

Welcome to Unit 2: Creating the Computer

CSCI1800

Dr. Aaron Sidney Wright

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Agenda

1. Overview of Unit 2
2. Essay Topic 1: Schools and Education
3. Essay Topic 2: Connect to Civil Rights
4. Essay Topic 3: Connect to Entrepreneurs

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Overview of Unit 2

Use the Schedule in the Course Syllabus
(BrightSpace / Pulse Calendar is incomplete)

CSCI1800_Fall2020 : Schedule

Unit	Week	Date	Due Dates	Tutorial	Tutorial Activity	Notes
<u>Unit 0. 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 and 4PM Atlantic			
		Fri., Sep. 18,				
		Sat., Sep. 19,				
		Sun., Sep. 20,				
		Mon., Sep. 21,	Synchronous help lecture, 4:05-5:25 Atlantic			

Schedule



Unit 2 Due Dates

Recall: the Writing Process

Invention

Organization

Composition

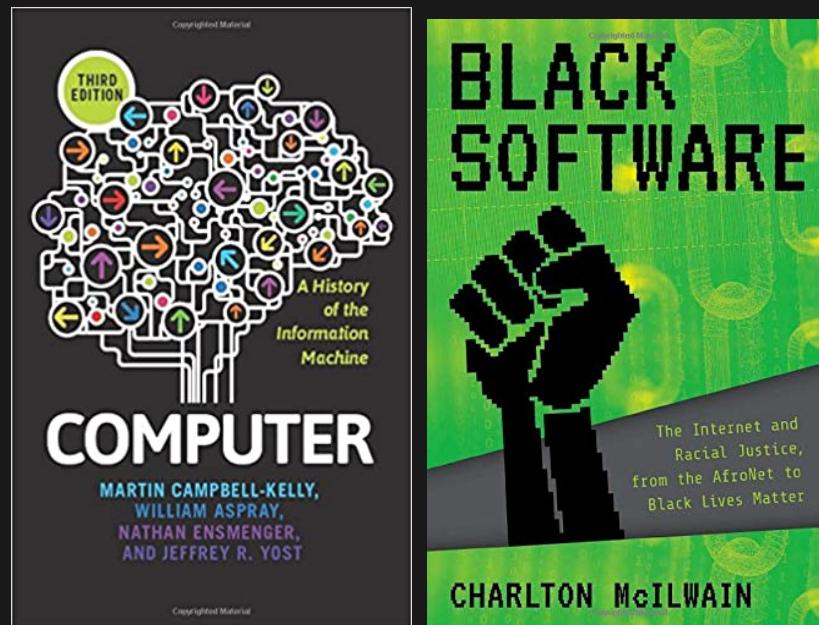
Revision

- 5pm Tues. 6.10.20: Team Plan Unit 2
- 6pm Wed. 14.10.20: Thesis Development Short Exercise
- 5pm Mon. 19.10.20: Essay Draft
- 5pm Wed. 21.10.20: Peer-review Comments
- 5pm Fri. 23.10.20: Unit 2 Final Essay

Unit 2 Submissions

- 5pm Tues. 6.10.20: Team Plan Unit 2
 - Group Assignment
- 6pm Wed. 14.10.20: Thesis Development Short Exercise
 - Individual Assignment
- 5pm Mon. 19.10.20: Essay Draft
 - Start Discussion thread in T# Discussions > Unit 2: Post your Drafts and Peer Comments
- 5pm Wed. 21.10.20: Peer-review Comments
 - Reply in T# Discussions > Unit 2: Post your Drafts and Peer Comments
- 5pm Fri. 23.10.20: Unit 2 Final Essay
 - Individual Assignment

Unit 2 Readings



Campbell-Kelly et al. (2014), Chapter 4: Inventing the Computer, Chapter 5: The Computer Becomes a Business Machine, PHOTOS: From Babbage's Difference Engine to System/360 and Chapter 2: The Tech School Route from McIlwain (2020) *Black Software*.

