

Unit 3 Intro Lecture

CSCI1800

Dr. Aaron Sidney Wright

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DALHOUSIE
UNIVERSITY

Agenda

1. Meta-Overview of Unit 3
2. Values in Technology Design
3. SAGE
4. Your questions

Use these slides on your own: <https://g.aaronswright.com/>.

Meta-Overview of Unit 3

Use the Schedule in the Course Syllabus

CSCI1800_Fall2020 : Schedule						
Unit	Week	Date	Due Dates	Tutorial	Tutorial Activity	Notes
<u>Unit 0</u> <u>Introduction</u>	Week1	Mon., Sep. 7,		Week1 Tutorial	None	LabourDay
		Tue., Sep. 8,				
		Wed., Sep. 9,				
		Thu., Sep. 10,	Open Office Hour, 10AM Atlantic and 4PM Atlantic			
		Fri., Sep. 11,	Introductory post			
		Sat., Sep. 12,				
		Sun., Sep. 13,				
	Week2	Mon., Sep. 14,	Team Charter, due 5pm Atlantic	Week2 Tutorial	Synchronous Practice Session: active reading / note taking	
		Tue., Sep. 15,				
		Wed., Sep. 16,	Team Plan Unit 1, due 5pm Atlantic			
		Thu., Sep. 17,	Open Office Hour, 10AM Atlantic			

Schedule

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Meta-Overview of Unit 3

Use the Schedule in the Course Syllabus

Intro Lecture Monday 4:05-5:35

Interactive Guest Lecture: Mon. Nov 2. 4:05-5:25 Dr. Helen Ai He

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<u>Unit 0 Introduction</u>	Week1	Mon., Sep. 7,		Week1 Tutorial	None	LabourDay
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Meta-Overview of Unit 3

BrightSpace >
Content >
Unit 3

The screenshot shows the BrightSpace Content page for Unit 3: Innovation and Expansion. At the top, there's a navigation bar with links for Course Home, Content, Discussions, Assessments, My Tools, and Help. On the right, there are icons for messaging, notifications, and user profile (Aaron Wright). Below the navigation is a search bar and a sidebar with various course sections like Overview, Bookmarks, Course Schedule, Table of Contents, Teaching Team, Course syllabus, Unit 0: Introduction, Unit 1: Before the Computer, Unit 2: Creating the Computer, Unit 3: Innovation and Expansion, Unit 4: Personal computing and the Internet, Readings, Video Office Hours, Tutorial Practice Sessions, Lectures, Collaborate Ultra, Lecture Recordings (Panopto), Wikis, Course Docs, and Course Rep.

The main content area displays a progress bar showing "80 % 8 of 10 topics complete". Below it is a list of topics:

- Unit 3 Welcome + Essay Topics** (Web Page)
- Unit 3 Checklist** (Checklist)
- Grace Hopper "The Queen of Code" [15 min]** (Video)
- Tech+Values Web Exhibit: Talking ATMs** (Link)
- Tech+Values Podcast Jai Virdi on Captions** (Link)
- "How a deaf, silent film actor pioneered closed captioning" CBC Q**
- Real Time computing in 1951 [1.5 min] Jay Forrester and Whirlwind** (Video)
- SAGE Air Defence video, 1960 [3 min]** (Video)
- Tech+Values Unix and Anti-Trust, Cory Doctorow** (Link)
- Cory Doctorow, May 6, 2020. "Unix and Adversarial Interoperability: The 'One Weird Antitrust Trick' That Defined Computing"**
- Grace Hopper: Visionary Pioneer, Beyer, 2012** (PDF document)
- Beyer, Kurt W. 2012. "Grace Hopper: Visionary Pioneer." *Core: A publication of the Computer History Museum*, 14–17.**
- Margaret O'Mara on Silicon Valley history [10 Min]** (Video)

This screenshot shows the "Welcome to Unit 3: Innovation and Expansion" page. It includes a welcome message from Dr. Aaron Stacey Wright, a video thumbnail, and a summary of the unit's goals: "In this Unit, you will learn about the Innovation and Development of modern computers. You will study innovative Cold War computer systems that are designed to defend against nuclear war. You will learn about the development of the first software, and the rise of Silicon Valley. New business models were invented, like venture capital. And computing became a part of life for ordinary workers and consumers."

