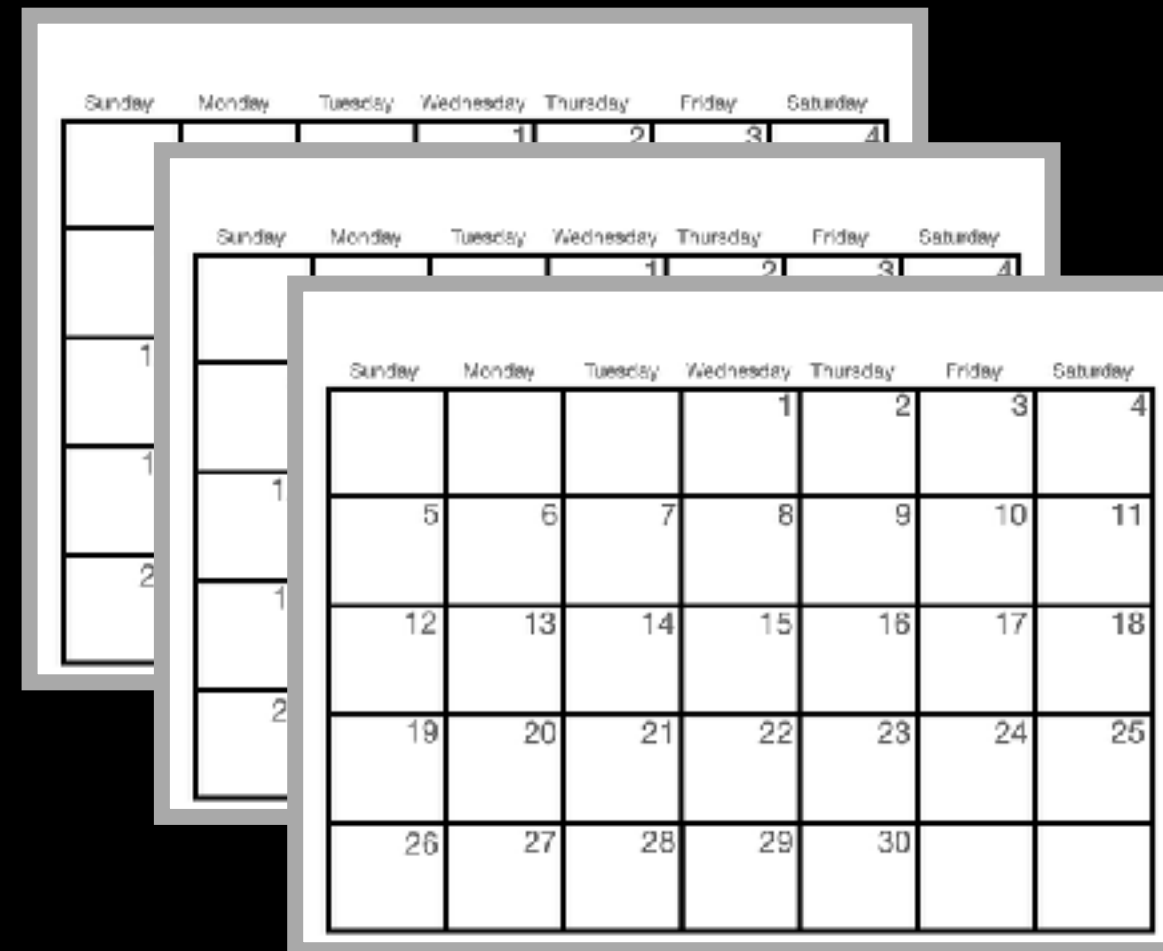


Why did my development project crash and burn?

Tim Standing

```
var tim = Position(company: nil title: nil)
```

Creating a Product



On Time



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Delayed



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

+

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Didn't Ship



Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

+

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

+

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

IBM Mainframes Circa 1960



Photo: <https://www.computerhistory.org/timeline/computers/>

Sytem 1400
0.0005 MIPS
80 KB Memory



Photo: NASA

System 7000
1 MIPS
160 KB Memory

IBM System 360 Design Goals

- Common instruction set across family of computers
- Family shares all peripherals
- Low end models can be used to develop software
- Clear upgrade path for customers

Frederick Brooks Jr.

