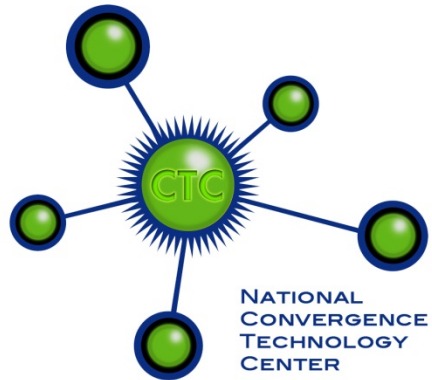




How to Implement a PC Clinic That Provides Students with Hands-On Experience

April 15, 2016



Rules of Engagement

1. All attendees are **muted**.
2. Send questions and comments to the Host via the WebEx “**Chat**” tool. Do not send messages to us via e-mail.
3. You will get CCN points for attending so be sure to **write your name and school** in the chat box so we know you are here.



David Pope

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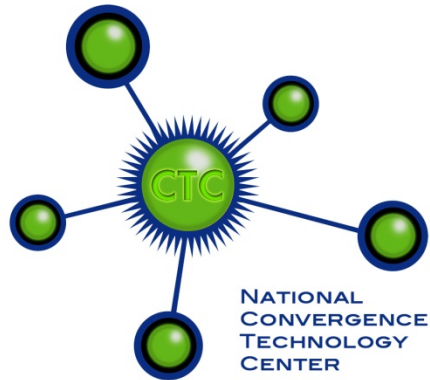
Cleveland Community College (Shelby, NC)



Implementing and Supporting a Student-Run PC Clinic:

Real-World Experience On-Campus

Ozarks Technical Community College



Our story

- Being the exploration of the progress of a pretty successful PC clinic
- A tale beneficial to all concerned
- Explicated in the slides to follow as best can be told by yr. humble narrator, Dave



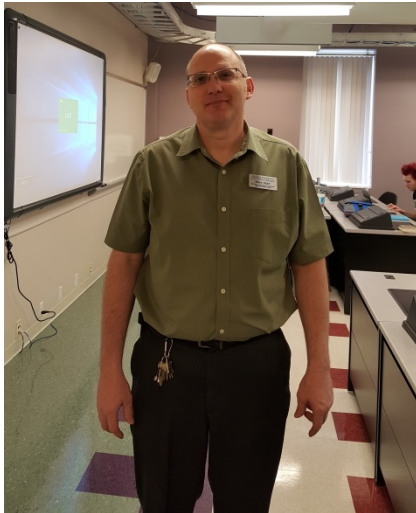
Who started the clinic?

Created by OTC Networking instructor Russell “Kelly” Campbell (April 23, 1962 - July 27, 2012)





Who runs the clinic today?



OTC NET graduate Mike Vest
as a FTE and adjunct



Department chair/instructor
George Gibeau as advisor



Who supports the clinic's day-to-day operations?

- Mike
- Part-time students
- Work-study students
- Internship/co-op education students



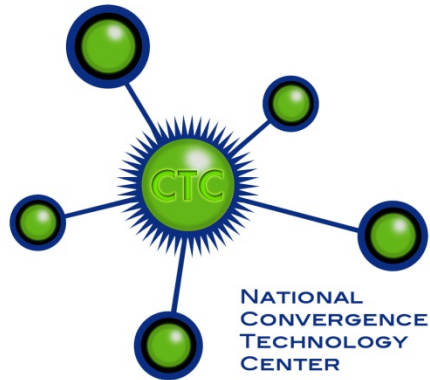
Who handles customers?

- Mike and part-time staff only for the first half of each semester
- This is done to get the students acquainted with procedures before they are let loose upon the customers



Who are the customers?

- OTC students
- Faculty
- OTC staff



Who are the suppliers of parts and tools?

- Students doing repairs locate parts online
- Mike vets parts selection before ordering takes place
- Mike also selects tools and materials



What influenced the clinic's creation?

- The need to augment the PC hardware/A+ curriculum
- The need to give students experience with hardware/software repair as well as customer service training



What influences its operation?

- Providing a service to the OTC community as well as training for our students
- Guidance from our BILT and from local employers



What are some of the clinic's challenges?

- New students arriving every semester means little continuity – have to train every semester
- This is an active training environment – upkeep and quality control are an ongoing concern
- Reconciling customer expectations with those of student-employees



What are the clinic's benefits?

