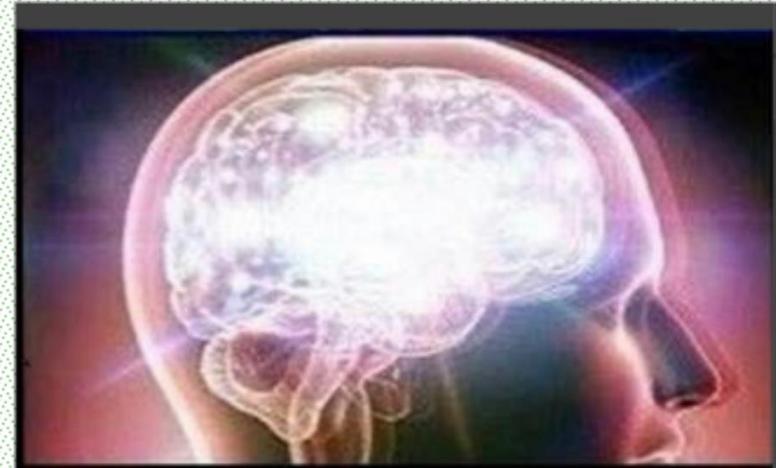
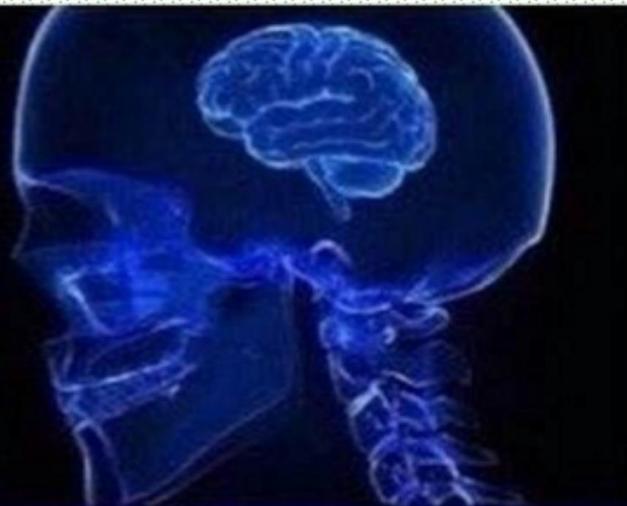


