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# Digital Systems

1.1 Introduction to MIS

FOX
MIS

# Welcome!

———

Fall 2020

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*"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 23) <br>   * must be present in class to earn credit – no exceptions! | 10% |
| Learn IT! And Coding Assignments <br> ** no late assignments accepted – no exceptions! | 25% |
| Exam #1 (50 minutes) | 20% |
| Exam #2 (50 minutes) | 20% |
| Exam #3 (50 minutes – held during finals week) | 20% |
| Honors Technology Research Project | 5% |

*In-Class activities will 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."

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# Readings & Videos – Part 1

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



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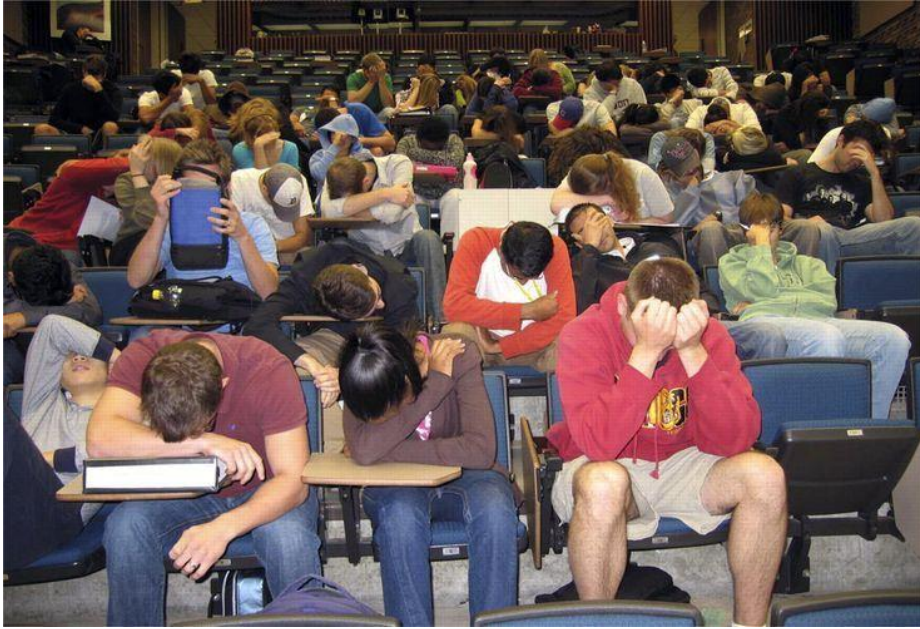- **Current content**
- **Available for Free!!!**

# Readings & Videos – Part 2

- **JavaScript**

  - Create simple JavaScript programs

  - Prompt users for input

  - Utilize loops

  - Process Information



JavaScript
ABSOLUTE BEGINNER'S GUIDE
No experience necessary!
que    Kirupa Chinnathambi
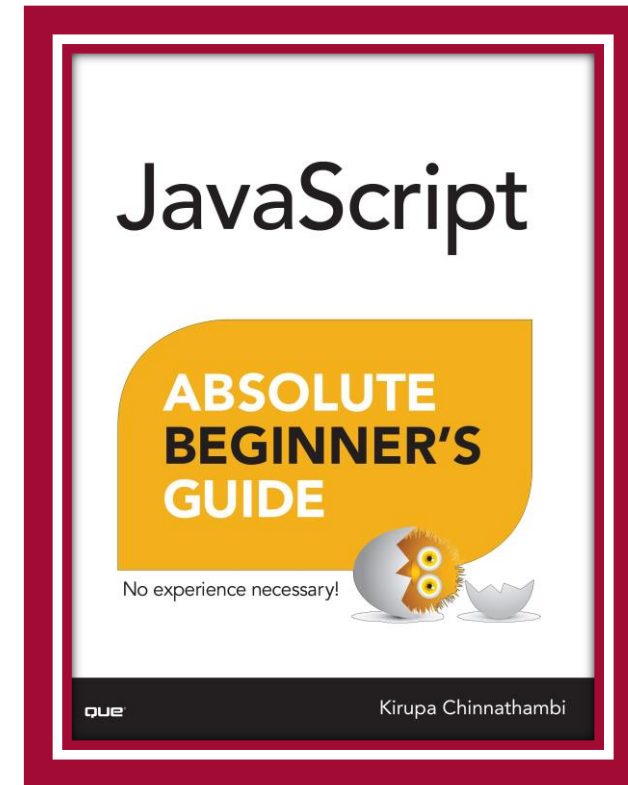
# Lecture vs. Activities



