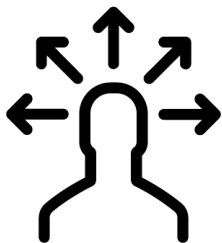
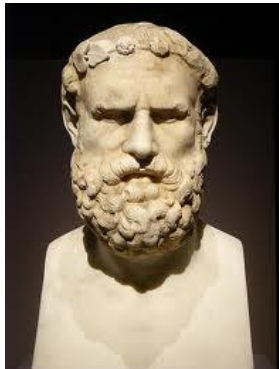


Keeping Your Options Open

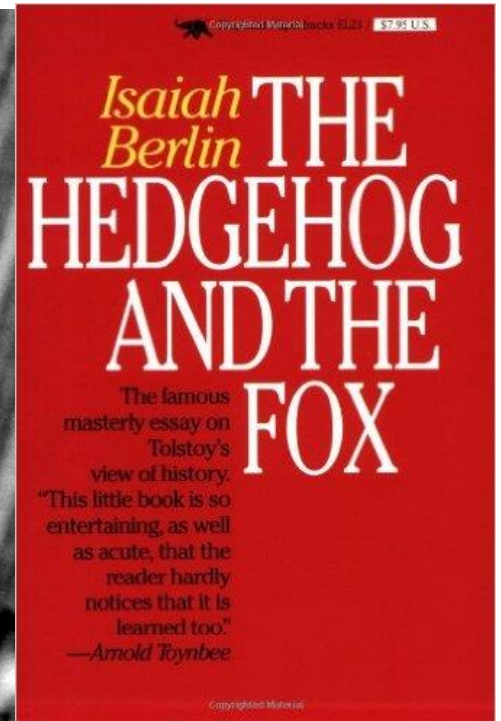
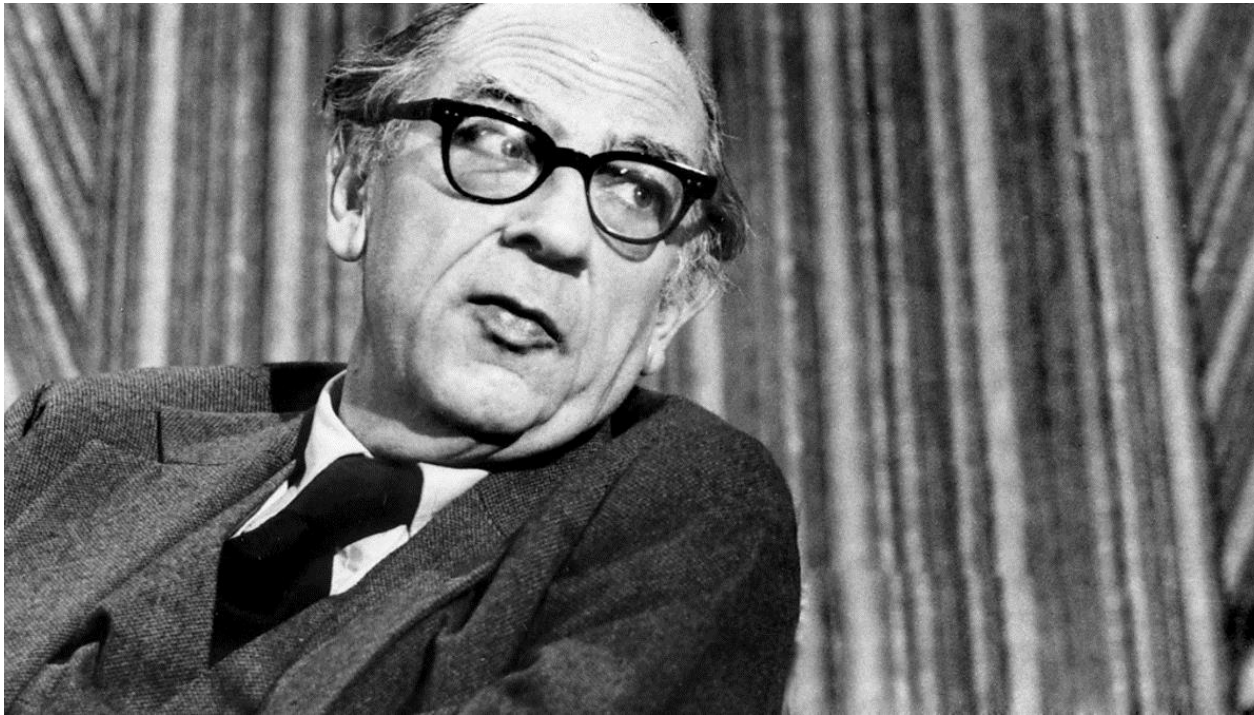
Or how to be a *practical* data
analyst/scientist/user/dba/architect