- Real world training for NET students
- Affordable PC repair for OTC faculty, staff and students
- Positive image for the NET department
- A revenue stream for the NET department, of which 100% goes to support the clinic and do things for our NET students



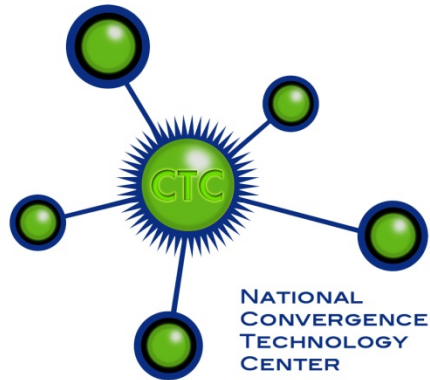
What does typical customer service look like?

- Greet, inform, explain, advise, service, follow-up
- Emphasis on
 - Listening to customers
 - Documenting progress and events
 - Making a best effort to ensure customer satisfaction
- Our mission is to guide the customer in making informed decisions regarding
 - Repair
 - Upgrade
 - Replacement



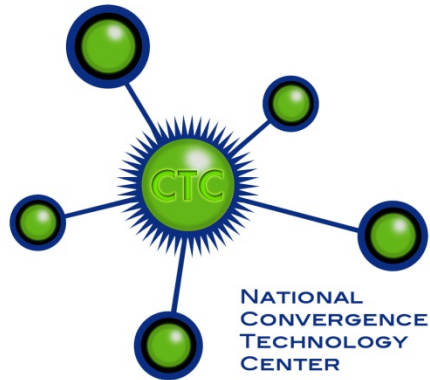
What is the average turn-around time?

- This varies
- At the semester start when everything is new it may be 3-4 weeks
- Once students have some training, turnaround drops
- Also affected by the number of repairs in the queue
- Depends upon
 - Influx of computers
 - Student training level
- Never gets under three to four days or over five weeks



What additional services or products does the clinic offer?

- Inexpensive anti-virus and anti-malware software
- Data recovery and backup
- Flash drives at pretty much cost
- Hardware repair up to and including minor soldering
- Limitations
 - About the only things we do not do are phones, tablets and Apple products
 - Too hard to get parts, takes way too much time to work on

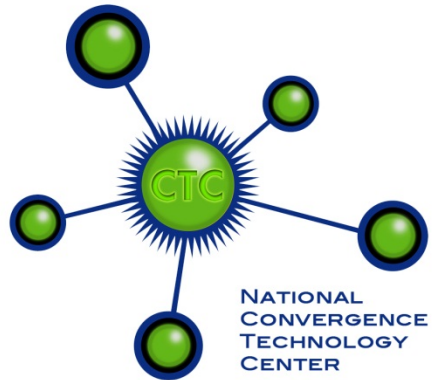


When did the clinic begin operation?

2007

When did the clinic move to its current location?

2011



When is the clinic open?

- Year-round except when the college is closed
- Monday through Friday, 8am – 5pm



When did the clinic begin to show a profit?

- We were lucky and obtained lots of equipment from a discontinued program
- We showed a profit from day one
- The clinic is not-for-profit
- Proceeds fund SkillsUSA fees, student conference attendance
- The Kelly Campbell scholarships for NET students



Where was the clinic located at first?

- In a storage room, out-of-the-way campus location
- Very small area
 - Three to four students
 - Two work tables



Where is the clinic located today?

- As of 2011 the clinic resides in a relatively accessible area
- High-traffic, highly visible
- Signage and bulletin boards
- Next to NET classrooms





Why has the clinic succeeded?

- Due to the never-ending commitment and hard work of Mike Vest
- There is no way the clinic would be what it is today without a dedicated full-time person at the helm
- Mike is always looking for ways to
 - Improve operations and polish an already professional environment
 - Ensure that students are getting meaningful training and experience



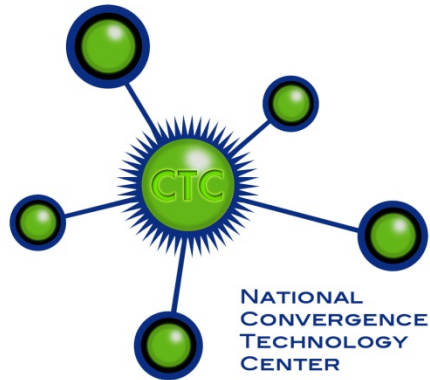
How much does the clinic charge?