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



- **3 Hours of zzzzzzzz's**

- **1 Hour Discussion**
- **2 Hours of Activity**

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# Active Learning Components

TECHNOLOGY

CONTENT

ACTIVITY

# The Active Learning Funnel

# The In-class Activity



Software Service Cross-Function Process
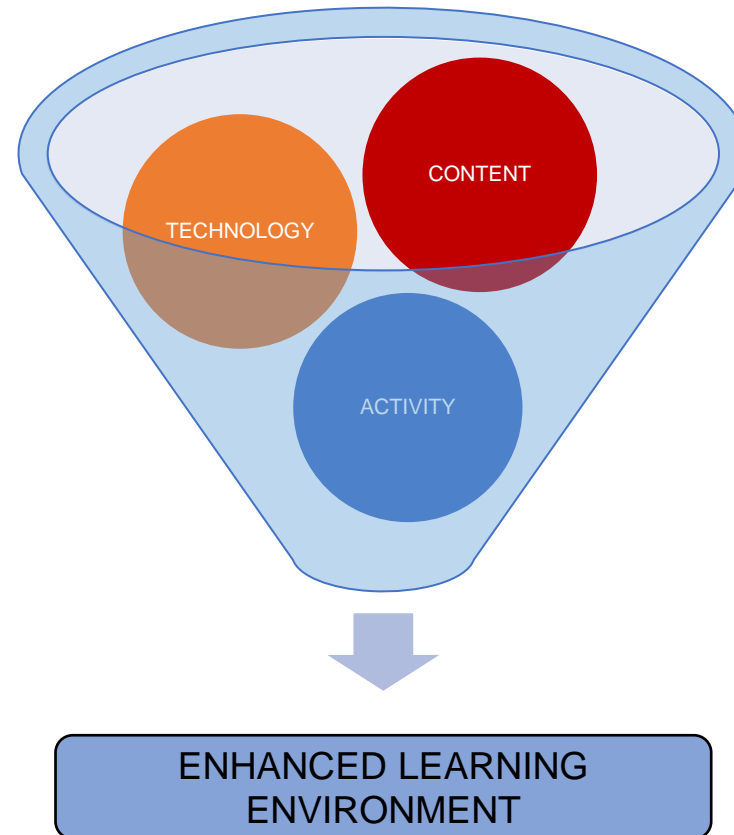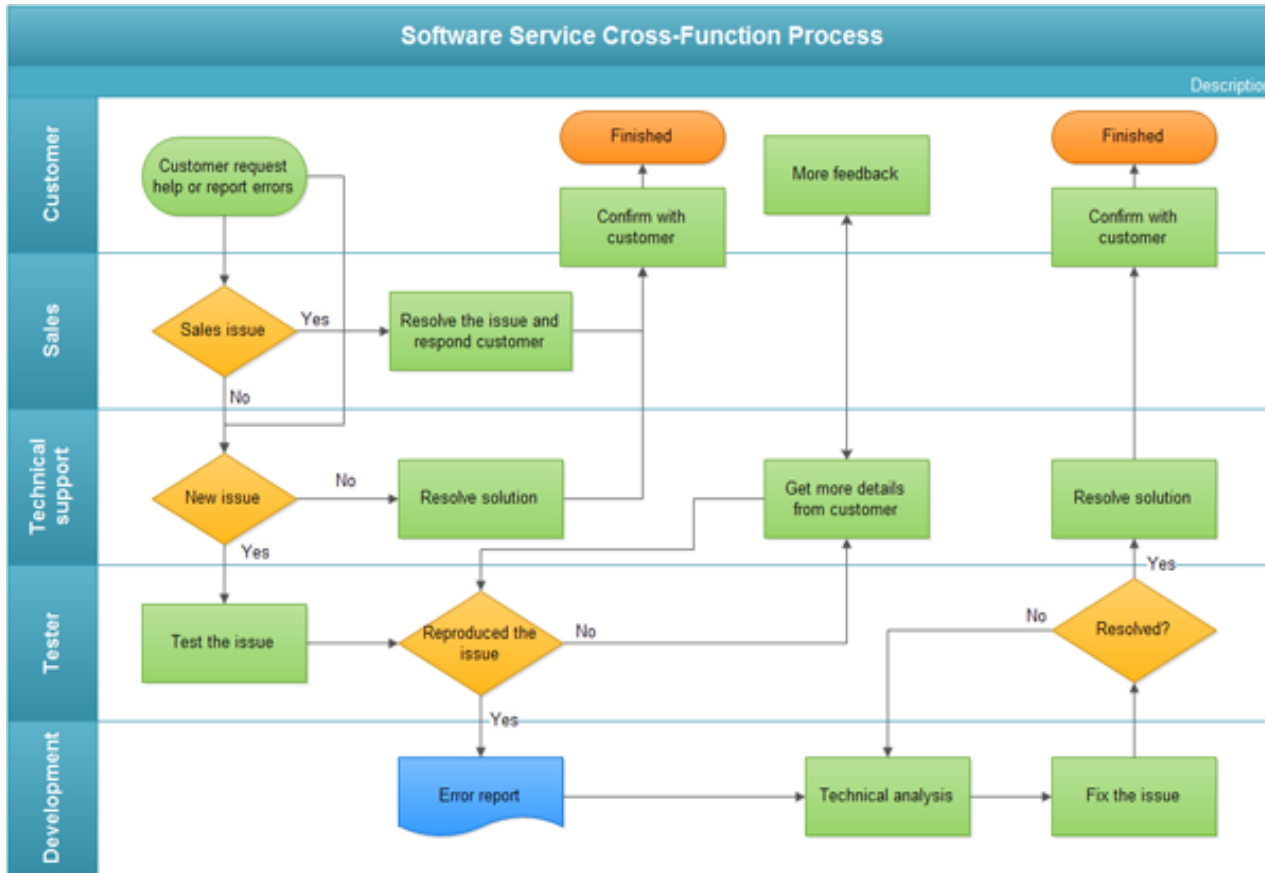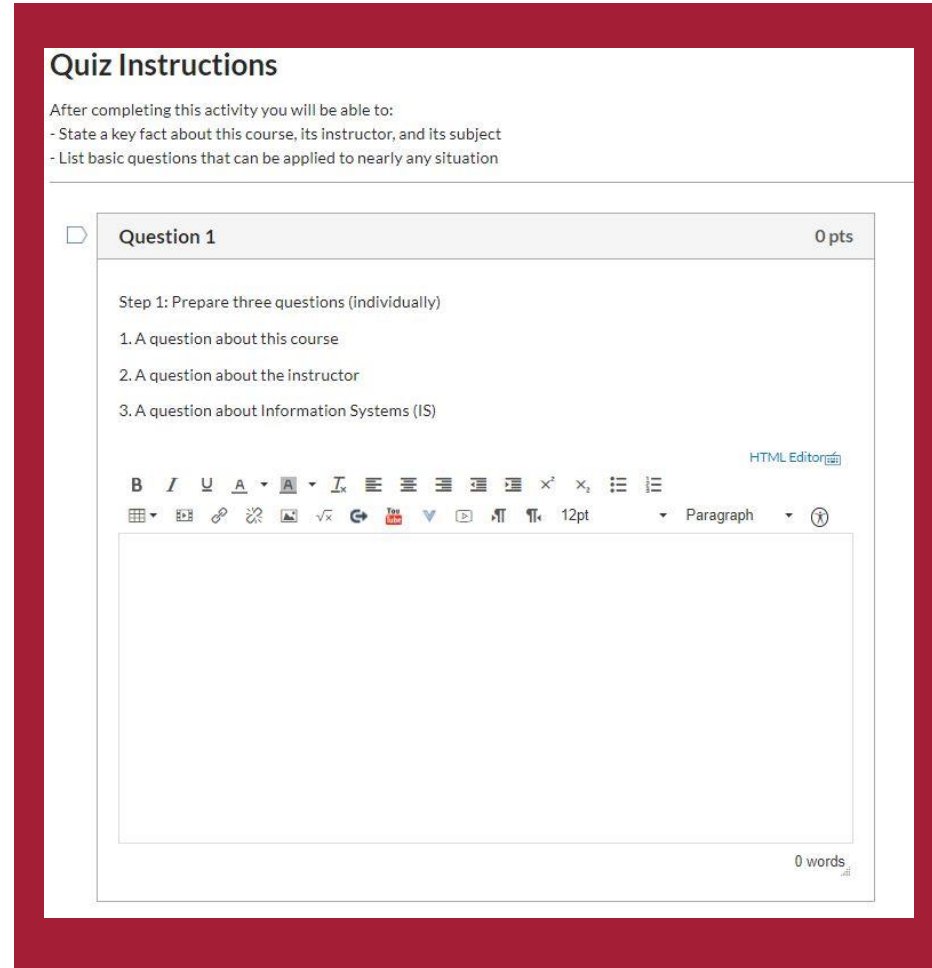
- **Process Diagrams**
  - Swim lane diagram
- **Real life scenarios**
- **Knowledge Application**
- **Problem Solve**
- **Synthesize Solutions**