The page also lists the "Table of Contents" and "Unit 3 Readings". Under "Unit 3 Readings", there are three video thumbnails for "Topic 1: Connect to Women in Tech", "Topic 2: Did the Government Create the Software Industry and Silicon Valley?", and "Topic 3: Connect to Women in Tech". Each topic has a brief description and a link to the video.

Unit 3 Writing Reflection

Recall: the Writing Process

Invention

Organization

Composition

Revision

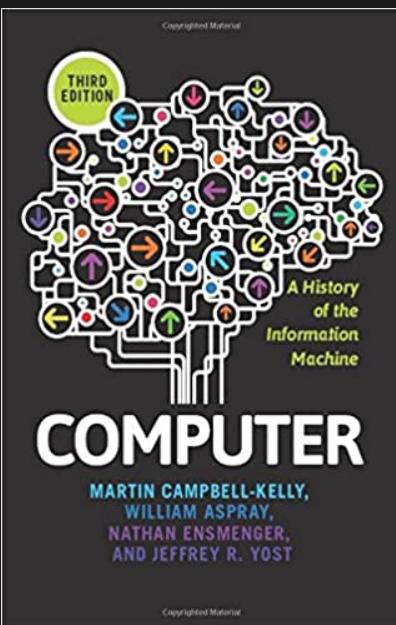
Writing Reflection Short Exercise. Reflect on the writing process.

Instructions in Assignments > "Unit 3. Writing Reflection".

Pass/Fail, worth 2%.

No Thesis Development Sheet in Unit 3

Unit 3 Readings



Chapters

- 7 Real Time: Reaping the Whirlwind
- 8 Software
- 9 New Modes of Computing
- Also examine the photographs in PHOTOS: From Babbage's Difference Engine to System/360 and PHOTOS: From SAGE to the Internet

Unit 3 Essays

- Essay Topic 1: Values in Technology Design
- Essay Topic 2: Did the Government Create the Software Industry and Silicon Valley?
- Essay Topic 3: Connect to Women in Tech

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Values in Technology Design

What are some examples of **moral values** in technology design?

Historical Example



Grace Hopper at a UNIVAC computer, with COBOL manual ([1961](#))

Grace Hopper wanted computers to be **accessible** to regular people, without advanced training in mathematics. Hopper wrote the first compilers: A-0 (1951); MATH-MATIC (1955–57); FLOW-MATIC (1955–59).

"Accessibility" is an example of a **moral value** that directed Hopper's development of new technologies.

Technologies and Values

Unit 3 New Technologies Example Moral Values

- Real Time computing
- SAGE air defence system
- SABRE Airline reservations
- ATMs
- Visa system
- BASIC
- UNIX
- Time sharing
- Computer Utilities
- :

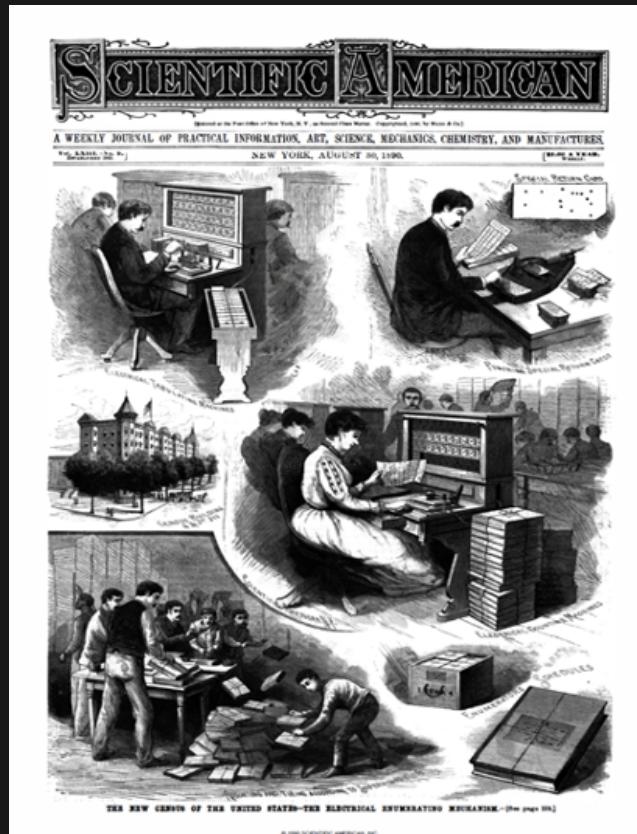
- Privacy
- Accuracy
- Property / ownership
- Accessibility
- Democracy
- Dignity
- Justice
- Autonomy
- Freedom
- Informed consent
- :

