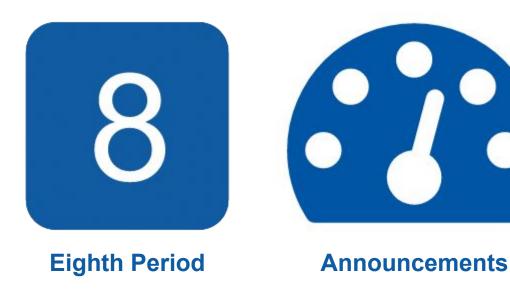
# A Web-Based Intranet Platform for TJHSST TJ Intranet 3: Ion

James Woglom Computer Systems Research Lab Torbert Period 3







**Eighth Period** 

- Final period of the TJHSST school day
- Used for student events and activities
- Electronic management system
  - Students sign up for each block
  - Teachers take attendance for their activities
  - Administrators add and schedule activities



**Announcements** 

- Primary school-wide announcement platform
- Automatic emails to students
- Public announcements published to social media
- Student groups for class year, clubs, etc



- Student and teacher profile pages
  - Emails, phone numbers, addresses
  - Course listings with rosters
  - Eighth period signups
- Privacy permissions settings (per FERPA)

## And much more...



## A History of TJ's Intranet Software

1984
TJHSST launched as magnet school for science and technology

Early 1990s
Eighth period program
established using bubblesheet signups

1997
Work begins on multiple
"Intranet" projects, to create
a student web portal

1999
Intranet launches, fully digitized Intranet system to prevent Y2K issues







January 2004
Intranet2 (Iodine)
development begins in
attempt to modernize

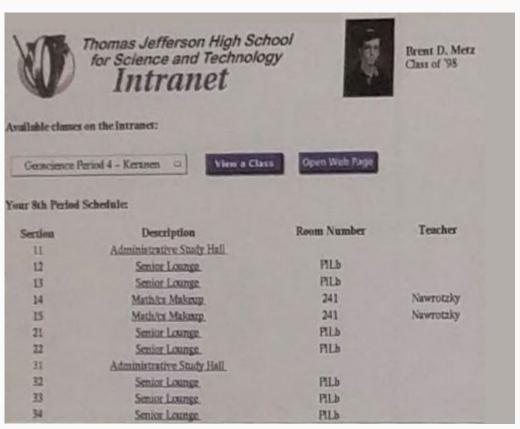
May 2006 lodine launches

June 2013
Intranet3 (Ion) project begins
with emphasis on mobile
devices and extensibility

November 2015 Ion launches

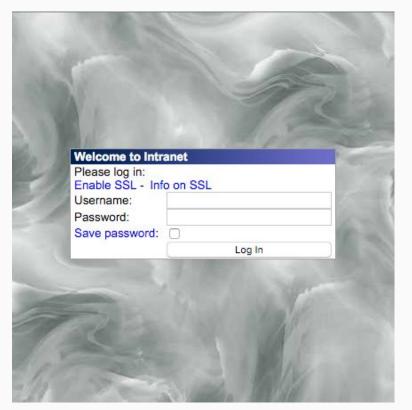
## Development of a Relational Database for a School Intranet Computer Systems Research Project: Brent Metz, Class of 1998

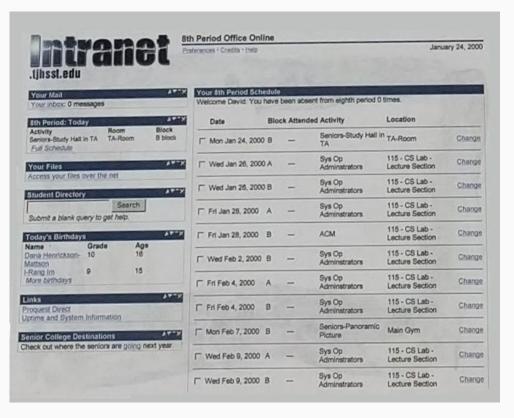
#### 1998 - 2000



## Development of a Student-Oriented Intranet Portal System Computer Systems Research Project: David Ziegler, Class of 2000

