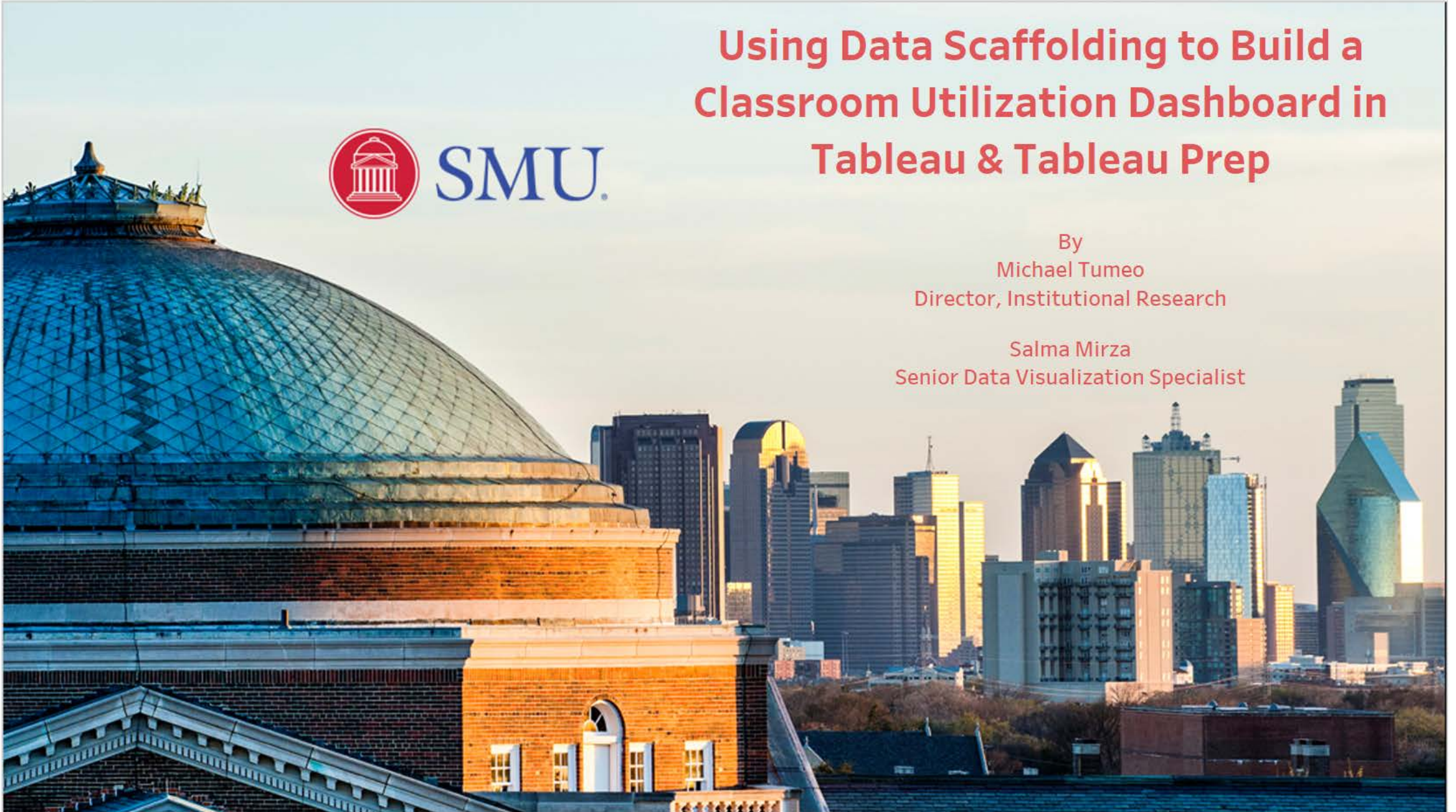


Using Data Scaffolding to Build a Classroom Utilization Dashboard in Tableau & Tableau Prep



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Key Reasons for a Visualization

- Key Reasons
 - The complexity of data
 - The complexity of the current grid
 - The number of course calendars within a semester
- Key Outcomes
 - Better student throughput
 - More efficient space utilization
 - Improved alignment between pedagogy and space/technology
 - Improved parking

The Grid

What we want

	Monday	Tuesday	Wednesday	Thursday	Friday
8:00					
8:50					
9:00					
9:50					
10:00					
10:50					
11:00					
11:50					
12:00					
12:50					
1:00					
1:50					
2:00					
2:50					
3:00					
3:50					
4:00					
4:50					

