CS615 - Aspects of System Administration

Ethics and Social Responsibility

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Computering, at its heart, is a people problem.

System Administration, Software Engineering, Information Security, etc. are all social activities.
We trust you have received the usual lecture from the local System Administrator. It usually boils down to these three things:

#1) Respect the privacy of others.
#2) Think before you type.
#3) With great power comes great responsibility.
The Job of a System Administrator

What exactly does a System Administrator do?

- no precise job description
- often learned by experience
- “makes things run”
- work behind the scenes
- often known as Operator, Network Administrator, System Programmer, System Manager, Service Engineer, Site Reliability Engineer etc.

system administrator n.:
one who, as a primary job function, manages computer and network systems on behalf of another, such as an employer or client.
Learning System Administration

System Administration is a profession with no fixed career path.

- few degree granting programs
- heavy reliance on practical experience
- specializations in many different areas possible
- breadth of expertise as necessary as depth in some areas
- background knowledge and requirements vary
Wanted: Human Anatomy Engineer

Required Skills and Experience:

- 3+ years of poking humans with sharp objects
- must have previously diagnosed a fever
- MD preferred, or equivalent work experience
- experience performing brain surgery a plus
 Codes of Ethics

Are you a member of a professional organization?

No 186 (63.3%)
A what what? 18 (6.1%)
ACM 27 (9.2%)
IEEE 13 (4.4%)
Usenix 44 (15%)
LISA 36 (12.2%)
LOPSA 38 (12.9%)
Other 31 (10.5%)
Codes of Ethics

In your career, have you ever faced an ethical dilemma?

- Yes: 199 (67.9%)
- No: 91 (31.1%)
- Other: 3 (1%)

Ethics and Social Responsibility
Examples

- "I have teaching staff demanding access to students home directories."
- "Managers have asked me to spy on employees."
- "Snooping on specific employee’s e-mail."
- "Faculty member child porn collection."
- "have been asked to lie to my direct reports (and candidates) about the future of the company"
- "have been told to not report various outages/loss of data situations to customers"
- "This is a daily thing."
Legal != Ethical
Legal != Ethical

Cambridge Analytica: how 50m Facebook records were hijacked

1. Approx. 320,000 US voters (‘seeders’) were paid $2-5 to take a detailed personality/political test that required them to log in with their Facebook account.

2. The app also collected data such as likes and personal information from the test-taker’s Facebook account...

3. The personality quiz results were paired with their Facebook data - such as likes - to seek out psychological patterns.

4. Algorithms combined the data with other sources such as voter records to create a superior set of records (initially 2m people in 11 key states*), with hundreds of data points per person.


https://is.gd/IxFCRr
Legal != Ethical

GitHub [Repository: volkswagen]

Branch: master

volkswagen / README.md

Ignovak 2 days ago Defeat chai (issue #12)

4 contributors

79 lines (56 sloc) 2.5 KB

volkswagen

Volkswagen detects when your tests are being run in a CI server, and makes them pass.

Build status js-standard-style volkswagen status

Why?

If you want your software to be adopted by Americans, good tests scores from the CI server are very important. Volkswagen uses a defeat device to detect when it’s being tested in a CI server and will automatically reduce errors to an acceptable level for the tests to pass. This will allow you to spend less time worrying about testing and more time enjoying the good life as a trustful software developer.
Legal != Ethical
Does your current employer’s "core values" include or convey a strong ethical stance beyond its immediate mission?

- Yes: 142 (48.3%)
- No: 65 (22.1%)
- No idea: 26 (8.8%)
- People actually pay attention to these?: 45 (15.3%)
- Other: 16 (5.4%)
Making the World A Better Place
Making the World A Better Place

Silicon Valley "Make The World A Better Place" Business Plan:

1. offer some free service
2. ???
3. Profit!
Making the World A Better Place

Silicon Valley "Make The World A Better Place" Business Plan:

1. offer some free service
2. collect data, sell ads
3. Profit!