In use: 1999 - 2006

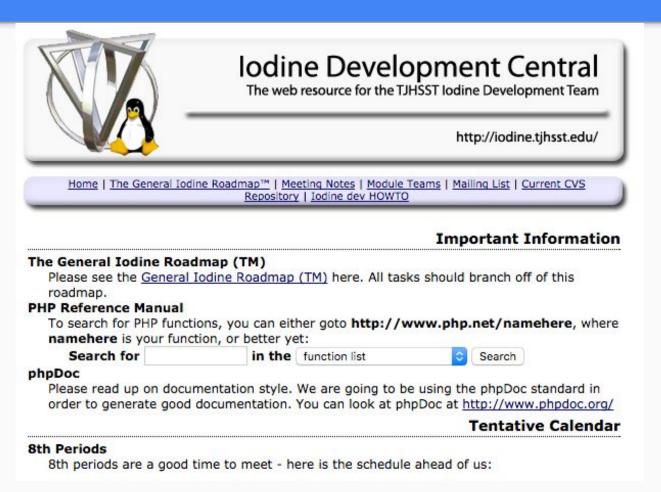




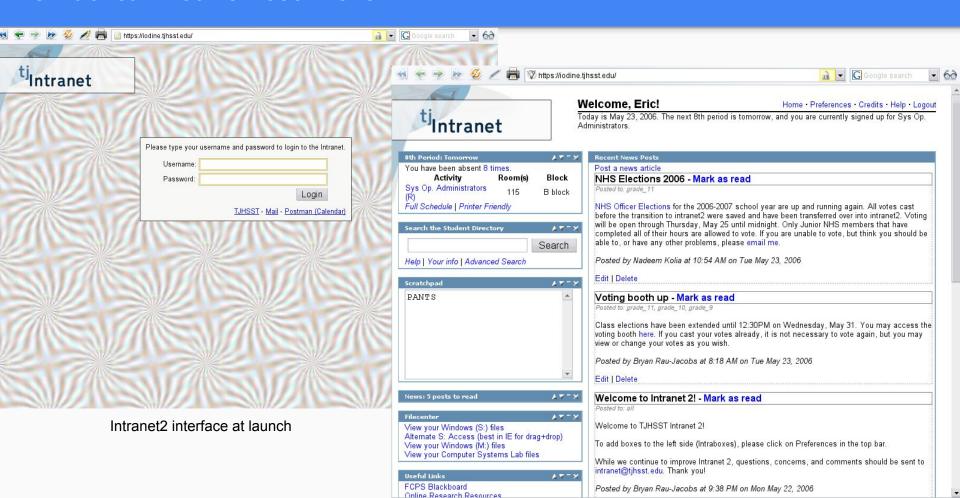
#### Intranet1 Problems

```
$fp = fopen("/www/passwd/admin3.passwd", "r");
$masterpwd = fread($fp,13);
     exec("/usr/bin/ncpumount \"/lan/$username\"");
     // change MATH back to TECHNOLOGY when it's un-broken (JWG 3/12/2003)
     $str="/usr/bin/nwauth -S TJHSST_MATH -U '" . ereg_replace("'","'\\'",$username) .
          "' -P '" . ereg_replace("'","'\\''", $password) . "'"; //2>&1";
     //print $str;
                                                                    echo "You are not allowed to view the results
//print $str:
$old=$str;
                                                                       of this poll. Sorry. <br >";
//$fd=popen($str,"r");
                                                                    echo "<br></ echo "<br/>hr></ HREF=\"poll.phtml\">View Polls</
//$str=trim(fgets($fd,16384));
                                                                       A>\n":
//pclose($fd):
                                                                    intranet footer();
$str = exec($str
if ($retval ==
                             && is_sysadmin())
                                                                                         on</P>\n";
  $username2=
                                                                                         ng=0 width=\"100%\">
                                      "<TABLE border=
                                                                                        tID) FROM
                                                                                         o.StudentID=
```