Project Manager IBM System 360

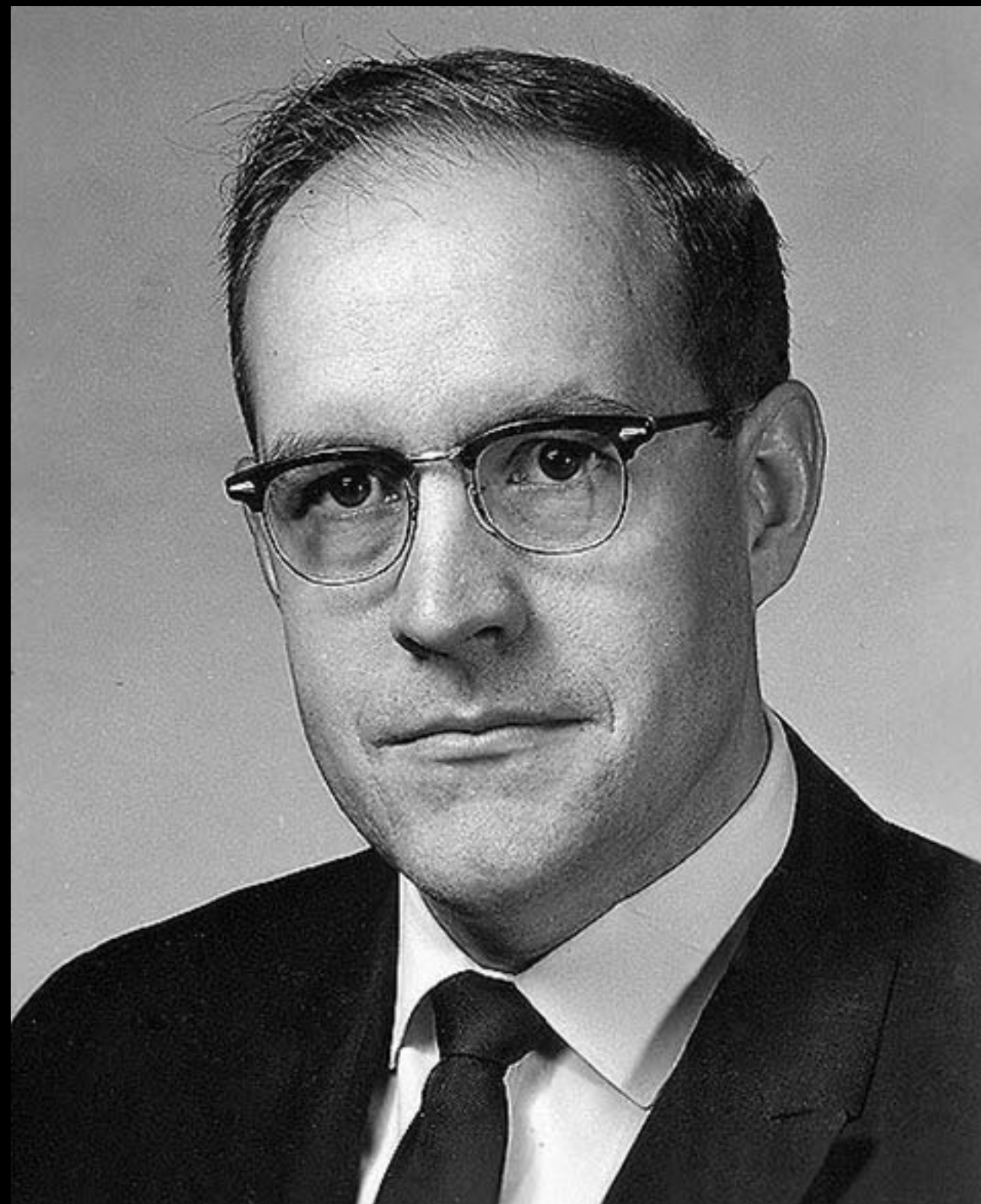


Photo: https://amturing.acm.org/photo/brooks_1002187.cfm

IBM

System 360



Photo: U. S. Department of Agriculture

Model 30
0.029 MIPS
64 KB Memory

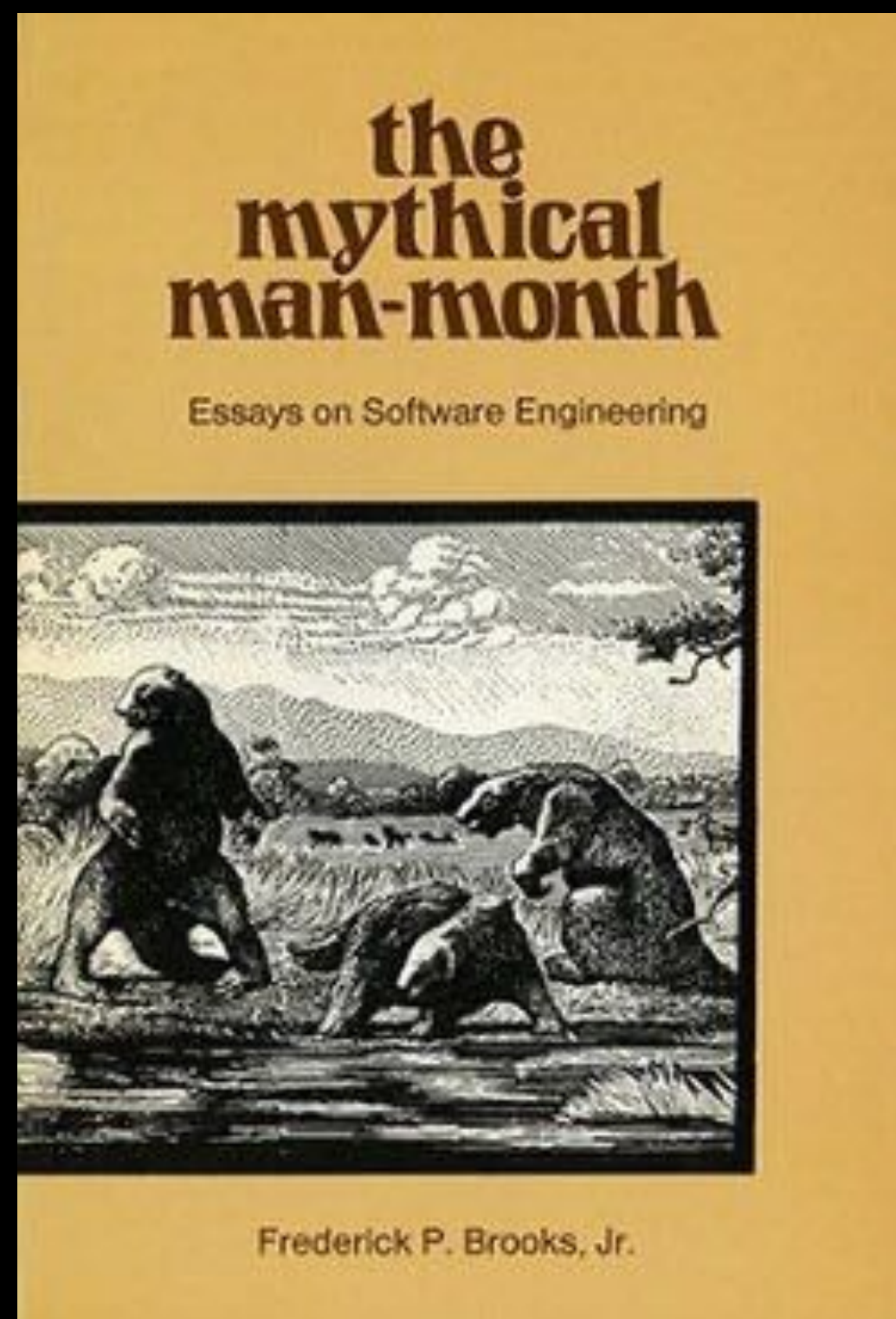


Photo: NASA

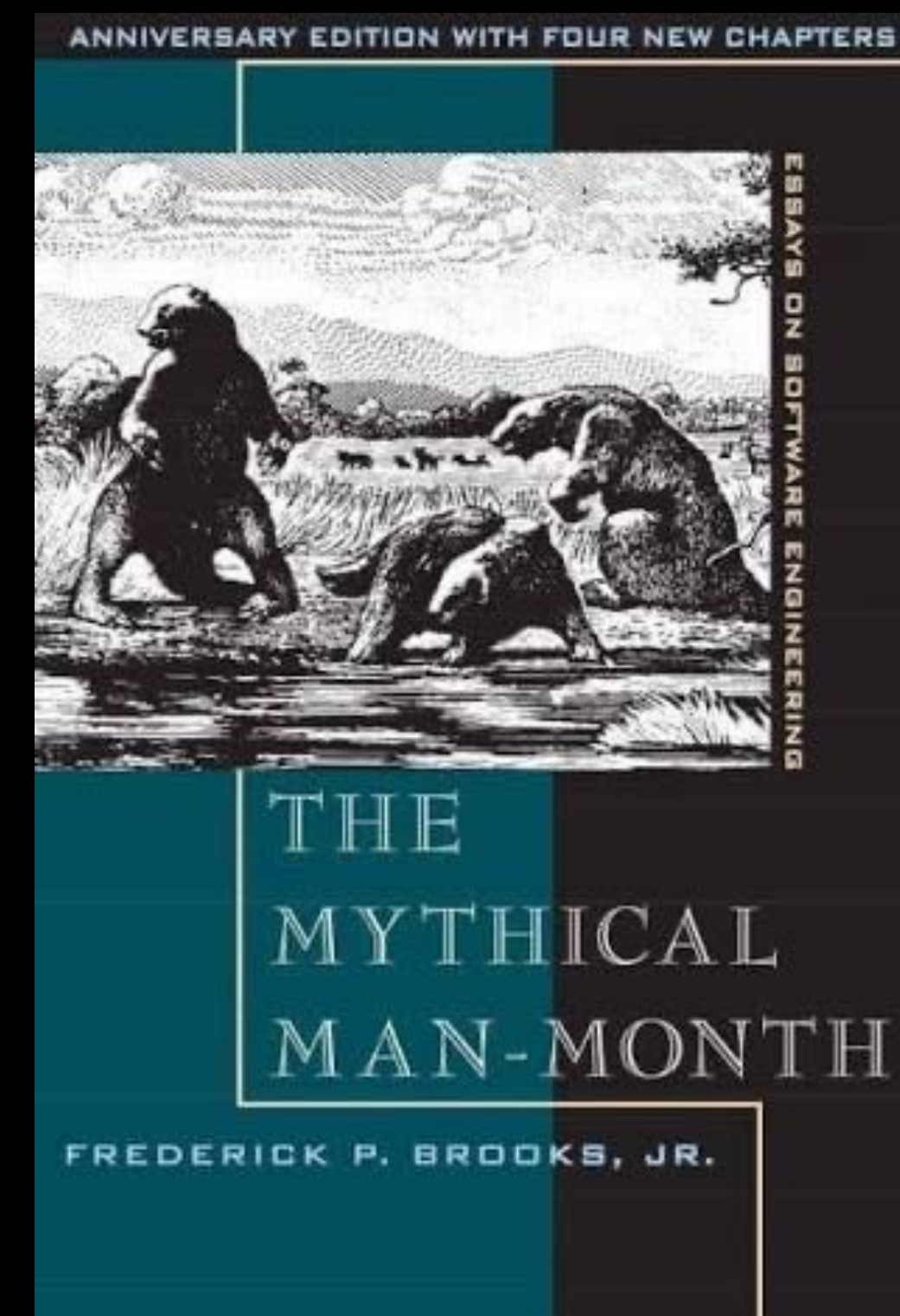
Model 91
16 MIPS
524 KB Memory

The Mythical Man-Month

Fredrick Brooks, Jr.



First Edition - 1975



Second Edition - 1995

Brooks Law:

**Adding manpower to a late
software project makes it later.**

Fredrick Brooks, Jr.

Second System Effect:

The second time a group of developers create a software product, it will be bloated, over engineered and delayed.

Fredrick Brooks, Jr.

The Mac in 1987



Photo: Apple, Inc.

