

# 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

- Cooking food, serving food, bussing tables, washing dishes



# Resource encapsulation

Wrapping a function or data

- Kitchen encapsulating the production of food



# Abstraction

Wrapping the function of something with a simple interface

- Steering wheel, accelerator, brake, ignition



# Modularity

## Supporting interchangeability

- 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' stuff (in an ideal world, at least)





# Process isolation

Making sure transactions and executions are separate

- Bank tellers insuring no interaction between customer transactions



# Information hiding

## Scambling or concealing data

- Imperceptible codes embedded by printers



# 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

## YOUR PII CHART™

Take time to inventory the identity relationships you have with the companies, organizations, and individuals you entrust with your personally identifiable information or PII. See how your identity is a PII Chart™, a picture of relationships you've created. Once you visualize the slices of your PII, managing your identity assets becomes easier.

### LEGEND

-  **SOCIAL SECURITY NUMBER**
-  **CONTACT INFORMATION**  
(email address, physical address, telephone and mobile numbers)
-  **GOVERNMENT-ISSUED IDENTIFICATION**  
(driver's license, passport, birth certificate, library card)
-  **BIRTH DATE, BIRTH PLACE**
-  **ONLINE INFORMATION**  
(Facebook, social media, passwords, PINs)
-  **GEOLOCATION**  
(smartphone, GPS, camera)
-  **VERIFICATION DATA**  
(mother's maiden name, pets' and kids' names, high school, passwords)
-  **MEDICAL RECORDS INFORMATION**  
(prescriptions, medical records, exams, images)
-  **ACCOUNT NUMBERS**  
(bank, insurance, investments, credit cards)