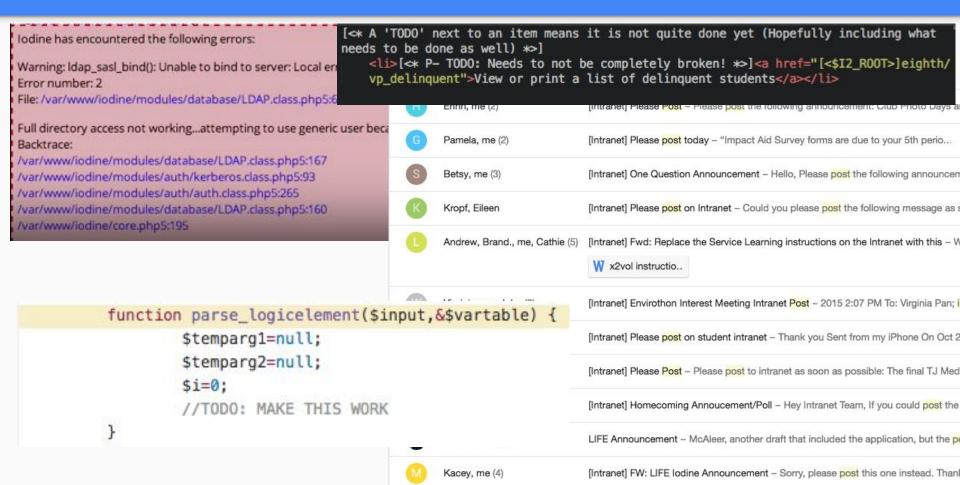
### Intranet2/Iodine Development: 2004 - 2006



#### TJ Intranet 2 - Iodine: 2006 - 2015



#### Intranet2 Problems

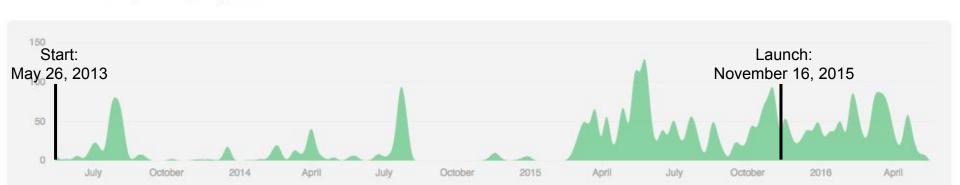




## Ion Development

May 26, 2013 – Jun 1, 2016

Contributions to master, excluding merge commits





16 contributors

Contributions: Commits -

## 29 months

from start to release

## Why Intranet3?







- Better infrastructure, using established tools and frameworks
  - Nginx web server
  - Python
  - Django web framework
  - PostgreSQL
  - > **Redis**

- Easier to test and develop
  - Vagrant development environment
- Improved documentation and unit testing
- Redesigned interface and responsive design for mobile devices

#### TJ Intranet 3: A Student's View

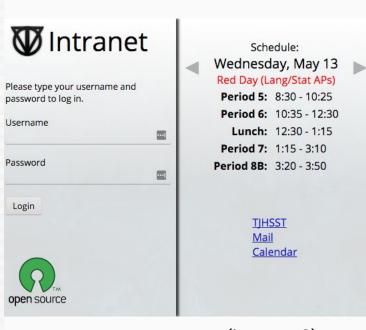


Login

Wed, June 1
Red Day

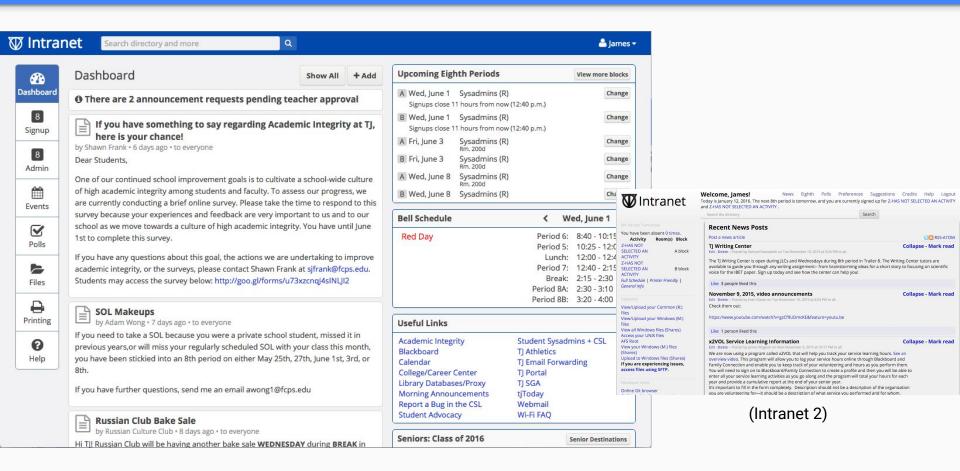
#### SOL Pd 6 & makeup (note order)