# What are CRMs?





## C is for:

- Customers
- Candidates
- Contacts

## R is for:

- Relationships
- Readily available
- Relatively inexpensive

## M is for:

- Managing your time
- (Not) Missing things
- Making life easier

## S is for:

- Software
- Simplifying workflows
- Source of truth

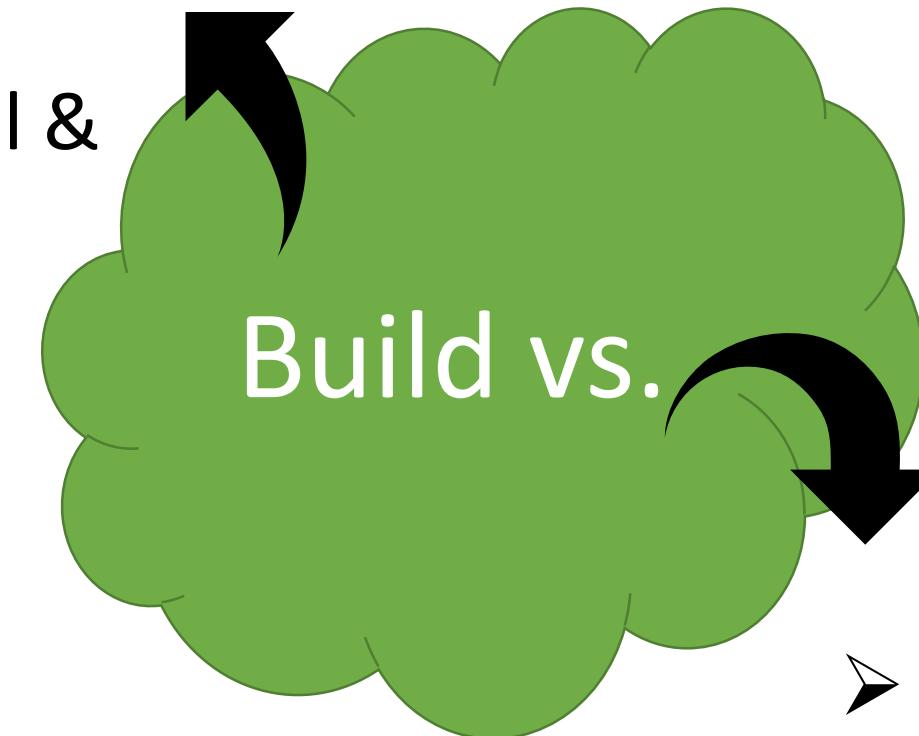


# Why would I want build my own?



# Commercial CRM

- Save money
- Increased control & customization



## No CRM

- Source of Truth
- Improved efficiency & organization

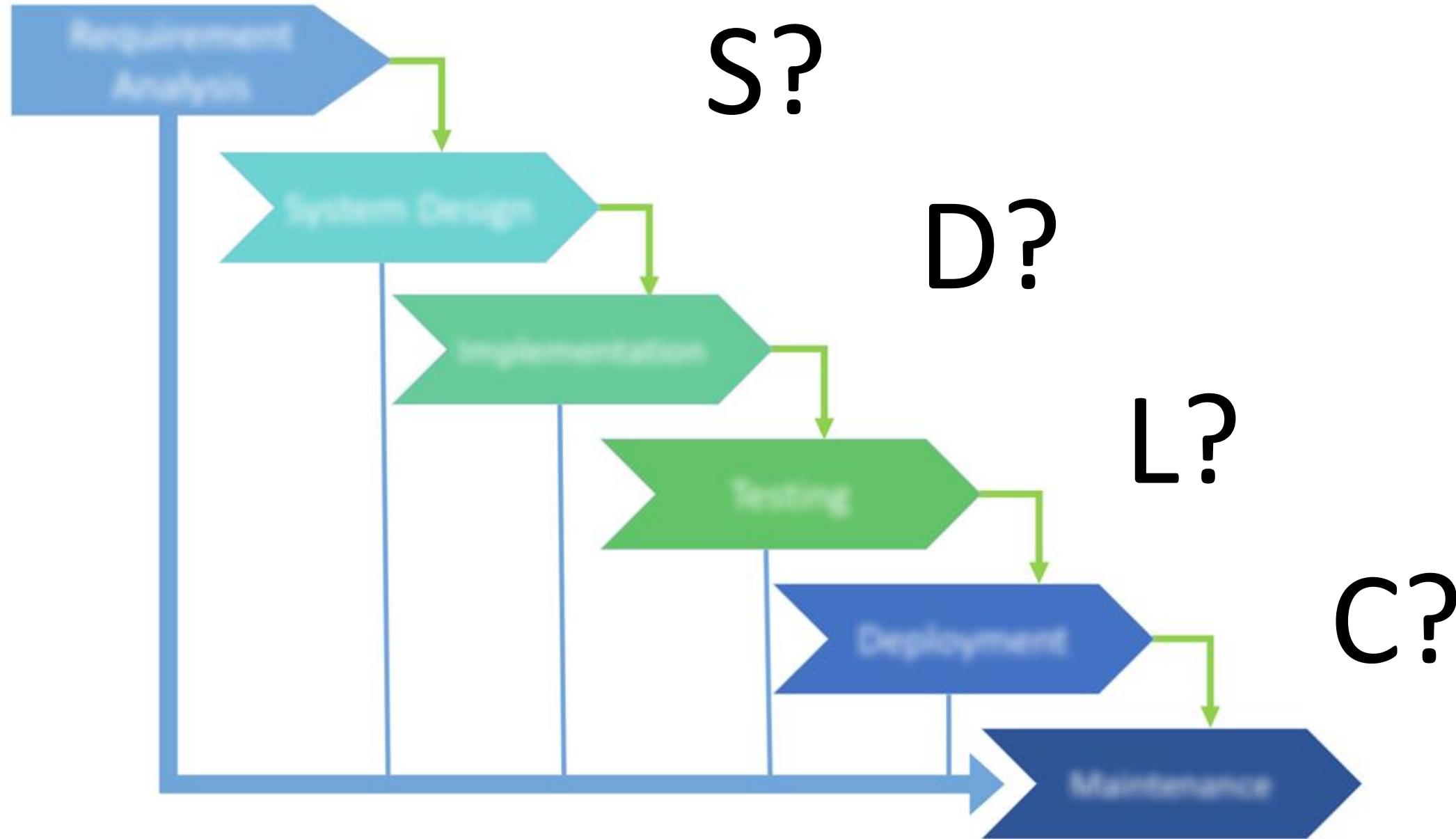


# Fringe Benefits Include

- Learning Opportunity
- Improved Empathy for Candidates
- Become an Informed Shopper



Okay, how do I build a CRM?