Unit 2: Events, People, Inventions

- Time period: 1940s to 1960s
- New machines: ENIAC, EDSAC, UNIVAC
- Innovations: Electronics, Architecture, Code
- New jobs: Programmer, Customer Engineer
- New computerized businesses

2. Electronics

2. Electronics

The development of modern computing

2. Electronics

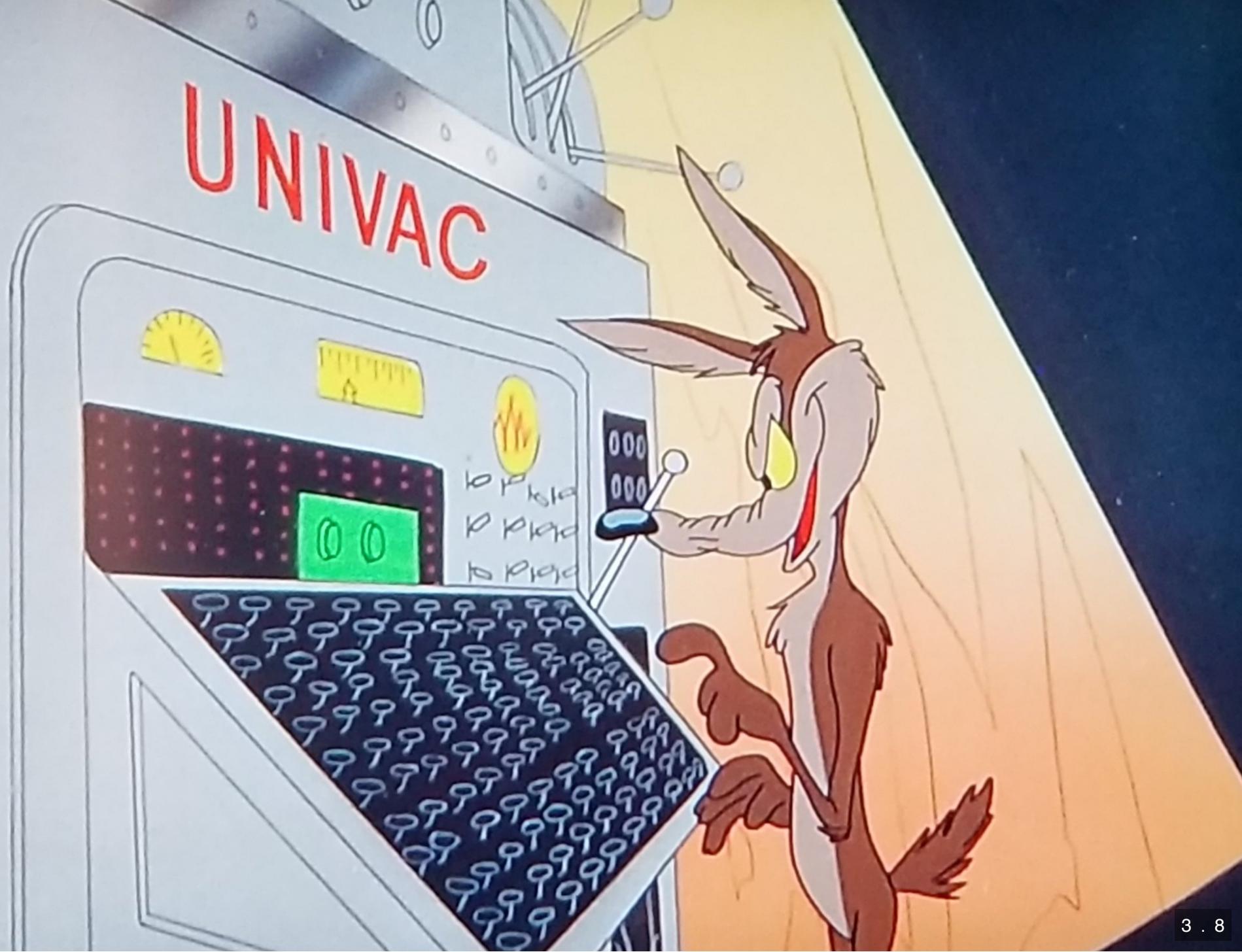
The development of modern computing

The people, the machines, and the companies
that shaped computing during and after World
War II. The ENIAC

