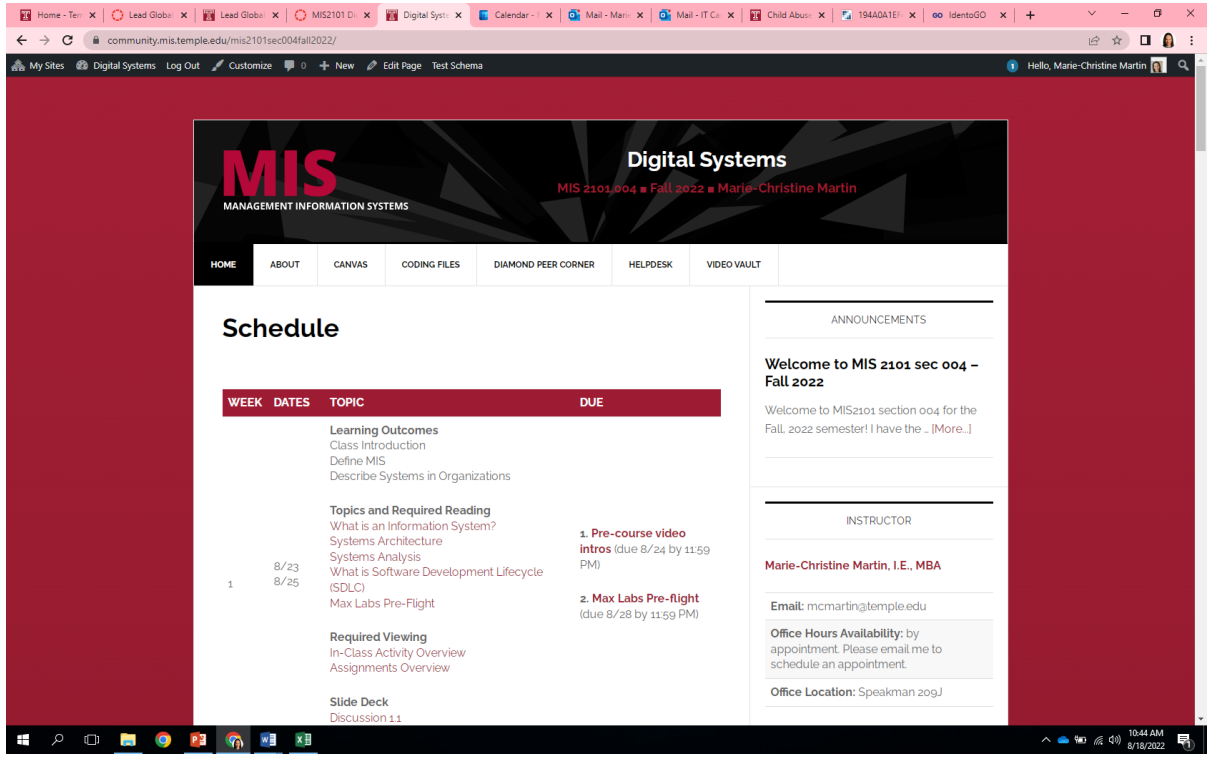
Max Lab Pre-Flight Assignment due by EOD Monday

Assignment #2

FOX MIS

Class Site Review

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



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Information Systems in Organizations

1.1 Intro to Information Systems in Organizations
In-Class Activity

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Digital Systems

1.2 What are Systems?
Focus this week: System Analysis

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MIS

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Business Systems Innovation Labs

