BETTER LIVING WITH OBSERVATIONAL DATA

USING SUMA TO INFORM SPACE AND SERVICE PLANNING

Jason Casden | Bret Davidson

NCSU Libraries

by Joyce Chapman, Suma Community development and data analysis specialist.

Noon Head Count

		2/21/2011 Mon	2/22/2011 Tues	2/23/2011 Wed	2/24/2011 Thurs	2/25/2011 Fri	2/26/2011 Sat	2/27/2011 Sun
	Ground Floor	93	71	139	105	79	15	20
	Lobby and Mezzanine	35	35	47	58	56	13	18
Tower/ Stacks	9th Floor	29	52	51	50	31	7	18
	8th Floor	38	28	53	29	34	8	8
	7th Floor	51	38	42	31	14	5	13
	6th Floor	42	47	48	46	30	9	6
	5th Floor	42	35	41	33	87	12	4
	4th Floor	42	49	42	43	23	13	10
	3rd Floor	38	35	46	35	26	15	15
	2nd Floor	42	27	40	33	79	16	10
	Unity Lab	28	28	35	23	21	6	1
East Wing	Spec. Coll. Reading Rm.	39	31	41	35	28	15	14
	Digital Media Lab	18	13	21	13	18	4	35
	1st Floor	220	205	240	221	269	42	73
	2nd Floor	17	26	22	29	14	0	3
West Wing	Techonlogy Sandbox	15	7	12	8	16	3	2
	Quiet Reading Room	55	48	67	60	51	6	10
	1st Floor	28	20	54	39	34	2	0
	2nd Floor	10	5	16	12	6	0	3
	Total	882	808	1060	903	816	196	245
	Initials	CG	CB	EE	ECB	EBG	CG	ECB

Definitions:
Lobby and Mezzanine: study tables on balcony, sitting area in front of circ, print/copy/scan/room, hallway surrounding circ
1st Floor East Wing: computer area, couches, study rooms, presentation practice room
Ground Floor: reading room, guest computers, Hill of Beans, entryway, express desk
2nd Floor East Wing: Does not include classrooms/office spaces like ITTC labs
2nd Floor West Wing: Does not include classroom/office spaces like auditorium and mini-theater

Security Patrol Head Count

Date: 5/3/11

		10:00PM	12:00AM	2:00AM	4:00AM
	Ground Floor	80	33	19	6
	Lobby and Mezzanine	40	31	11	9
Tower/ Stacks	9th Floor	101	59	46	28
	8th Floor	75	68	33	19
	7th Floor	87	66	36	20
	6th Floor	89	48	16	5
	5th Floor	63	55	23	12
	4th Floor	54	42	12	8
	3rd Floor	64	30	21	6
	2nd Floor	51	34	12	6
	Unity Lab	27	23	9	3
East Wing	Spec. Coll. Reading Rm.	67	48	24	3
	Digital Media Lab	26	11	8	1
	1st Floor (Commons)	278	226	113	66
	2nd Floor	33	25	14	7
West Wing	Technology Sandbox	18	15	5	2
	Quiet Reading Room	57	38	15	15
	1st Floor	50	41	8	6
	2nd Floor	75	52	13	9
Total		1339	983	449	233
Patrol (initials)		A.J.	I.N.	A.J.	

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Computer = Computer, laptop use
SMART = SMART Board use
MSurace = Microsoft Surface use
Pixel = Perceptive Pixel use
4screen = QuadScreen Projecting use
Gaming = Gaming (XBox, PS3, Wii)
Other = Other (Socializing, Reading, eating etc.)

INDIVIDUAL	Computer	SMART	MSurface	Pixel	4screen	Gaming	Other
Total#							

DML Observation

INSTRUCTIONS: Tally the activities people are doing on their own using the designated codes below. If people are working in a group, tally them in the 'group' column, and circle each group (example: (II) (III)).

M = Multimedia creation (photo/video editing, video importing/conversion, other multimedia work)
T = Touchscreen use: USING TOUCHSCREEN FUNCTIONALITY (Lenovo PCs)
S = Scanning (Document and book scanning, negative/slide scanning)
C = General Computing (Social Networking, word processing, web-browsing, email, chat, etc.)

Activity	# of ppl Alone	# of ppl in Group (Circle each group)
M	III\	(II)
T	I	
S	ＨＴＴI	
C	III\	(II)

DATE: 04/12/11
TIME: 2:30
STAFF: EBG

NOTES (Interesting activity, use of technology, etc.):