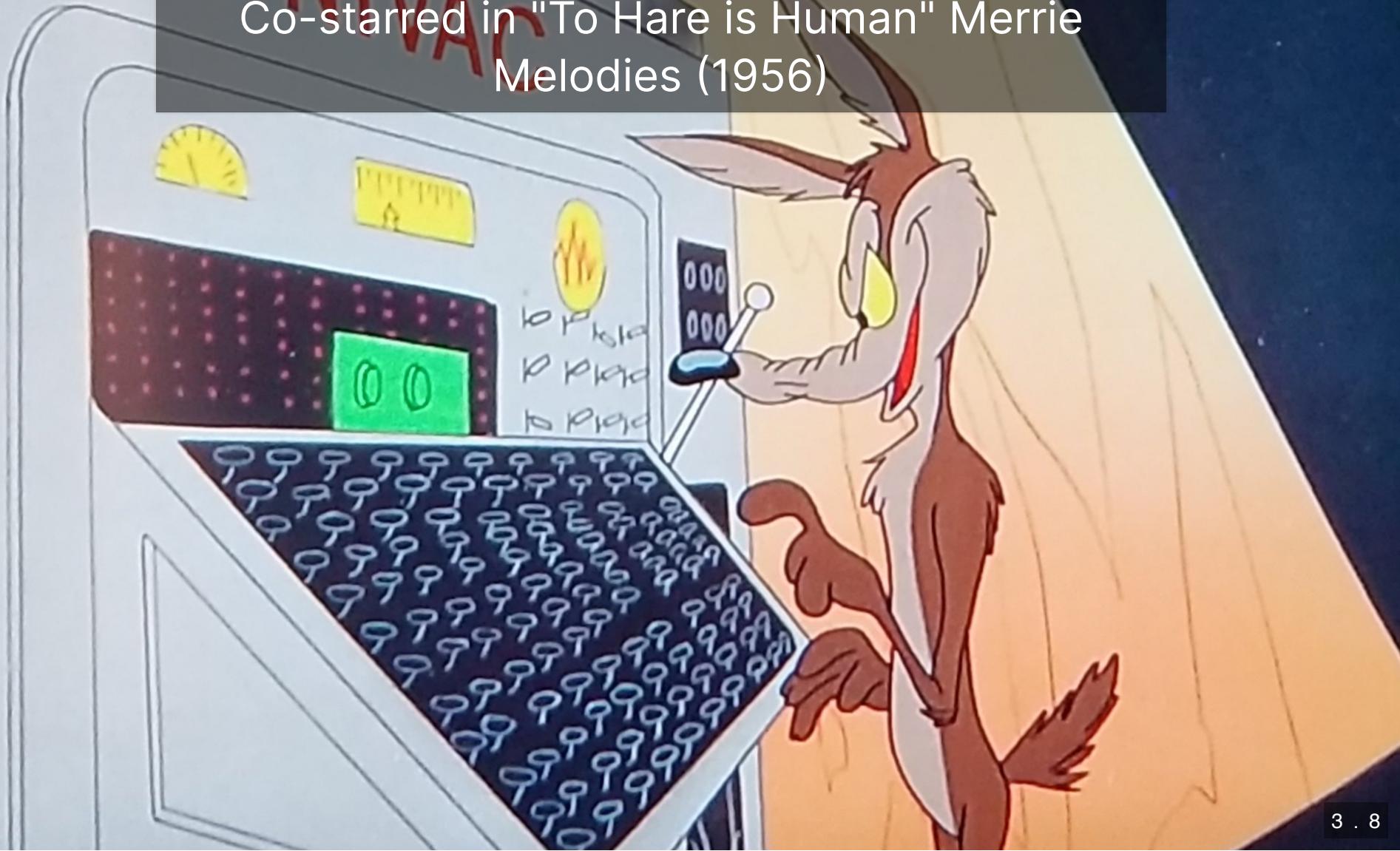
2. Modern Architecture

2. Modern Architecture

The first useful Stored-Program electronic computer, the EDSAC



The first commercial computer, UNIVAC.
Co-starred in "To Hare is Human" Merrie
Melodies (1956)