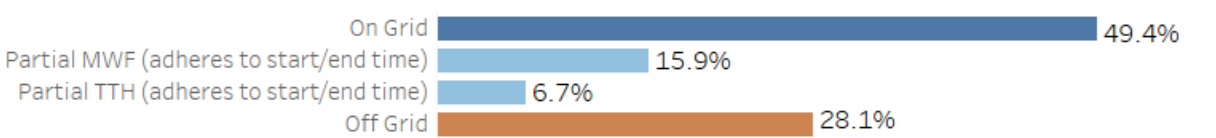
What we have



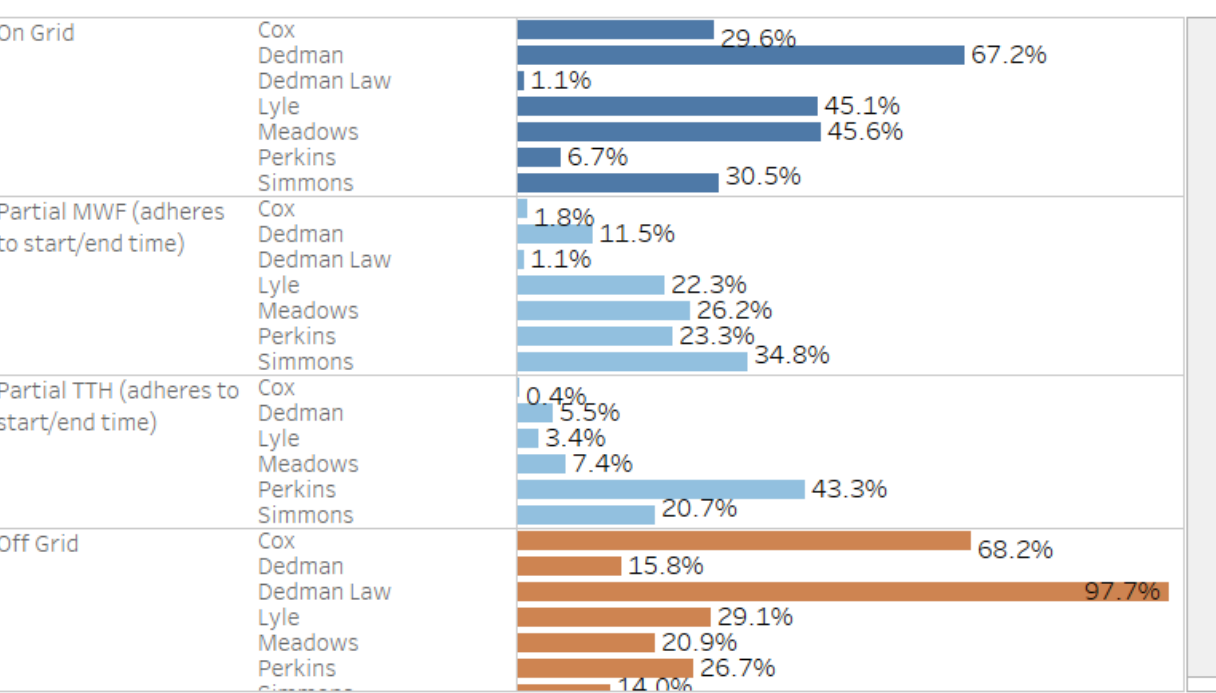
Number of Sections Grouped Under Grid Patterns

On Grid: MWF, starts and ends on the top of the hour, runs for exactly 50 minutes
 TTH, starts at 8 am, 9:30 am, 11 am, 12:30 pm, 2 pm, or 3:30 pm, runs for exactly 80 minutes
Partial MWF: M or W or F (or some combination), starts and ends on the hour, can occupy rooms for multiple 50 mins blocks
Partial TTH: T or TH, starts at 8 am, 9:30 am, 11 am, 12:30 pm, 2 pm, or 3:30 pm, can occupy rooms for multiple 80 mins blocks
Off Grid: Adheres to none of the above

Percentage of sections offered by SMU according to Grid classification



Percentage of sections offered by schools according to Grid classifications



Percentage of sections offered by SMU by session start times

	8:00 am - 9:30 am	10:00 am - 1:30 p..	2:00 pm - 4:00 pm
Monday	21.3%	52.1%	26.6%
Tuesday	28.7%	37.7%	33.8%
Wednesday	21.3%	51.6%	27.2%
Thursday	28.0%	38.2%	33.8%
Friday	25.0%	58.0%	18.6%
Saturday	100.0%		

Percentage of sections offered by schools by session start times

		8:00 am - 9:30 am	10:00 am - 1:30 pm	2:00 pm - 4:00 pm
Cox	Monday	32.9%	28.9%	38.2%
	Tuesday	33.8%	25.7%	40.5%
	Wednesday	35.4%	28.0%	36.6%
	Thursday	35.1%	24.7%	40.3%
	Friday	50.9%	43.4%	24.5%
Dedman	Monday	18.5%	59.4%	22.1%
	Tuesday	26.5%	41.5%	32.0%
	Wednesday	19.0%	58.9%	22.2%
	Thursday	26.5%	41.8%	31.7%
	Friday	20.1%	63.3%	16.6%
Dedman Law	Monday	21.4%	46.4%	32.1%
	Tuesday	25.0%	25.0%	50.0%
	Wednesday	25.6%	46.5%	27.9%
	Thursday	26.7%	30.0%	43.3%
	Friday	40.0%	60.0%	
Lyle	Monday	19.1%	51.5%	29.4%
	Tuesday	28.9%	37.3%	33.7%
	Wednesday	16.4%	50.7%	32.9%
	Thursday	31.6%	35.4%	32.9%
	Friday	29.4%	54.9%	15.7%
Meadows	Monday	22.9%	40.7%	36.4%
	Tuesday	28.5%	38.2%	33.3%
	Wednesday	19.1%	43.4%	37.5%