Green Team Links:
https://techcrunch.com/2019/01/29/facebook-project-atlas/
https://is.gd/1iNu0D
Codes of Ethics

*Primum non nocere.*
Codes of Ethics

Black Team links:

https://is.gd/1XMSkj
https://is.gd/0SwusY
ACM Code of Ethics

1.1 Contribute to society and human well-being.
(ISC)2 Code of Ethics

Protect society, the common good, necessary public trust and confidence, and the infrastructure.
IEEE Code of Ethics

to accept responsibility in making decisions consistent with the safety, health, and welfare of the public
ACS Code of Ethics

The Primacy of the Public
You will place the interests of the public above those of personal, business or sectional interests.
A Code of Ethics in Internet Operations

We are stewards of our users’ data.
We are obligated to act in the public interest.
Ethics

The LISA Code of Ethics:

- Professionalism
- Personal Integrity
- Privacy
- Laws and Policies
- System Integrity
- Education
- Social Responsibility
- Ethical Responsibility
LISA Code of Ethics

Professionalism and Personal Integrity:

- maintain professional conduct; don’t let personal feelings or beliefs interfere
- know your competence, know when to seek help
- disclose and recuse yourself under conflicts of interest
- own your mistakes

Lead by example.
LISA Code of Ethics

Privacy:
- only access private information when necessary
- protect confidentiality of accidentally learned information
- work in teams/pairs
- delete, mask, encrypt, anonymize
- even better: do not collect the information to begin with

Data is a liability.
Understand the OSI Stack
LISA Code of Ethics

Laws and Policies:

- educate yourself and others on relevant laws, regulations, policies
- (work to) elect informed representatives
- participate in design and architecture of e.g. technical standards
- engage with special interest groups in your organization
- understand the difference between legal and ethical; between the letter of a law and the spirit or objective

All politics is local.
LISA Code of Ethics

Communication:

- communicate clearly, openly with your users, management, colleagues
- listen to the needs of others
- other people are also people
- document your policies with reason and rationale
- let people see how you make decisions, how you prioritize things, how your team works

“Sunlight is the Best Disinfectant”
LISA Code of Ethics

Education and Community:

- continuously educate yourself, enhance your technical knowledge
- share your knowledge, teach others
- attending conferences is not optional
- eventually, neither is speaking at conferences
- publish your results, research
- build ties with peers at other organizations
- partake in Open Source, meetups, mailing lists, community events

You are shaped by the community and culture you choose. Choose wisely. Seek diversity.
SysAdmin realities

- you are in a *privileged* position
- you *are* a target
“Ethical” Cyberwar?

Red Team link:

https://faculty.nps.edu/ncrowe/attackethics.htm
SysAdmin realities

- you are in a *privileged* position
- you *are* a target
- you are *obligated* to act in your users’ interest
- you *will* face tough choices
- there is *no rulebook* to help you decide
- the slippery slope is not always steep
- you *can* make a difference
Ethics: This stuff isn’t easy!
Ethics: This stuff isn’t easy!

https://is.gd/6EBynw
https://is.gd/djUzAO

https://is.gd/ccF9Dg
Ethics: This stuff isn’t easy!

Mark Klein / https://en.wikipedia.org/wiki/Room_641A
Ethics: This stuff isn’t easy!
Ethics: This stuff isn’t obvious!

- Amazon’s recruiting tool discriminating against women
  https://is.gd/a5RqxN

- Google facial recognition tagging black people as gorillas
  https://is.gd/IPmodY

- Microsoft’s Chatbot Tay turned into a Nazi in <24h
  https://is.gd/kK0mWA

- Facebook lets you target ’Jew Haters’ https://is.gd/eCKVIj

- Uber ’God View’ used to spy on celebrities, ex-boyfriends/girlfriends, and ex-spouses https://is.gd/Tc5YH3

...although sometimes it is.
What can you do?

When facing a dilemma:

- seek clarification, eliminate ambiguity
- express your concerns
- get it in writing
- increase transparency, reporting, information sharing
- keep a paper trail
- identify allies and official channels (with care!)
What can you do?

Speak up, ask questions.

“All that is necessary for the triumph of evil is that good people do nothing.”
Use your privilege.

Small examples you can contribute:

- asking questions in meetings on behalf of others
- asking higher ups publicly (all-hands meetings) or privately (emails to CEO or leaders)
- when designing products, ask how this benefits the user
- question the ever-present goal of making money; many monetary profit goals are short-term
- when collecting data, ask how long it needs to be stored for; ask if it can be masked
- salary transparency
- participate in special-interest groups; organize or present on relevant topics
- support non-profit organizations
- ...

...
At the end of the day...
Reading

- https://www.usenix.org/lisa/system-administrators-code-ethics
- https://www.acm.org/about/code-of-ethics
- https://lopsa.org/CodeOfEthics
- https://www.isc2.org/Ethics
- https://www.ieee.org/about/corporate/governance/p7-8.html
- https://neveragain.tech/
- https://www.netmeister.org/blog/primum-non-nocere.html
- https://www.netmeister.org/blog/all-is-not-lost.html
- pretty much anything by Zeynep Tufekci and Danah Boyd
Professional Organizations

- https://www.lopsa.org/
- https://www.acm.org/
- https://www.internetsociety.org/
- https://www.nanog.org/