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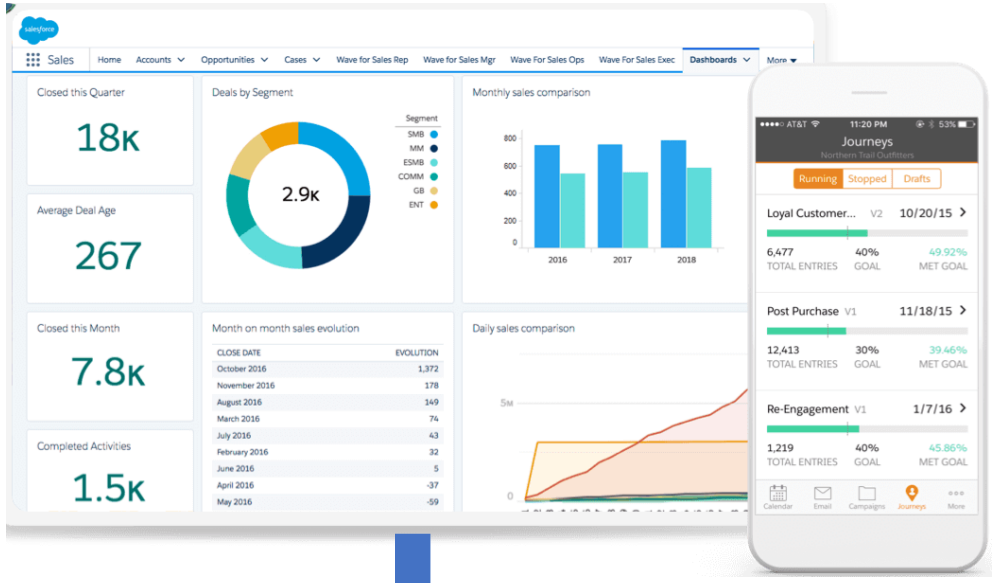
Assignment #2

FOX MIS

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://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

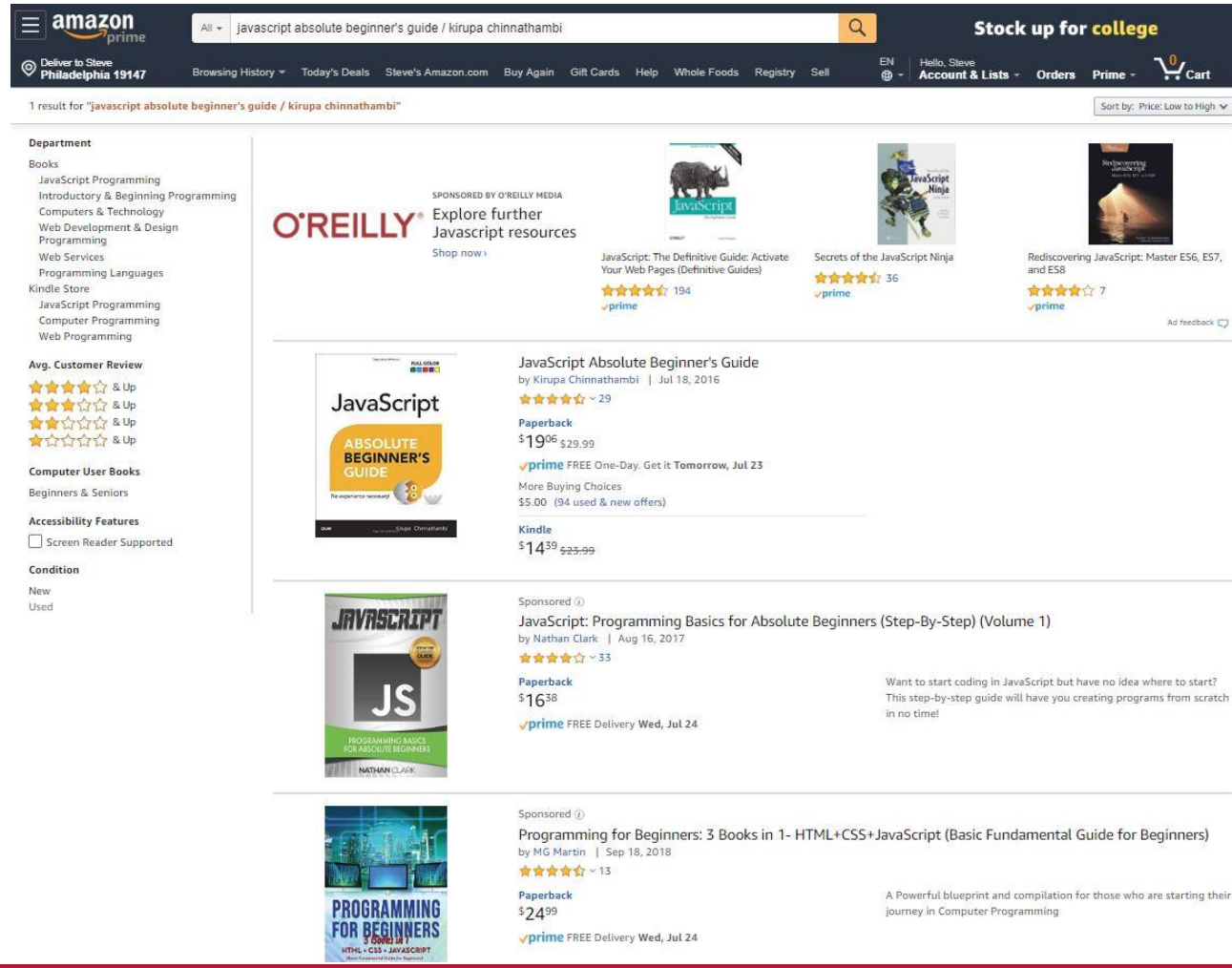
- Manipulation of information = value
- Managed by MIS professionals
- Systems surround us 24/7
- Application Programming Interface (API’s)