- Fall Terms
- Fall 2016
 - Fall 2017
 - Fall 2018
 - Fall 2019
 - Fall 2020

- Course Career
- GR
 - IEP
 - UG

Title	Intro	Grid	Grid Patterns	Goals	Goals
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Goals

- Build a Gantt chart to reflect the schedule of classes; location, day, time. A granular level look at each section
- Show each section in terms of start times as well as end times
- Show the empty slots in the rooms to see how well the spaces are being utilized
- Length of each bar reflect the duration of the meeting in minutes
- Color of the bars reflect their Grid status

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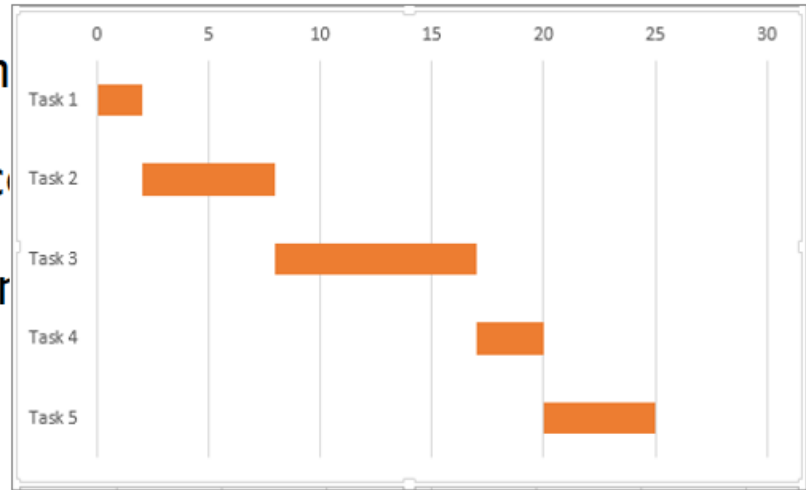
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`DATEDIFF('minute', [Mtg Start], [Mtg End]) / (24*60)` **Goals**