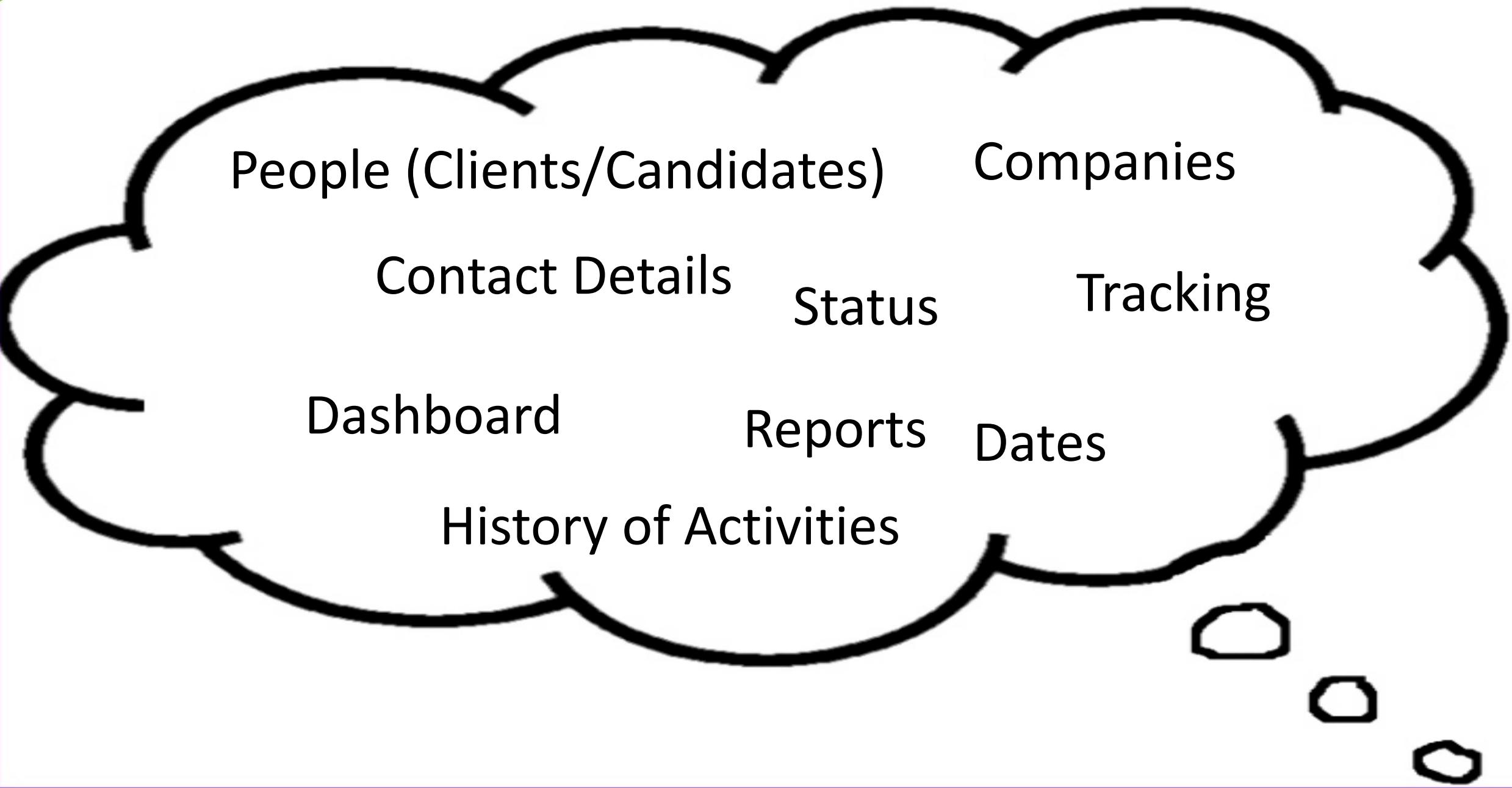




# Requirements Gathering

You'll Need





# People

- Client or Candidate?
- Where do they work?
- What do they do?
- How do I get in touch?
- What's my history with them?



# Companies

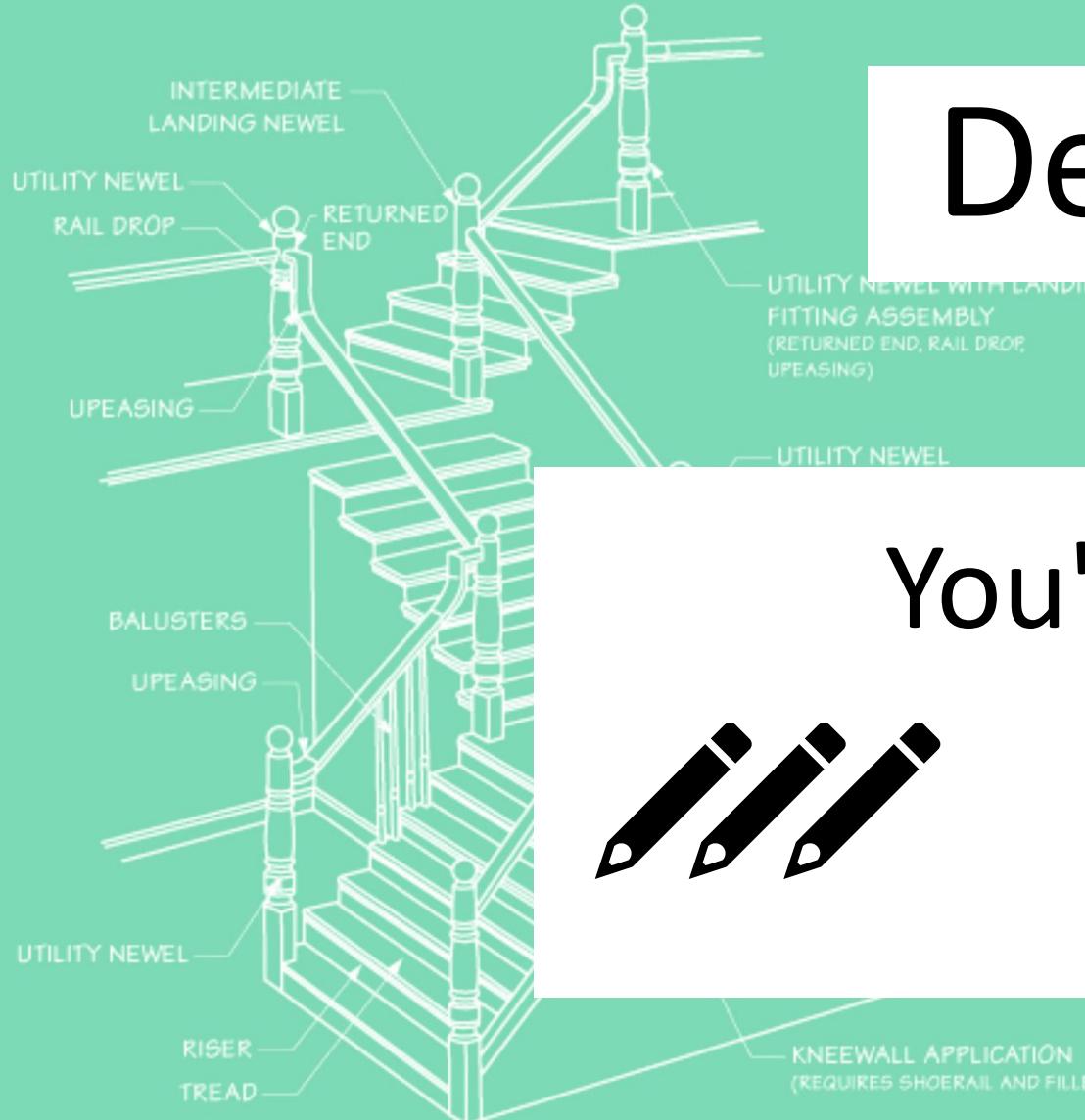


- Who works there?
- Location / HQ Phone?
- d/b/as and other info?
- What's my history there?