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???



Understanding Systems (cont.)

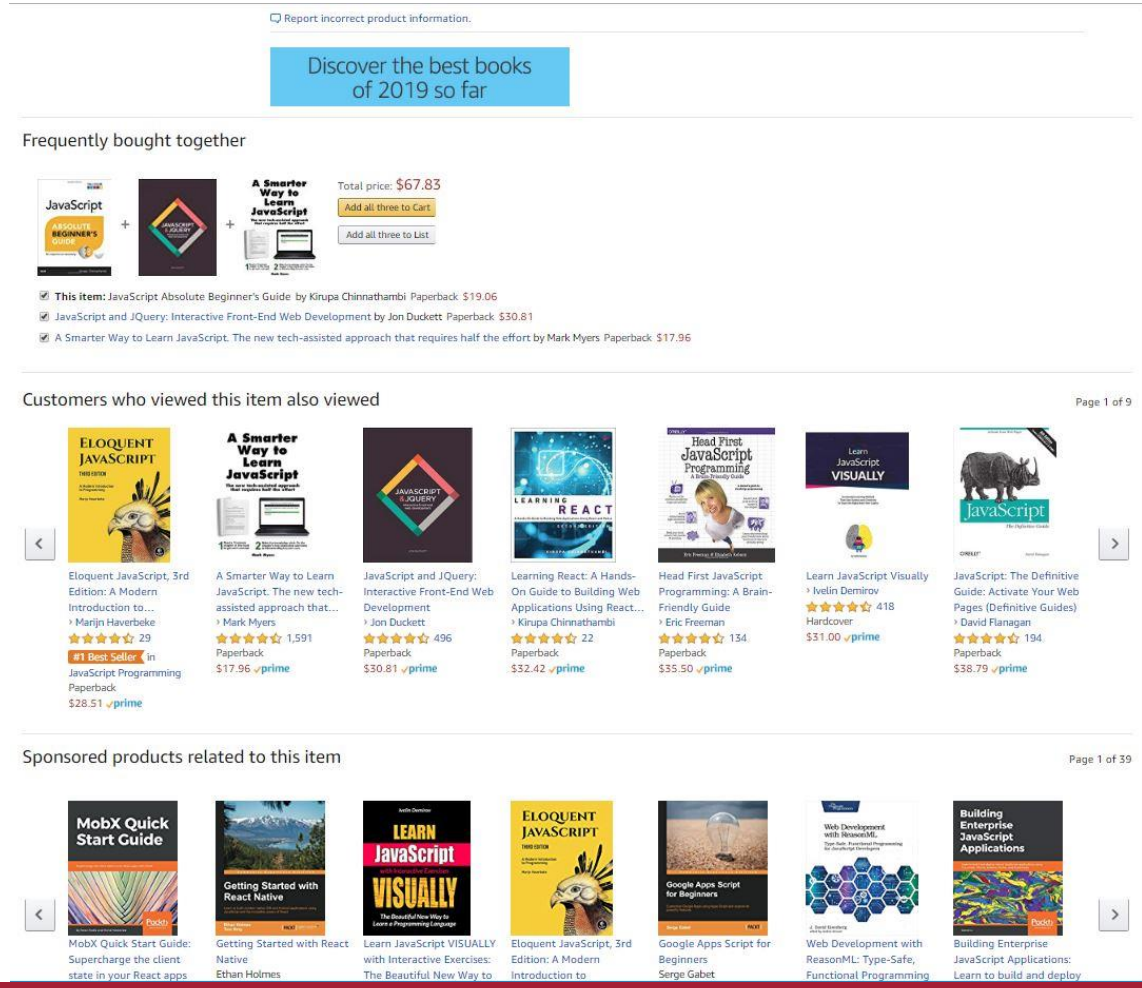
Buying lunch

- 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 !!!



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