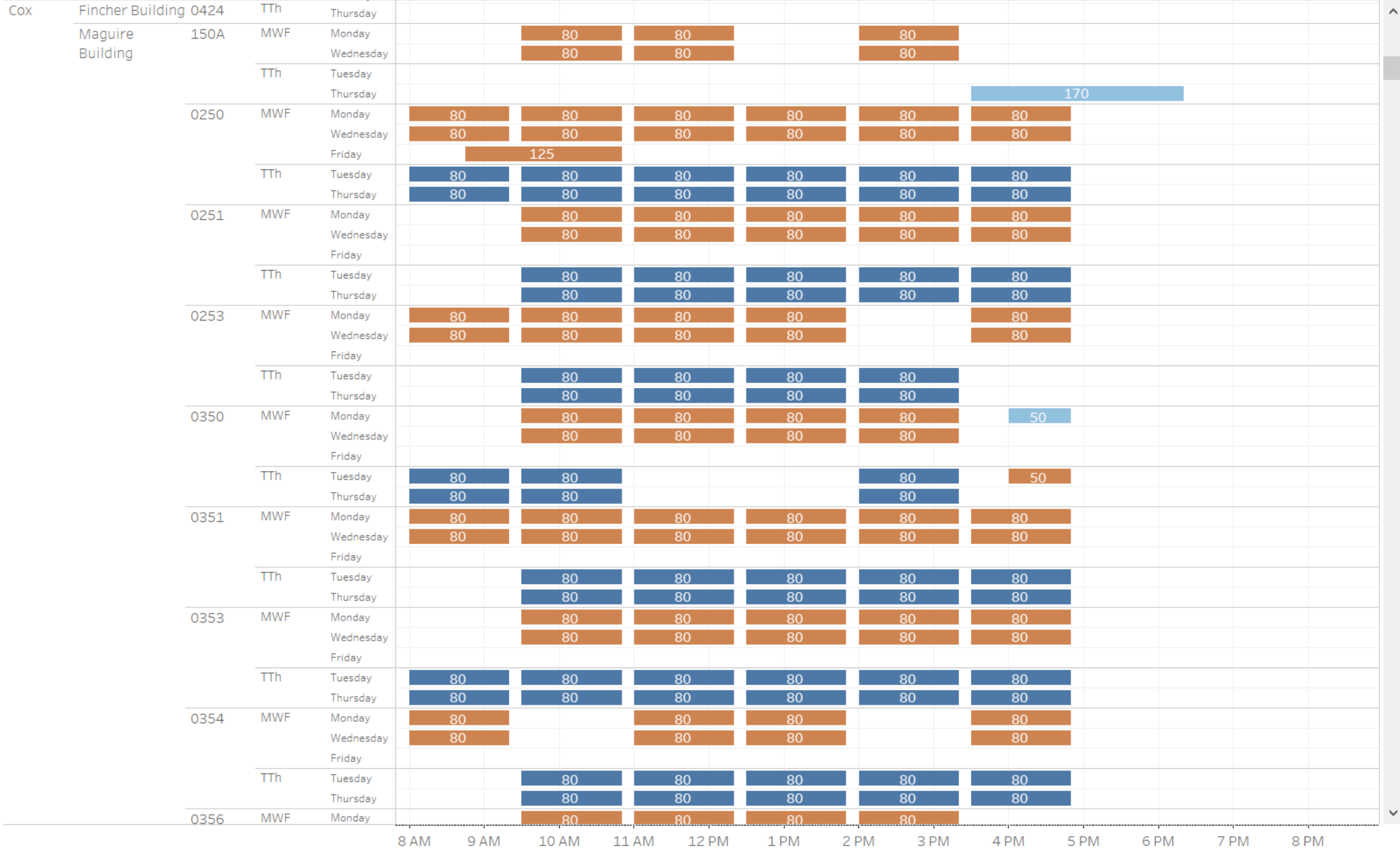


at each

- Build a Gantt chart to reflect the schedule of classes; location at each section
- Show each section in terms of start times as well as end times
- Show the empty slots in the rooms to see how well the space is used
- Length of each bar reflect the duration of the meeting in minutes
- Color of the bars reflect their Grid status



Course Begin Date: 8/25/2016



Meeting Begin Dates

8/25/2016

Show history

Terms

- Fall 2016
- Fall 2017
- Fall 2018
- Fall 2019
- Fall 2020

Building Name

- (All)
- Annette Cald...
- Armstrong R...
- Boaz Residen...
- Caruth Hall

School

- (All)
- Cox
- Dedman
- Dedman Law
- Guildhall

Subject

- (All)
- ACCT
- ADV
- AMAE
- ANTH

Room Type

- (All)
- Auditorium
- Computer Lab
- Conference R...
- Laboratory

Pattern

- Off Grid
- On Grid
- Partial MWF (adh..)
- Partial TTh (adhe..)

Goals

- Build a Gantt chart to reflect the schedule of classes; location, day, time. A granular level look at each section
- Show each section in terms of start times as well as end times
- Length of each bar reflect the duration of the meeting in minutes
- Show the empty slots in the rooms to see how well the spaces are being utilized
- Color of the bars reflect their Grid status
- Incorporate the “off” begin and end dates in the data to make a dynamic schedule that adapts to different calendars