The first commercial computer, UNIVAC.
Co-starred in "To Hare is Human" Merrie
Melodies (1956)

ECKERT-MAUCHLY COMPUTER CORPORATION

SPECIALISTS IN ELECTRONIC DIGITAL EQUIPMENT

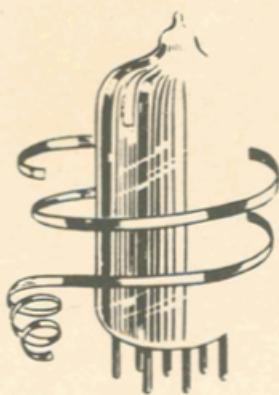
INCLUDING AUTOMATIC COMPUTERS FOR INDUSTRIAL CONTROLS

RAPID, ACCURATE, AND ECONOMICAL PROCESSING OF INFORMATION

The

UNIVAC

Universal Automatic
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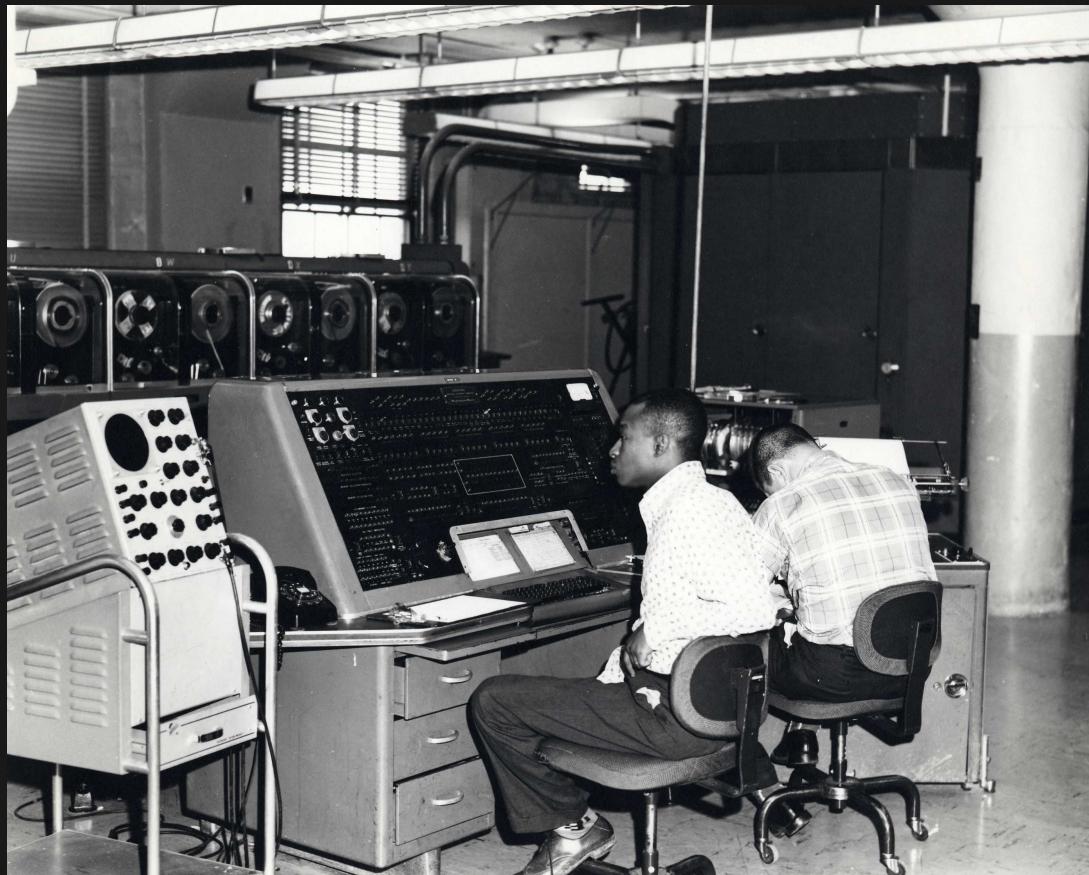


