10 First Principles

A set of guidelines for constructing more secure systems

* Layering
* Resource encapsulation
* Abstraction
* Modularity
* Least privilege
* Domain separation
* Process isolation
* Information hiding
* Simplicity
* Minimization

Camp activity

10 First Principles Bingo
- After they are explained, identify where they appear in camp and fill out box with a description
- Teams completing the card get some swag.

Layering

Organizing functions into discrete units
- Cook, server, busser, dishwasher

Resource encapsulation

Wrapping a function or data
- Kitchen encapsulating the production of food
- Envelope encapsulating a letter

Abstraction

Wrapping a complex function with a simple interface
- Steering wheel, accelerator, brake, ignition

Modularity

Supporting interchangeability and reusability
- Standardized batteries in electronics

Least privilege

Giving users only the privileges they need
- Not giving administrator privileges to CEOs

Domain separation

Making sure users in two disparate organizations don't get at each others' stuff

- Making sure the RNC and DNC can't access each others' documents (ideally, that is!)

Process isolation

Making sure transactions and executions are separate
- Bank tellers insuring no interaction between customers

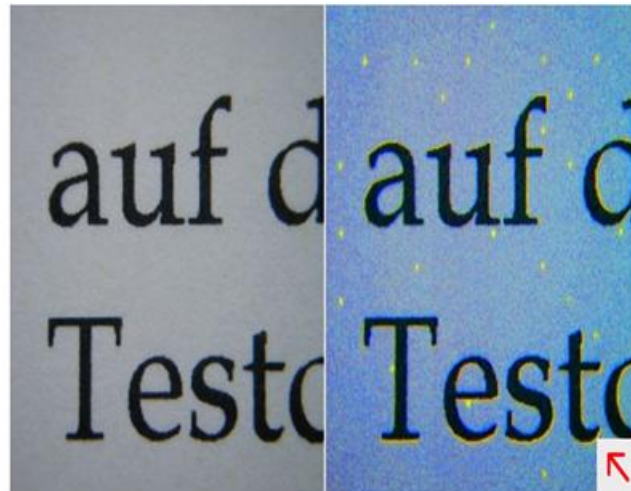# Information hiding

Scambling or concealing data

- Imperceptible codes embedded by printers

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FBI Used 'Microdots' to Nab Accused NSA Leaker

By Linda Hervieux, Newser Staff
Posted Jun 12, 2017 8:06 AM CDT

Graphic shows dots from a HP Laserjet printer illuminated on right. (By Florian Heise,

Simplicity

Reducing complexity in design
- Simplified UI for phones

Minimization

Reducing the amount of code running and data collected
- Only giving your SSNs when absolutely necessary
- Turning off unused services