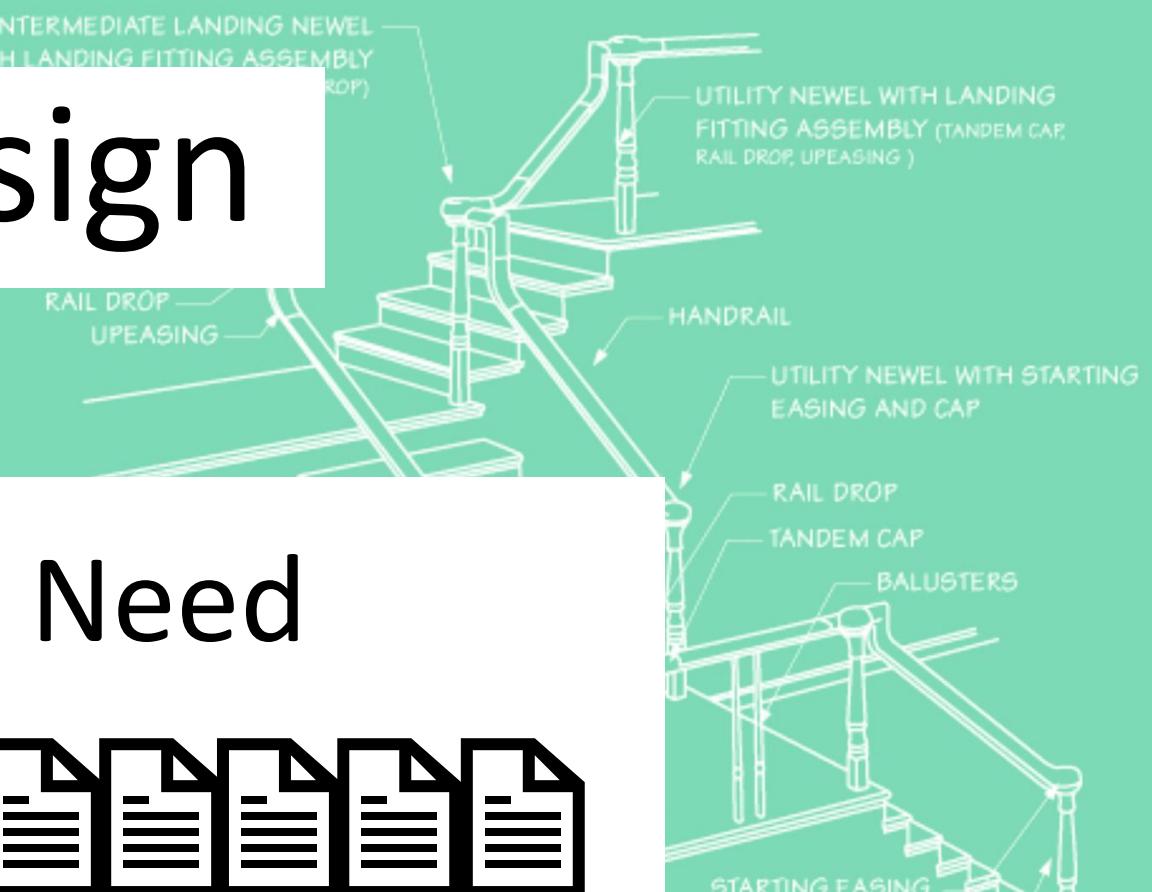
# Activity History

- Who / what / when / where?
- What's coming up?
- To-do / dashboard
- List by person / company
- Generate reports
- Export for further analysis





# Design



POST TO POST SYSTEM

NOTE! SOME STAIR  
PEOPLE CALL UPEASINGS/RAIL DROPS  
GOOSENECKS.



OVER THE POST SYSTEM



# Types of Design

## ➤ Architectural

- Structure-first design
- Underlying framework

## ➤ Logical

- Modeling the flow of information through the system

## ➤ Physical

- User Interface
- Data Structure
- Process



# For Demo CRM

## ➤ Architecture

- Using Google Apps (Spreadsheets for now)
- Apps Script glues it all together

## ➤ Logical

- Not many moving parts
- Data flows are mostly in the UI



# Speaking of Apps Script

- Javascript is the best language for many Sourcing 'apps'.
- Apps Script == JavaScript training wheels
- Apps Script works with almost all your favorite (including Calendar, Gmail, Sheets, Contacts, Drive, Maps, Translate, and many more)
- Apps Script supports some common frameworks (like Jquery, which I've used, badly, in Demo CRM) that can make development easier.
- App Script can be used to build anything from simple add-ons like Demo CRM, to standalone web apps.



# Data Design for Demo CRM

- Three data types – Person, Company, History
- Treated the 'workbook' like a database
- Individual sheets are tables
  - Header rows define the structure of each table
- Implemented UUIDs to link records
  - Person -> Company
  - Person <-> History
  - Company <-> History



# UI Design for Demo CRM

- Two spreadsheet-based displays
  - Dashboard – pending/recent activities, reports, tools to look up or add records (Person, Company, History)
  - Viewer – an interface for viewing a single record, tools to make changes
- Pop-up Boxes
  - Adding new records from Dashboard
  - Search / select records to open in Viewer
  - Modifying existing records within Viewer



