



MGT 3745 B: intelligent automation w/ javascript

AGENDA

September 12, 2023
(92 days = 13 weeks, 1 days)



- js replit review
- key terms (google app script)
- in-class exercise
- assignments

Key Terms

Examples of Business Problems

searches (e.g., filtering) - processes and algorithms used to solve a search problem (finding "y" within "x")

sorting - ordering/categorizing data

counting - start/maintain a count of the number of iterations/cycles/instances

lists - start/maintain a structure of values

personalization - tailoring a service or a product to accommodate specific individuals, sometimes tied to groups or segments of individuals

robustness - ability of a computer system to cope with errors during execution and cope with erroneous input

Source: https://en.wikipedia.org/wiki/Search_problem

Source: https://en.wikipedia.org/wiki/Random_number_generation

Source: <https://en.wikipedia.org/wiki/Personalization>

Source: [https://en.wikipedia.org/wiki/Robustness_\(computer_science\)](https://en.wikipedia.org/wiki/Robustness_(computer_science))



Key Terms

Coding Syntax

<script> - tag is used to embed client-side JavaScript in HTML. The tag can contain JavaScript statements or references to an external script file through the src attribute

DOM - object model used by JavaScript to access and change all the elements of an HTML document

HTML (Hyper Text Markup Language) - standard markup language for Web pages

JS DOM Elements - object model used by JavaScript to access and change all the elements of an HTML document

getElementById()

getElementsByName()

getElementsByClassName()

event listener - method that attaches an event handler to the specified element

addEventListener()

Source: https://www.w3schools.com/tags/tag_script.asp

Source: https://www.w3schools.com/js/js_htmldom.asp

Source: https://www.w3schools.com/js/js_htmldom_elements.asp



Key Terms

Coding Syntax

syntax - rules that define the combinations of symbols that are considered to be correctly structured statements or expressions

runtime - subsystem that exists both in the computer where a program is created, as well as in the computers where the program is intended to be run

javascript (.js) - dynamically typed scripting language which conforms to the ECMAScript standard, which supports event-driven program development and styling

nodejs - asynchronous event-driven JavaScript runtime

npm - node package manager, which uses a package.json manifest file to store a list of packages

programming style guide - document which contains a set of rules or guidelines for computer program source code (e.g., standardjs)

lint(ing/er) - code analysis tool which enforces a programming style guide (e.g., eslint)

Source: [https://en.wikipedia.org/wiki/Lint_\(software\)](https://en.wikipedia.org/wiki/Lint_(software))

Source: <https://en.wikipedia.org/wiki/JavaScript>

Source: <https://nodejs.org/en/about/>

Source: https://en.wikipedia.org/wiki/Runtime_system



Key Terms

Coding Syntax

console.log() - outputs a message to the web console

variables - named containers for storing or referencing data (e.g., let, const, var)

block - group of zero or more statements (single code instructions) within curly brackets

datatypes - kinds of data a variable can store or functions can return (e.g., string, number, boolean, objects)

arrays - a zero-based index/list of values

operators - assignment, arithmetic, comparison, logical, conditional, type

conditions - statement executes a statement if a specified condition is truthy

loops - block of code which runs repeatedly

objects - a stored set of values, indexed by key name

function - a named block that may accept (parameters) and/or return values

callbacks - functions that are passed as a parameter to another function

arrow functions - unnamed functions and are used to support other blocks of code

Source: <https://www.w3schools.com/js>

Source: <https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/>



Key Terms

Coding Syntax

map() - creates a new array from calling a function for every array element

filter() - creates a new array filled with elements that pass a test provided by a function

callback - a function passed into another function as an argument, which is invoked inside the outer function to complete some kind of routine or action

try/catch - a series of code blocks to handle exceptions or errors thrown while the code is being run

Source: https://www.w3schools.com/jsref/jsref_map.asp

Source: https://www.w3schools.com/jsref/jsref_filter.asp

Source: https://developer.mozilla.org/en-US/docs/Glossary/Callback_function

Source: <https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/try...catch>



Business Problem Solving

Wicked Business Problem Domains

- ▶ **Communication** - documentation, visualization, and understanding the format of information your audience is seeking and their preferred consumption style (e.g., README files via markdown & HTML)
- ▶ **Automation** - reduction of human intervention in processes (Google App Script aka, JavaScript, nodejs)
- ▶ **Integration** - the process of combining data or functionality from one or more sources within an application (APIs)
- ▶ **Experimentation** - the process of confirming or rejecting a hypothesis (bubble.io, electron, chrome extensions)
- ▶ **Analysis** (Decision Intelligence) - asserting past occurrences and predicting future events (jest, charting)



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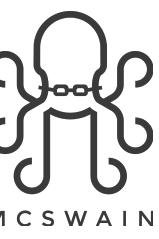
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Key Terms

Coding Syntax

google apps script - rapid application development platform for creating business applications in modern JavaScript that integrate with Google Workspace applications like Gmail, Calendar, Drive, etc.

standalone - web apps, application utilities, event-triggered

bound to google workspace document - scripts run within a google workspace file

scriptlets - special tags within templated HTML which contain code that would work in a normal Apps Script file, such as calling functions defined in other code files, referencing global variables, or using Apps Script APIs