# The In-class Activity – Canvas



- **Reinforce assigned materials**
  - Readings
  - Videos
  - Lecture

- **Exam Preparation**

- **Work in teams**

- **You keep your work**

# Not Just Another Intro Class!

- Accounting
- Business Management
- Entrepreneurship & Innovation Management
- Financial Planning
- International Business Administration
- Marketing
- Risk, Insurance & Healthcare Management
- Supply Chain Management

- Actuarial Science
- Economics
- Finance
- Human Resources Management
- Legal Studies in Business
- Management Information Systems
- Real Estate
- Statistical Science and Data Analytics

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**

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# The 2019 IS Job Market is Steady

**Job Placement Rate**

| | At Graduation | 6-Months after Graduation |
|---|---|---|
| Bachelor's: | 70% | 69% |
| Master's: | 47% | 81% |

**Confidence in Job Market**

Bachelor's: 64%
Master's: 55%
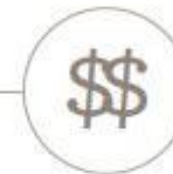
**Average Salary**

Bachelor's: $65,314
Master's: $84,113

## IS Students are Happy About Their Future Jobs

**Satisfaction & Enthusiasm about Job Offer**

Bachelor's: 83%
Master's: 70%

**Offer from Appealing Organization**

Bachelor's: 89%
Master's: 75%

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# Class Site Review

- **No Blackboard or Canvas**
  - https://community.mis.temple.edu/
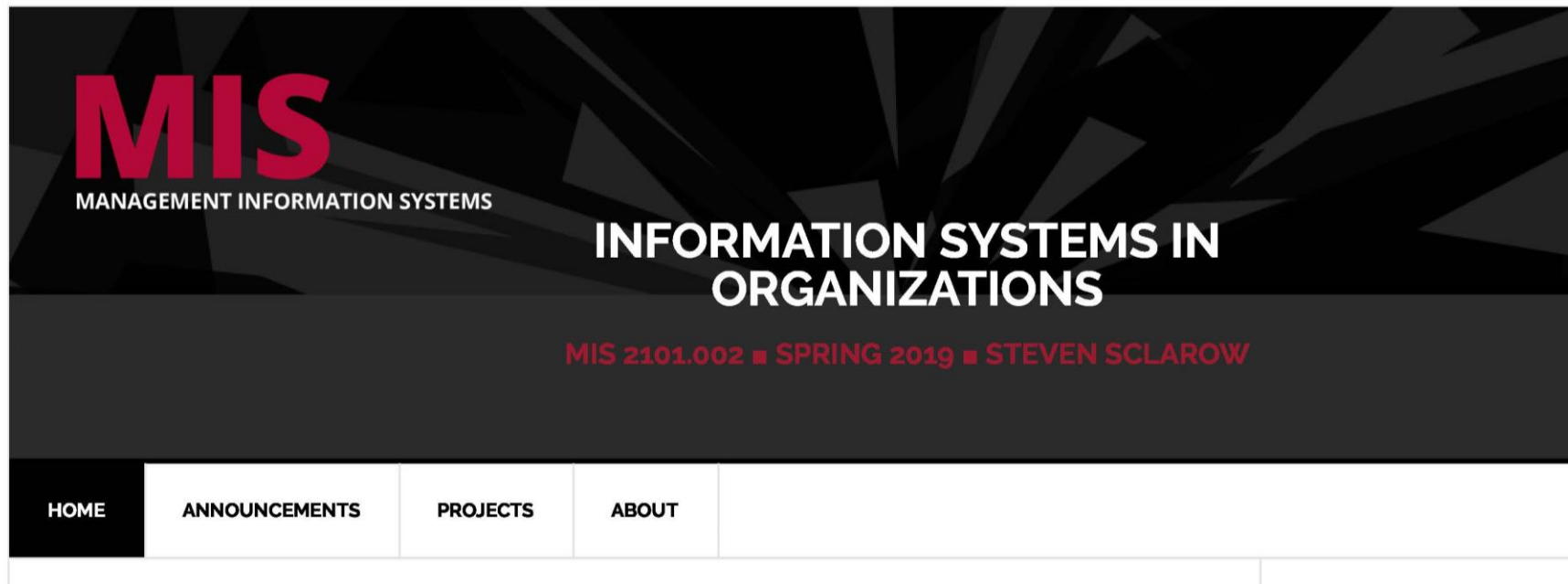
# ROADMAP