- Encyclopedia Britannica

Source: https://www.britannica.com/topic/information-system/Management-support

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**

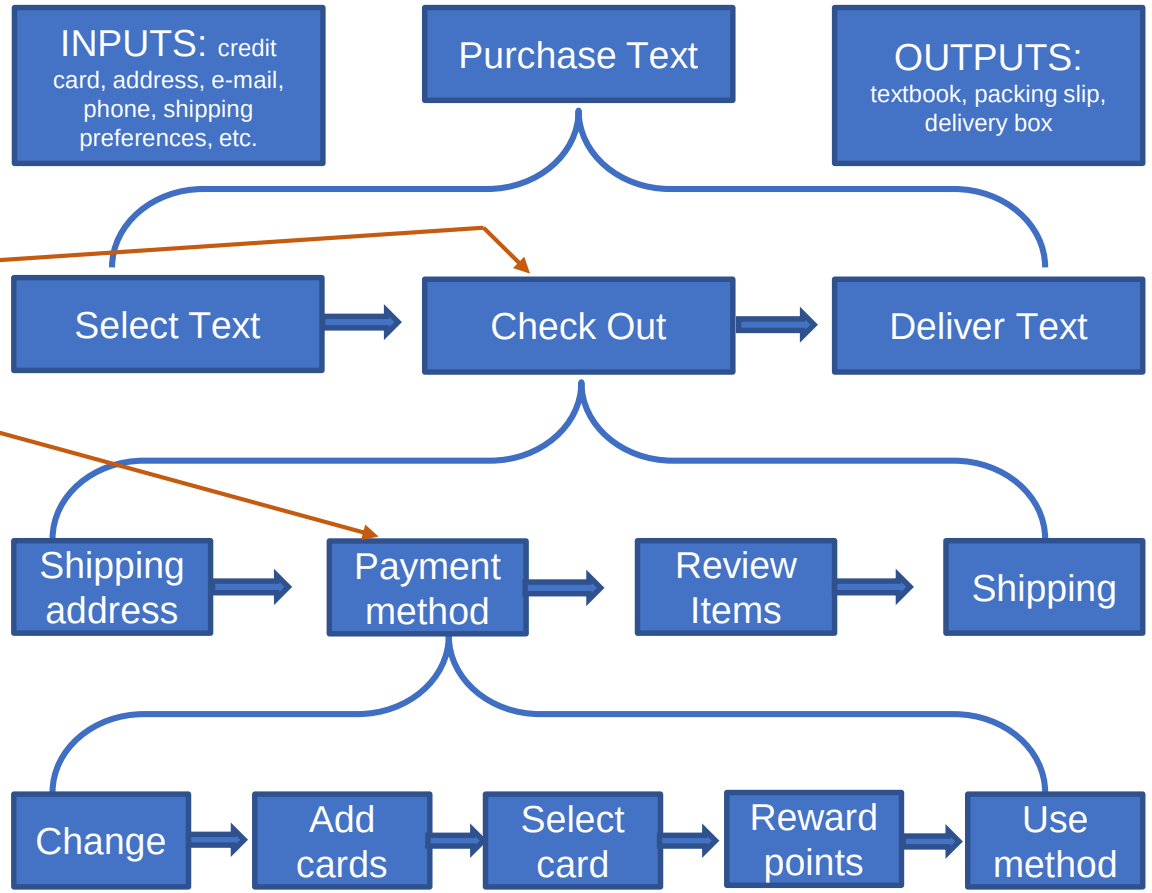
Image: http://www.xanadutec.com/software-as-a-service.html