- Normal repairs are \$40 plus the cost of any parts
- Other services are offered at cheaper rates
 - Data backup/recovery \$10
 - Application install \$10
 - Free consultations
 - Any fix under five minutes is free

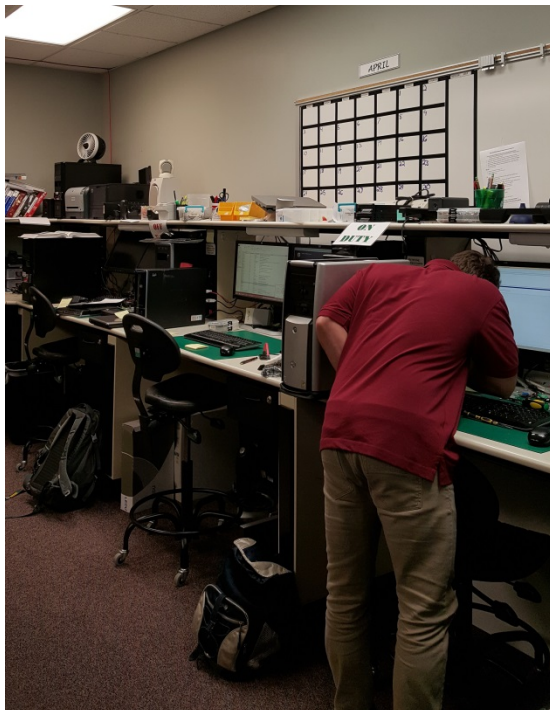


How many employees does the clinic have?

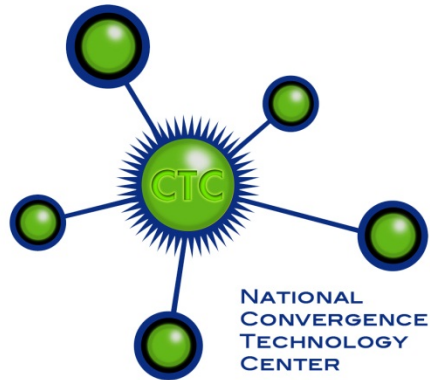
- One full-time
- Two part-time
- Two to three work-study
- Up to 15 internship/co-op education students per semester



How are students involved in running the clinic?



- All aspects of the clinic operation except purchasing of parts
- Knowledge sharing between students is actively encouraged



How are students selected to serve in the clinic?

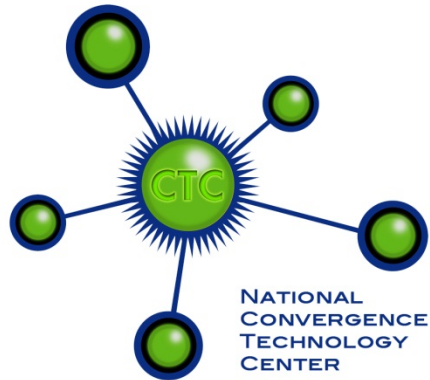
- Meet the same requirements as the internship
- Successfully complete our desktop hardware class
- Interview with Mike for permission to enroll



How are orders processed?

- First-come, first-served
- OTC faculty are given priority if
 - The machine in question is their only PC
 - They need it for classroom/curriculum use





How are the clinic's finances managed?

- Mike and George worked with Finance to set up a non-college-funded account
- Managed to get a dedicated purchase card (P-Card)
- Lets us use clinic funds for things most budgets are not allowed to do



How are the clinic's finances managed?

- Provide embroidered polo shirts to be worn while on duty
- Buy students parting gifts (usually toolkits) for completing the course
- Take them out for a nice lunch
- Fund a scholarship awarded every semester for NET students
- Purchase equipment for clinic use
- Etc.