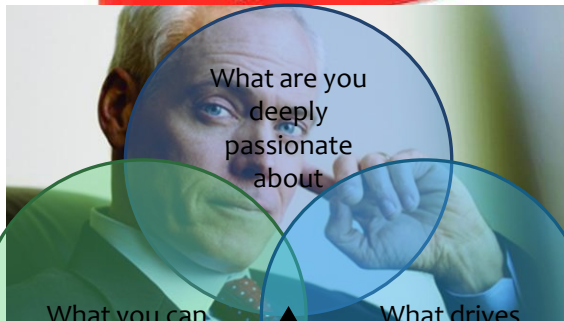
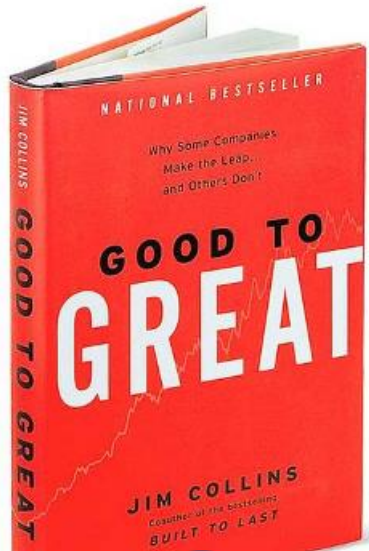
Philosophers and analytics



*The fox knows many things,
but the hedgehog knows one big thing.
-- Archilochus, 700 B.C.*



Sir Isaiah Berlin published in 1953



What are you deeply passionate about

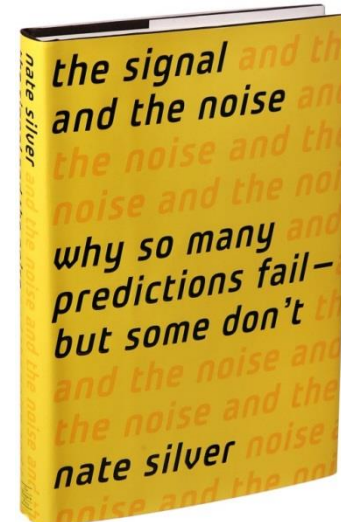
What you can be the best in the world at

What drives your economic engine



Hedgehog Concept

Jim Collins, 2001



Nate Silver, 2012

Which is the right approach to analytics?