Normal

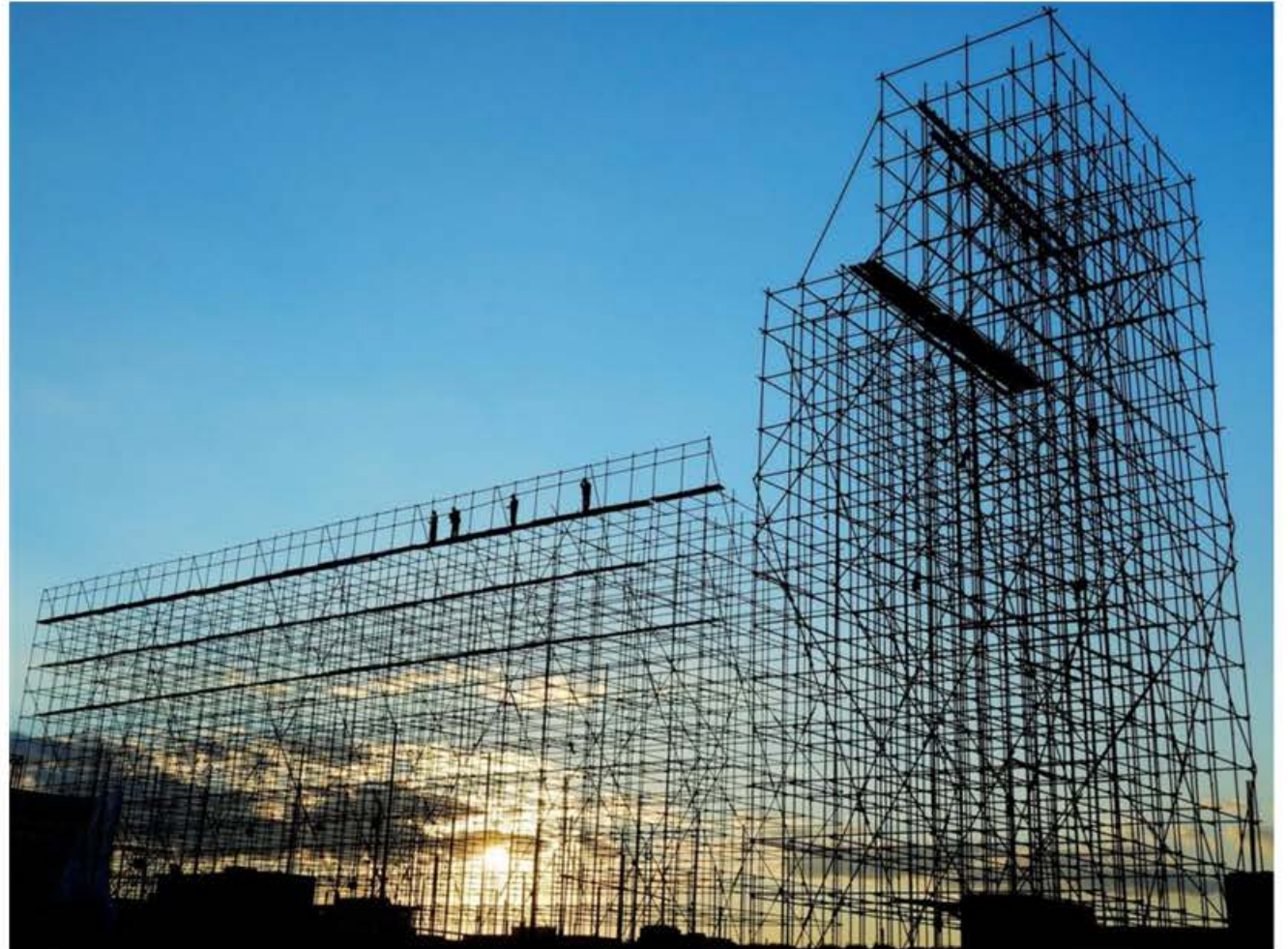
Course	Section	Course Title	Start Date	End Date	Mtg Start	Mtg End	Day Column
ACCT 2301	001H	INTRO TO FINANCIAL ACCT	8/22/2016	12/5/2016	3:30:00 PM	4:50:00 PM	Thursday
ACCT 2301	001H	INTRO TO FINANCIAL ACCT	8/22/2016	12/5/2016	3:30:00 PM	4:50:00 PM	Tuesday
ACCT 2301	002	INTRO TO FINANCIAL ACCT	8/22/2016	12/5/2016	8:00:00 AM	9:20:00 AM	Monday
ACCT 2301	002	INTRO TO FINANCIAL ACCT	8/22/2016	12/5/2016	8:00:00 AM	9:20:00 AM	Wednesday
ACCT 2301	003	INTRO TO FINANCIAL ACCT	8/22/2016	12/5/2016	9:30:00 AM	10:50:00 AM	Monday
ACCT 2301	003	INTRO TO FINANCIAL ACCT	8/22/2016	12/5/2016	9:30:00 AM	10:50:00 AM	Wednesday

Not Normal

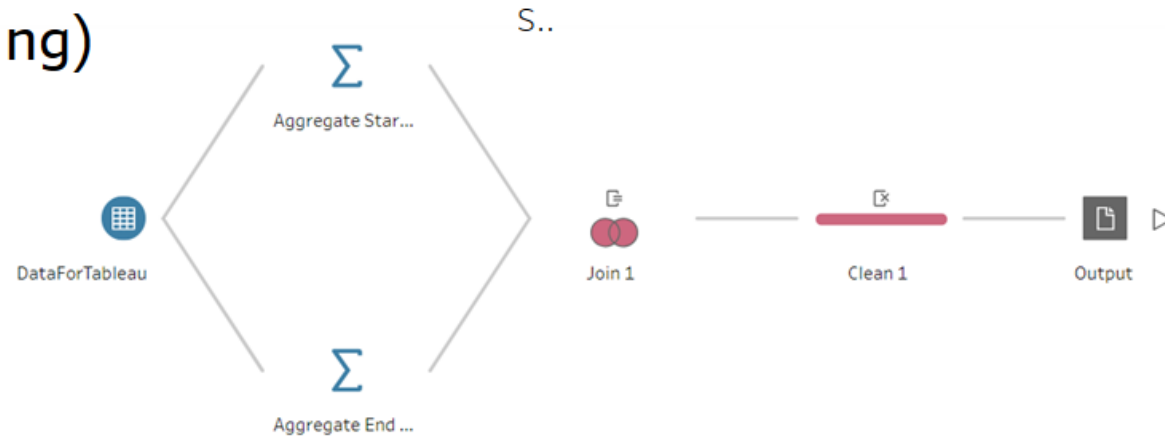
Course	Section	Course Title	Start Date	End Date	Mtg Start	Mtg End	Day Column
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	121	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	2:00:00 PM	4:50:00 PM	Wednesday
ACCT 6226	21	ACCOUNTING INFORMATION SYSTEMS	10/17/2016	12/3/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6226	22	ACCOUNTING INFORMATION SYSTEMS	10/17/2016	12/3/2016	9:30:00 AM	12:20:00 PM	Thursday
ACCT 6226	121	ACCOUNTING INFORMATION SYSTEMS	10/17/2016	12/3/2016	2:00:00 PM	4:50:00 PM	Thursday
BA 6352	600	MARKETING STRATEGY	8/26/2016	8/26/2016	1:10:00 PM	5:00:00 PM	Friday
BA 6352	600	MARKETING STRATEGY	9/16/2016	9/16/2016	1:10:00 PM	5:00:00 PM	Friday
BA 6352	600	MARKETING STRATEGY	10/21/2016	10/21/2016	1:10:00 PM	5:00:00 PM	Friday
BA 6352	600	MARKETING STRATEGY	11/18/2016	11/18/2016	1:10:00 PM	5:00:00 PM	Friday