The

BINAC*

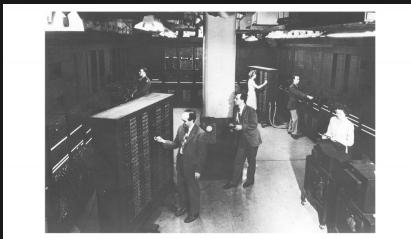
Binary Computer for
Engineering and
Industrial Control
Applications

2. UNIVAC



A UNIVAC computer at the [US Census Bureau](#), ca. 1960.

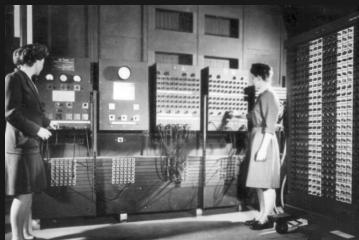
2. Who is History About?



Photograph of the ENIAC with Eckert and Mauchly at centre, with men and women at edges

2. Who is History About?

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ENIAC (1946) being programmed by Betty Jennings (Left) and Frances Bilas (Right)

2. Who is History About?



An unknown woman builds core memory in the late 1960s. Photograph from a Raytheon Apollo 11 Press Kit. The original caption described her as a “space age needleworker.” ([Shorey and Rosner, 2019](#))

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3. Essay Topic 2: Connect to Civil Rights
4. Essay Topic 3: Connect to Entrepreneurs

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Essay Topic 1: Schools and Education

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Essay Topics

Each essay topic has three parts:

1. Historical background
2. Core essay instruction
3. Required sources

Historical Background



Moore School of Electrical Engineering (U Penn)
around 1940.

FREE FACTS FOR MEN 17-55!
Prepare In Spare Time For Profitable Jobs In . . .

ELECTRONICS
AS USED IN
GUIDED MISSILES

TELEVISION — RADAR — MICRO-WAVES, ETC.

No Advanced Education or Previous Technical Experience Required!

A man doesn't even have to know how to splice a lamp cord or use a soldering iron to be eligible to prepare in his spare time at home to enter the big opportunity field of Electronics. As a result, many laborers and bookkeepers, store clerks, shop men, farmers, and men of nearly every calling—have taken the DeVry Tech program, and today have good jobs or service shops of their own in Electronics.

KEEP YOUR JOB!

As you train for a good opportunity that pays real money in Electronics, you won't have to interfere with your present job. Your chances of preparing to enter Electronics need not be held back because of the job you hold today. Send coupon for full facts!

Marvels of Electronics

Satellites, guided missiles, and other marvels made possible by Electronics bring us into a new era of wonderment and opportunity!

Employment Service

Puts you in touch with job opportunities. Your employer helps you get a better position in the plant where you are now employed.

Draft Age?

We have valuable information for every man of draft age; so if you are subject to military service, be sure to check the coupon.

Prepare NOW

At Home or at our Chicago or Toronto Laboratories!

Use part of the income from the job you have today to prepare for home or a highly interesting and profitable career tomorrow! Or, come to Chicago or Toronto and fully equip yourself in our laboratories. It is probably easier than you think. Send coupon for FREE FACTS!

DeVRY TECHNICAL INSTITUTE
CHICAGO 41, ILLINOIS
Formerly DeFOREST'S TRAINING, INC.

One of America's Largest Electronic Training Centers

Accredited Member of National Home Study Council.

Sample Booklet FREE!

We'll give you a free copy of an interesting booklet, "Electronics and YOU," which will tell you just what you can do now to prepare to enter one or more branches of Electronics.

DeVRY TECHNICAL INSTITUTE
4141 Belmont Ave., Chicago 41, Ill., Dept. PE-10-0
Please give me your FREE booklet, "Electronics and YOU," and tell me how I may prepare to enter one or more branches of Electronics.