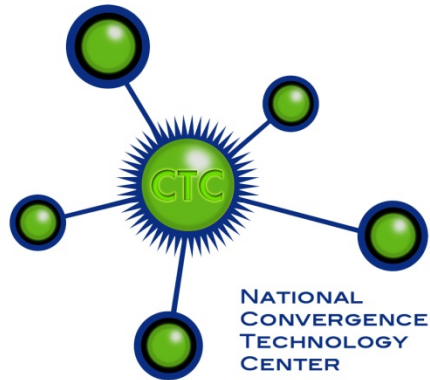
Additional info

- We continue to get positive feedback from almost all students that take the clinic as to the benefit it provides them W/R/T real-world issues
- Unlike a classroom environment where we have contrived labs to illustrate a point, students never know what is going to walk in the door
- The experience really helps with their troubleshooting, problem-solving, and documentation skills



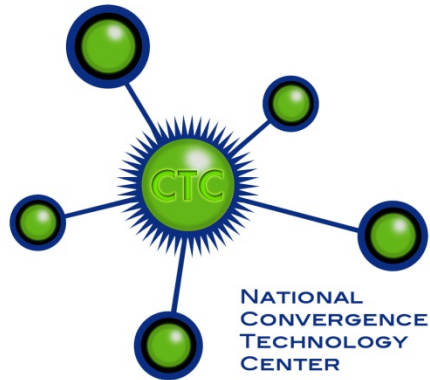
Additional info continued

- We have a custom-designed customer ticket system
 - Database and UI designed by one of our recent graduates
 - Really helps with documentation and report generation
 - Also a great learning tool for students
- Collation of knowledge
 - Knowledge sharing is a big deal
 - Faculty learn from students!



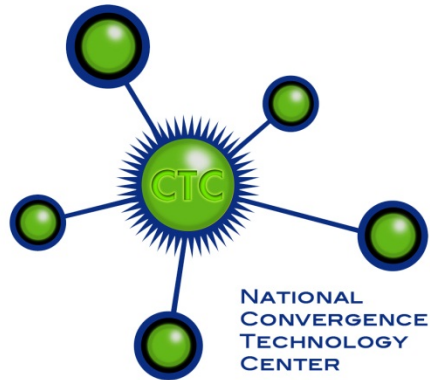
Starting a clinic – who needs to be involved?

- The school administration – a general nod for approval is vital
- A manager/instructor
- At least one faculty advisor/shepherd
- Other NET faculty
 - Teacher awareness is very important
 - Keep them in the loop



What is needed?

- A location you can lock down (office with a keyed door, or similar)
- Technical work benches
- Bench PCs
- Power, KVM, and network connections for machines under repair
- A LAN for the clinic area
- Internet connectivity
- Secure storage for customer systems and spare parts



What is needed?

- A work ticket tracking system
- Room on the academic schedule if you don't have a slot available
- Support from your IT department
- A means of assessing student work in the clinic
- A means of purchasing parts for repairs
- A means of recycling dead hardware



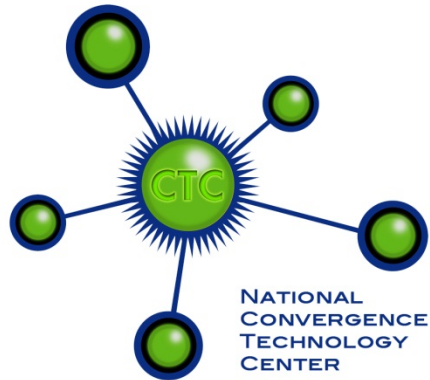
What do we offer?

KISS is the sacred principle – start with repairs, add features as you grow

Make sure hours of operation are consistent and accessible

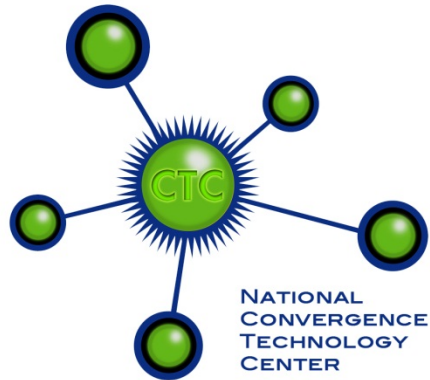
Changes in times of availability affect customer confidence

Makes little sense to open a clinic two days a week from noon until 4pm



When to deploy?

- Nail down support from college admin and IT departments before proceeding
- Start planning once you get the go-ahead
- Deploy during slack tide
 - You cannot rush this and you need to allow for the unexpected
 - Summer is probably best – plan for a fall opening



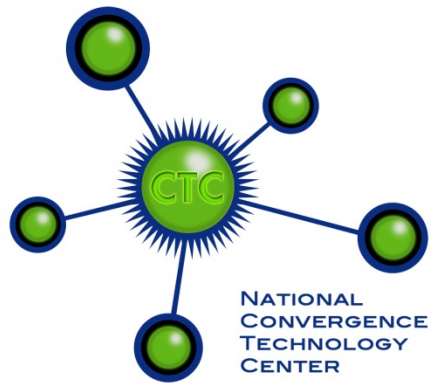
Where on campus?