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

- Mart Doyle

Process Decomposition

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

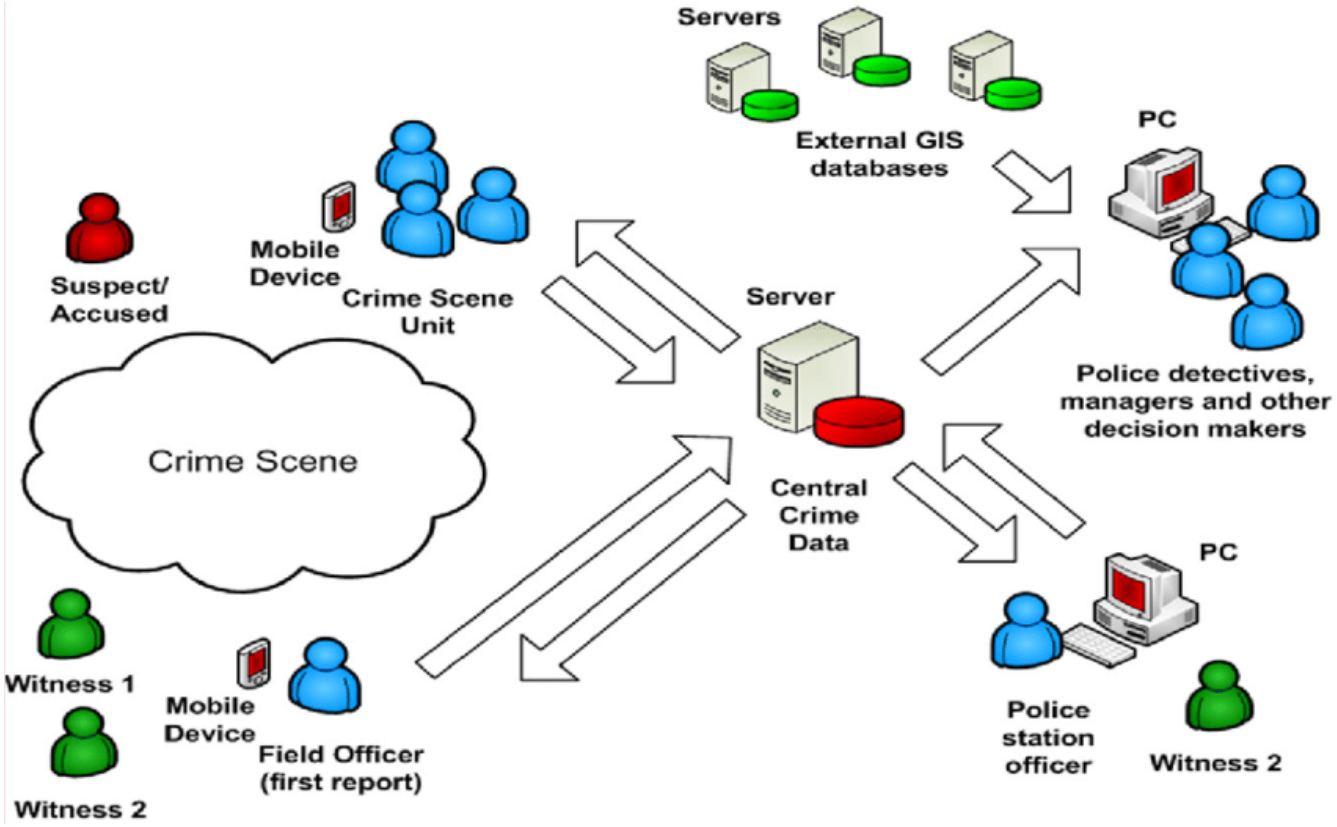


“Systems Architecture is a response to the conceptual and practical difficulties of the description and the design of complex systems.”

