Big Issues

Technology project statistics are *horrible*

McKinsey & Oxford Uni

- 5,400 large IT projects (over 15 mil value)
  - 17 percent of large IT projects go so badly that they can threaten the very existence of the company
  - On average, large IT projects run 45 percent over budget and 7 percent over time, while delivering 56 percent less value than predicted

IBM

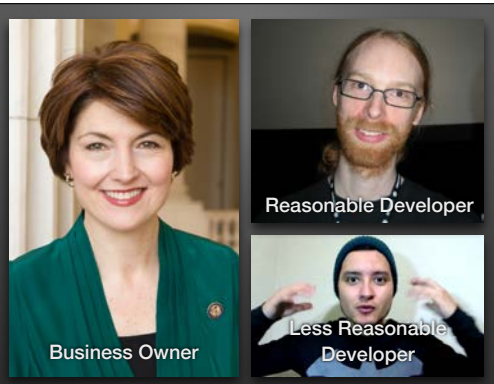
- 1,500 Change Management Executives
  - Only 40% of projects met schedule, budget and quality goals
  - Best organizations are 10 times more successful than worst organizations

Small project failure examples

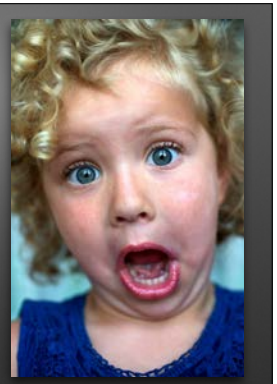
Let's Talk

- Intellectual Property
- Quality & Testing
- Security
- Scalability

Intellectual Property



Default Ownership May Surprise



Key IP Concepts

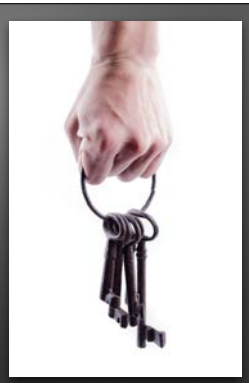
- Owning Rights
- Owning a License - Worldwide, Irrevocable, Royalty Free
- Background IP
- Project IP

Own Project IP, License Background IP

Ensure Confidentiality

Pragmatic Control

1.Hosting
2.Code Repositories
3.No Obfuscation



Make Sure You Can Leave

Be careful of integrated service offerings

Document "What If's"

1.Vendor focus change
2.Vendor business problems
3.Breakdown of relationship

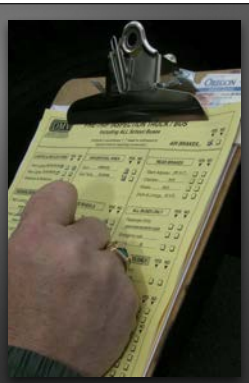
End of IP

Understanding Testing

What the industry knows to be true

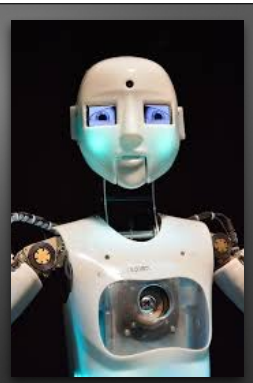
- All software has defects
- Enhancements often add defects
- The any system of complexity cannot be held fully in the mind
- Undetected defects get more expensive to fix over time
- Testing & code reviews are our best defence

So we need testing…



Who can test?