- You're probably at the mercy of the college for space
- Use legitimate means to find a space, don't just ask for one
- If things go well, the college may offer better quarters



Summary

- Starting a PC clinic is no small undertaking
- The rewards can be tremendous
 - Student learning
 - Student employability
 - Departmental reputation
- Much planning goes into a successful deployment
- Let me know if you have questions and I'll do my best to help



Questions?

PC Repair Class

LEARNING HARDWARE/SOFTWARE SUPPORT SKILLS
THROUGH A PC REPAIR SHOP CLASSROOM MODEL

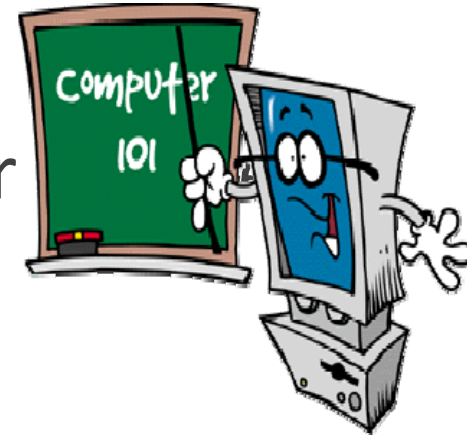


Course Format

- CTS 220 - Advanced Hardware/Software Report
- Hybrid Format
- 3 Hours Lab On-Campus
 - PC Repair Shop Model
- 2 Hours Online
 - Readings/Assignments/Journals/A+ Test Prep
- 16 Weeks

Course Introduction (1 week)

- Course overview
- Set expectations
- Discuss ethics and customer
- Plan organizational chart
- Intro to help desk software
- Intake process



Student Expectations

- Treat the class like a job
- Follow procedures
- Respect the customer's property
- Provide good customer service
- Document, document, document
- Don't be afraid to ask for help
- Collaborate with classmates to solve problems



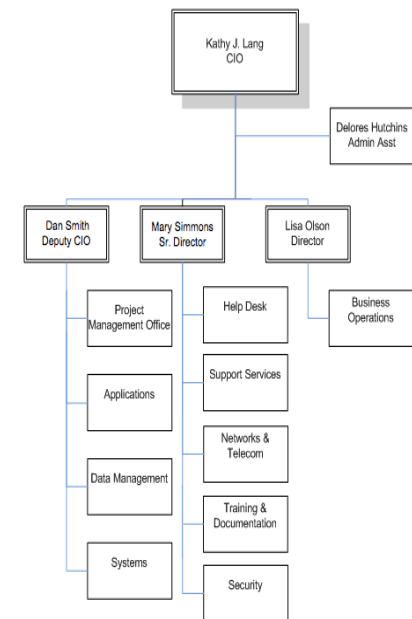
Student Benefits

- Real-world troubleshooting experience
- Hands-on PC repair
- Collaborative problem-solving
- Soft skills development
- Help desk experience
- Technical writing experience



Class Organizational Chart

- Run as PC repair small business
- Instructor (CEO) facilitates/supervises
- Varies each semester
- Allow student input
- Assign duties/responsibilities (may rotate)
- Technicians often work in teams
- Pair weak students with those with more exp.
- Select a manager



Intake Process

- CSR greets customer
- Service agreement discussed and signed
 - Free service (labor)
 - Customer must buy parts
 - College is not responsible for damage or data loss
- Computer info and description of problem
 - Model/Serial #
 - Passwords
 - Probing questions to assess the problem
- Equipment is tagged and ticket generated

Intake Date: _____

Customer Email Address: _____

Print Full Name: _____

Phone Number: _____ Ext: _____

Please select the reason for your visit today:

- | | |
|---|--|
| <input type="checkbox"/> Computer Optimization | <input type="checkbox"/> Consultation-Hardware |
| <input type="checkbox"/> Consultation-Software | <input type="checkbox"/> Drivers |
| <input type="checkbox"/> Hard Drive Replacement | <input type="checkbox"/> LCD Replacement |
| <input type="checkbox"/> Operation System Install | <input type="checkbox"/> Peripherals |
| <input type="checkbox"/> Power Supply | <input type="checkbox"/> Virus Removal |
| <input type="checkbox"/> Other: _____ | |