Apple Offsite for Future Mac OS in spring 1988

32 bit color support

Preemptive multitasking

Speech Recognition

**Increase address space
from 8 MB to 4 GB**

Protected memory

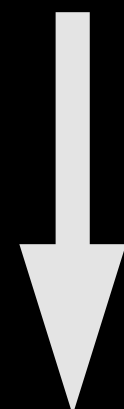
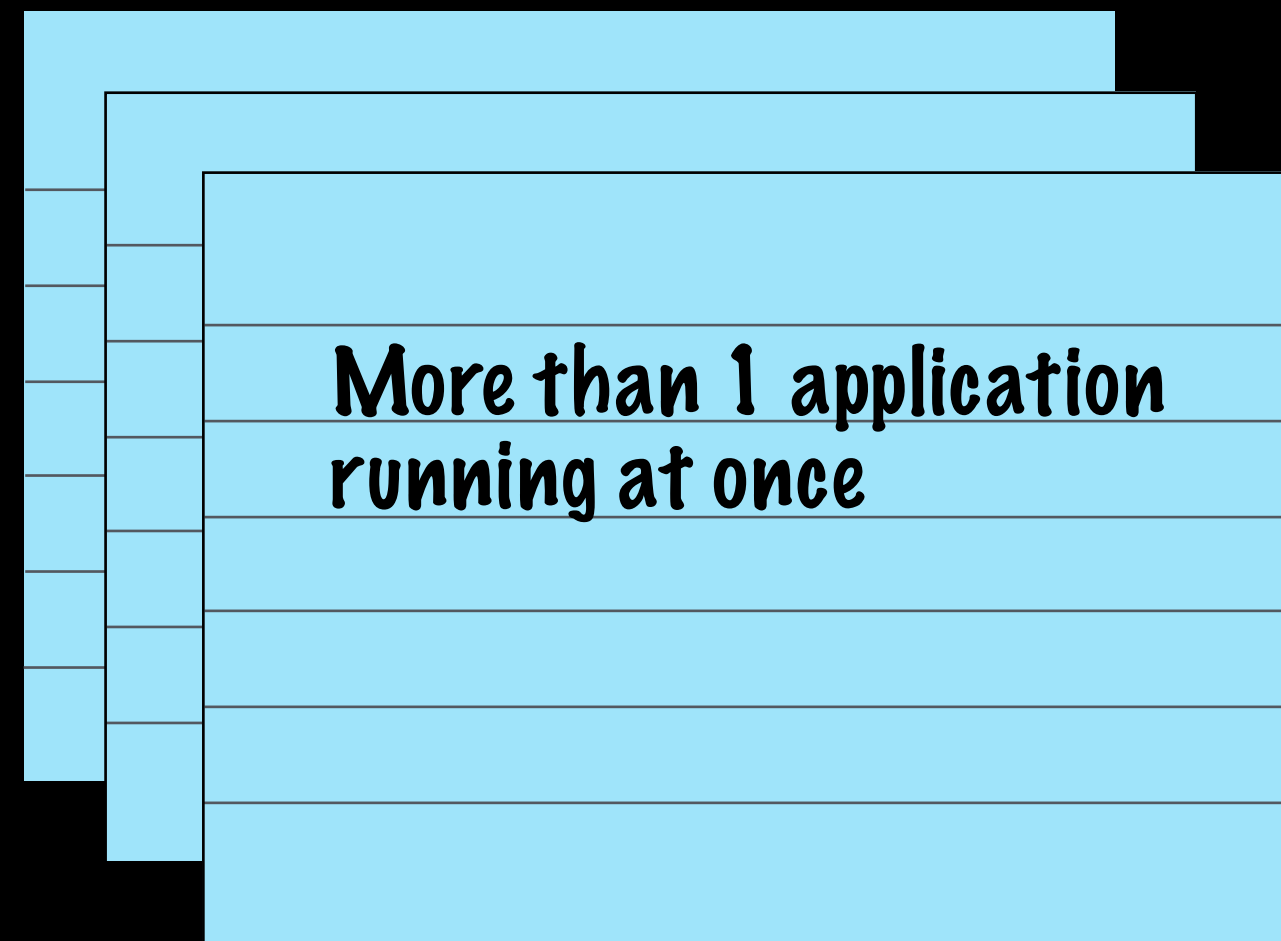
File system journal