- Boris Golden

Systems Architecture

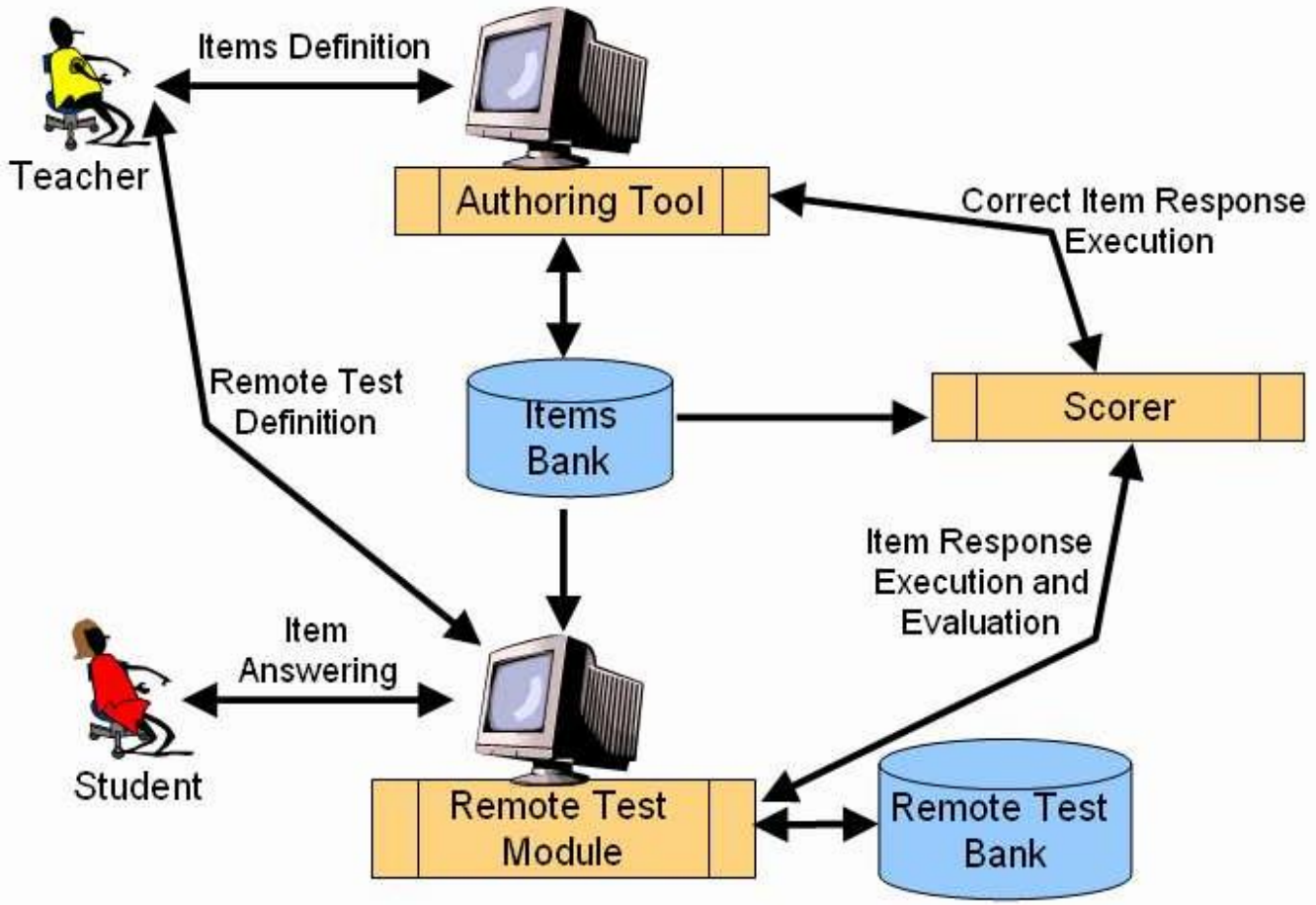
- Conceptual Diagram
- Structural components
- Identify/Solve Problems
- Existing or New
- Communication tool



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/

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

2. What is “Systems Architecture?”:

Representation of the system & all of its parts/components

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Information Systems in Organizations

1.2 What are Systems?
In-Class Activity #2

FOX MIS

Prepare for week 2 – complete before our next class:

- Read articles
- Watch videos
- Take notes!