Data Scaffolding

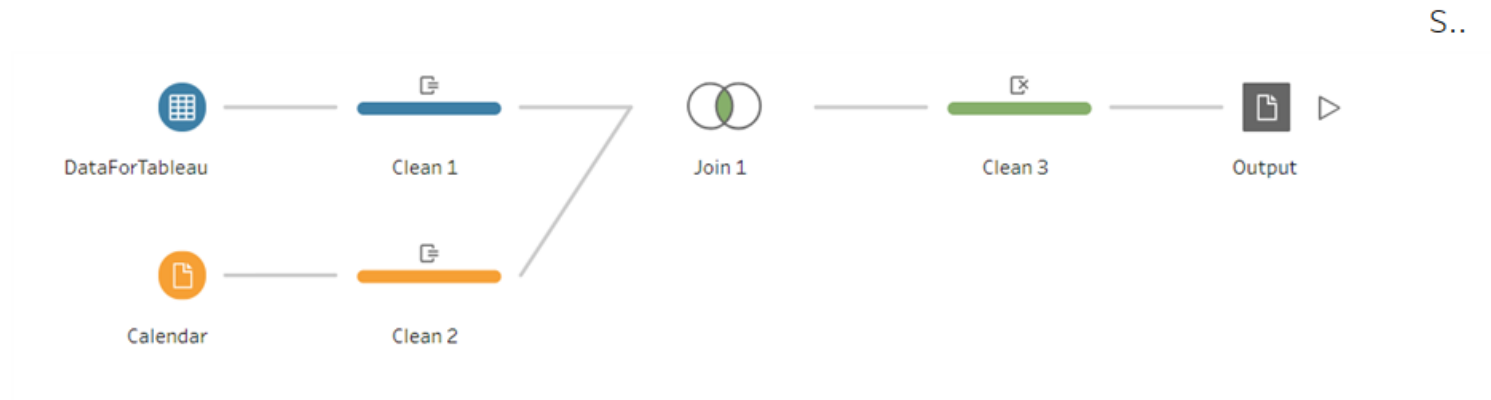
1. Allows you to visualize data where no data is reported.
2. Essentially, creates a "scaffold" upon which the data stands.
3. Allows you to visualize gaps in the dataset.
4. Creates a Cartesian join; will add a row for each value that is being added to the original field. This greatly increases in size the more fields you add to the scaffold. The size of the scaffold may affect performance



Step1 : Create a comprehensive list of all start and end dates in the dataset (the scaffolding)