Period 6: 8:40 - 10:15 Period 5: 10:25 - 12:00 Lunch: 12:00 - 12:40 Period 7: 12:40 - 2:15 Break: 2:15 - 2:30 Period 8A: 2:30 - 3:10 Period 8B: 3:20 - 4:00

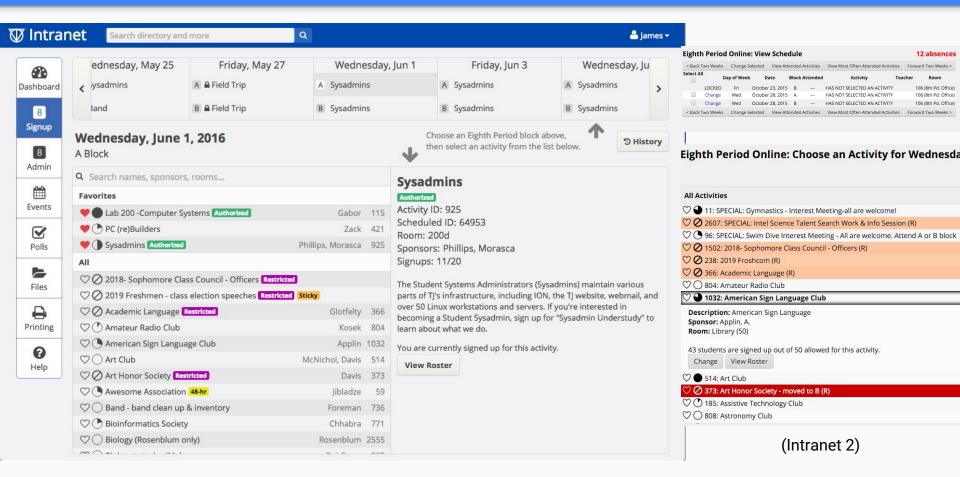


(Intranet 2)