**START**

## Week 1:
Introduction & Systems Analysis
- Course Description
- Systems Thinking

## Week 2:
Introduction to Process Mapping
- Systems & Processes
- Swim Lane Diagrams

Assignment #01

## Week 3:
Digital Product Management
- Max Labs 1a & 1b
- Entity Relationship Diagrams (ERD)

Assignment #02

## Week 4:
Introduction to Data Modeling
- ERD Diagrams
- Learn IT Kickoff

Assignment #03

## Week 5:
Exam #1 & Information Systems – Part I & II
- CRM & ERP

*Exam – check calendar

## Week 9:
Exam #2 & JavaScript Unit #1 - Part I & II
- Hello World, Variables
* Exam - check calendar
Assignment #07

## Week 8:
Cybersecurity & AI – Part I & II
- Protection Protocols
- Artificial Intelligence

Assignment #06

## Week 7:
Platforms & Digital Business Models – Part I & II
- Platforms & Digital Models
- APIs
Assignment #05

## Week 6:
Information Systems – Part III & IV
- Data Analytics
- SCM
- Max Labs 2a2b

Assignment #04

## Week 10:
JavaScript Unit #2 Functions
- Operator types
- Strings

Assignment #08

## 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

Assignments #'s 9 & 10

**FINISH**

# Digital Systems

1.2 What are Systems?

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# ROADMAP

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Assignments #'s 9 & 10

**FINISH**

# 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`**
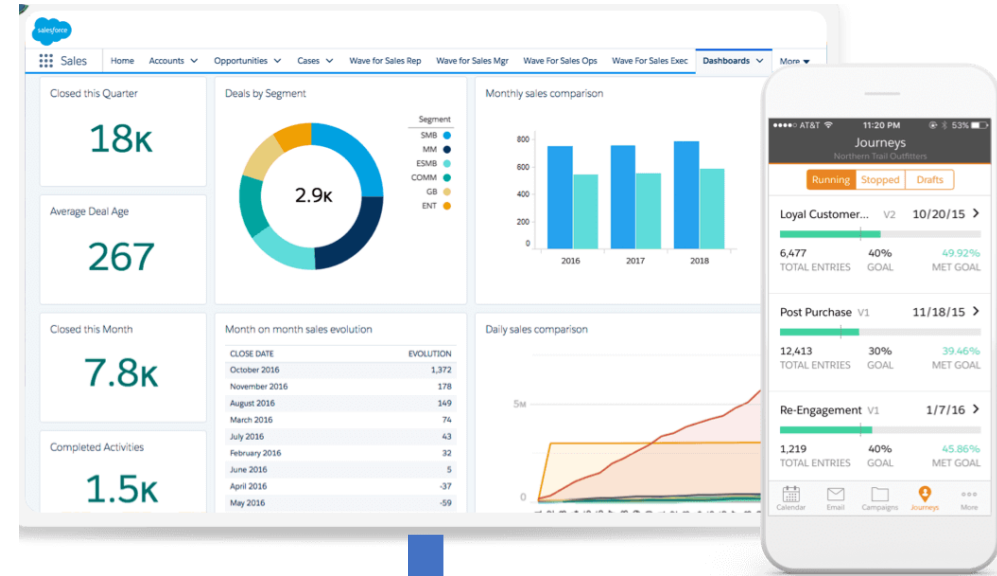
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# World View – A collection of "Systems"