Hedgehog



Fox

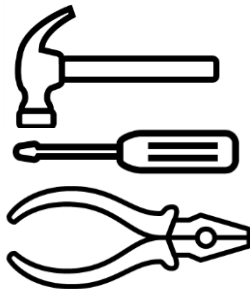
The Visual Outline



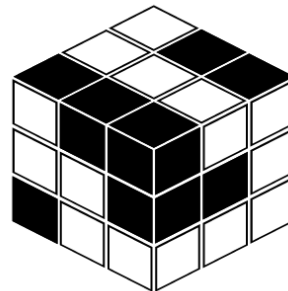
Data



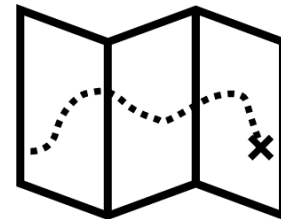
Troubles



Tools



Challenges



Routes

You say Data, I say datums





Banks



Federal Deposit
Insurance Corporation

Each depositor insured to at least \$250,000 per insured bank

<https://www5.fdic.gov/idasp/main.asp>



Troubles

Data is already pivoted
 Ocean of Numbers
 Formatting is text report

	<u>9/30/2015</u>	<u>9/30/2014</u>	<u>12/31/2014</u>	<u>12/31/2013</u>	<u>12/31/2012</u>	<u>Percent Change</u> <u>1 Year</u>
Interest and Fees on Loans	23,911,000	16,922,000	34,016,000	23,838,000	23,662,409	41.30
Income From Lease Financing	505,000	509,000	667,000	673,000	768,842	-0.79
Tax-Exempt	157,000	189,000	244,000	255,000	270,091	-16.93
Estimated Tax Benefit	83,593	100,785	129,924	135,295	142,218	-17.06
Income on Loans & Leases (TE)	24,499,593	17,531,785	34,812,924	24,646,295	24,571,469	39.74
US Treas & Agency (Excl MBS)	692,000	409,000	646,000	71,000	223,204	69.19
Mortgage Backed Securities	4,936,000	4,776,000	5,809,000	8,264,000	7,876,374	3.35
Estimated Tax Benefit	11,713	9,598	13,844	9,550	6,557	22.04
All Other Securities	302,000	323,000	429,000	369,000	373,467	-6.50
Tax-Exempt Securities Income	22,000	18,000	26,000	18,000	12,454	22.22
Investment Interest Income (TE)	5,941,713	5,517,598	6,897,844	8,713,550	8,479,602	7.69
Interest on Due From Banks	276,000	308,000	330,000	323,000	432,217	-10.39
Int on Fed Funds Sold & Resales	112,000	116,000	153,000	179,000	246,947	-3.45
Trading Account Income	1,096,000	1,228,000	1,611,000	1,900,000	1,011,683	-10.75
Other Interest Income	215,000	186,000	293,000	273,000	430,313	15.59
Total Interest Income (TE)	32,140,307	24,887,384	44,097,769	36,034,846	35,172,232	29.14
Int on Deposits in Fining Off	231,000	257,000	337,000	351,000	437,235	10.12



Bikes

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[Safety](#)

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Get moving!
Bike share is fast,
easy and affordable.

Station locations and trip records by year

2010

[Nice Ride data 2010 season.zip \(1.4 MB \)](#)

2011

[Nice Ride data 2011 season.zip \(2.9 MB \)](#)

2012

[Nice Ride data 2012 season.zip \(3.8 MB \)](#)

2013

[Nice Ride data 2013 season.zip \(4.4 MB \)](#)

2014

[Nice Ride data 2014 season.zip \(5.6 MB \)](#)

2015

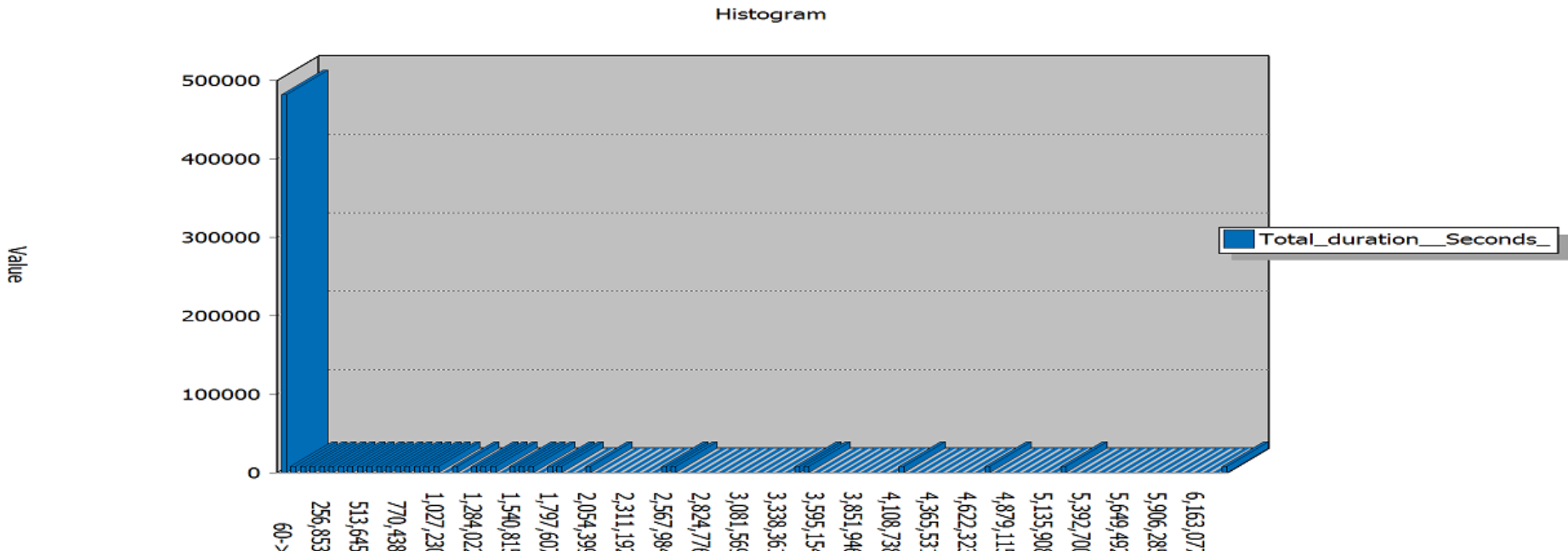
[Nice Ride data 2015 season.zip \(5.9 MB \)](#)