Technologies and Values

Can you think of examples of Tech+Values from
Unit 1 and Unit 2?

Technologies and Values

Can you think of examples of Tech+Values from Unit 1 and Unit 2?



More on Tech Design and Values

Use the Schedule in the Course Syllabus

Interactive Guest Lecture: Mon. Nov 2. 4:05-
5:25 Dr. Helen Ai He

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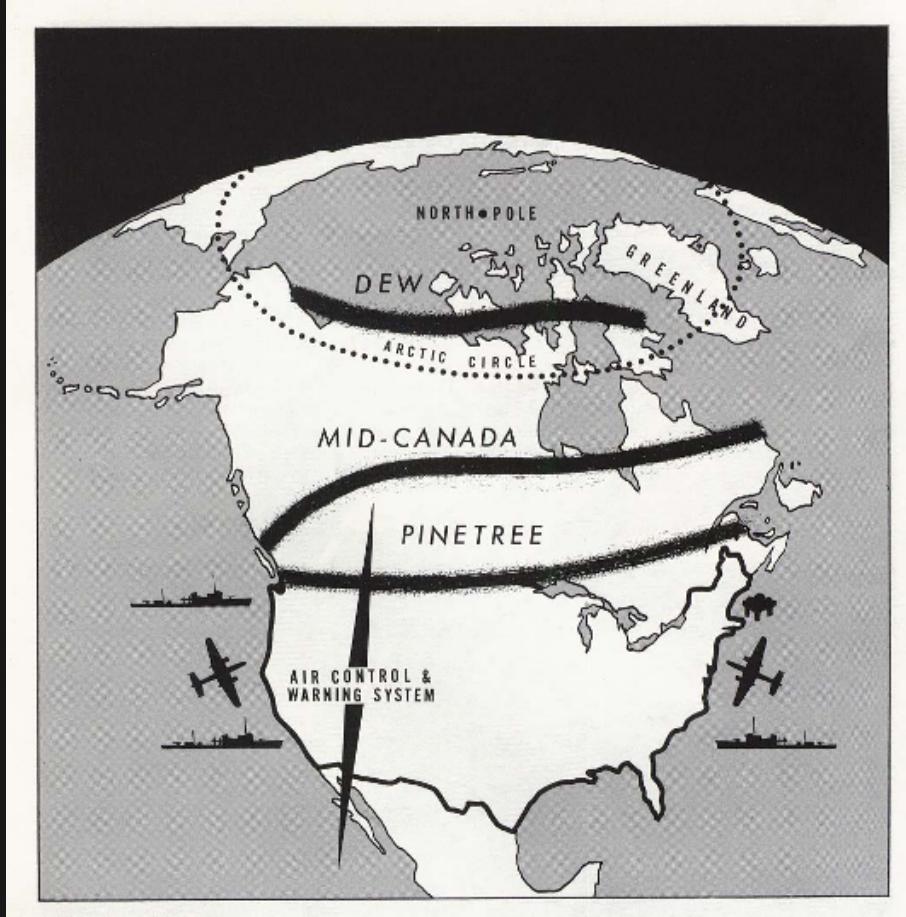
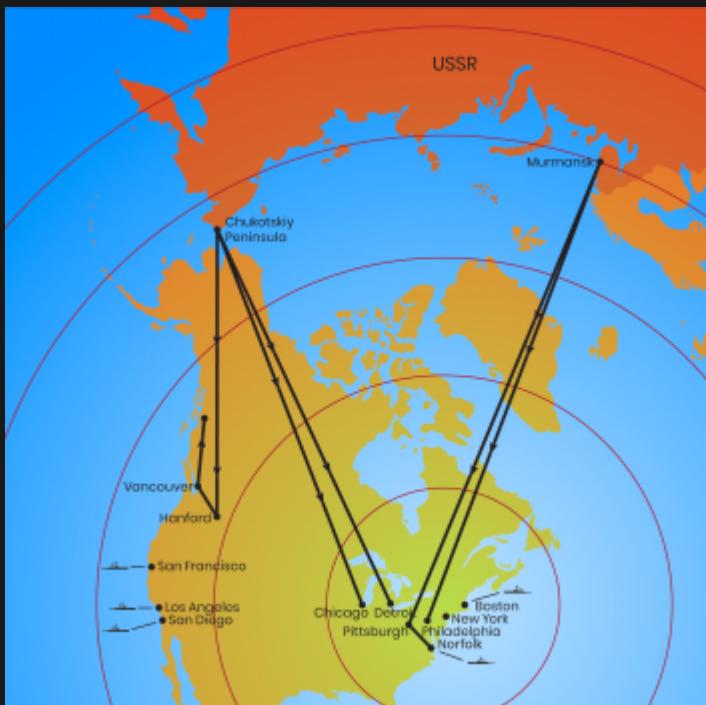
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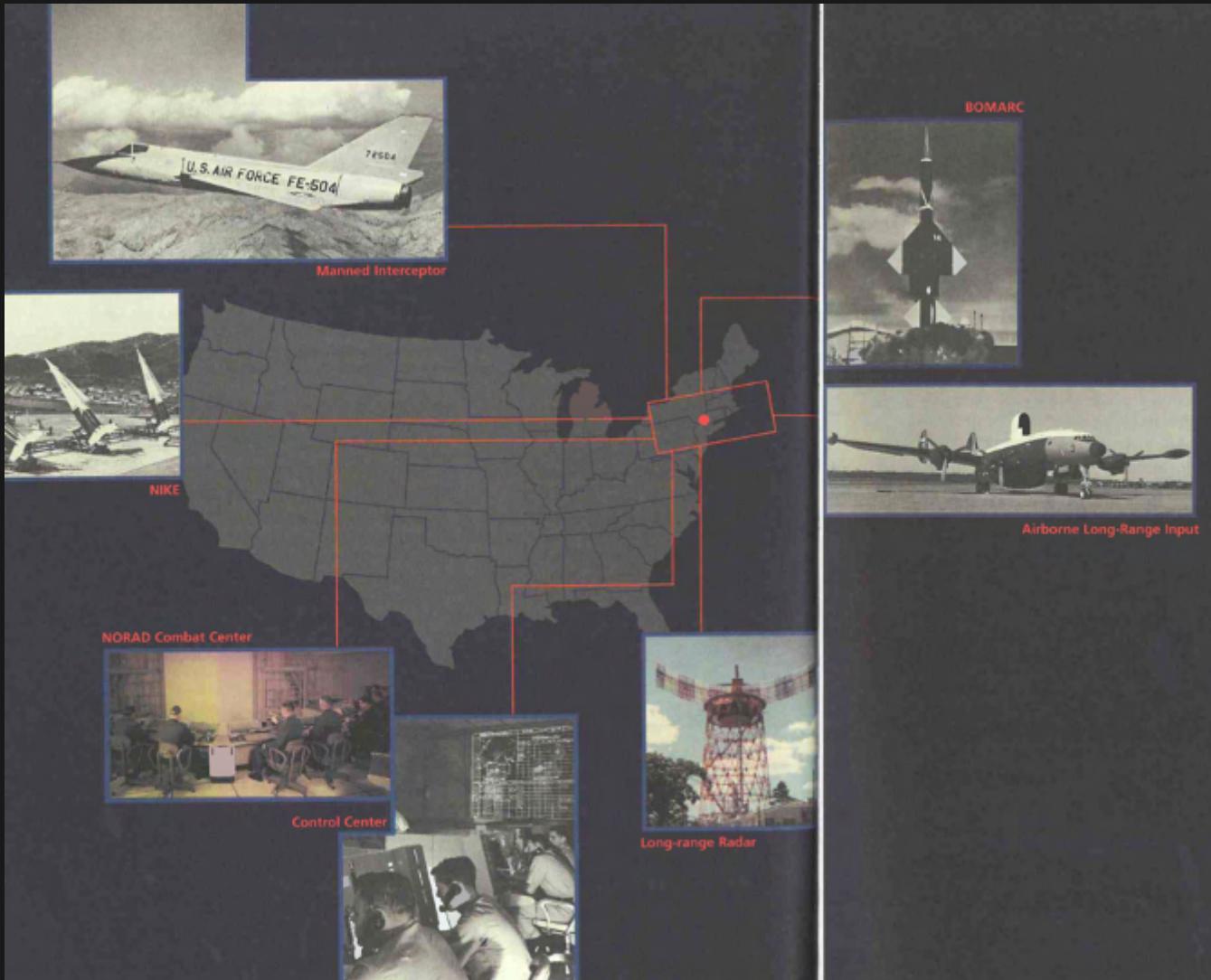
SAGE/ Cold War