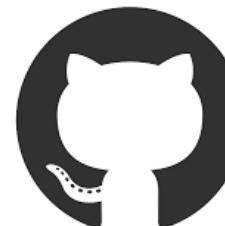
# Process Design for Demo CRM

- No Direct Data Access
  - 'Database' sheets are hidden
  - Data is pulled into the active View (Dashboard or Viewer)
  - Add/edit info with helper interfaces
- Information is copied to views, no transforms on original data
- Data is validated on each access

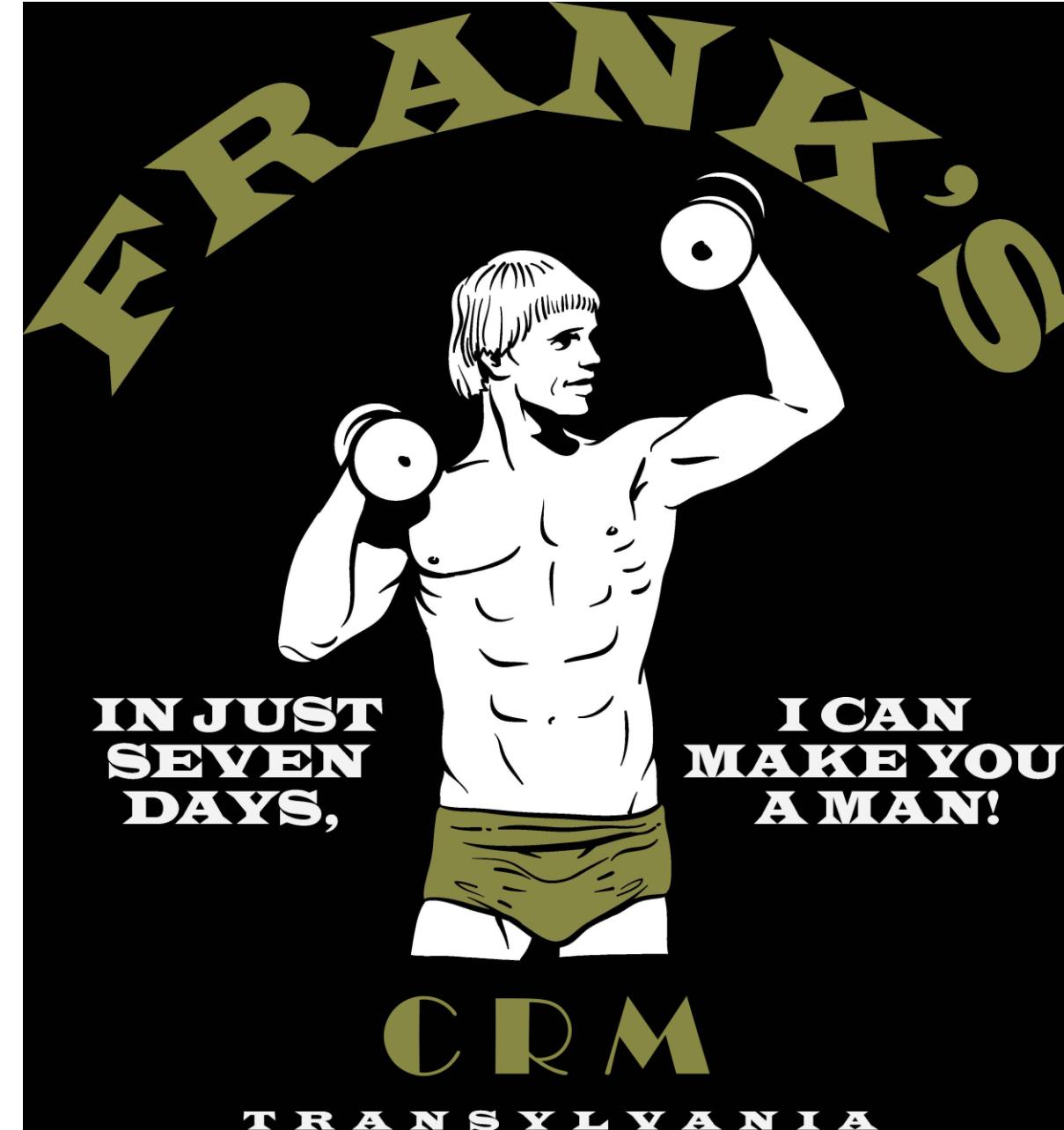


# Implementation

You'll Need



My demo  
CRM took  
about seven  
days...



...but yours  
should take less  
than seven  
minutes!