<https://www.niceridemn.org/data/>



Troubles

Data integrity
Volume Issues
Outliers skew



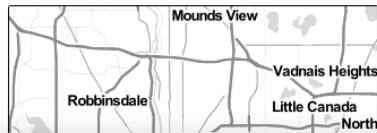


Colleges

College Scorecard

[← BACK TO SEARCH RESULTS](#)

SHARE THIS SCHOOL



University of Minnesota-Twin Cities

Minneapolis, MN
30,271 undergraduate students
www1.umn.edu

- 4 Year
- Public
- City
- Large

Average Annual Cost



Graduation Rate



Average Annual Cost



\$17,208

Graduation Rate



74%

Salary After Attending



\$47,800

National Average

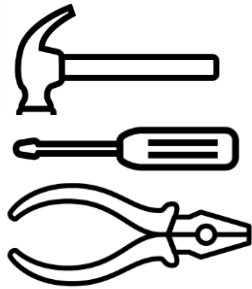


Troubles

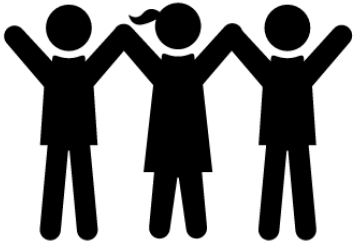
122 Columns in the *short* version
 Need a SME to interpret
 LOTS of Nulls

1	UNITID	OPEID	opeid6	INSTNM	CITY	STABBI	INSTUR	NPCURI	HCM2	PREDDI	CONTRI	LOCALI	HBCU	PBI	ANNH	TRIBAL	AANAP	HSI	NANTI	MENON	WOMEN	RELAF	SATVR:	SATVR:	SATMT:	SATMT:	SATWR	SATWR	SATVRI	SATMTI	SATWR	ACTCM:	ACTCM:	ACTEN:	ACT:					
2	101587	102400	1024	University Livingsto	AL	www.uw2	secure.u	0	3	1	43	0	1	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	18	22	16	NULL				
3	101602	898800	8988	Lurleen E Andalusi	AL	www.libc	www.libc	0	1	1	41	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL				
4	101648	102600	1026	Marion M Marion	AL	www.mar	www.mar	0	2	1	43	0	0	0	0	0	0	0	0	0	0	0	0	NULL	460	590	460	600	NULL	NULL	525	530	NULL	18	26	17	NULL			
5	101675	102800	1028	Miles Coll Fairfield	AL	www.mile	miles.edu	0	3	2	21	1	0	0	0	0	0	0	0	0	0	0	0	55	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL				
6	101693	102900	1029	University Mobile	AL	www.umc	toc.noell	0	3	2	41	0	0	0	0	0	0	0	0	0	0	0	0	75	470	610	470	680	NULL	NULL	540	575	NULL	20	25	20	NULL			
7	101709	100400	1004	University Monteval	AL	www.mor	www.mor	0	3	1	21	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	495	613	465	550	440	580	554	508	510	20	26	21	NULL		
8	101736	569700	5697	Northwes Muscle S AL	AL	www.nws	nwsco.ec	0	2	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
9	101879	101600	1016	University Florence	AL	www.una	studentn	0	3	1	13	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	413	565	433	530	NULL	483	482	NULL	19	25	17	NULL			
10	101897	103100	1031	Northes Rainsville AL	AL	www.nac	www.nac	0	2	1	42	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
11	101912	103300	1033	Oakwooc Huntsville AL	AL	www.oak	www.oak	0	3	2	12	1	0	0	0	0	0	0	0	0	0	0	0	95	410	513	400	510	NULL	NULL	462	455	NULL	17	22	16	NULL			
12	101949	103400	1034	Alabama Monroevi AL	AL	www.asc	www.asc	0	2	1	41	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
13	101958	2E+06	22960	Prince In: Montgorn AL	AL	princeins	princeins	0	2	3	12	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
14	101994	563200	5632	Reid Stat Evergree	AL	www.rsto	www.rsto	0	1	1	41	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
15	102030	103000	1030	Bishop S Mobile	AL	www.bish	www.bish	0	2	1	12	1	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
16	102043	103600	1036	Samford Birmingh	AL	www.sam	samford:	0	3	2	21	0	0	0	0	0	0	0	0	0	0	0	0	0	54	500	630	510	610	500	610	565	560	555	23	28	23	NULL		
17	102058	4E+06	40673	Selma Ur Selma	AL	selmauni	selmauni	0	3	2	32	1	0	0	0	0	0	0	0	0	0	0	0	0	54	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL		
18	102067	569100	5691	Shelton S Tuscaloc	AL	www.she	www.she	0	2	1	13	1	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL		
19	102076	103800	1038	Snead St Boaz	AL	www.sne	www.sne	0	2	1	32	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL		
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22	102261	2E+06	22704	Southea: Birmingh	AL	www.seb	www.seb	0	3	2	21	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	16	25	14	NULL
23	102270	104400	1044	Stillman S Tuscaloc	AL	www.still	www.still	0	3	2	13	1	0	0	0	0	0	0	0	0	0	0	0	66	350	450	383	438	NULL	NULL	400	411	NULL	17	20	15	NULL			
24	102298	104600	1046	Talladeg: Talladeg	AL	www.tall	www.tall	0	3	2	32	1	0	0	0	0	0	0	0	0	0	0	0	76	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL		
25	102313	573400	5734	H Council Montgorn AL	AL	www.tren	www.tren	0	1	1	12	1	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL		
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27	1E+07	104703	1047	Troy Univ Phenix C AL	AL	http://w	NULL	0	0	1	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
28	1E+07	104755	1047	Troy Univ Montgorn AL	AL	http://w	NULL	0	0	1	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL			
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37	102614	106300	1063	University Fairbank: AK	AK	www.uaf	www.uaf	0	3	1	23	0	0	0	0	0	0	0	0	0	0	0	0	0	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL		
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39	102699	899300	8993	University Anchorage: AK	AK	www.uaf	www.uaf	0	3	2	35	0	0	0	0	0	0	0	0	0	0	0	0	0	71	465	675	460	510	495	590	490	590	20	24	10	NULL			