Stock Market Crash, 1929															
Japan Invades Manchuria, 1931				UN founded, 1945								Korean War (1950–53)			
Fascist Germany, 1933				US "New Deal" 1935								Partition of India, 1947			
2nd Sino-Japanese War, 1937–45				"Third World" De-Colonization								Cold War, 1946–89			
Great Depression				WWII 1939–45											
1930	1932	1934	1936	1938	1940	1942	1944	1946	1948	1950	1952	1954	1956	1958	1960

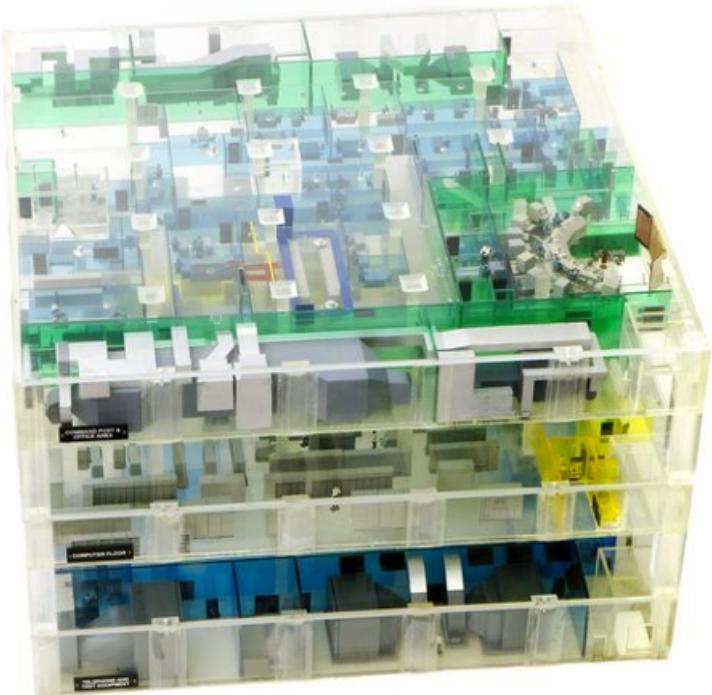
Cold War Anti-Aircraft Systems



Semi Automatic Ground Environment



SAGE



SAGE

Madeline Carey, SAGE
programmer, with ~60,000 punch
cards (same as SAGE master
program)