- LARGE BATCH SCAN OF SLIDES
- AUDACITY/SOUND MIXING
- SCANNING 35MM FILM (USED EPSON SCANNING W/ PADDING TAKEN OFF)
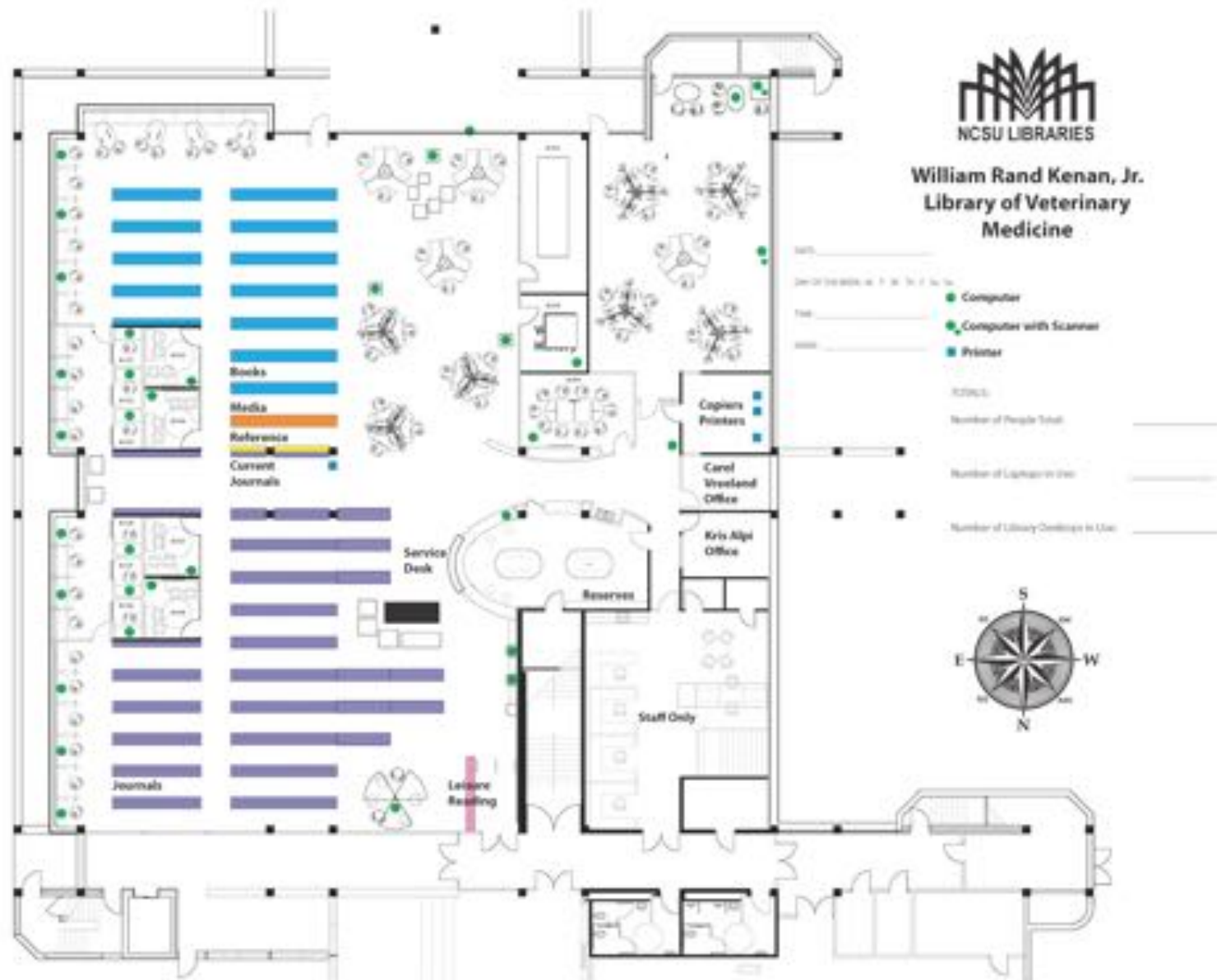
Could we collect more detailed data, more easily, with fewer errors, and manage it all more consistently?

And could we build more sophisticated and intuitive analysis tools that are totally reusable for all data by lots of people in our institution?

Could we then use data about space and service usage to make better decisions (even small ones)?

THE WEB HAS HAD THIS FOR YEARS

WEB ANALYTICS

COLLECTING RICH RELATIONAL DATA FOR A NEW SERVICE IS TRIVIAL OR EASY

SPREADSHEETS

COLLECTING DATA REQUIRES ERROR-PRONE AND TIME-CONSUMING DATA ENTRY

LESS DATA IS COLLECTED, WITH LESS DETAIL, LESS OFTEN.

WEB ANALYTICS

YEARS OF DATA FOR DOZENS OF SERVICES IS IN ONE PLACE.

SPREADSHEETS

MANY SPREADSHEETS, MANY FORMATS, SPLIT BY YEAR OR SEMESTER, STORED IN A VARIETY OF LOCATIONS.

CROSS-SERVICE ANALYSIS IS RARE.

WEB ANALYTICS

ALTHOUGH APIS EXIST, ANALYSIS TOOLS ARE EASY TO USE AND CAN BE ACCESSED BY MANY PEOPLE.

THEY'RE ALSO THE SAME FOR EVERY DATASET.

SPREADSHEETS
LIMITED ANALYSIS TOOLS. CAN A PROGRAMMER HELP?

FEWER PEOPLE USE DATA TO INFORM FEWER DECISIONS WITH LESS SOPHISTICATED QUERIES.

SUMA

An open source tablet-based app (well, toolkit) to aid library staff in assessment of how patrons are using library spaces.