Equipment:

- Desktop Computer Laptop Computer Tablet

Model: _____

Serial Number: _____

Other Equipment Left: _____

Please provide your:

User Name: _____

Password: _____

Brief Description of Problem: _____

By signing below, you agree that you understand the terms listed in the Cleveland Community College, Advanced Hardware / Software Support Service Agreement, Terms and Conditions:

Sign Full Name: _____ Date: _____

For Tech Use:

Diagnosis: _____ Assigned Tech: _____

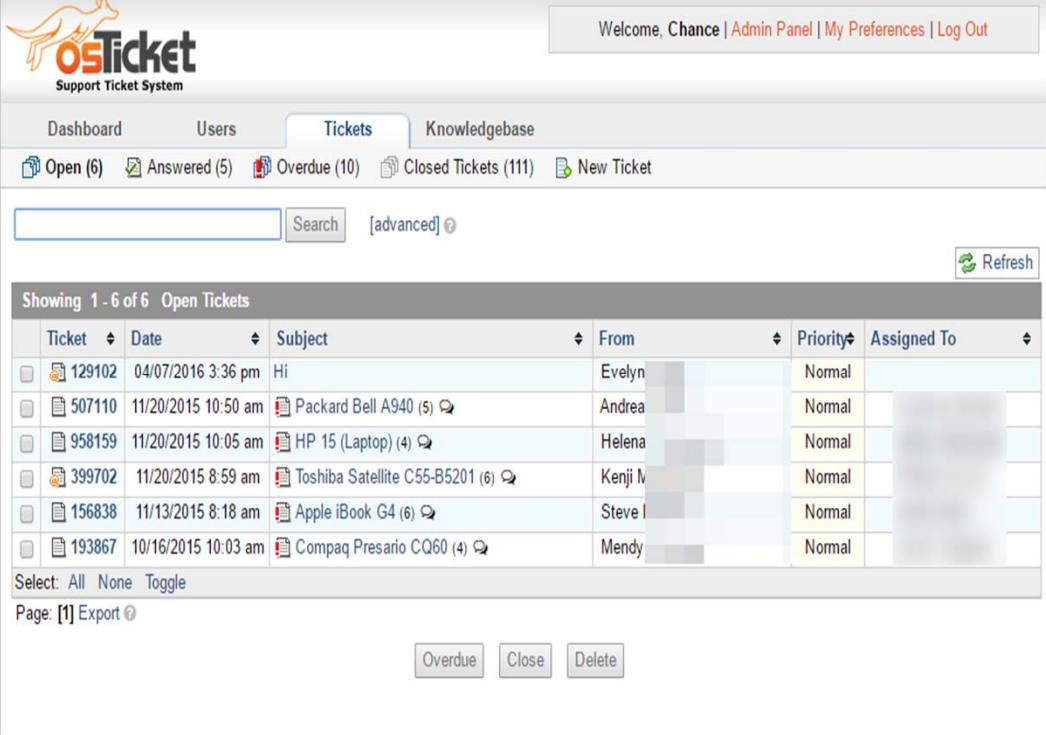
Equipment Needed (if any): _____

Repair Notes: _____

_____ Testing: _____ Closed: _____

Help Desk Software

- OS Ticket
- Open-source
- Phone in Class



The screenshot displays the OS Ticket Support Ticket System interface. At the top, there is a navigation bar with the OS Ticket logo and a user welcome message: "Welcome, Chance | [Admin Panel](#) | [My Preferences](#) | [Log Out](#)". Below this, there are tabs for "Dashboard", "Users", "Tickets", and "Knowledgebase". The "Tickets" tab is active, showing a summary of ticket counts: "Open (6)", "Answered (5)", "Overdue (10)", "Closed Tickets (111)", and a "New Ticket" button. A search bar is present with a "Search" button and a "[advanced]" link. A "Refresh" button is located in the top right corner of the ticket list area.