Choosing the right tool set



Strengths and Weaknesses



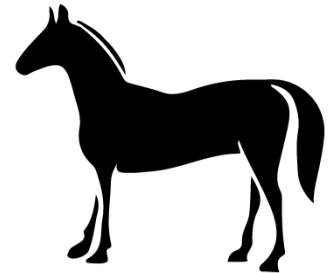
Community



Learnability



Flexibility



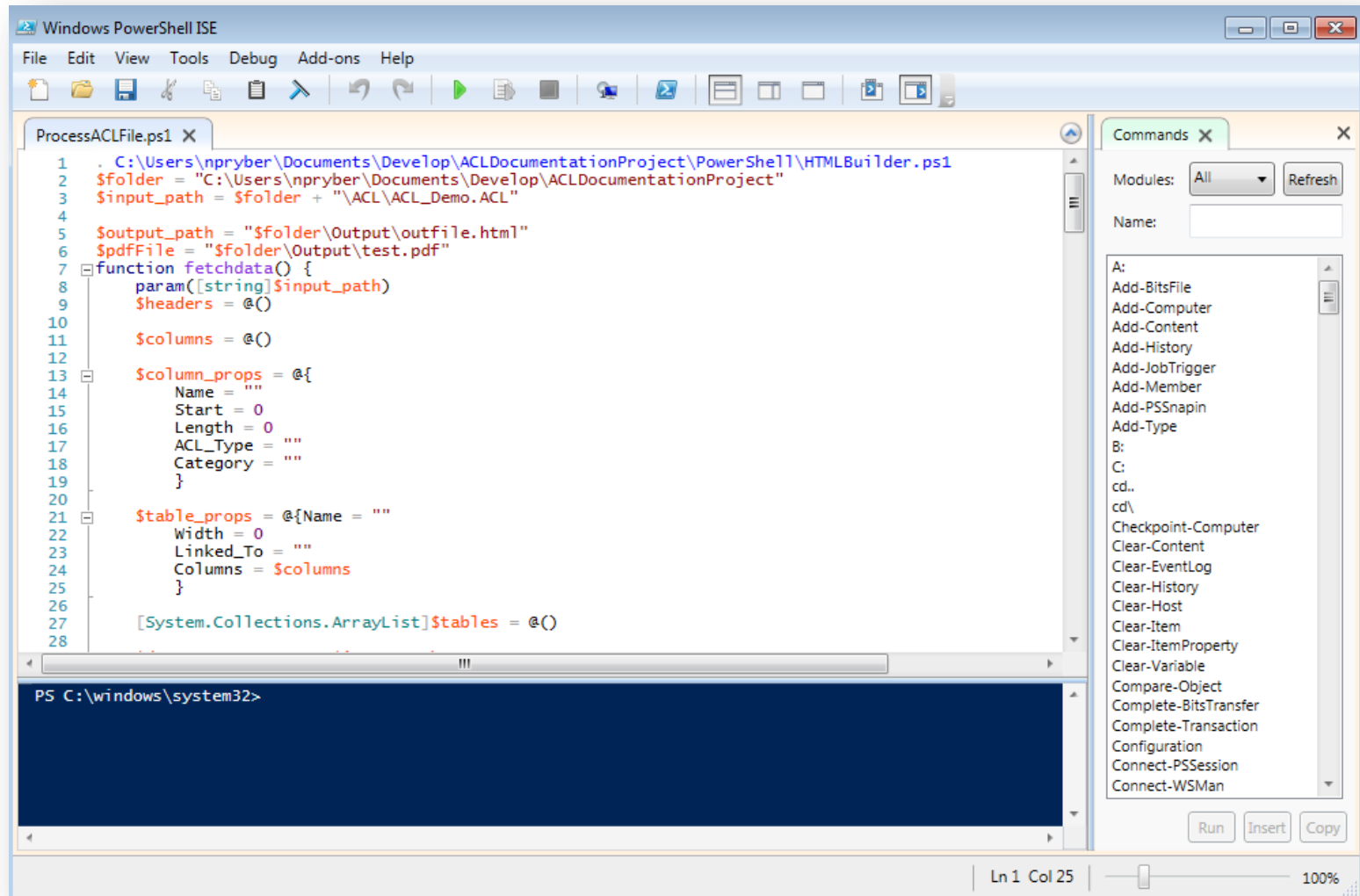
Horsepower

Windows PowerShell ISE



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Scripting for Windows Users Jealous of *NIX Users





ACL Analytics

The Desktop Analytic Tool Only Your Auditor Knows



NAVIGATOR

- 2015 TDWI Presentation.ACL
 - _015_TDWI_Presentation
 - Bikes_Events

COMMAND LINE

Empty command line input field with standard text editing controls.

Index:

	Start_date	Start_station	Start_station_num	End_date	End_station	End_station_num	tal_duration_Seconds_	Account_type
1	11/1/2015 21:55	West 15th Street & Willow	30093	11/1/2015 22:12	Nicollet Island	30170	983	Member
2	11/1/2015 21:55	West 15th Street & Willow	30093	11/1/2015 22:12	Nicollet Island	30170	980	Member
3	11/1/2015 21:55	4th Street & 13th Ave SE	30009	11/1/2015 22:05	Logan Park	30104	565	Casual
4	11/1/2015 21:54	Lyndale Ave S & 22nd Street	30017	11/1/2015 21:55	Lyndale Ave S & 22nd Street	30017	65	Member
5	11/1/2015 21:54	YWCA Downtown	30006	11/1/2015 22:44	YWCA Downtown	30006	3037	Casual
6	11/1/2015 21:53	Coffman Union	30024	11/1/2015 21:56	Social Sciences	30019	200	Casual
7	11/1/2015 21:52	YWCA Downtown	30006	11/1/2015 22:44	YWCA Downtown	30006	3116	Casual
8	11/1/2015 21:52	YWCA Downtown	30006	11/1/2015 22:44	YWCA Downtown	30006	3110	Casual
9	11/1/2015 21:45	28th Street & Nicollet Ave. S	30064	11/1/2015 21:59	Midtown Exchange	30008	878	Casual
10	11/1/2015 21:39	7th Street & 4th Ave. S	30051	11/1/2015 23:45	7th Street & 4th Ave. S	30051	7587	Casual