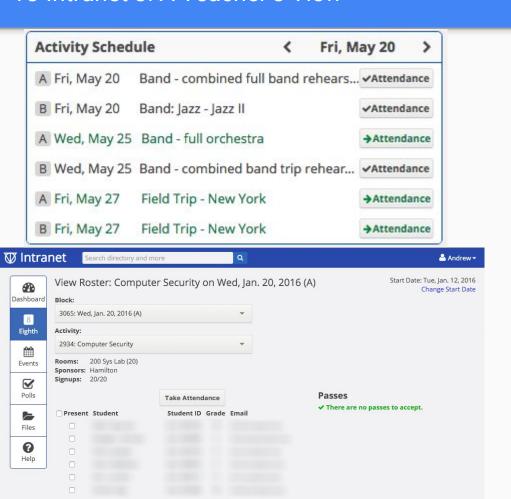
#### TJ Intranet 3: A Student's View

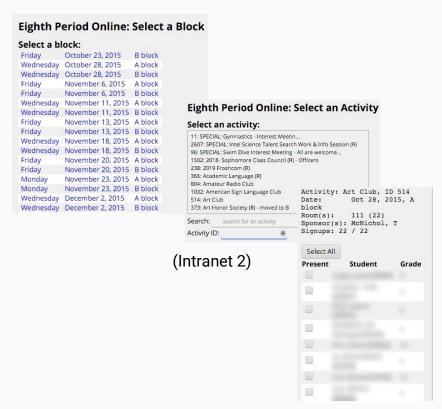


#### TJ Intranet 3: A Student's View

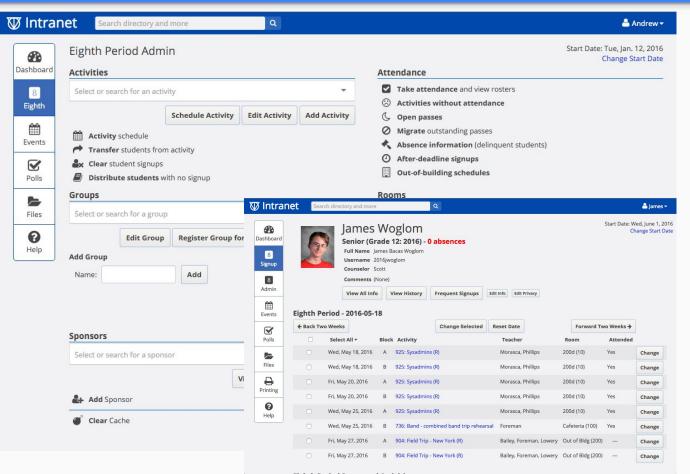


#### TJ Intranet 3: A Teacher's View





#### TJ Intranet 3: An Administrator's View





Start date: Oct 22, 2015

#### Student Options

- 1. Register a group of students for an activity
- 2. Add, modify, or remove a special group of students
- 3. Add students to a restricted activity
- 4. Switch all the students in one activity into another

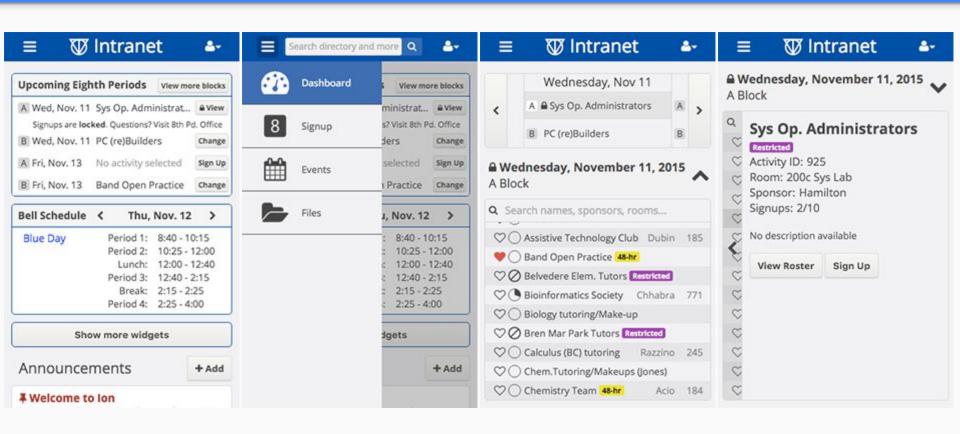
#### **Activity Scheduling Options**

- 1. Add, modify, or remove an activity
- 2. Add, modify, or remove a room
- 3. Add, modify, or remove an activity sponsor
- 4. Schedule an activity for eighth period
- 5. View or print a class roster
- 6. View or print the utilization of rooms in a given block
- 7. View or print the utilization of a given room
- Room assignment sanity check
- 9. View or print sponsor schedule
- 10. View or print activity schedule

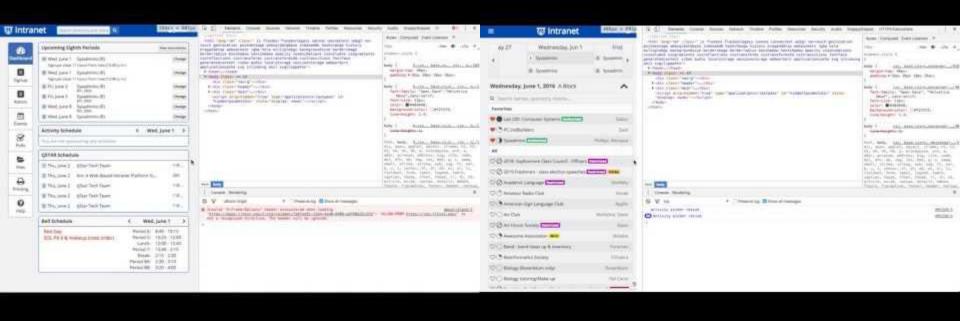


(Intranet 1 & 2)