The main content area shows a table of "Showing 1 - 6 of 6 Open Tickets". The table has the following columns: Ticket, Date, Subject, From, Priority, and Assigned To. The data rows are as follows:

Ticket	Date	Subject	From	Priority	Assigned To
129102	04/07/2016 3:36 pm	Hi	Evelyn	Normal	
507110	11/20/2015 10:50 am	Packard Bell A940 (5)	Andrea	Normal	
958159	11/20/2015 10:05 am	HP 15 (Laptop) (4)	Helena	Normal	
399702	11/20/2015 8:59 am	Toshiba Satellite C55-B5201 (6)	Kenji M	Normal	
156838	11/13/2015 8:18 am	Apple iBook G4 (6)	Steve I	Normal	
193867	10/16/2015 10:03 am	Compaq Presario CQ60 (4)	Mendy	Normal	

Below the table, there is a "Select: All None Toggle" option and a "Page: [1] Export" option. At the bottom of the interface, there are three buttons: "Overdue", "Close", and "Delete".

Repair Process

- Ticket assigned to technician
- Technician diagnoses the problem
 - Consults with classmates/teacher if needed
- Completes repair
 - Contacts customer if needed
- Documents steps taken on work-bench form
- Updates help desk ticket throughout the process
- Contacts the customer via help desk and phone for pickup



Cleveland Community College CTS 220 Computer Repair Shop Status Sheet

Owner:		Phone NO:	Date:
Manufacturer:		Type:	Model:
Ticket #			
Diagnostic:			
Software:		Hardware	
Software Installed:		Replaced/Fixed	
<input type="checkbox"/> Avast (antivirus)		<input type="checkbox"/> Hard drive	
<input type="checkbox"/> Super AntiSpyWare		<input type="checkbox"/> Memory	
<input type="checkbox"/> Malwarebytes		<input type="checkbox"/> LCD Screen	
<input type="checkbox"/> Other:		<input type="checkbox"/> Video Card	
Operating System		<input type="checkbox"/> Other	
Windows 8		Notes:	
<input type="checkbox"/> Rolled Back			
<input type="checkbox"/> Installed			
Reimaged			
<input type="checkbox"/> Google Chrome		Tasks Performed	
<input type="checkbox"/> Win 7			
<input type="checkbox"/> Linux			
<input type="checkbox"/> Win Vista			
<input type="checkbox"/> Win XP			
<input type="checkbox"/> Registered?		<input type="checkbox"/> Disk Cleanup	
Drivers		<input type="checkbox"/> Antivirus Scan	
<input type="checkbox"/> Installed		<input type="checkbox"/> Malware Scan	
		<input type="checkbox"/> Spyware Scan	
		<input type="checkbox"/> Dusted	
		Other:	
Notes:		Notes:	
Technician:		Signature	
Verified by:		Signature	

Common PC Issues

- Virus/Malware Cleanup
- PC Tune-up (My computer is slow?!)
- System updates
- Busted LCD
- Hard drive failure
- OS not loading
- Forgotten password
- Mostly laptops
- More tablets/handhelds recently



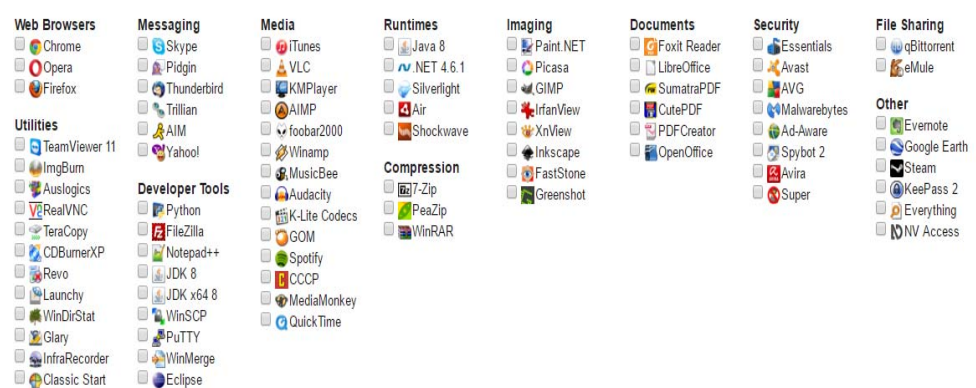
PC Clean-up Software

- Avast/AVG Free Anti-virus
- Malwarebytes
- SUPERAntiSpyware
- CCleaner
- Ninite
- Hiren's Boot CD
- Ultimate Boot CD
- OS Discs

1. Click all the apps you want
You can learn more about a program by hovering over it.

2. Click Get Installer and run it
Ninite installs apps for you in the background. No clicking next. We say NO to toolbars or other junk.