**Systems = people + process + technology**

- Manipulation of information = value

- Managed by MIS professionals

- Systems surround us 24/7

- Application Program Interface (API's)

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# Understanding Systems

**Buying textbooks on Amazon**

- What was part of that system?

  o Log-in (multiple steps)

  o Search

  o Shopping Cart

  o Purchase (Multiple steps)

  o What else???

# Understanding Systems (cont.)

**Buying lunch**

- What was 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

# A collection of technologies

**Including:**

- **Hardware**

- **Software**

- **Policies**

- **Education tools**

- **API's**

- **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?**



Infrastructure — amazon web services

Communications — twilio

Mapping

Braintree — Payments

SendGrid — Email

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# Four Core Steps of Designing UX

- **Problem Definition**

- **Documenting Business Processes**

- **Process Decomposition**

- **Data Modeling**

# 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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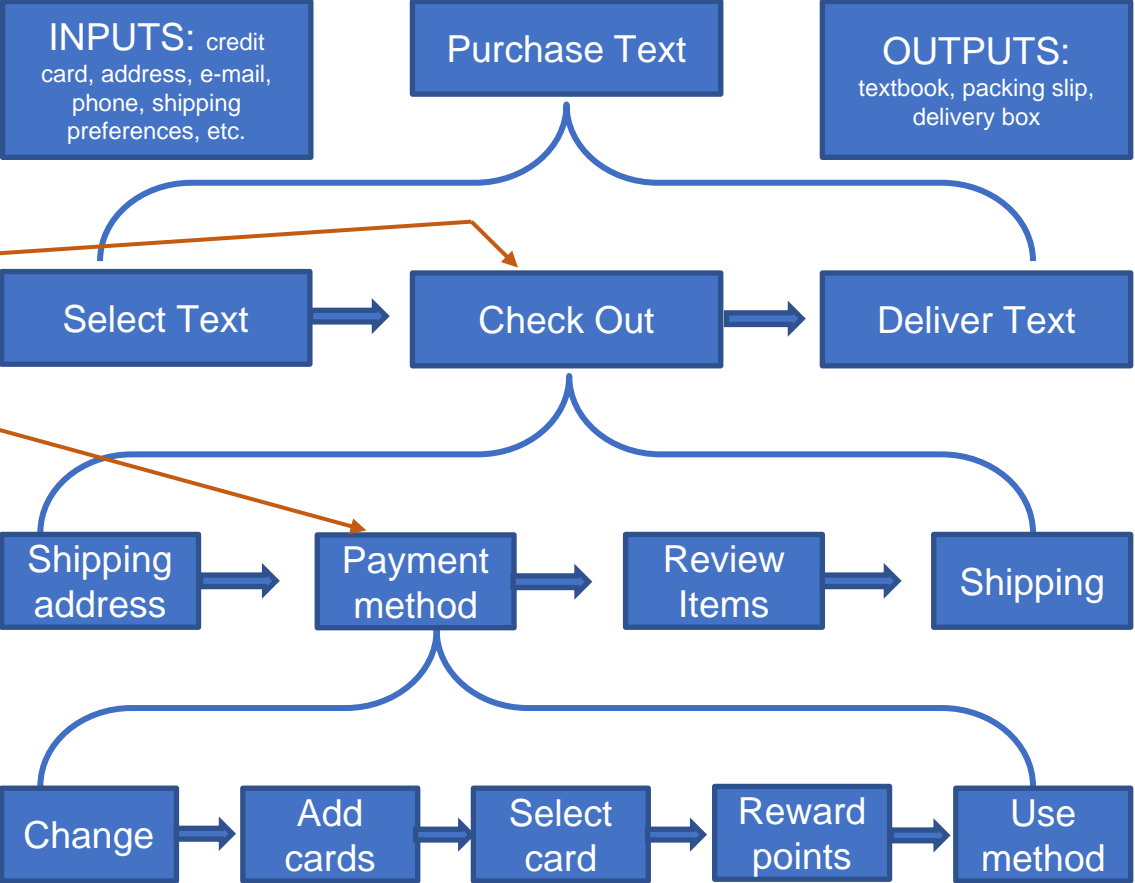
- Mart Doyle