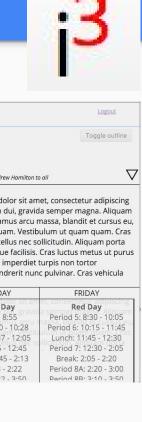
### TJ Intranet 3: Responsive Design



### TJ Intranet 3: Responsive Design

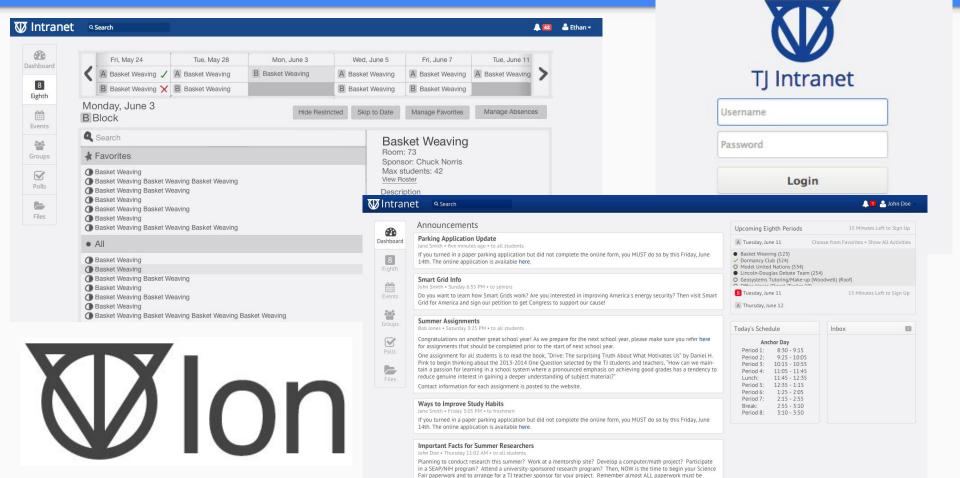


## Design Mockups/Planning

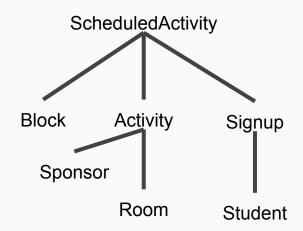


	MONDAY		DNESDAY (TODAY)	THURS		IDAY							
intranet	A: No activity selected		,	: Yearbook : Yearbook									
HOME		+ +	+		+	+							
8TH PERIOD					intranet <sup>2</sup>	3	(1) You have 5 absences.  HELLO, JAMES. (1) You have 5 unread emails. (1) Signups close in 12 minutes.			nread emails.	Logout		
MAIL	There will be maintenance on Intranet today Lorem ipsum dolor sit amet, consectetur adipiscing elit. In id purus at tortor semper blandit in et nulla. Phasellus lorem augue, vulputate sit amet mollis sed, molestie sed nibh. Nulla viverra, elit dictum tincidunt posuere, augue mi blandit elit, nec rutrum felis eros at leo. Vivamus molestie tellus sed odio interdum luctus. Nam lacus neque, aliquet at ultrices rhoncus, ullamcorper ac urna. Doneo doi onunc, auctor sed consequat ut, auctor eget lorem. Aliquam erat						HOMEPAGE Toggle outline						
FILECENTER							eighth The next eighth period is: to tomorrow		riod is: tomor	row wednesday	news J-Day!  Andrew Hamilton	to all	
POLLS	volutpat. Phas	• 1	EIGHTH		A Sys Op A	Sys Op Adminstrators		ys Op Adminstrators	li i	met, consectetur adipiscing			
GROUPS		Search Announcements		+ Post	Eighth Period	1		<b>1</b> ≜Et	than 🕶	No activity selected			
	TJ Intranet	STEMbassador volunteer opportunities Evan Glazer - Wednesday, August 07, 2013 - view groups		# B	A Mon, Nov 18	S windows csl porta mo				porta molestie. In imperdie	orci tristique facilisis. Cras luctus metus ut purus iolestie. In imperdiet turpis non tortor tum ut hendrerit nunc pulvinar. Cras vehicula		
	Dashboard	County. Become a STEMbassador and	fax County, Arlington County, and Prince William dor and give back to your local elementary and ng and mentoring kids on weekends, evenings, or	y and	A. Mon, Nov 18 B. Mon, Nov 18 A. Mon, Nov 18 B. Mon, Nov 18				Documents  EDNESDAY (TODAY)		mattis placerat. THURSDAY FRIDAY		
	8 Eighth	8th period.  • Summer STEM camps (nearly 50)	locations): Help out in a summer of	July 24 cience Center mentary schools. s needed to coach tics. No prior					riod 5: 8:30 - 10:05 riod 6: 10:15 - 11:45 unch: 11:45 - 12:30	Red Day	JLC Blue Day JLC: 8:00 - 8:55	<b>Red Day</b> Period 5: 8:30 - 10:05	
	Events	elementary school students near y     Mini Labs events (over 50 location sessions seek volunteers for four	our home. Updated July 24 ns): These Children Science Center							Period 1: 9:00 - 10:28 Period 2: 10:37 - 12:05	Period 6: 10:15 - 11:45 Lunch: 11:45 - 12:30		
	Groups	Updated August 7, 2013  Lorton Station Elementary Schoo 4th to 6th graders.in First Robotic experience necessary. Email stembassadors@tjhsst.edu if you	s Lego League Robotics. No prior		Schedule				Bro rio	riod 7: 12:30 - 2:05 Break: 2:05 - 2:20 riod 8A: 2:20 - 3:00	Lunch: 12:05 - 12:45 Period 3: 12:45 - 2:13 Break: 2:13 - 2:22 Period 4: 2:22 - 3:50	Period 7: 12:30 - 2:05 Break: 2:05 - 2:20 Period 8A: 2:20 - 3:00 Period 8R: 3:10 - 3:50	
	Polls	service activities. More info about STE	service activities. More info about STEMbassadors  CSL VM Server Maintenance		iber 14	Friday, Nove	mber 15	Saturd					
	Files	Andrew Hamilton - Monday, July 29, 2013 - view groups All - there will be maintenance on two of the CSL VM Servers r reboot tomorrow, July 30th, around 2PM. The following systet a short outage while the server they are on is shut down and  1) Remote Access Server (remote.tjhsst.edu) lodine Mysql Database Server		s will experience booted:									
	Settings Settings	Total downtime for each system should be less than 30 minutes. If you have any questions, please email sysadmins@lists.tjhsst.edu or ahamilto@tjhsst.edu.  Thank you in advance for your patience.											