⋮

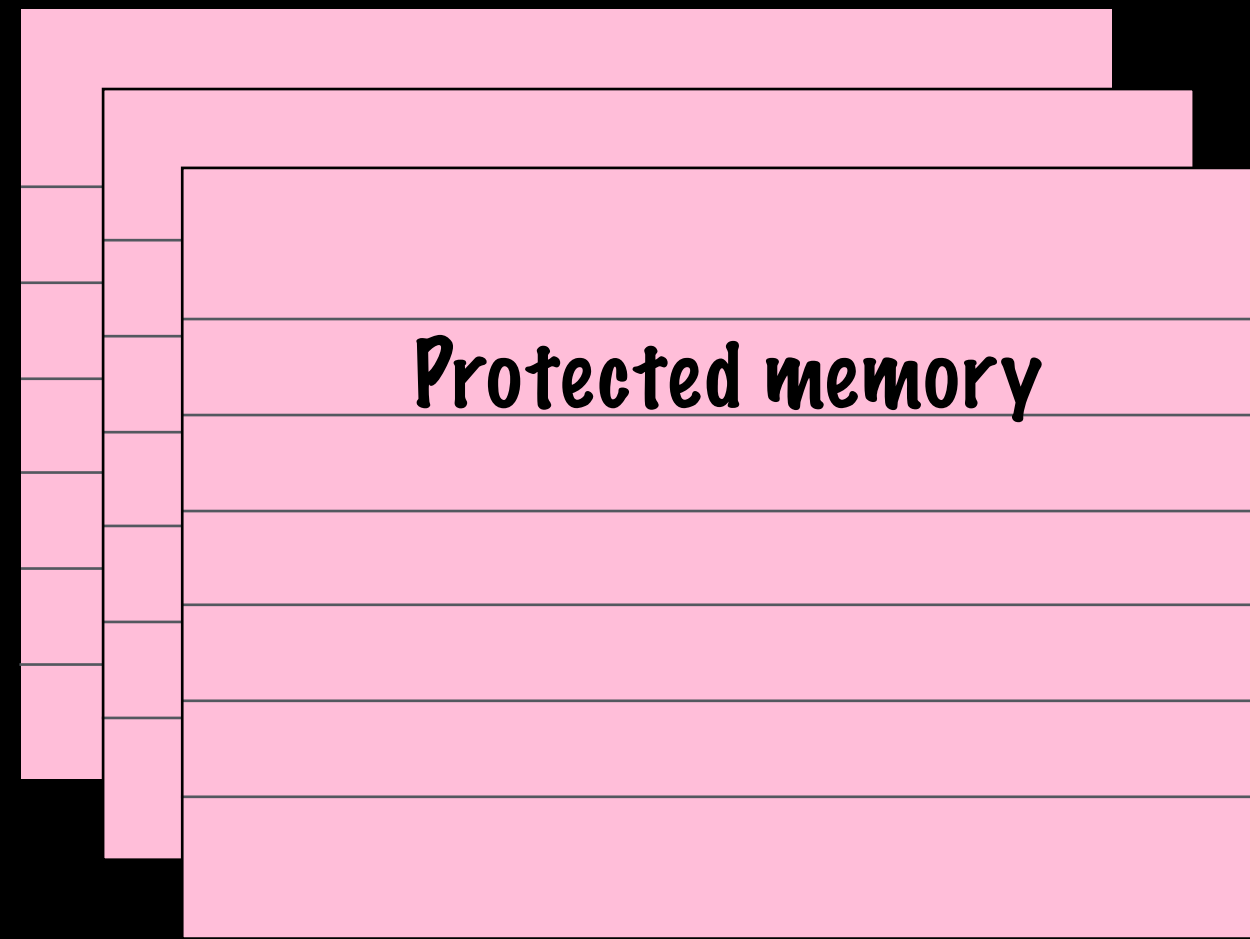
⋮

⋮

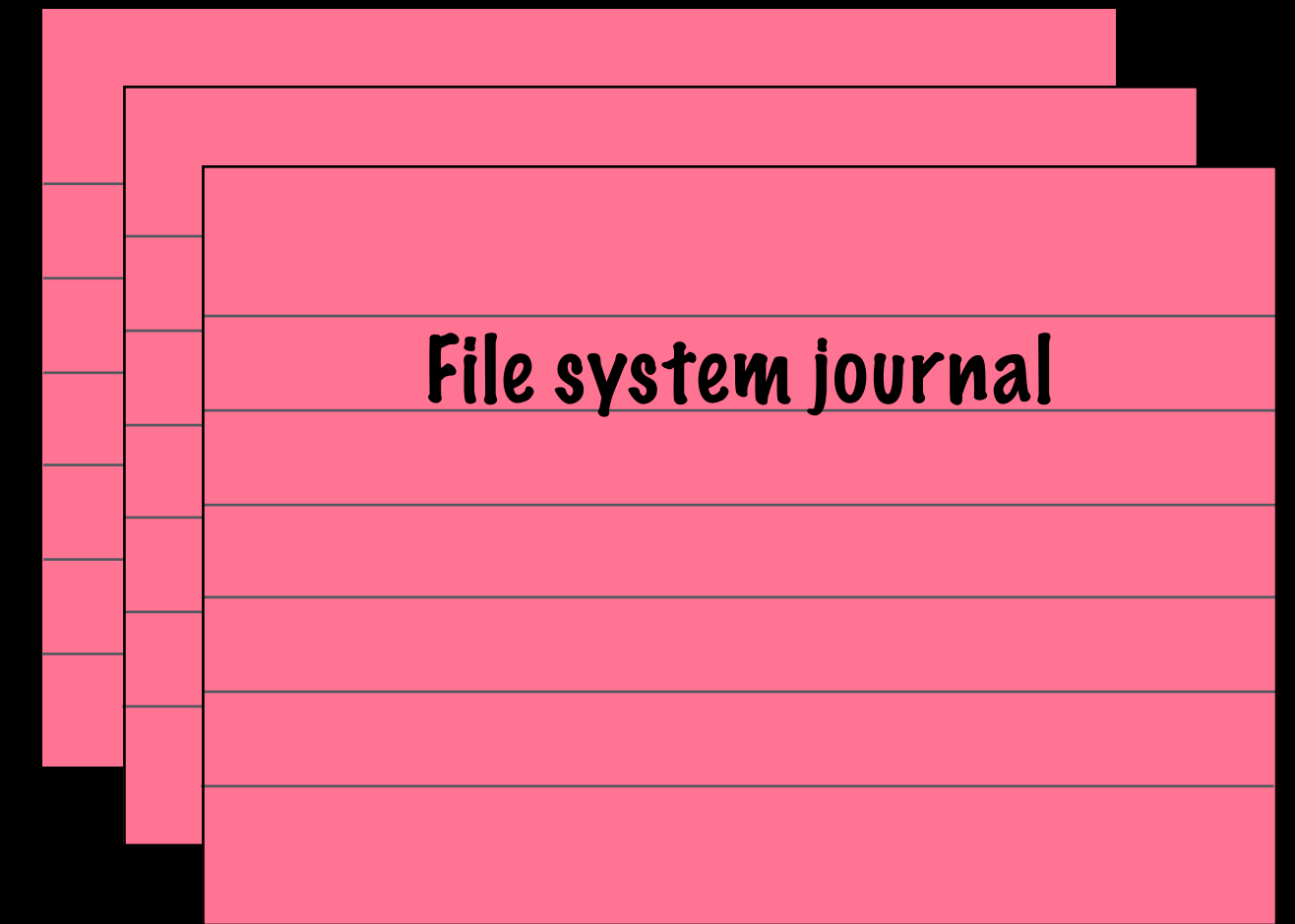
Future versions of Mac OS



Future Mac OS
(Mac OS 7.0, 7.5...)



“Pink”
Operating System

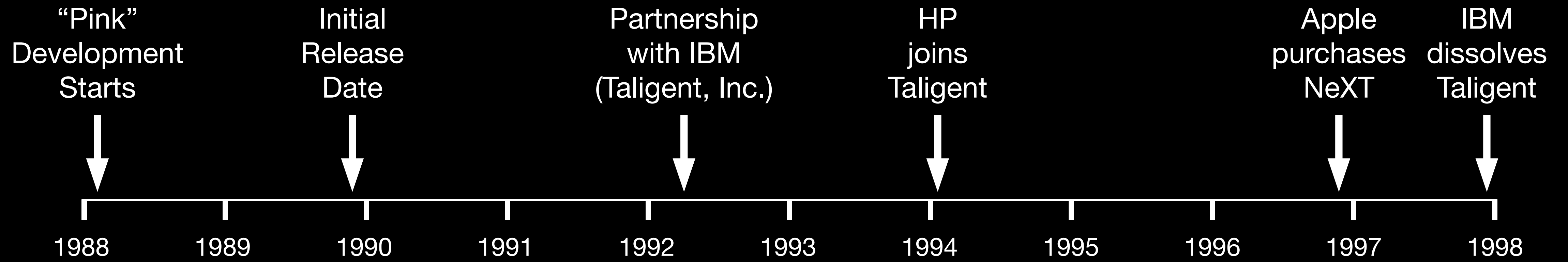


Research
Projects
(Future OSs)

“Pink” Operating System

- Protected Memory & Preemptive Multitasking
- Object oriented operating system
- Run all legacy Mac applications in compatibility mode
- Ship in 2 years (end of 1989)

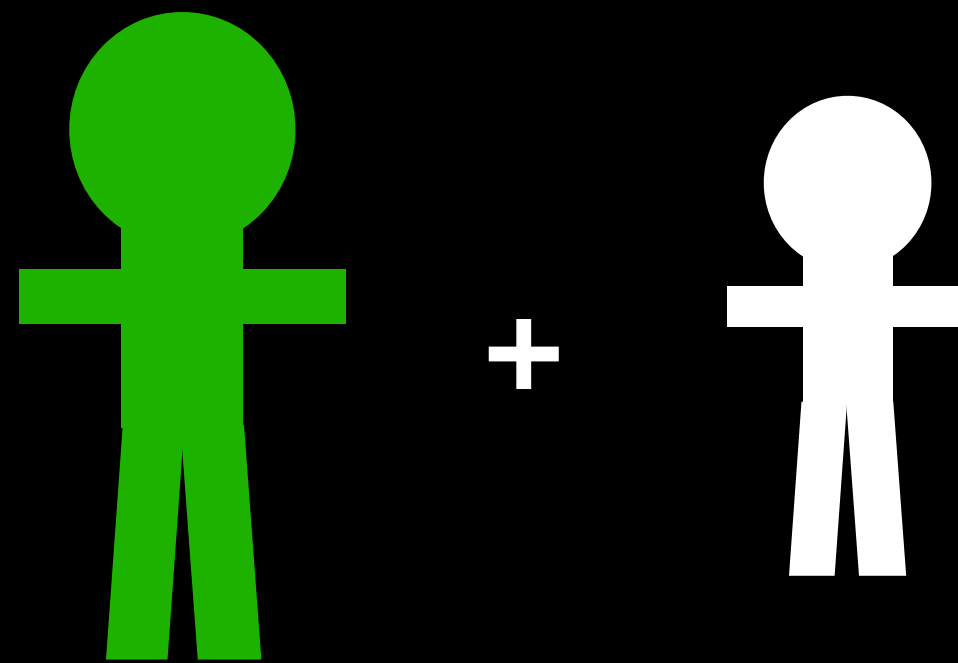
“Pink” Development Timeline



Preventing the Second System Effect

- Resist over-engineering the solution
- Conceptual integrity (not created by committee)
- Surgical Teams
- Emphasize resource constraints
 - Financial
 - Time to market
 - Target hardware