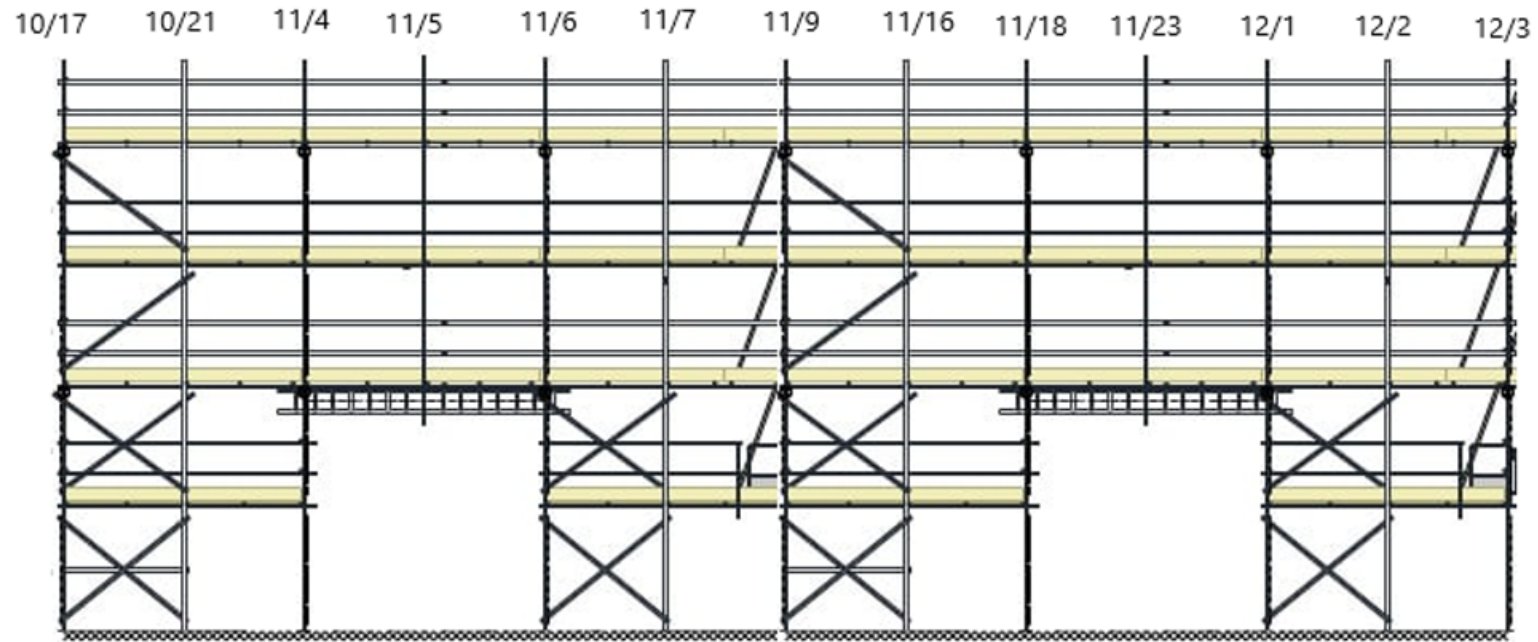


Step 2 : Attach the courses to the scaffolding



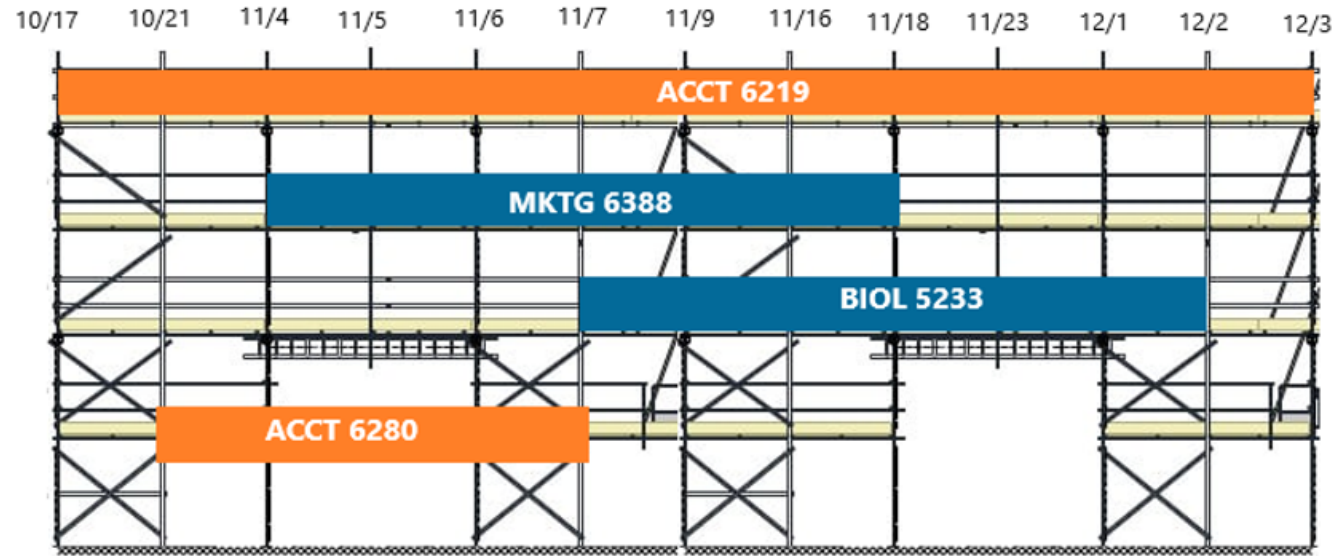
Step1 : Create a comprehensive list of all start and end dates in the dataset (the scaffolding)

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Step1 : Create a comprehensive list of all start and end dates in the dataset (the scaffolding)



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Building the Scaffold H.