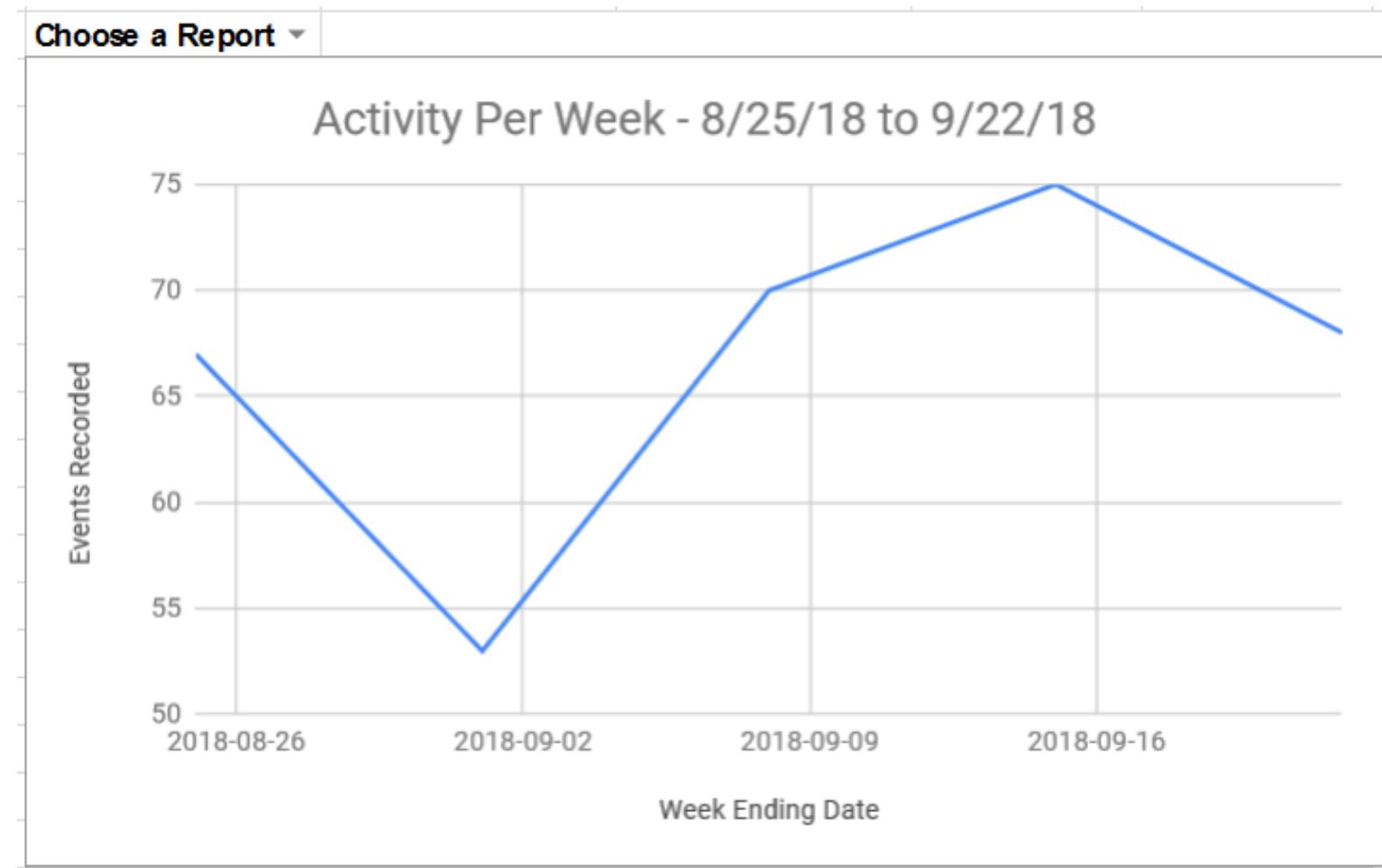
# Demo CRM - Dashboard

- Main Interface – buttons to drive other functionality
- List of pending / past activity
- Selector for report views

1	Hello David								Today is 9/10/2108
2									
3									
4	Upcoming Actions	<a href="#">Open Calendar</a>							
5	Linked Person/Org	Date & Time	Type	Status	Next Step	Details / Notes		Choose a Report ▾	
6	Shaina Galley	9/27/2018 @ 12:4	Call	Pending	In Person	Call and let her k			
7	Colleen Vickers	10/07/2018 @ 14:	SMS	Pending	Call	Remind about Sa			
8	Samuel Frame	10/09/2018 @ 07:	In Person	Pending	Pending	Tell Sam Happy I			
9	Fergus St. James G	11/11/2018 @ 08:	Email	Pending	Pending	Send Goosie a s			
10	The General George	2/6/2019 @ 17:21	Mail	Pending	Pending	Remember to ma			
11									
12	Past Actions	<a href="#">View</a>							
13	Linked Person/Org	Date & Time	Type	Status	Next Step	Details / Notes			

# Demo CRM - Reports

- Implemented as Charts – easy and look nice





# Demo CRM - Viewer

➤ View Person or Organization Details, edit if needed

<b>Record Type</b>	Person	<b>Phones</b>	856-255-5524 (Home)	<b>Street Address</b>
<b>First Name</b>	The	<b>Emails</b>	thegeneral@gmail.com (Personal)	<b>Street Address</b>
<b>Last Name</b>	Patton	<b>Latest Title</b>	Consultant	<b>Local Business</b>
<b>Middle Names</b>	General George S.	<b>Latest Company</b>	Stinking Cute Inc.	<b>Region</b>
<b>Suffix</b>		<b>Prospect Type</b>	Doggo	<b>Counties</b>
<b>Prefix</b>	Sir	<b>Status</b>	Good	<b>Post Office Box</b>
<b>Return to Dashboard</b>	<b>Upcoming Actions</b>	<a href="#">Open Calendar</a>		
Date & Time	Type	Status	Next Step	Details / Notes
9/27/2018 @ 12:42 PM	Call	Pending	In Person	Call and let her know
10/07/2018 @ 14:37	SMS	Pending	Call	Remind about Sam's
10/09/2018 @ 07:32	In Person	Pending	Pending	Tell Sam Happy Bir
11/11/2018 @ 08:00	Email	Pending	Pending	Send Goosie a silly cat meme
2/6/2019 @ 17:21	Mail	Pending	Pending	Remember to mail
<b>Past Actions</b>	<a href="#">View</a>			



# Demo CRM – Add/Edit Pop-ups

- Driven by code, defined by HTML templates

Add a New Person History Item

Add a new History record to your CRM (phone calls, emails, etc.) -- all fields except for Notes / Details are required.

Is this History item for a Person or Organization?