Pilot / Copilot Development Teams

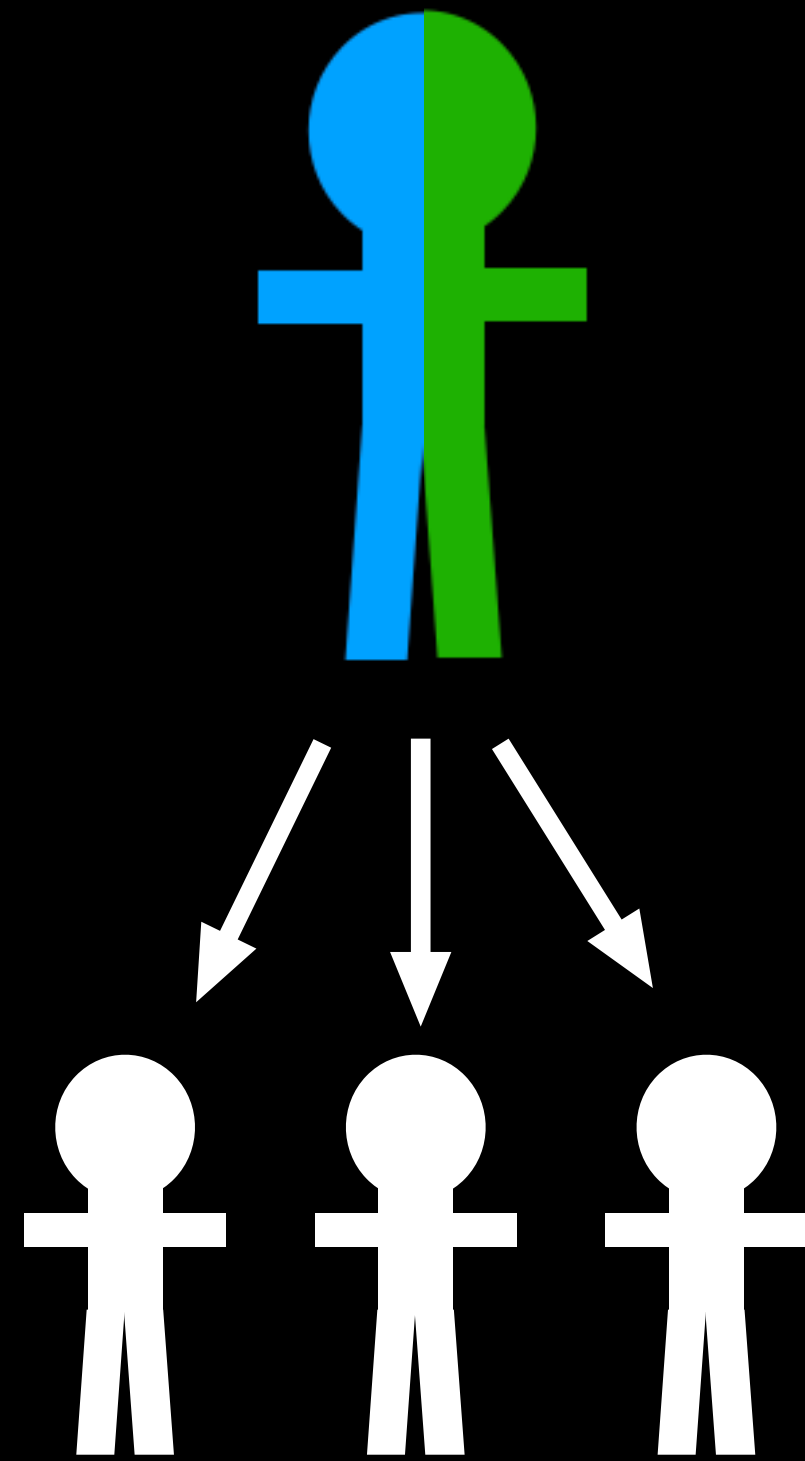


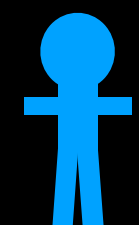
= Technical Lead

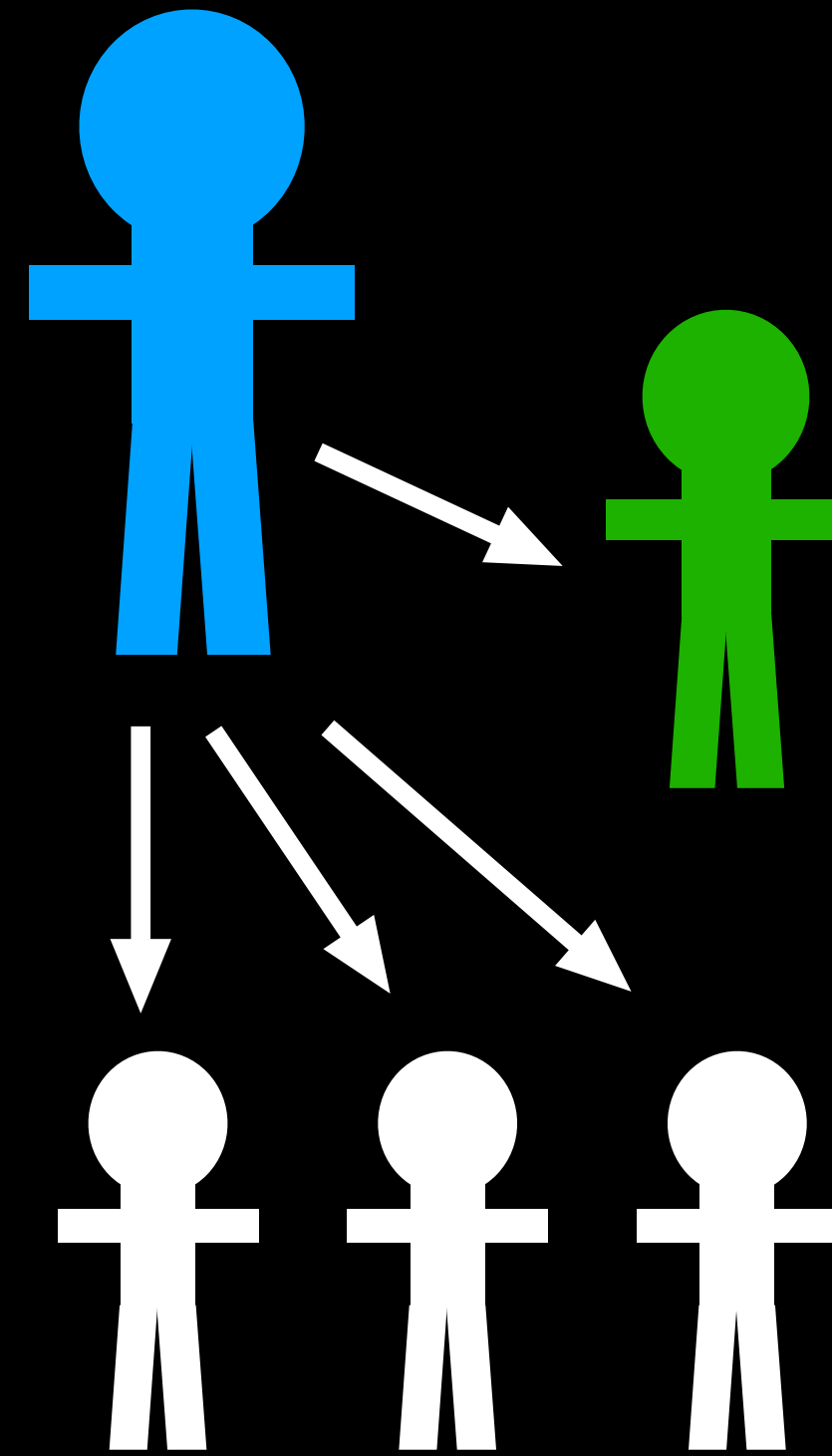


= Programmers

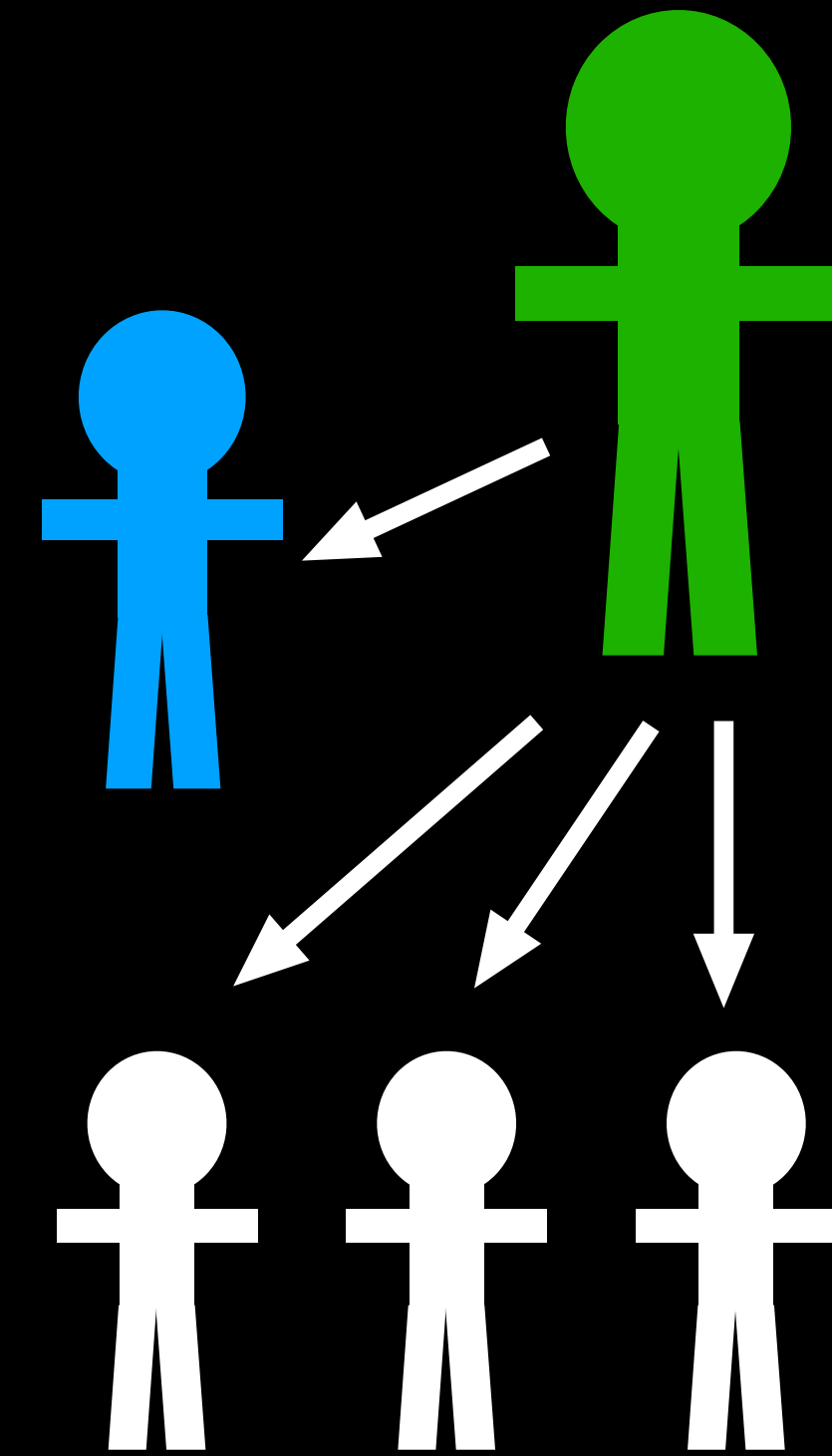
Team Management - 3 Choices

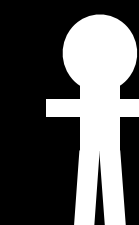


 = Manager



 = Technical Lead



 = Programmers
&
Testers





Search for: “Bean to bar chocolate”



Search for: “Wood fired pizza”



Search for: “Single origin coffee roaster”