3. Run it again later
Your installer will update apps to the latest versions. If something is up-to-date we'll skip it.

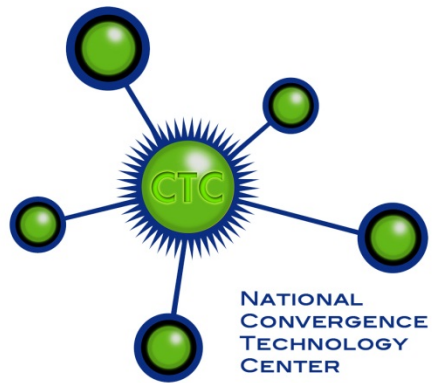


Web Browsers	Messaging	Media	Runtimes	Imaging	Documents	Security	File Sharing
<input type="checkbox"/> Chrome <input type="checkbox"/> Opera <input type="checkbox"/> Firefox	<input type="checkbox"/> Skype <input type="checkbox"/> Pidgin <input type="checkbox"/> Thunderbird <input type="checkbox"/> Trillian <input type="checkbox"/> AIM <input type="checkbox"/> Yahoo!	<input type="checkbox"/> iTunes <input type="checkbox"/> VLC <input type="checkbox"/> KMPlayer <input type="checkbox"/> AIMP <input type="checkbox"/> foobar2000 <input type="checkbox"/> Winamp <input type="checkbox"/> MusicBee <input type="checkbox"/> Audacity <input type="checkbox"/> K-Lite Codecs <input type="checkbox"/> GOM <input type="checkbox"/> Spotify <input type="checkbox"/> CCCP <input type="checkbox"/> MediaMonkey <input type="checkbox"/> QuickTime	<input type="checkbox"/> Java 8 <input type="checkbox"/> .NET 4.6.1 <input type="checkbox"/> Silverlight <input type="checkbox"/> Air <input type="checkbox"/> Shockwave	<input type="checkbox"/> Paint.NET <input type="checkbox"/> Picasa <input type="checkbox"/> GIMP <input type="checkbox"/> IrfanView <input type="checkbox"/> XnView <input type="checkbox"/> Inkscape <input type="checkbox"/> FastStone <input type="checkbox"/> Greenshot	<input type="checkbox"/> Foxit Reader <input type="checkbox"/> LibreOffice <input type="checkbox"/> SumatraPDF <input type="checkbox"/> CutePDF <input type="checkbox"/> PDFCreator <input type="checkbox"/> OpenOffice	<input type="checkbox"/> Essentials <input type="checkbox"/> Avast <input type="checkbox"/> AVG <input type="checkbox"/> Malwarebytes <input type="checkbox"/> Ad-Aware <input type="checkbox"/> Spybot 2 <input type="checkbox"/> Avira <input type="checkbox"/> Super	<input type="checkbox"/> qBittorrent <input type="checkbox"/> eMule
Utilities	Developer Tools		Compression			Other	
<input type="checkbox"/> TeamViewer 11 <input type="checkbox"/> ImgBurn <input type="checkbox"/> Auslogics <input type="checkbox"/> RealVNC <input type="checkbox"/> TeraCopy <input type="checkbox"/> CDBurnerXP <input type="checkbox"/> Revo <input type="checkbox"/> Launchy <input type="checkbox"/> WinDirStat <input type="checkbox"/> Glary <input type="checkbox"/> InfraRecorder <input type="checkbox"/> Classic Start	<input type="checkbox"/> Python <input type="checkbox"/> FileZilla <input type="checkbox"/> Notepad++ <input type="checkbox"/> JDK 8 <input type="checkbox"/> JDK x64 8 <input type="checkbox"/> WinSCP <input type="checkbox"/> PuTTY <input type="checkbox"/> WinMerge <input type="checkbox"/> Eclipse		<input type="checkbox"/> 7-Zip <input type="checkbox"/> PeaZip <input type="checkbox"/> WinRAR			<input type="checkbox"/> Evernote <input type="checkbox"/> Google Earth <input type="checkbox"/> Steam <input type="checkbox"/> KeePass 2 <input type="checkbox"/> Everything <input type="checkbox"/> NV Access	

PC Repair Tools

- Basic tool kits
- iFixit Pro Tech Toolkit
- PC Vacuum
- Thermal paste
- Multiple flash drives
- Power supply tester
- POST tester
- Multimeter





Questions?



Thank you!

Please be sure to take the survey.

<https://www.surveymonkey.com/r/M5BVQYF>



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