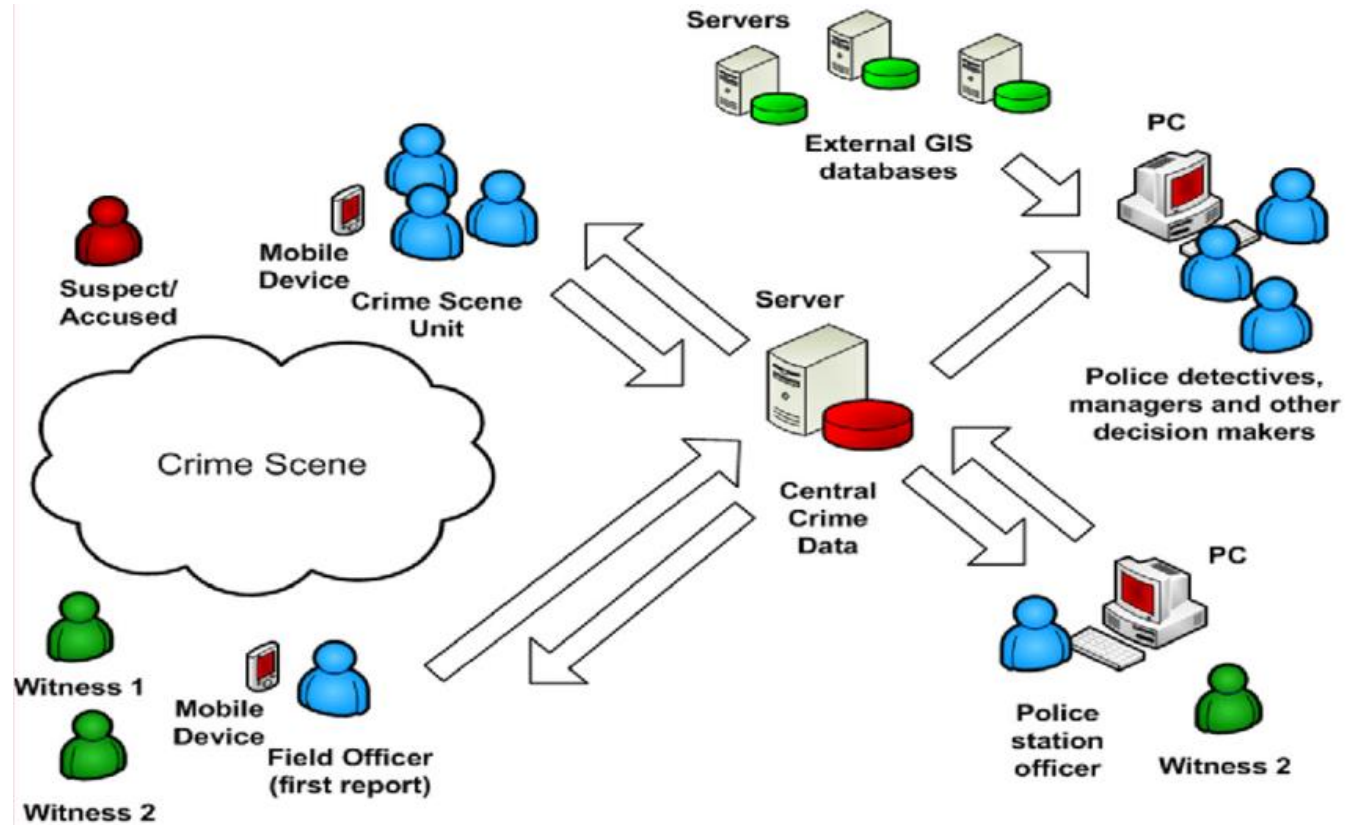# Process Decomposition



- **Single entity**

- **Subsystem**

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

———

- Boris Golden

# Systems Architecture

- **Conceptual Diagram**

- **Structural components**

