

## Week 3

Spreadsheets are powerful & versatile tools.

- After you've defined what you need to do with data, you will turn to spreadsheets to help build evidence that you can then visualize & support your findings
- As a detective, you always want to have spreadsheets in the evidence bag.

"DAs spend a lot of time organizing data and performing calculations. There are lots of tools, including SS".

Simple tasks when you begin with data:

- Organize data
  - Pivot table
  - Sort & Filter
- Calculations
  - Formulas
  - Functions

Formula

vs

Function

User  
Makes

Im built.

They use operators:

Symbols that name that type of operation or calculation to be performed.

Another thing Cell Reference:

It is a single cell or range of cells that can be used in formula.

And what is Range:

- Collection of two or more cells

COUNTIF() is formula & function as it requires a user input.

~~Here count is formula & IF~~

Some common errors...

#DIV/0!

You know

{ 0/0 }

#ERROR!

= AVERAGE ( - - <space> - - )

#N/A

You know

#NAME?

Name of function is misspelled.

#NULL!

= AVERAGE ( - - <spaces> - - )

#NUM!

Some error datatype errors  
or the way you put variables  
in the functions

#REF!

When a cell is removed

#VALUE!

Mismatch in datatype & against  
required datatype

Now, the highlight of Week 3.

"You have to put your 99% of time planning & 1% to put it into an action".

∞ → Me from other's quote.

Use the STRUCTURED to define  
APPROACH problem domain

- If you define the problem from the start it will be easier to solve.

↖ It is called Problem Domain.

Problem

Domain : Specific area of analysis that encompasses every activity affecting or affected by the problem.



The DAs are not given a whole picture to think the data, so they have to follow the Structured thinking & critical thinking to find the best solution.

Starts with problem domain.

Wow! The amazing concept is coming!

Refresher:

Structured thinking:

- Process of recognizing problem
- Organizing information
- Revealing gaps and opportunities
- Identifying options.

another words,

"It's a way of having  
CLEAR list of where  
you are expected to

- Deliver
- Timeline
- Checkpoints."

Structured thinking ~~lets~~ lets you to understand problems at high level.

Starting place of structured thinking is **Problem domain**.

Good Point



- Now, once you know the specific area of analysis, you can set your base and lay out all your requirements + hypothesis.

~~As~~

Practice structured thinking by **Scope of Work (SOW)**

"It is an agreed-upon outline of the work - you are going to perform"

↓ like

Work details, Reports, Schedules

DAAs do ... Data preparation, Validation Analysis, initial results.

## Example of SOW:

~~Some people has hired~~ Some people has hired a wedding planner.

In wedding there are multiple things that planner has to work.

Like Catering, Place, Invitations.

All of them have their own SOW.

Let's just pick Invitations.

## Invitations SOW:

- Deliverables

- Invitation options
- List the addressees
- Print them
- Address write
- Stamp
- Send

- Timeline

- Dates & Milestones.



- Report:

- Show when each step is complete

## Fundamental Pieces of SOW:

- Deliverables:

- What work is being done here?
- What things are created as result?
- When the project is complete, what to deliver to SH?
- Will you collect the data?

Be specific here.

- Milestones:

- Closely related with timeline
- Which are major milestones
- How will you know when they are complete?

- Timelines:

Way of mapping expectations for how long each step of process should take



## • Report :

- How to give status updates to your SH.
- How will you communicate progress with SH + sponsors.

To really think what data is all about think...

**Who** — collected

**What** — is it about

**Where** — was collected

**How** — was collected

**When** — when collected

**Why** — A good question is why.

Collect data in objective way.

# Data Modes / Levels...

- **Descriptive** - What happened
- **Diagnostic** - Why happen
- **Predictive** - What will happen
- **Prescriptive** - How to make it happen

Hindsight

What  
happened after  
it happened.

(Descriptive)

Insight

Why

(Makes  
you understand)

(Diagnostic)

~~Predictive~~

Foresight

Ability to  
Predict.

(Predictive)