Kafferaven
<https://www.kafferaven.se/>

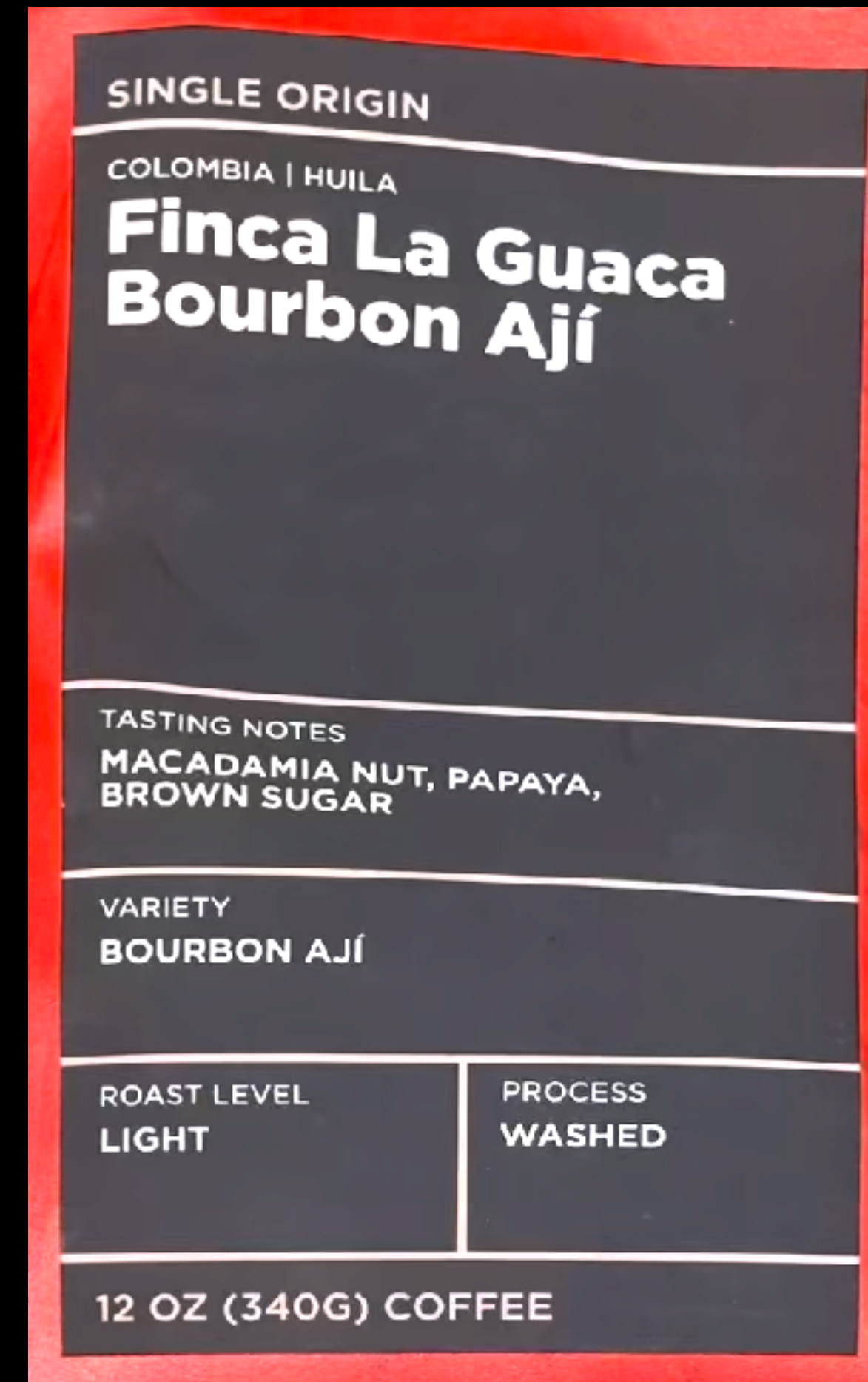


Morgan
<https://www.morgoncoffeeroasters.com/>



Da Matteo
<https://damatteo.se/>

Single Origin Coffees



1Zpresso K-Ultra Hand Grinder

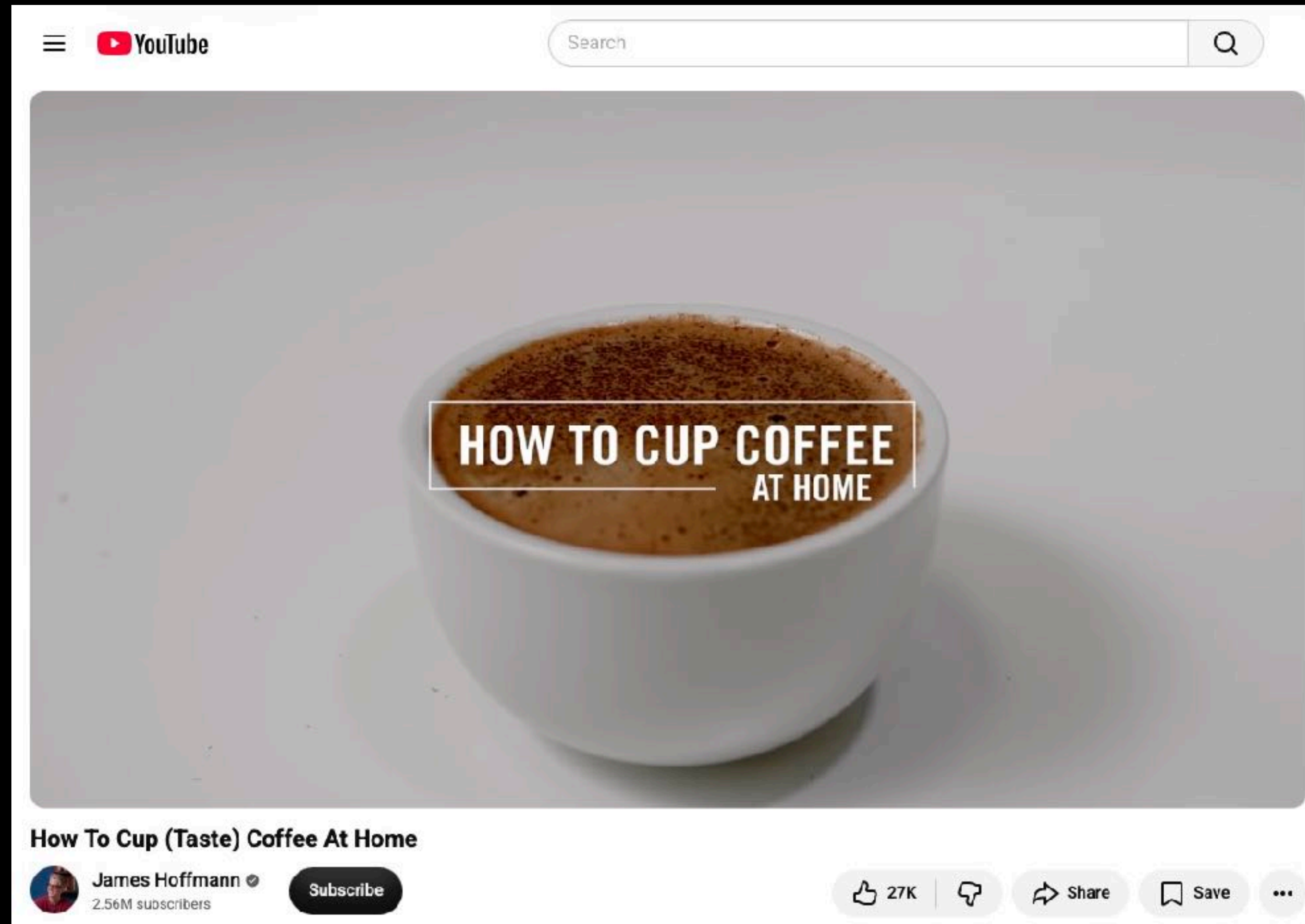


<https://1zpresso.coffee/product/kultra/>

Cupping Coffee



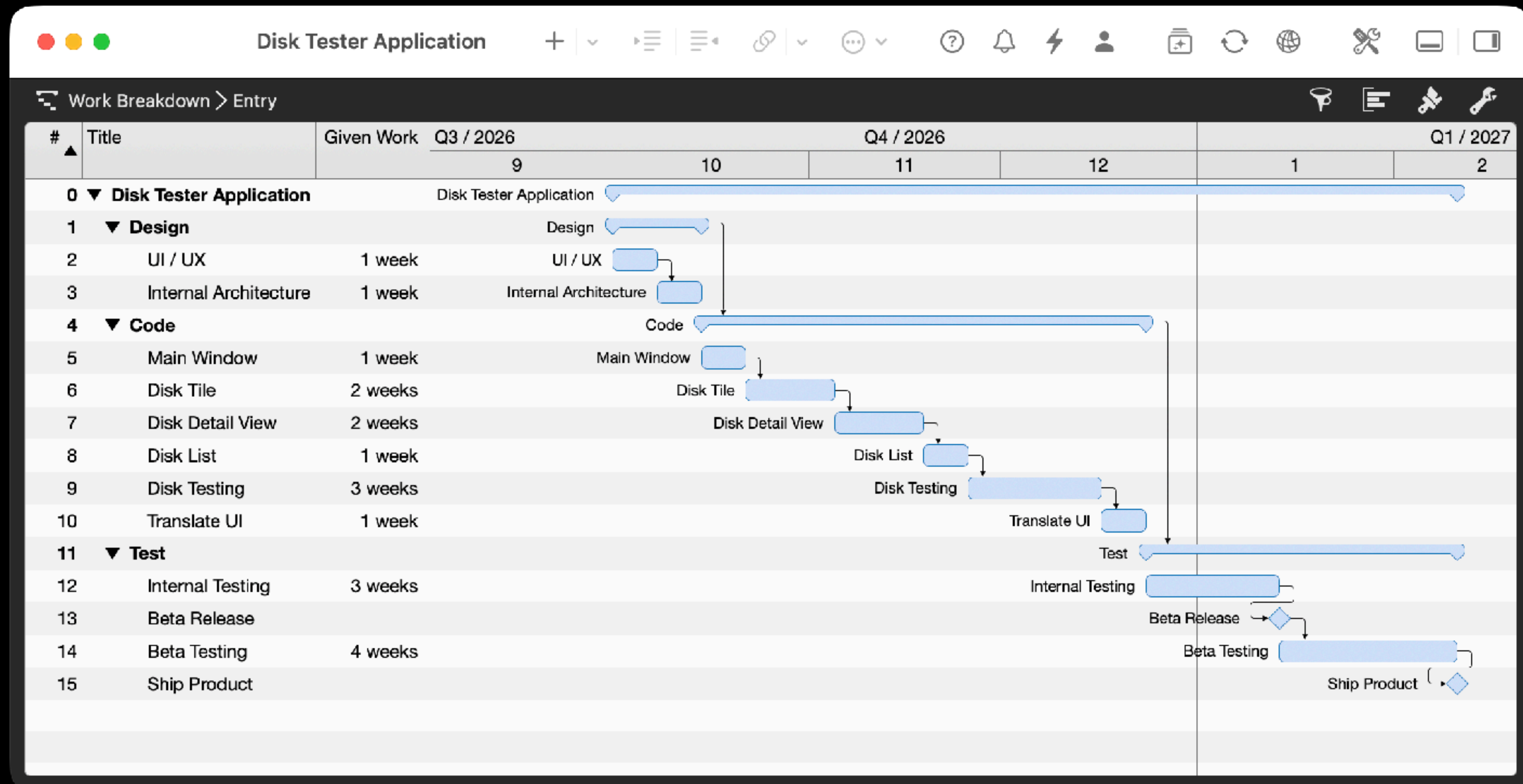
James Hoffmann on Coffee Cupping



<https://www.youtube.com/watch?v=cSEgP4VNynQ>

GANTT Charts

(In Merlin Project)