- **Identify/Solve Problems**

- **Existing or New**

- **Communication tool**

# 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/
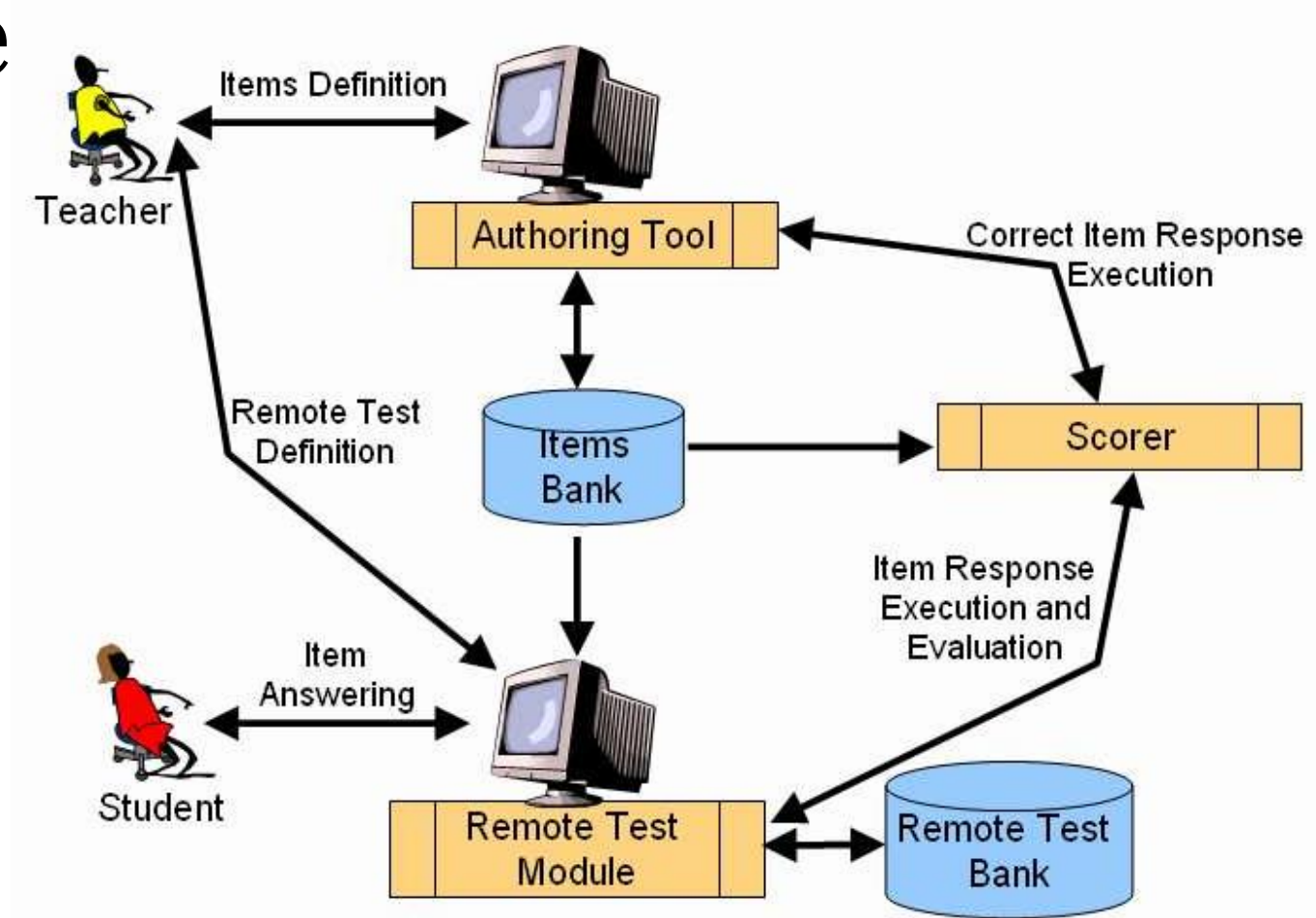
# More to Come

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