Source: <https://developers.google.com/apps-script/overview>

Source: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Template_literals

Source: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/Date

Source: https://www.w3schools.com/tags/tag_script.asp

Source: https://developers.google.com/apps-script/guides/html/templates#code.gs_4

Key Terms

Problem Solving Methodology

Create a **problem statement**

Use computational thinking as the process which **produces an algorithm/pseudocode** (plain language description of the steps) that generates the desired condition or result

Convert algorithms/pseudocode, or **encode**, into JavaScript

In-class exercise #1: <https://docs.google.com/spreadsheets/d/1U917B7YrCrDDcerEIMqJGraNP9mzF-kVzCVgf4n5Fw/edit#gid=1725307726>

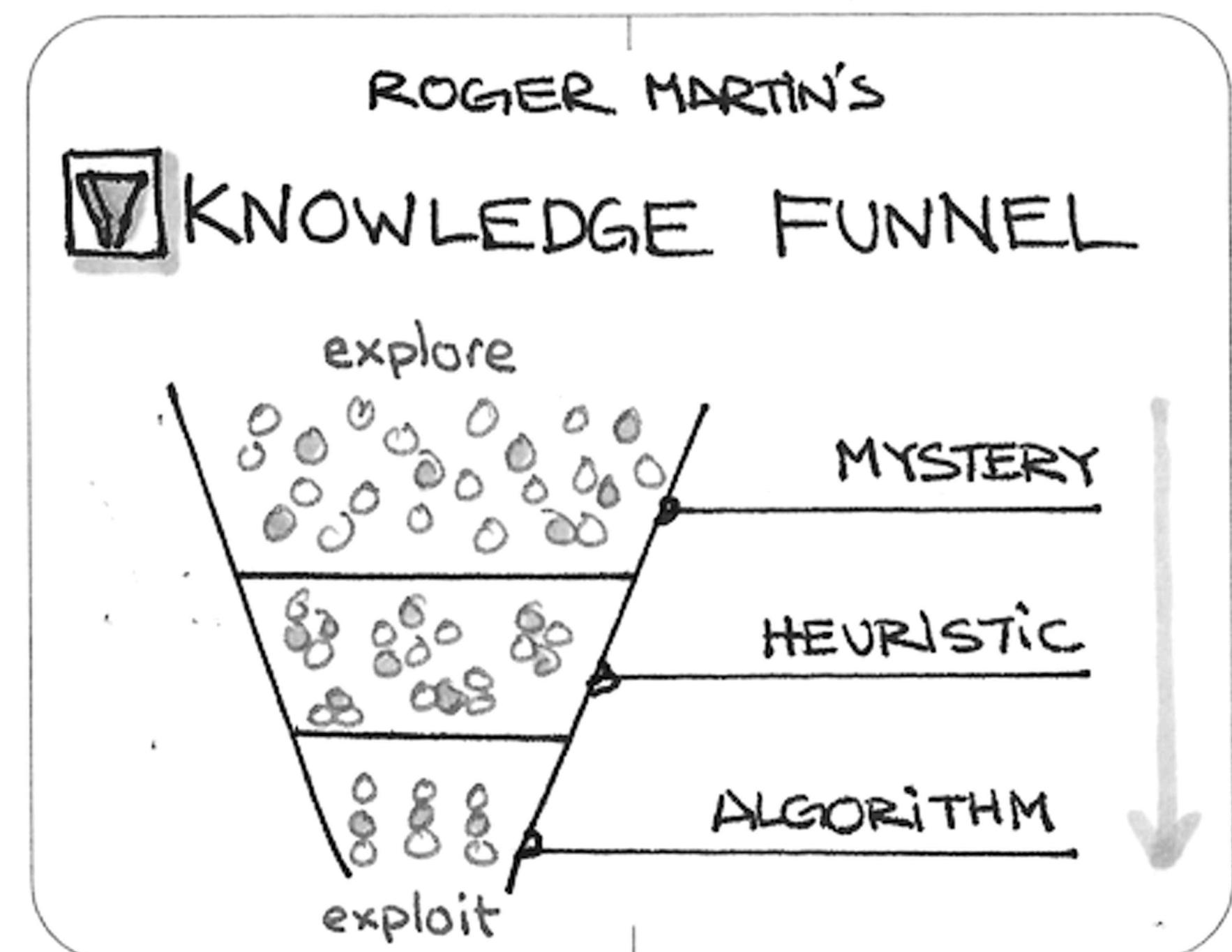
In-class exercise #2: <https://docs.google.com/spreadsheets/d/16QZ10yRfG0qldeXKmr000XLcEvwjax6chIDS1ce3SWUc/edit?usp=sharing>

Source: <https://en.wikipedia.org/wiki/Pseudocode>

Source: <https://rogerlmartin.com/lets-read/the-design-of-business>

sketchplanations.com

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Assignments

Homework 3

<https://gatech.instructure.com/courses/347044/assignments/1512980>

Week 3 Discussion

https://gatech.instructure.com/courses/347044/discussion_topics/1554913

Week 4 Discussion

https://gatech.instructure.com/courses/347044/discussion_topics/1562553



Assignments

Installations

Sign up for a free [Google](#) account

Readings

[Google Apps Script](#)

[Google Apps Script Reference](#)

[The Strategic Impacts of Intelligent Automation](#)

What is Intelligent Automation?

What Intelligent Automation investments influenced business process performance or organizational performance?

Questions?