In other words…the gathering, storing, exporting, analyzing, and visualizing of data across spaces/activities/time and around events.
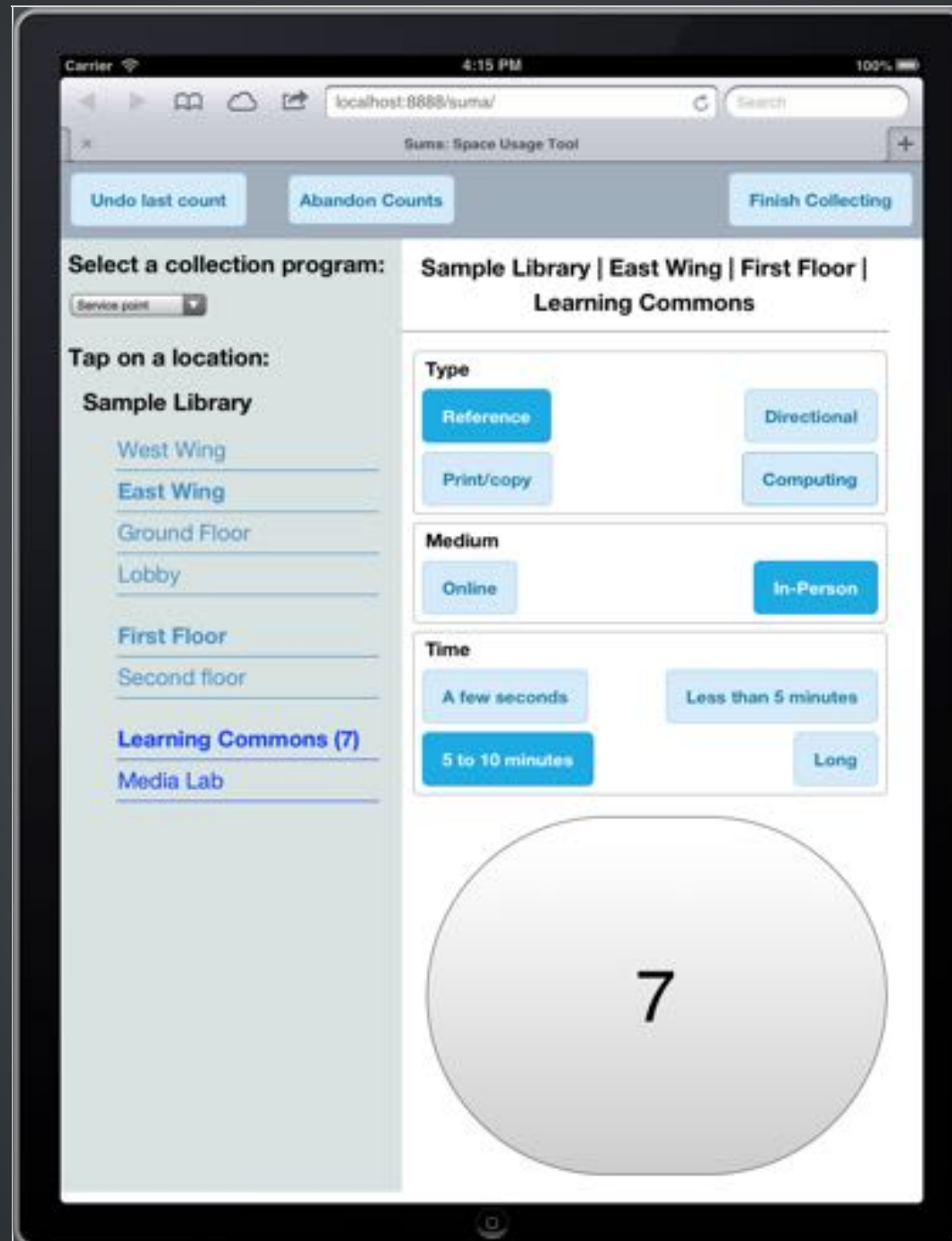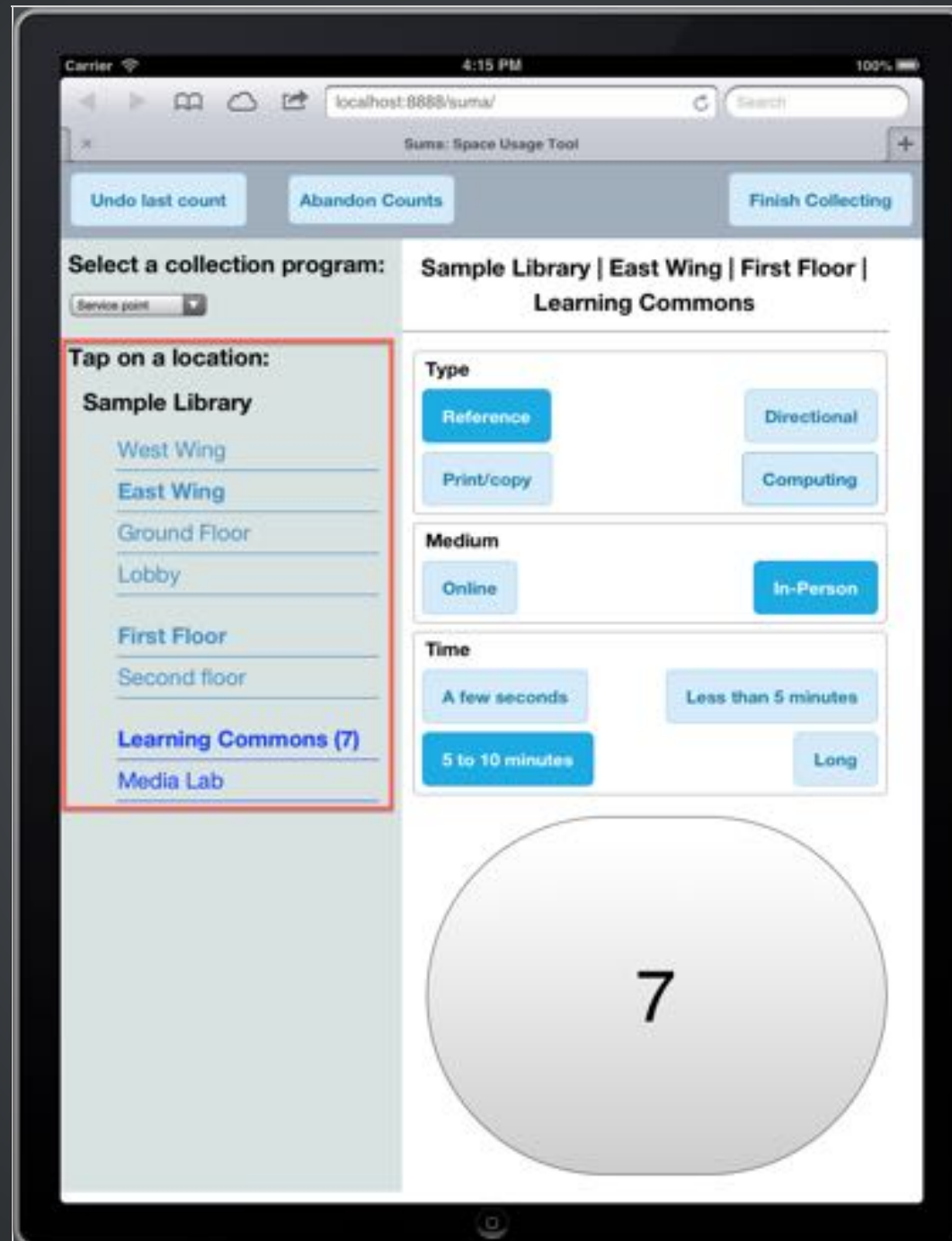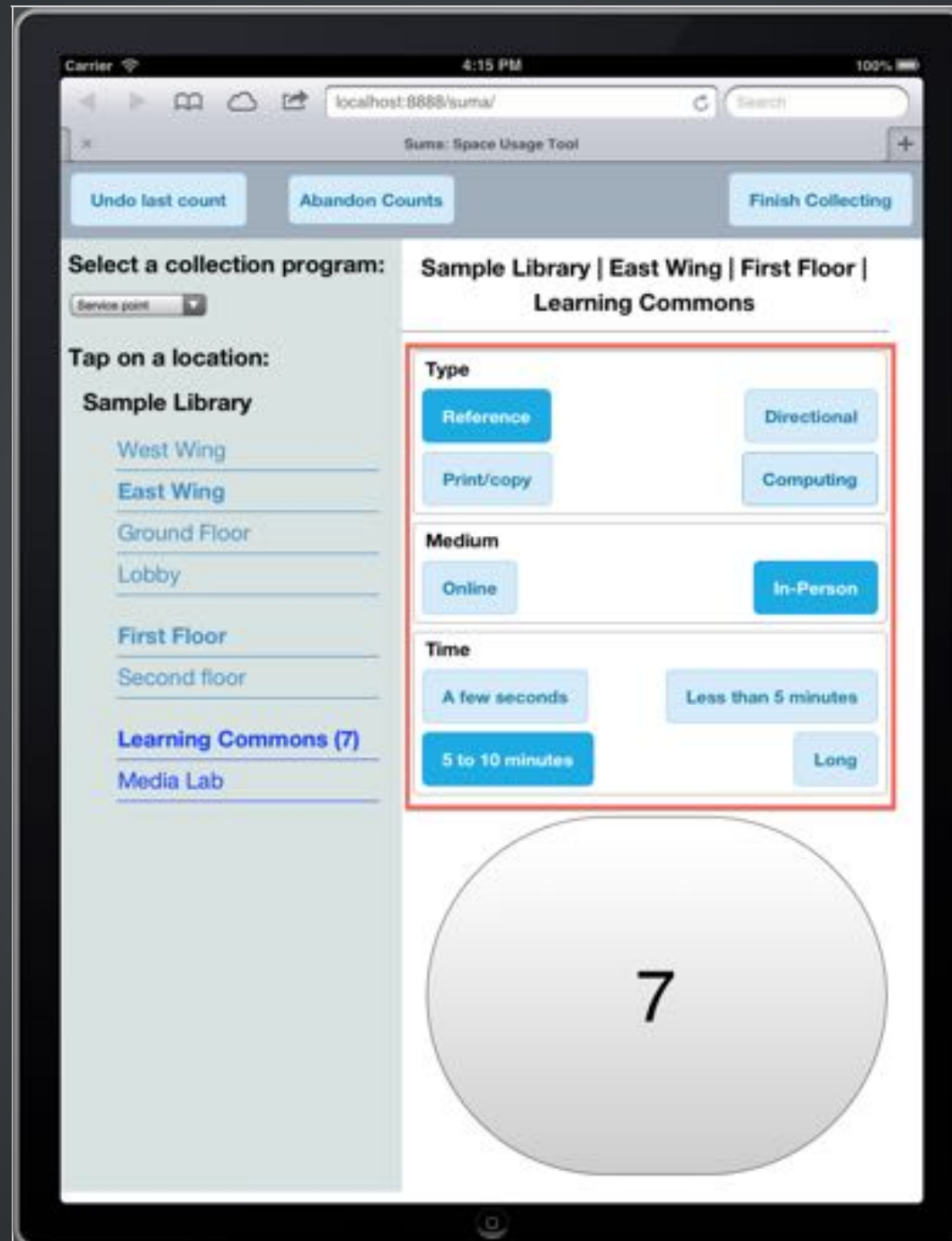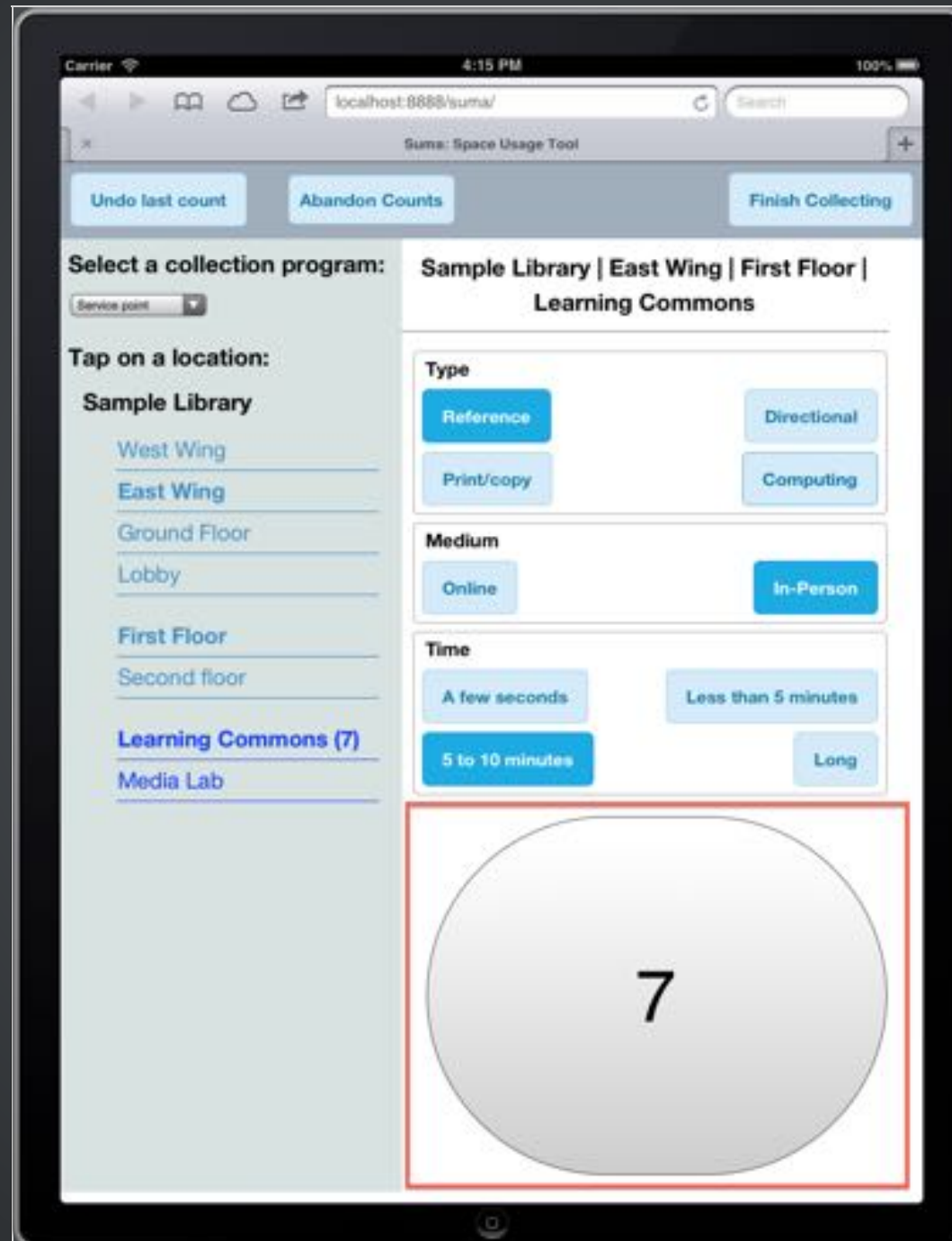
DATA COLLECTION