Select a Person to Add History:

Action Type:

Action Date:

Action Time:    Select Time Zone

Action Outcome:

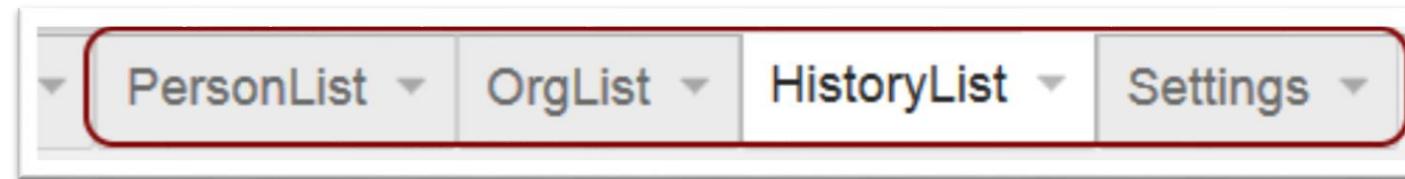
Next Step:

Notes / Details:

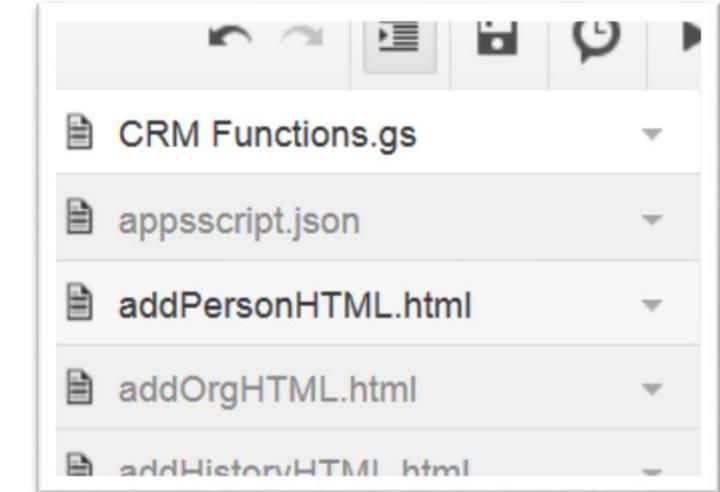
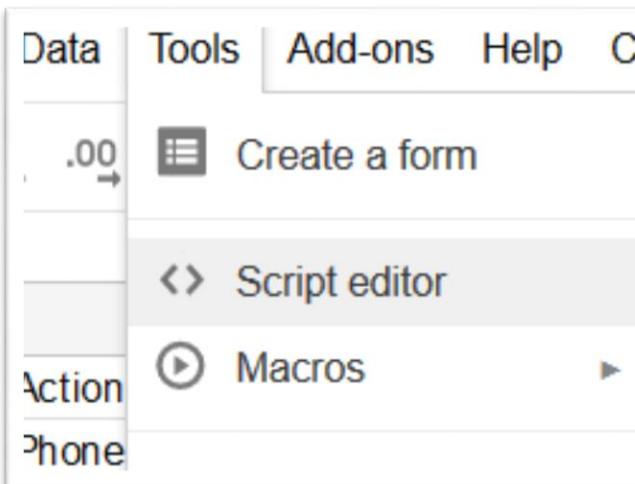


# Demo CRM – Behind the Scenes

- 4 Hidden Sheets (one per 'Type', one for settings)



- Script editor stores the custom code and templates





# Demo CRM – 'Database'

- Each 'Type' Sheet contains header definitions

1	UUID	Action Type	Action DateTime	Action Outcome	Next Step	Details	LinkedUUID
2	2d3b7ac0-079c-4f4d-ac16-9b23b1ea5eac	Phone Call	2018-19-09T16:00:00Z-0700	Pending	Pending	Scheduled follow up	9730f6fd-c07b-4d38-94a6-000000000000
	2a9de0fc-dca9-40aa-8ff5-b9096089b81f	Email	2018-08-03T06:37:00Z-0500	Offer Made	Notify Candidate	From: John Smith Date: Fri, Aug 3, 2018 To: David Miller	9730f6fd-c07b-4d38-94a6-000000000000

- UUID's uniquely identify each record
  - Used to cross-reference between sheets
  - (I used <https://www.uuidgenerator.net/api/version4/>)



# Demo CRM – Script Code

- One ".gs" file contains all functions

```
CRM Functions.gs x addHistoryHTML.html x addOrgHTML.html x addPersonHTML.html x app
var html = HtmlService.createHtmlOutputFromFile('addPersonHTML')
    .setWidth(1000)
    .setHeight(1000);
SpreadsheetApp.getUi()
    .showModalDialog(html, 'Add a New Person');
}

function addOrgDialog() { //Caller for the input form for new Organization records
  var html = HtmlService.createHtmlOutputFromFile('addOrgHTML')
    .setWidth(1000)
    .setHeight(1000);
  SpreadsheetApp.getUi()
    .showModalDialog(html, 'Add a New Organization');
}
```



# Demo CRM - Templates

- HTML Templates define the UI of add/edit pop-ups
- One for each pop-up right now

addHistoryHTML.html ✘ addOrgHTML.html ✘ addPersonHTML.html ✘ appsscript.json ✘ findPersonHTML.html ✘ findOrgHTML.html ✘ editPersonHT

```
<!DOCTYPE html>
<html>
  <head>
    <base target="_top">
    <link rel="stylesheet" href="//code.jquery.com/ui/1.12.1/themes/base/jquery-ui.css">
    <script src="https://code.jquery.com/jquery-1.12.4.js"></script>
    <script src="https://code.jquery.com/ui/1.12.1/jquery-ui.js"></script>
    <script>
      $( function() {
        $( "#datepicker" ).datepicker();
      });
    </script>
  </head>
  <body>
    <style>
      input[type="text"] {
        width: 75%;
```



# Testing

You'll Need



&





- Make a list of all the things your software does.
- Every feature has one or more ways to fail.
- How can you test that it's working correctly?