1. Developer
2. Tester
3. Client *(UAT)*
4. Automated Computer Tests



Automated Testing

- Pro's
  - Fast
  - High Reliability
  - Part of Deployment
- Con's
  - High Up Front Cost
  - Slows Initial Development
  - Costly to maintain if change is frequent

NASA Example

Worlds most reliable software system

400K lines of code only 3 post testing bugs found

20 - 50x Cost (1Billion)

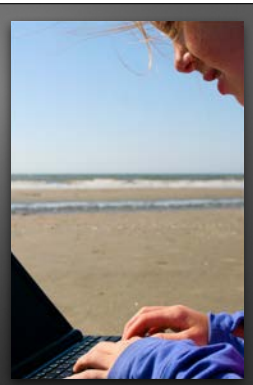
Online System

Sells $1,000 / day

$10,000 to setup test suite

Payback @ 10 Days

Monitoring Alternative

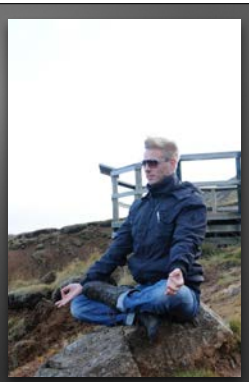


Key Factors to Consider

- Likely changes to platform
- Reputational loss
- Speed to Market
- Cost over time
- Test coverage
- Client's willingness to human test

What do we do?

Automated tests for important, stable software.



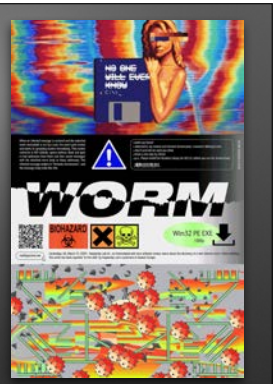
Let's Chat…

End of Testing

Security

Why Hack?

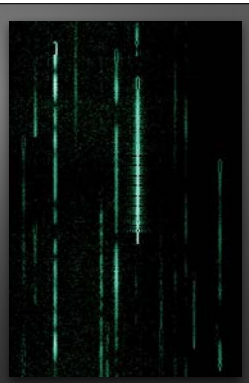
1. Bored / Cause Havoc
2. Use you as a bot (spam, phishing)
3. Steal Data - CC, Passwords



Hacking Methods

1. Breach Security

   Outdated software
2. Denial of Service Attack (DOS)
3. Social Engineering



Protecting Yourself

1. Good Passwords

   88FatBombers3Candy

   beats

   #9uYK3
2. Unique Passwords

Protecting Your Site

- Don't hold valuable data
- One way password encryption
- WordPress
  - Change your admin URL / Name
  - Go lightly on plugins
  - Host separately

Protecting Your Site

- Confirm you have working backups
- Get monitoring in place (New Relic)
- Run away from a developer who doesn't know what an SQL Injection Attack is
- If you're worried, search "[Technology] Security Checklist"

End of Security

Scalability

Why Slow Happens

1. Server Problems
2. Pipe Problems
3. Many Requests
4. Complex Computation

Define “Big”

Pre test against this

How likely is a surge?

Technique #1

More Server (Hosting) Capacity

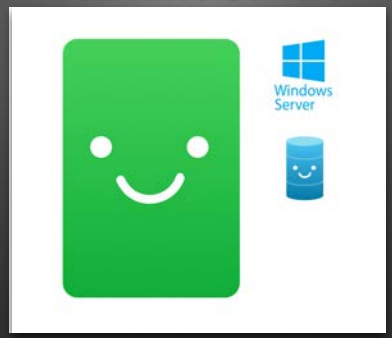
Vertical: Bigger Server

Horizontal: More Servers

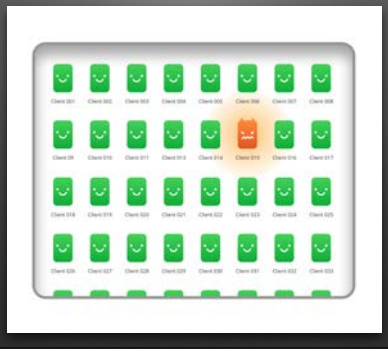
Four types of hosting

Dedicated Servers

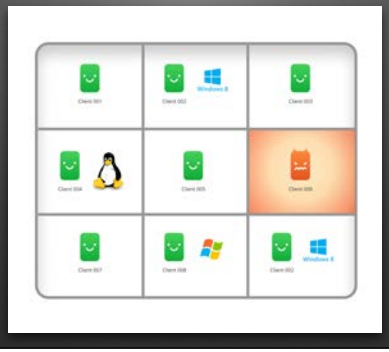
Dedicated Servers



Shared Servers



Virtual Private Servers (VPS)