SUMA DATA COLLECTION

STAFF AS SENSORS

SPACE AND SERVICE ANALYTICS

- Staff scheduling
- Building hours
- Service desk service patterns
- Study room reservations
- Technology and furniture use
- Use of specialized spaces (e.g. Graduate Commons)
- Comparing branch and main libraries, at different times of day
- Special Collections researcher services
- Turnaways (e.g. Technology Lending)
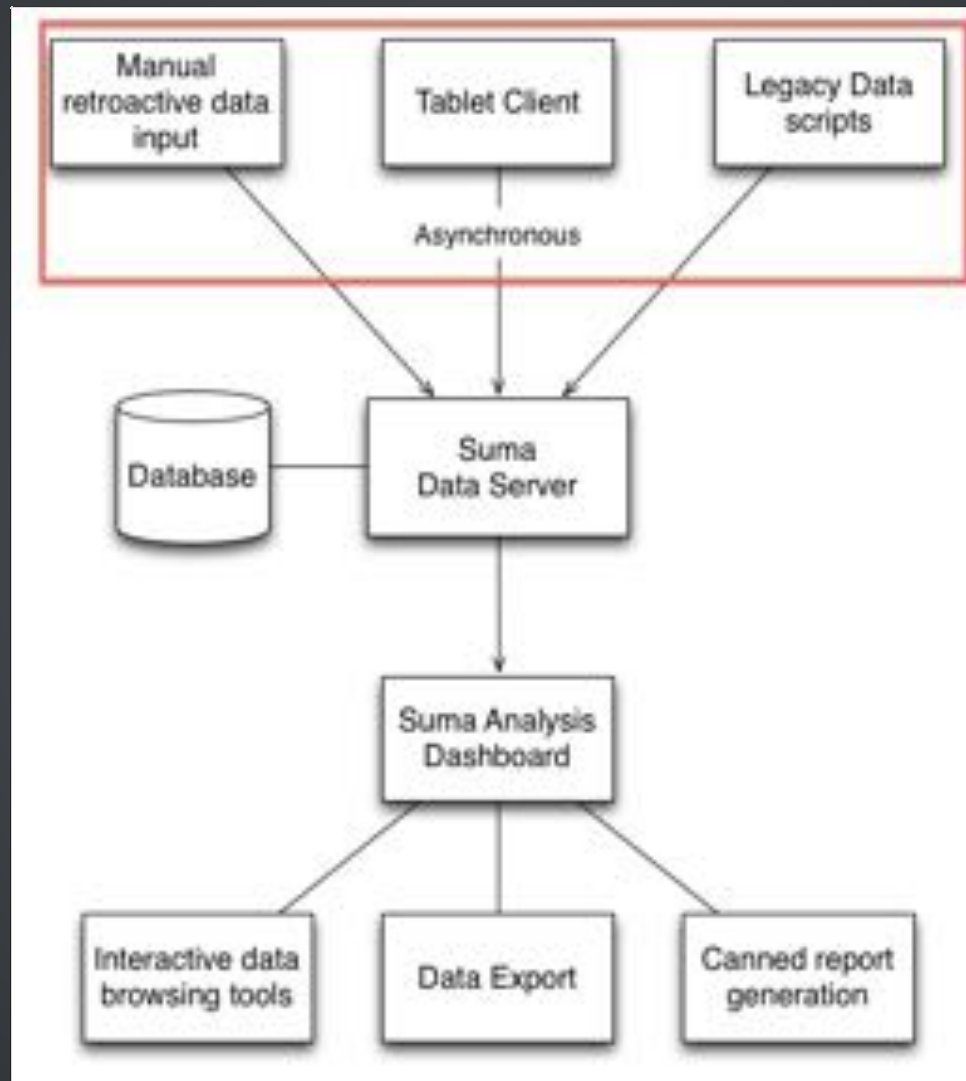- Combine with other data: circulation, gate counts, tech lending, reserves, online services