11	11/1/2015 21:39	2nd Ave N & N 6th Street	30053	11/1/2015 21:51	MCAD	30018	720	Casual
12	11/1/2015 21:39	7th Street & 4th Ave. S	30051	11/1/2015 23:45	7th Street & 4th Ave. S	30051	7554	Casual
13	11/1/2015 21:38	Portland Ave. & Washington Ave.	30090	11/1/2015 21:50	4th Street & 13th Ave SE	30009	710	Casual
14	11/1/2015 21:35	Hennepin County Government Center	30029	11/1/2015 21:37	South 2nd Street & 3rd Ave S	30030	101	Member
15	11/1/2015 21:32	Williamson Hall	30025	11/1/2015 21:41	Como Ave. SE & 29th Ave. SE	30109	527	Member
16	11/1/2015 21:31	Elliot Hall	30058	11/1/2015 21:34	Coffman Union	30024	171	Member
17	11/1/2015 21:26	6th Ave. SE & University Ave.	30088	11/1/2015 21:32	4th Street & 13th Ave SE	30009	338	Member
18	11/1/2015 21:23	Currie Park	30037	11/1/2015 21:53	Groveland Ave & Clifton Place	30187	1834	Member
19	11/1/2015 21:15	11th Ave S & S 2nd Street	30154	11/1/2015 21:53	Lyndale Ave S & 22nd Street	30017	2310	Member
20	11/1/2015 21:15	11th Ave S & S 2nd Street	30154	11/1/2015 21:53	Lyndale Ave S & 22nd Street	30017	2285	Member
21	11/1/2015 21:14	11th Ave S & S 2nd Street	30154	11/1/2015 21:48	Nicollet & Franklin	30060	2046	Member
22	11/1/2015 21:03	Malcolm Ave SE & 5th Street SE	30055	11/1/2015 21:27	IDS Center	30042	1435	Casual
23	11/1/2015 21:02	11th Street & Hennepin	30004	11/1/2015 21:09	Nicollet Mall & Grant Street	30052	459	Member
24	11/1/2015 21:02	Malcolm Ave SE & 5th Street SE	30055	11/1/2015 21:27	IDS Center	30042	1495	Casual
25	11/1/2015 20:59	11th Street & Hennepin	30004	11/1/2015 21:04	West 15th Street & Willow	30093	308	Member
26	11/1/2015 20:58	Marshall Street NE & 8th Ave. NE	30008	11/1/2015 21:06	5th Street NE & 1st Ave NE	30178	528	Member