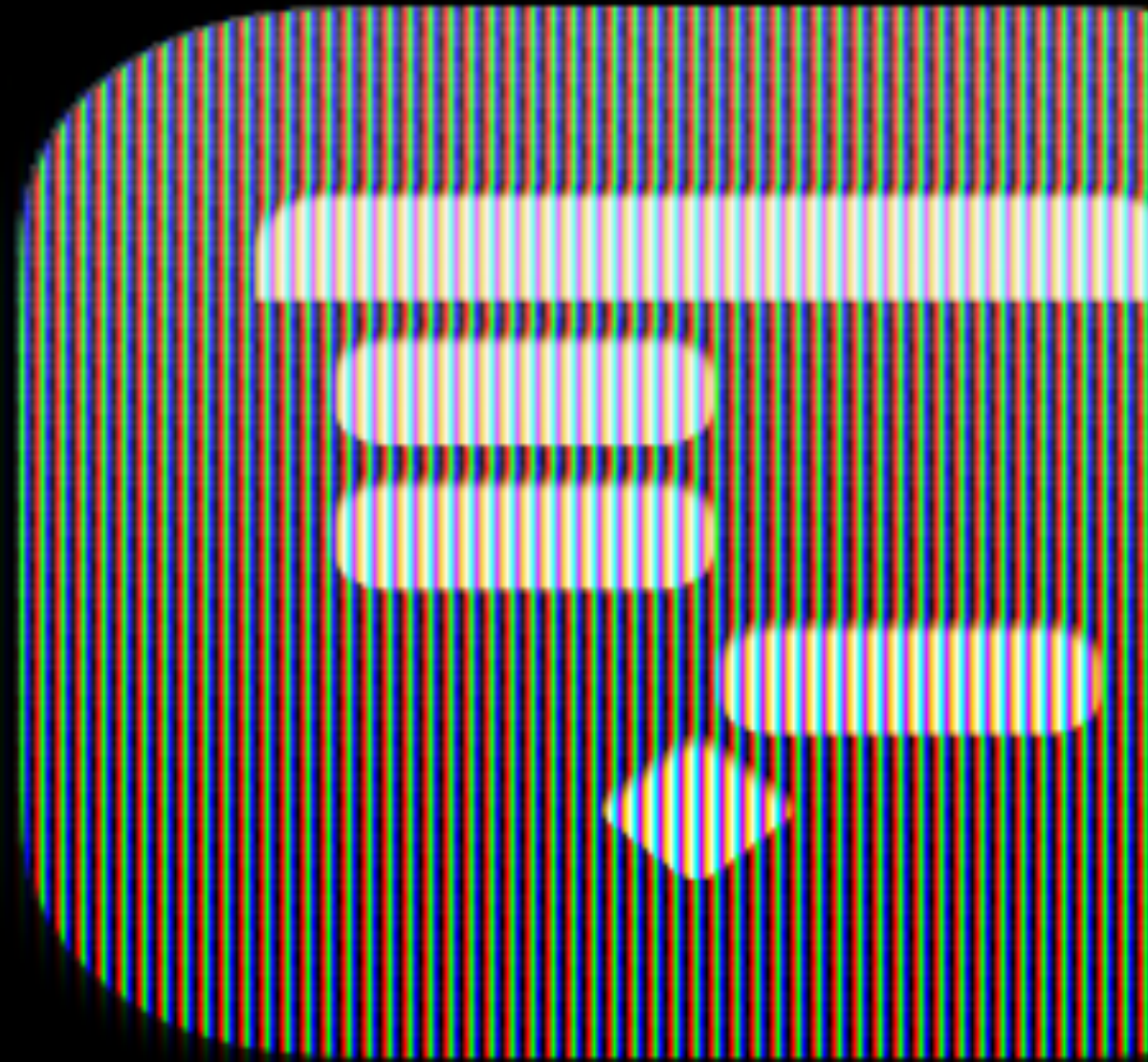


Disk Tester Application



Work Breakdown > Entry

# ▲	Title	Given Work	Q3 / 2026	Q4 / 2026			
			9	10	11	12	
0 ▼	Disk Tester Application		Disk Tester Application				
1 ▼	Design		Design				
2	UI / UX	1 week	UI / UX				
3	Internal Architecture	1 week	Internal Architecture				
4 ▼	Code		Code				
5	Main Window	1 week	Main Window				
6	Disk Tile	2 weeks	Disk Tile				
7	Disk Detail View	2 weeks	Disk Detail View				
8	Disk List	1 week					
9	Disk Testing	3 weeks					
10	Translate UI	1 week					



OmniPlan



<https://www.omnigroup.com/omniplan>

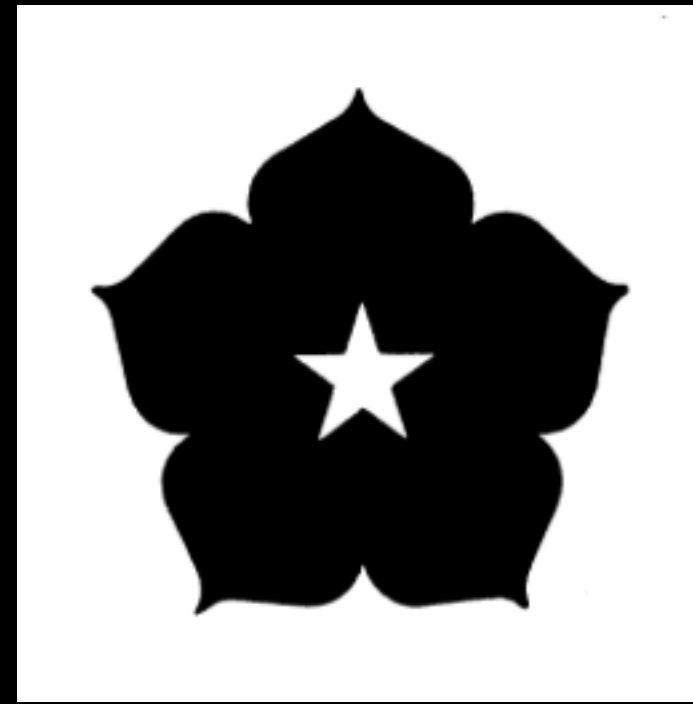


Merlin Project



<https://www.projectwizards.net>

The Good, the Bad and the Ugly



Jasmine Technologies, Inc.

Project: Database module for identifying HDDs

Problem: Project completion delayed 6 months

GANTT Chart Used: No

Solution: No action taken

Shipped: Released 6 months late



Asante Technologies, Inc.

Project: Driver for EN/SC ethernet adapter

Problem: Start of work delayed 3 weeks

GANTT Chart Used: No

Solution: Change physical location

Shipped: On time



MacUser Magazine

Project: Scriptable tool for file i/o testing

Problem: Project never started

GANTT Chart Used: No

Solution: No action taken

Shipped: Never shipped



DriveSavers Data Recovery

Project: Disk duplication application

Problem: Project start delayed by 6 weeks

GANTT Chart Used: No

Solution: Change project manager

Shipped: Ships on time



Other World Computing, Inc.

Project: SMART Alec application for macOS

Problem: Increase in features and bugs during development

GANTT Chart Used: No

Solution: No action taken

Shipped: Never shipped



Other World Computing, Inc.

Project: Add RAID 6 and 6+ to SoftRAID driver

Problem: Project start delayed by 2 years

GANTT Chart Used: No

Solution: Change physical location

Shipped: Ships 4 years after announced



Other World Computing, Inc.

Project: DriveGuide disk formatting software for macOS

Problem: Project is delayed 6 months

GANTT Chart Used: No

Solution: Change lead engineer

Shipped: Released 6 months late

Reasons Developers Get Stuck

- Writers' Block
- Bored
- Lack of self-confidence
- Distracted by new features
- Under-qualified
- Doesn't work well with others

Reasons Developers Get Stuck

Solutions:

- Writers' Block → GANTT Chart
- Bored → Increase Collaboration
- Lack of self-confidence → Find Mentor
- Distracted by new features → Establish priorities
- Under-qualified → Education or reassignment
- Doesn't work well with others → Isolated projects

Shipping a Product On Time

- Complete UI and architecture design before starting coding
- Create GANTT chart with no task longer than 1 week
- Review GANTT chart weekly and update it to reflect reality
- Don't let team members get stuck for longer than 3 weeks
- Change collaboration groups readily
- Limit team size to 10

SoftRAID version 9

- RAID 6 and 6+ volumes
- Up to 16 disks per volume
- Mac and Windows
- Read and write to encrypted APFS on Windows
- macOS 13.3 and later come with SoftRAID driver preinstalled (macOS 27 required for RAID 6 and 6+)





DriveSavers Data Recovery



Mike Cobb

Director of Engineering and CISO

- Data recovery from damaged hardware
HDDs, SSDs, iPhones, RAID, Camera Cards
- Recover data encrypted by ransomware
- Recover crypto wallets
both hardware and software



<https://drivesaversdatarecovery.com/>



DriveSavers Data Recovery

- Offices in UK, Japan and Australia
- Free estimate before work starts
- Many failures are not hardware and recovery can be done without shipping hardware (corrupted file system, lost crypto wallet passkey, ransomware)
- DriveSavers pays shipping both directions (if device is needed for recovery)



Phil Bridge

Global Business Development
phil.bridge@drivesavers.com



<https://drivesaversdatarecovery.com/>

Q & A