UNDERSTANDING OUR USERS

- Where do our users go?
- What are they doing?
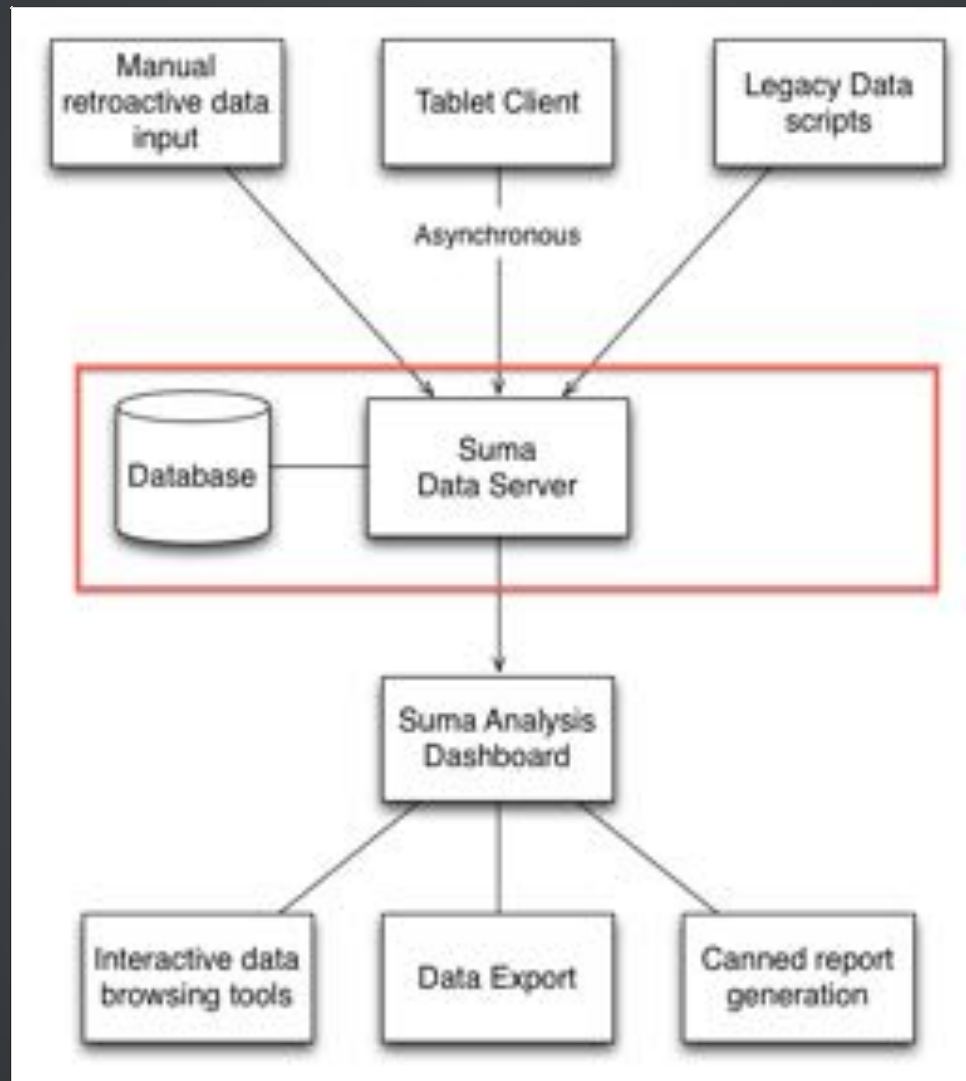- When are they doing it?