IBM /SAGE promotional film:
archive.org/details/OnGuard1956



SAGE

SAGE: Completed in 1963



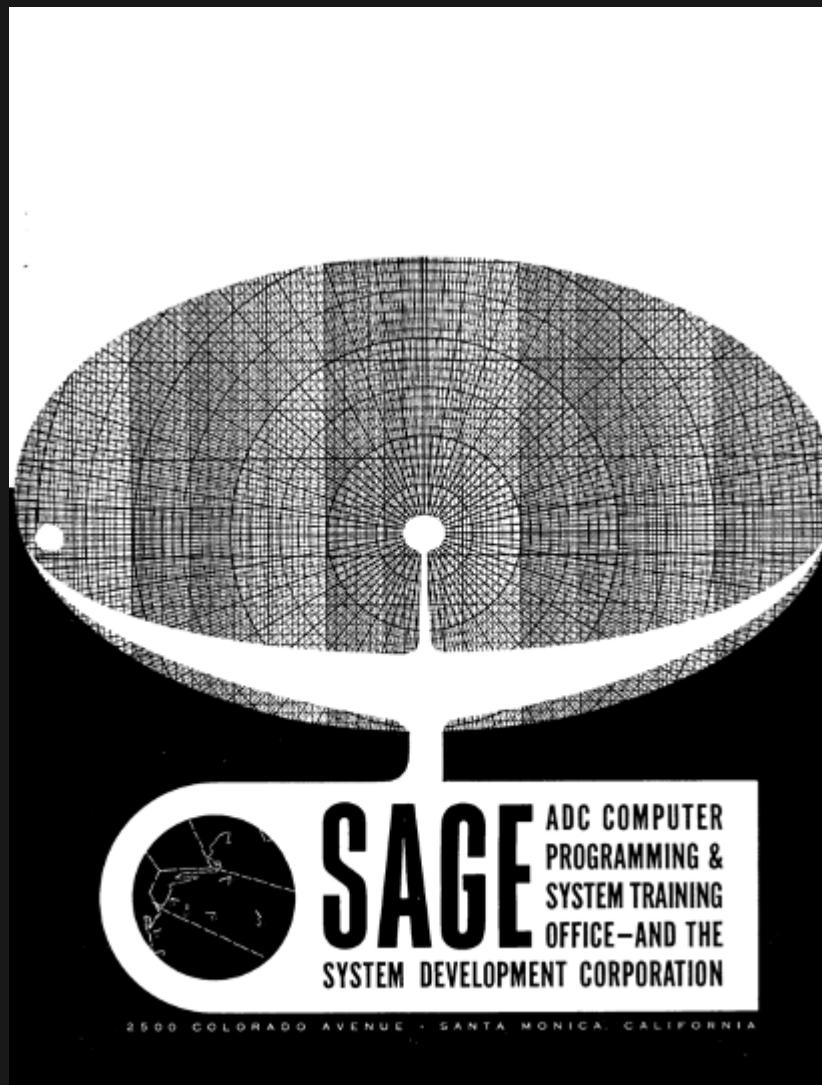
SAGE

SAGE: Completed in 1963

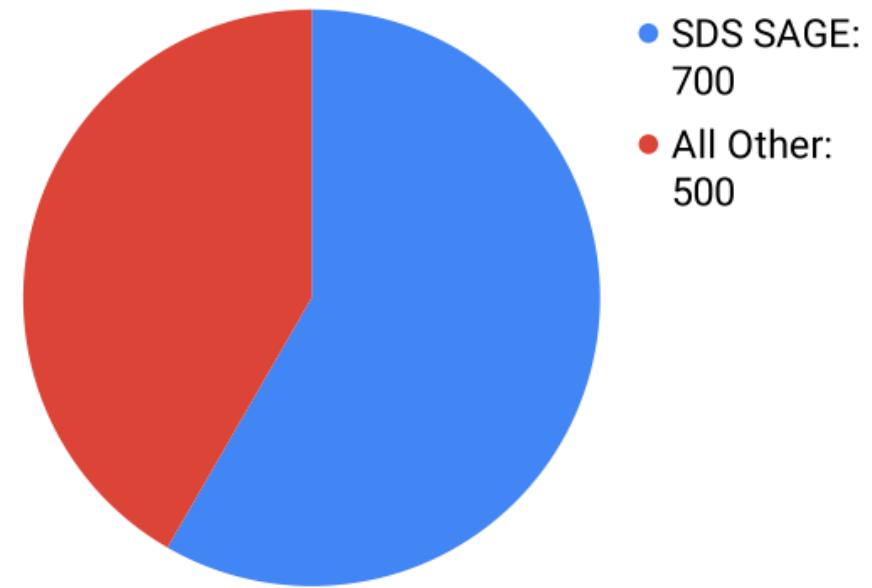
Obsolete on delivery!



SAGE Impact



Total Programmers in US in early 1960s ~1,200



SAGE Moral Values?

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Thank you for joining!

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CSCI1800 Fall 2020

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