Professional Edition

Tableau Desktop

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The Desktop Analytic Tool Everyone Knows

Data Analytics

Nice_ride_trip_history_2...

Dimensions

- Account type
- End date
- End station
- End station number
- Start date
- Start station
- Start station number
- Measure Names

Measures

- Total duration (Seconds)
- Number of Records
- Measure Values

Pages

Filters

Marks

Automatic

Color Size Label

Detail Tooltip Path

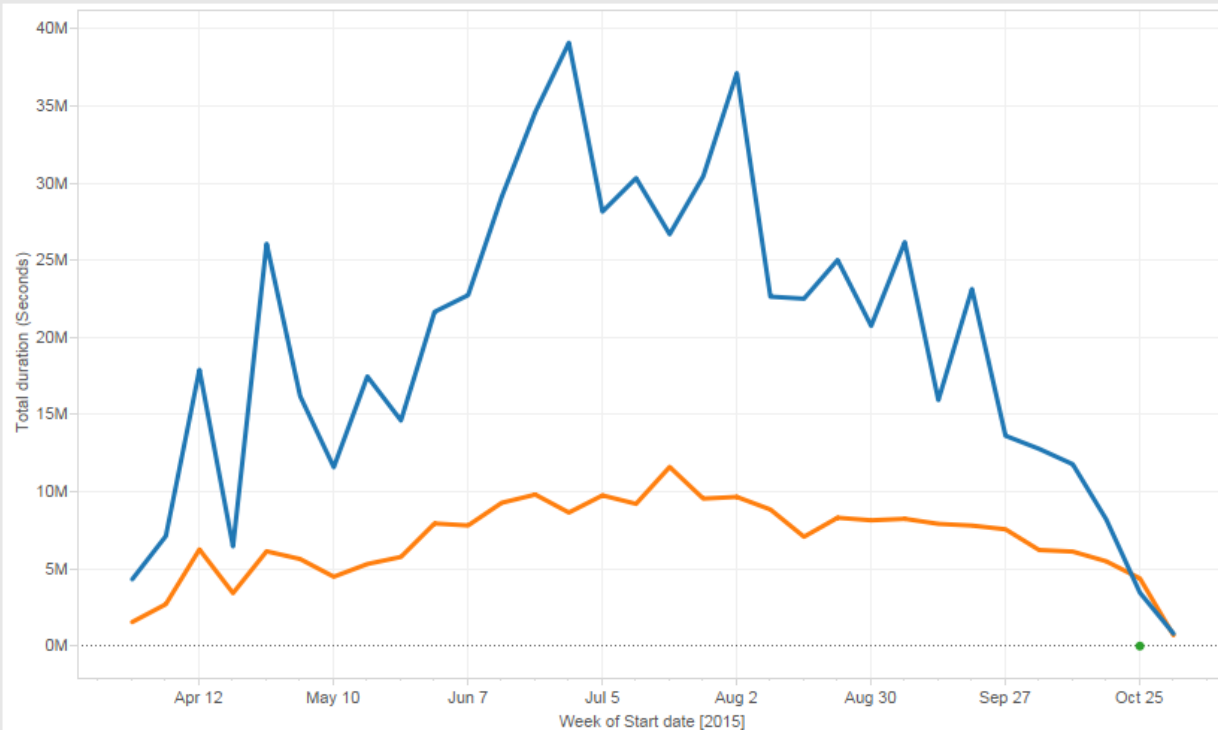
Account type

Account type

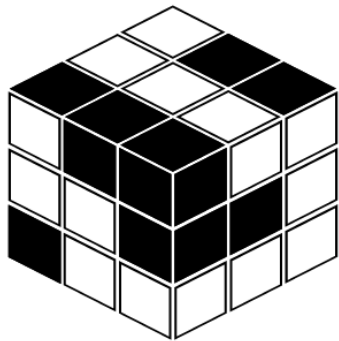
- Casual
- Member
- Unknown

Columns WEEK(Start date)

Rows SUM(Total duration (Sec..



Challenges





Concatenate Reports



Report Intake

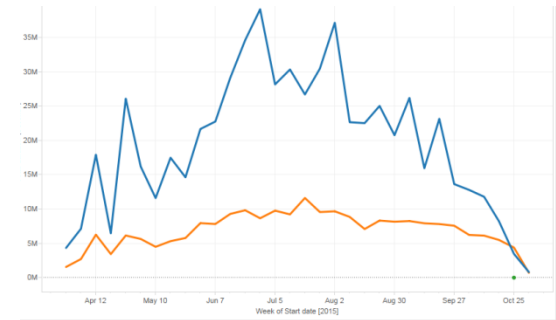
INITECH

T.P.S. REPORT
COVER SHEET

Prepared By: _____ Date: _____
System: _____ Program Language: _____ Platform: _____ OS: _____
Unit Code: _____ Customer: _____
Unit Code Tested: _____
Due Date: _____ Approved By: _____