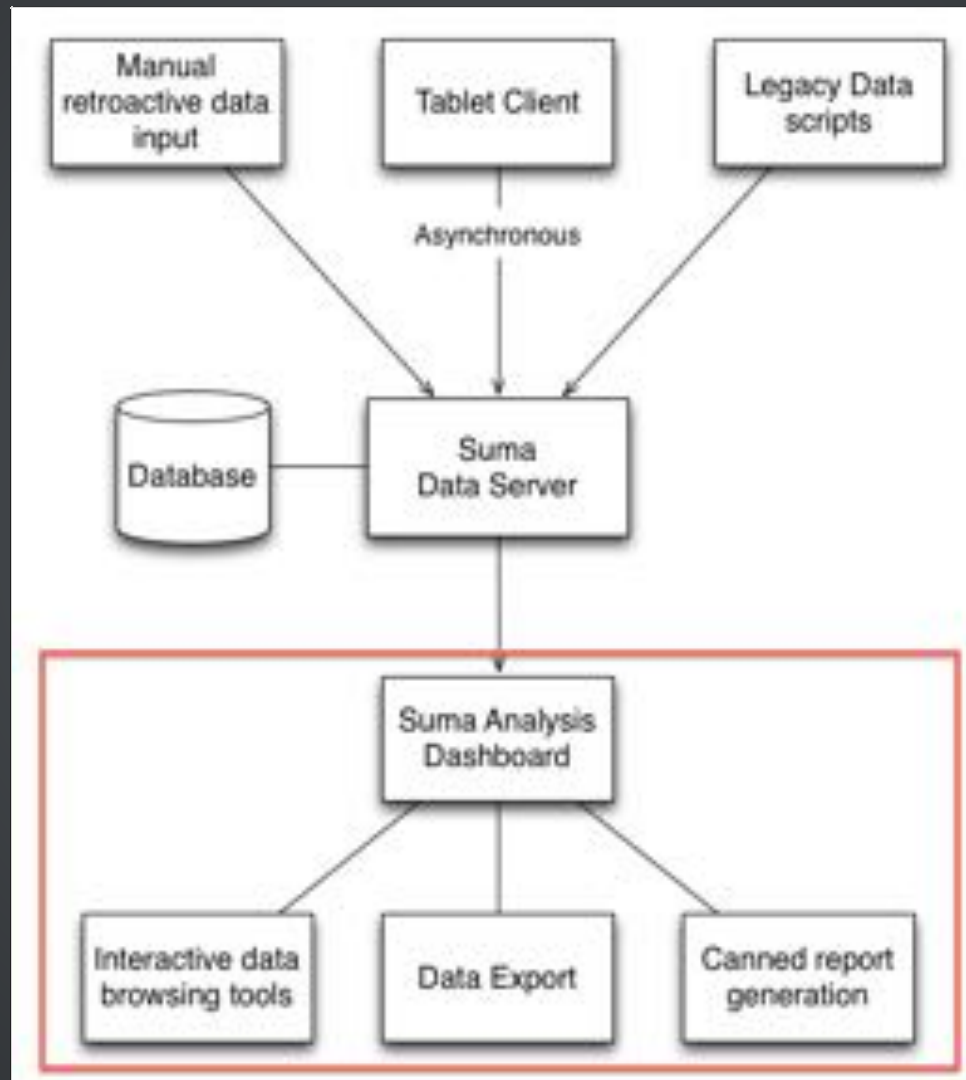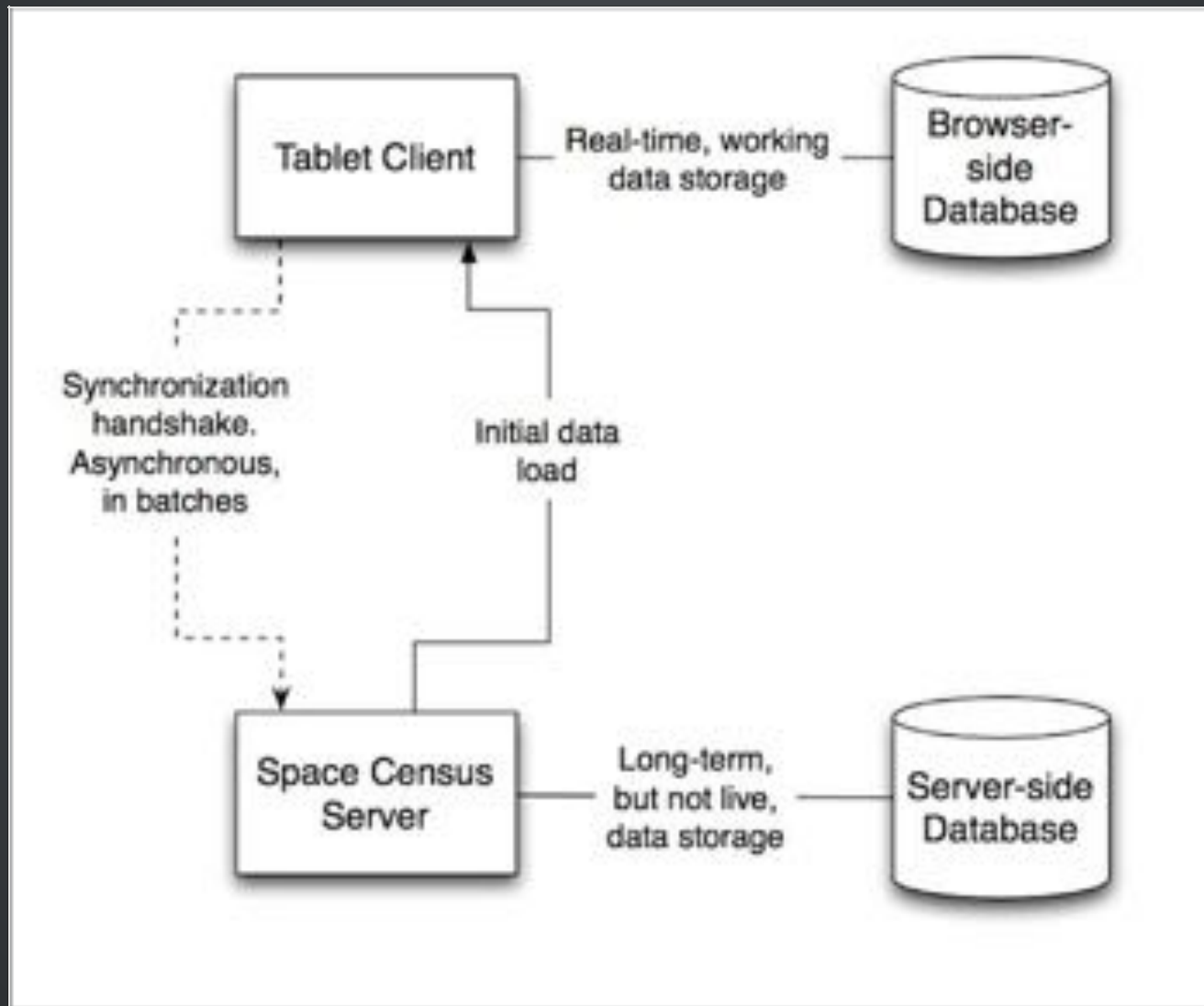- What *could* they be doing?