## Official Design Plan



## Django ORM/Models



EighthSponsor.objects.get( last\_name="Smith", online\_attendance=True).values()

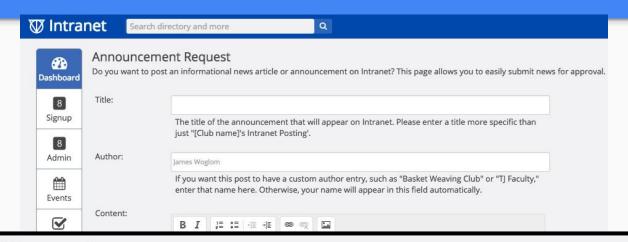


SELECT first\_name,last\_name,user\_id,online\_attendance, show\_full\_name FROM eighth\_eighthsponsor WHERE last\_name="Acio" AND online\_attendance=1;

```
class EighthSponsor(AbstractBaseEighthModel):
    """Represents a sponsor for an eighth period activity."""|
    first_name = models.CharField(max_length=50)
    last_name = models.CharField(max_length=50)
    user = models.OneToOneField(User, null=True, blank=True)
    online_attendance = models.BooleanField(default=True)
    show_full_name = models.BooleanField(default=False)
```

```
>>> EighthSponsor.objects.all()
[<EighthSponsor: Acio>, <EighthSponsor: Applin>, <EighthSponsor:
    Armstrong>, <EighthSponsor: Auerbach>, <EighthSponsor: Bailey>,
    '...(remaining elements truncated)...']
>>> EighthSponsor.objects.filter(last_name="Smith")
[<EighthSponsor: Smith, Adam>, <EighthSponsor: Smith, Andrea>, <
    EighthSponsor: Smith, Heidi>]
>>> EighthSponsor.objects.filter(last name_startswith="A").update(
    starts with a=True)
[<EighthSponsor: Acio>, <EighthSponsor: Applin>, <EighthSponsor:</pre>
    Armstrong>, <EighthSponsor: Auerbach>]
>>> EighthScheduledActivity.objects.filter(sponsors last name="Acio
    ", block date="2016-04-01")
[<EighthScheduledActivity: Study Hall (Acio) & Chem Makeup on Fri,
    April 1, 2016 (A)>, <EighthScheduledActivity: Study Hall (Acio)
    & Chem Makeup on Fri, April 1, 2016 (B)>]
```

#### **News Request Process**



## Announcement Request

Do you want to post an informational news article or announcement on Intranet? This page allows you to easily submit news for approval.