Course	Section	Course Title	Start Date	End Date	Mtg Start	Mtg End	Day Column
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	9:30:00 AM	12:20:00 PM	Wednesday

13 unique dates in the dataset between start and end dates

Calendar field contains all dates in the dataset between start and end dates

13 rows added

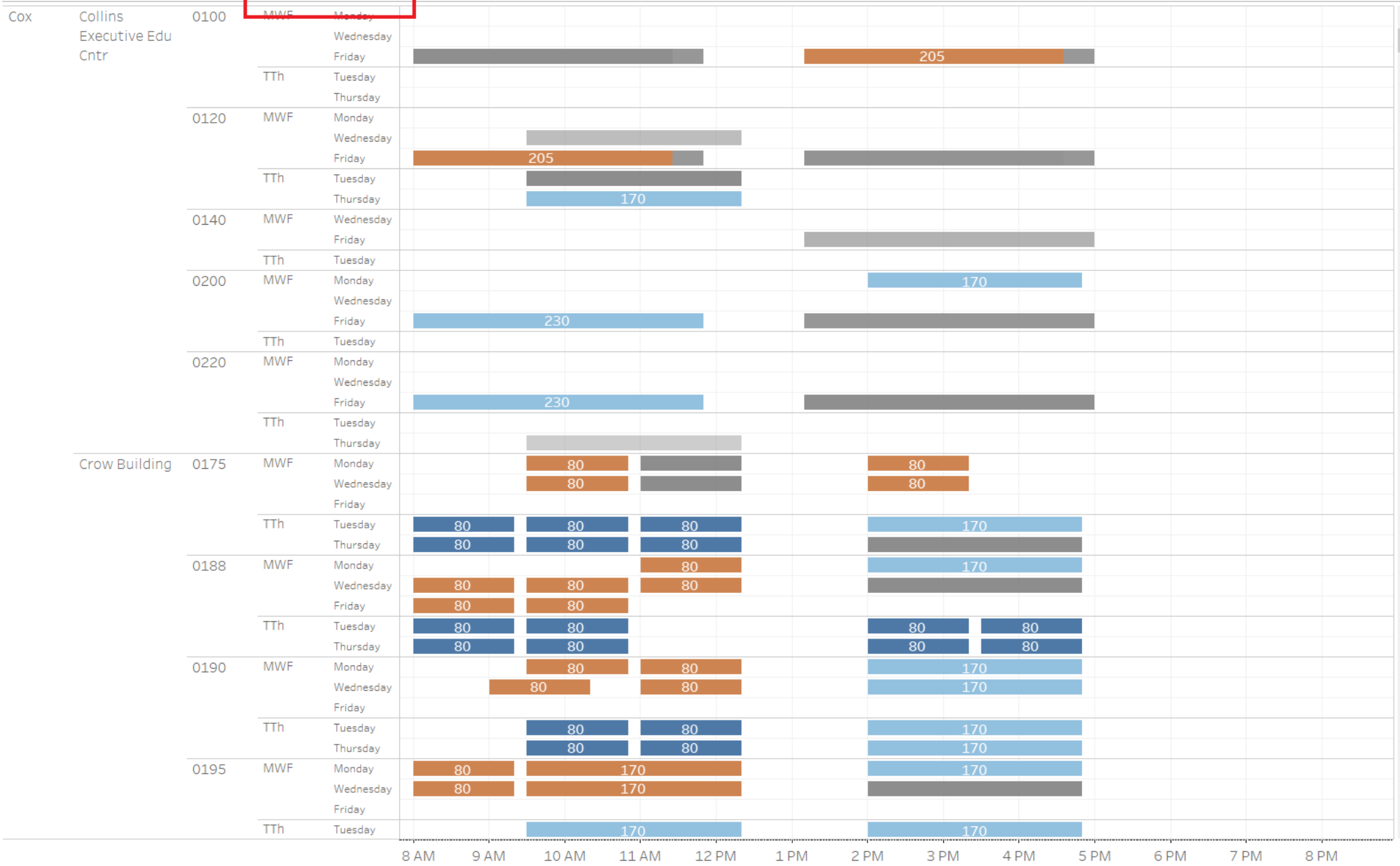
Course	Section	Course Title	Start Date	End Date	Calendar	Mtg Start	Mtg End	Day Column
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	10/17/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	10/21/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/4/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/5/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/6/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/7/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/9/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/16/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/18/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	11/23/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	12/1/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	12/2/2016	9:30:00 AM	12:20:00 PM	Wednesday
ACCT 6219	21	LEADERSHIP SKILLS-ACCT PROF	10/17/2016	12/3/2016	12/3/2016	9:30:00 AM	12:20:00 PM	Wednesday

Course Begin Date: 12/2/2016

Meeting Begin Dates

< 12/2/2016 >

Show history



Terms

- Fall 2016
- Fall 2017
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- Fall 2020

Building Name

- (All)
- Annette Cald...
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- Boaz Residen...
- Caruth Hall

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- Auditorium
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- Conference R...
- Laboratory

Pattern

- Off Grid
- On Grid
- Partial MWF (adh..
- Partial TTh (adhe..

Goals

Normal

Scaffold

Scaffold in Prep

Build Scaffold

Questions

Questions ?