SYSTEM OVERVIEW
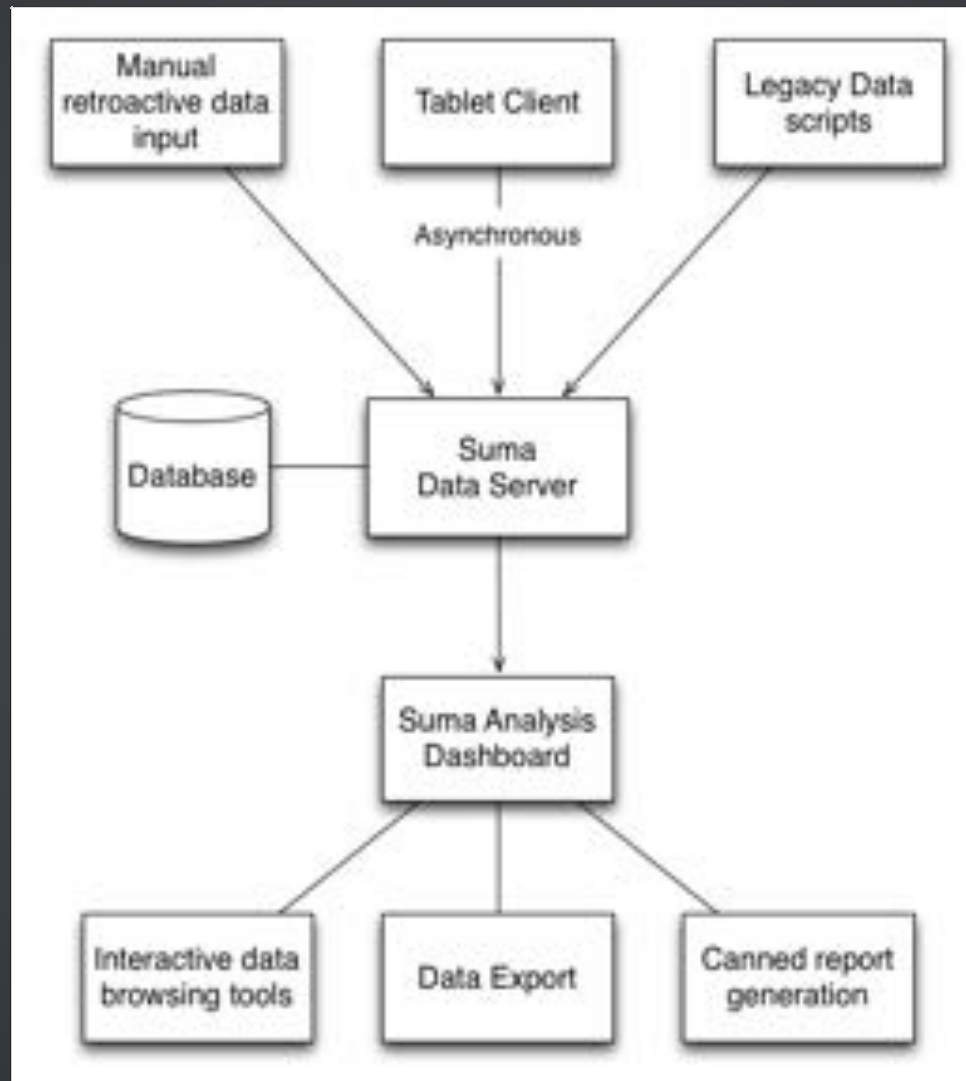
SYSTEM OVERVIEW

SYSTEM OVERVIEW

SYSTEM OVERVIEW

DATA SYNCHRONIZATION

CORE TECHNOLOGIES

- Zend PHP Framework
- MySQL, Web SQL Database, Persistence.js
- AngularJS
- D3.js

ANALYSIS IN ACTION

- Sample Data
- 2 of 4 reports

OPEN SOURCE

- 45+ active academic library pilot projects
- Hosted on GitHub
- Pull requests are always welcome

OPEN SOURCE SUPPORT (FREE KITTENS)

PROJECT TEAM

- Jason Casden
- Bret Davidson
- Joyce Chapman
- Rob Rucker
- Rusty Earl
- Eric McEachern

THANK YOU!

http://go.ncsu.edu/Suma

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