### News Request Process

[lon] News Post Confirmation Request from James Woglom









ion-noreply to 2016jwoglom \$

7/14/15

James Woglom (2016jwoglom) has submitted an Intranet announcement, and has asked for you to approve its posting. All Intranet

announcements must first be approved by a teacher or f are:

Title: Really Important Announcement

Content (that will be posted):



ion-noreply to intranet-approval \$

#### Welcome to Ion

by James Woglom • 7 months ago • to everyone • You submitted this announcement.

Welcome to the next generation of TJ's Intranet Platform: Ion. Initially launched in 2000 to Intranet has grown and evolved over the years as a student-built and maintains for the modern world of computers, smartphones, and tablets, as well as a four evolve. Here are a few quick tips to get you started:

- Ion has officially replaced lodine as the TJHSST Intranet, and is now available. as lodine.
- On desktop browsers, the primary navigation appears on the left side of a in the top left corner.

was approved by a sponsor and is in the approval queue:

request a post button

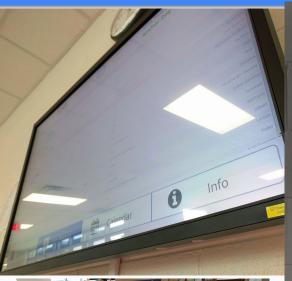
[Intranet-approval] [Ion] News Post Approval Needed (This is a test of the request



TJ Intranet @TJIntranet - 16 Nov 2015

Welcome to Ion: Welcome to the next generation of TJ's Intranet Platform: Ion. Initially launched in 2000 to re... ion.tjhsst.edu/announcements/...

## Signage Displays -- Application of Ion









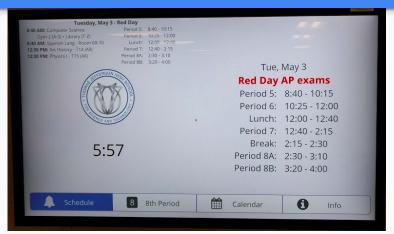
1:25

Tue, Feb. 23
Blue Day

Period 1: 8:40 - 10:15
Period 2: 10:25 - 12:00
Lunch: 12:00 - 12:40
Period 3: 12:40 - 2:15
Break: 2:15 - 2:25
Period 4: 2:25 - 4:00

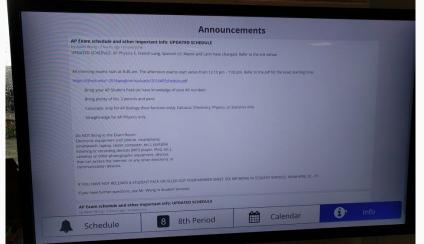


## Signage Functionality

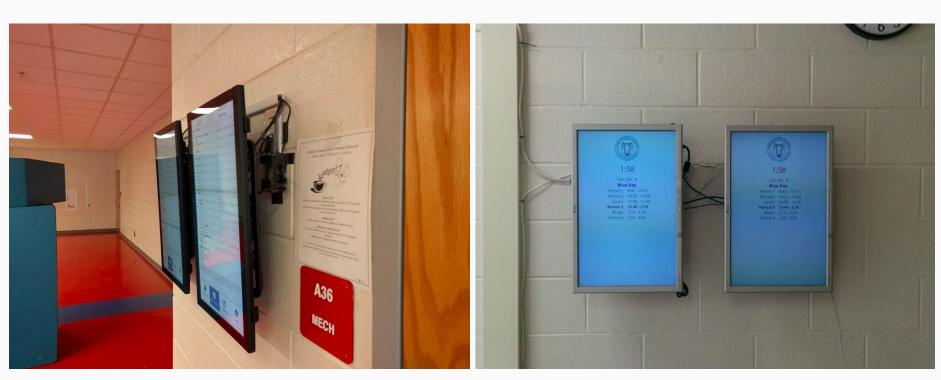








## First Phase



Einstein (Chemistry) Commons

Gandhi Commons (Test Setup)

## Second Phase





Front Entrance Commons

Galileo Commons

## Third Phase





Library

Curie (Techlab) Commons