Test Date: _____ Tested By: _____
Total Run Time: _____ Total Error Count: _____
Error Reference: _____
Error Legend: _____ Log Location: _____
Passed: _____ Moved to Production: _____
Comments: _____

CONFIDENTIAL

Trending

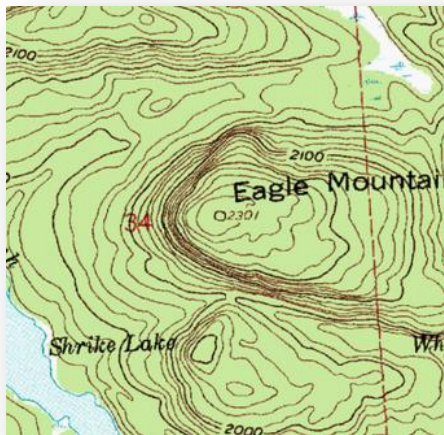




Altitude

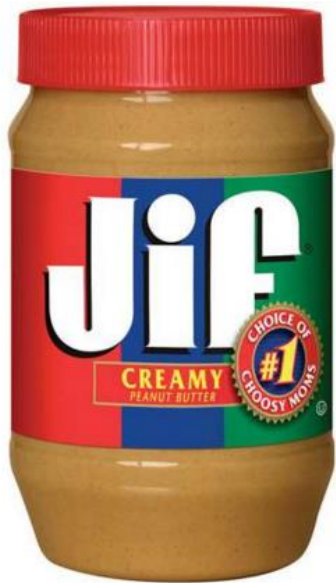
Lost Stations

Lazy Bikers





Column Selection



Sampling

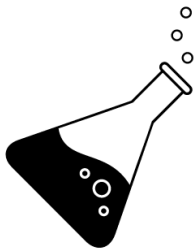


Regional Maps



Is there a silver bullet?





Experiment



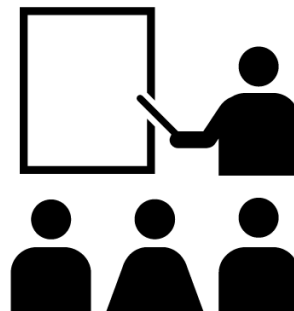
Flexibility



Practice



Learn



Teach



User Groups

Which is the right approach?




Credits

Print

THE EMPIRE STRIKES BACK

It is a dark time for the Rebellion. Although the Death Star has been destroyed, Imperial troops have driven the Rebel forces from their hidden base and pursued them across the galaxy.

Evading the dreaded Imperial Starfleet, a group of freedom



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