Blank fields

Directly edited cells

Click all the buttons

Impossible dates

Double-click all the single-clicks

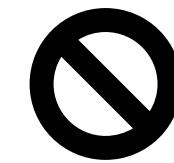
Weird characters

Cancel tasks midway



# Deployment

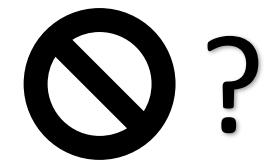
You'll Need

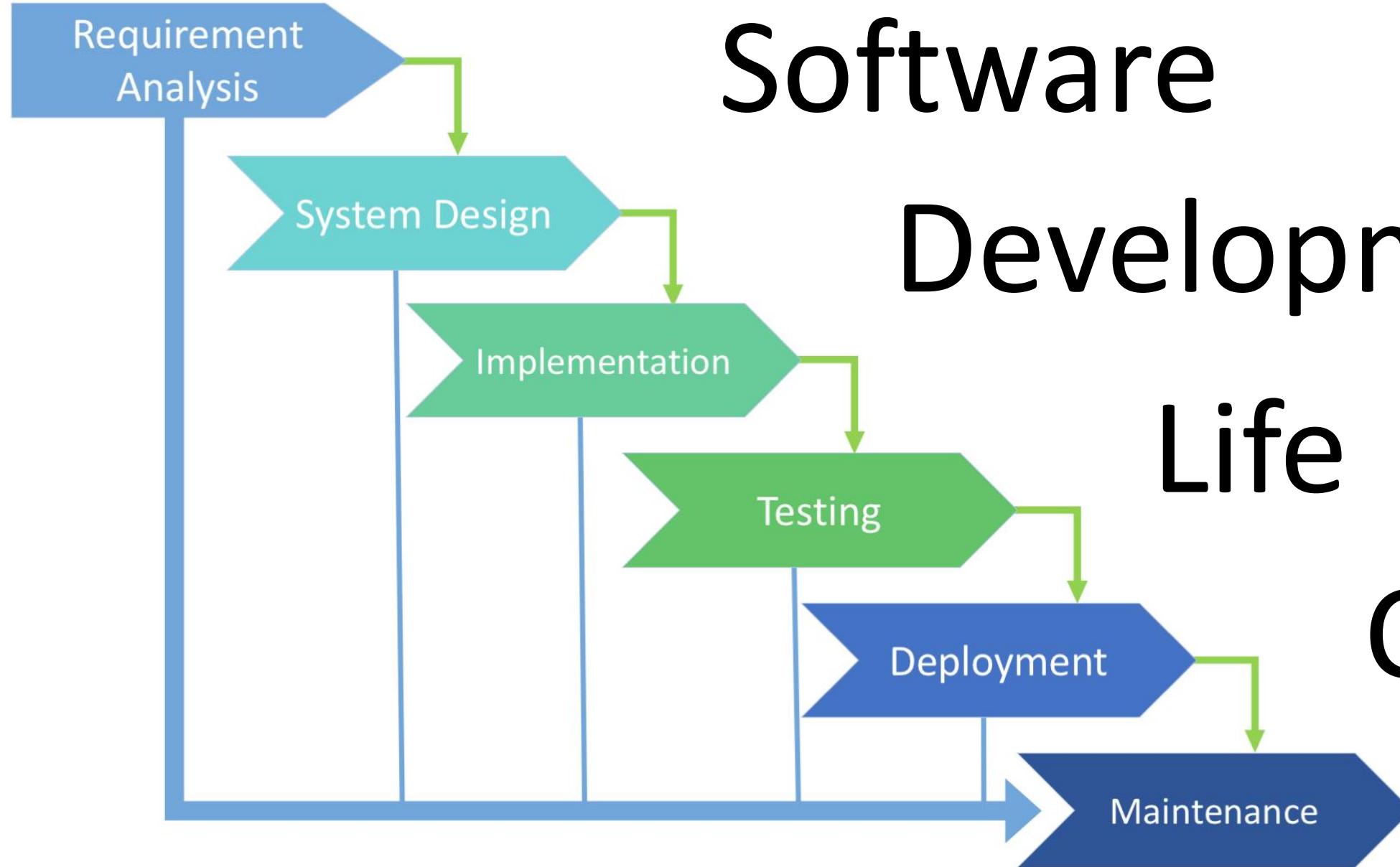




# Maintenance

You'll Need





# Software Development Life Cycle



# Upgrades

You'll Need





Calendar integration

Contact Details

Email integration

SMS reminders

Upload files

More reports

Drip campaigns

Templates



Google business analyst jobs remote

All Shopping News Videos Maps More Settings Tools

About 21,400,000 results (0.65 seconds)

**Jobs**  
Near Delanco, NJ

 Customer Experience Analyst  
United States Cold Storage, Inc.  
Camden, NJ  
via LinkedIn

Over 1 month ago Full-time

 Business Analyst - FIS / REMOTE  
Infotek Consulting Services Inc.

A screenshot of a Google search results page for "business analyst jobs remote". The search bar shows the query. Below it, the "All" tab is selected in the navigation bar. The results page displays a job listing for a Customer Experience Analyst at United States Cold Storage, Inc., located in Camden, NJ, posted over 1 month ago and listed as full-time. Below this is another job listing for a Business Analyst at Infotek Consulting Services Inc., also remote. The interface includes standard Google search controls like microphone and search icons, and a settings/Tools menu.



SOURCECON  
— ATLANTA —

Question  
everything





Get the demo CRM, source code, and installation guide at:



<https://github.com/selllikesybok/SC-Atlanta-2018>