Cloud Services

Hosting Comparison

	Shared	Virtual Private Server (VPS)	Cloud	Dedicated
Entry Cost Range (monthly)	$20 - $100	$200 - $500 *Plus $500 Mgmt*	$100 - $250	$500 - $1000 *Plus $500 Mgmt* *** Volume Value*
Built to Scale	No	Yes	Yes	No
Scale Quickly	Capped	Yes (mins - days)	Yes (instant)	No (weeks)
Disaster Recovery	Slow	Slow	Fast	Slow
Management Costs Extra?	No	Yes	It depends	Yes
Extra Services	No	Sometimes	Common	Sometimes
Reputable Vendors	WP Engine Anchor	Anchor Rack Space Digital Ocean	Heroku Amazon S3 Azure	Anchor Rack Space Soft Layer

Appropriate Hosting Helps With Scale

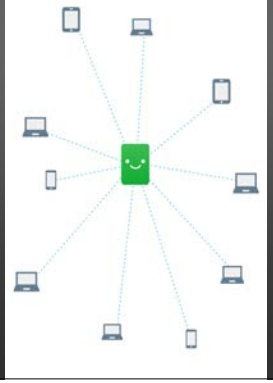
Playstation Supercomputer

Technique #2

Caching

Pre-calculation

Content Distribution Networks (CDN's)



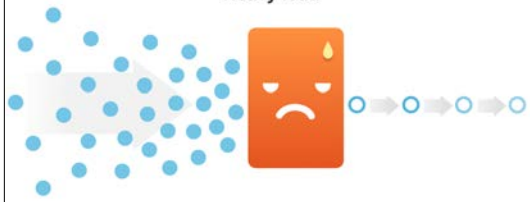
Technique #3

Queuing

Putting requests into a queue and getting to them in turn.

Normal load

Heavy load

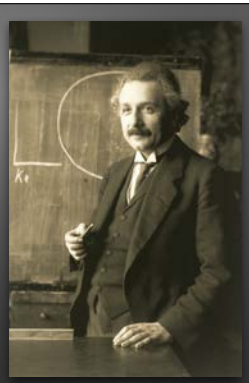


Heavy load *with Queuing*

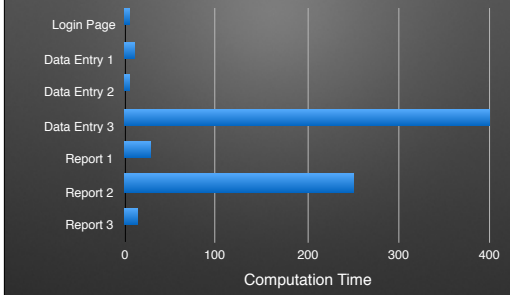
Method #4

Improving Algorithms

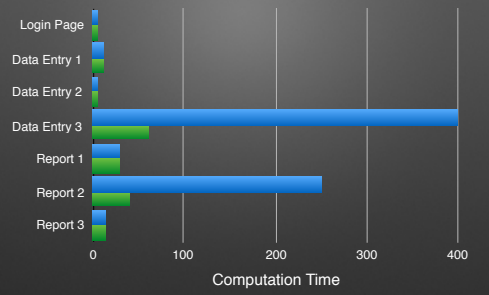
Premature Optimisation is the root of all evil



Page Optimisation Example

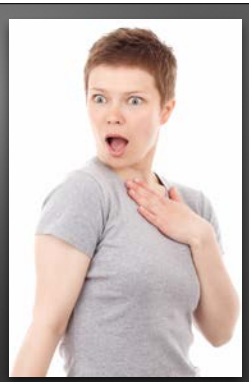


Page Optimisation Example



What do we do?

1. Buy a little more than we think we need
2. Monitor & resolve



End of Session