Name _____ Age _____
Street _____ PLEASE PRINT _____ Apt. _____
City _____ Zone _____ State _____
 Check here if subject to Military Training.
DeVry Tech's Canadian Training Center is located at
2033 626 Residew Avenue, Toronto 12, Ontario

October, 1958

7

Ad for DeVry Technical Institute (1958).

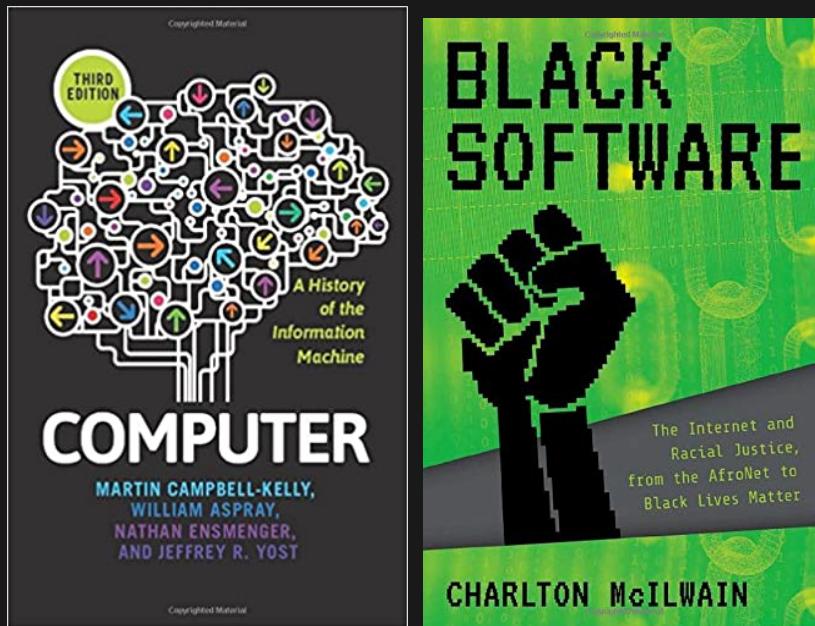
Essay Topic 1: Core Instruction

In an essay of between 675 and 825 words, **assess the role of educational institutions** in the history of computing discussed in the Unit 2 readings. Your essay should address one of these questions:

- Were educational institutions the most important factor in the history of computing?
- Or, compare the Moore School to DeVry technical college: how were they similar and how were they different?

Essay Topic 1: Required Sources

Your essay must use the McIlwain (2020) chapter and at least one chapter out of Campbell-Kelly et al. (2014) chapters 4 and 5.



Note: in the McIlwain reading, paragraphs set entirely in *italic type* are quotes.

Essay Topic 1: Schools and Education

Each essay topic has three parts:

1. Historical background
2. Core essay instruction
3. Required sources



Essay Topic 2: Connect to Civil Rights

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Historical Background

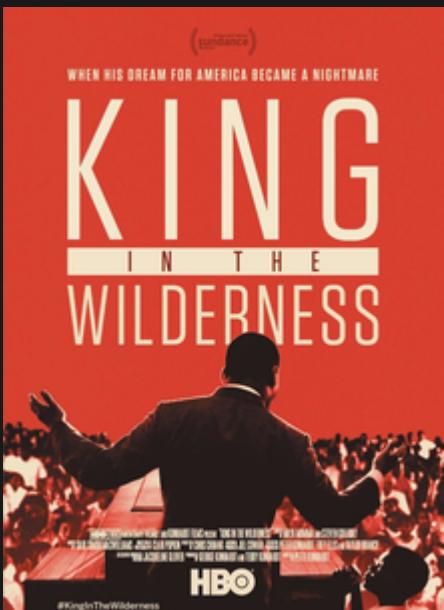


William Murrell, engineer and entrepreneur
(1990).



An unknown woman builds core memory in the late 1960s, from a Raytheon Apollo 11 Press Kit.
(Shorey and Rosner, 2019)

Historical Background: Civil Rights

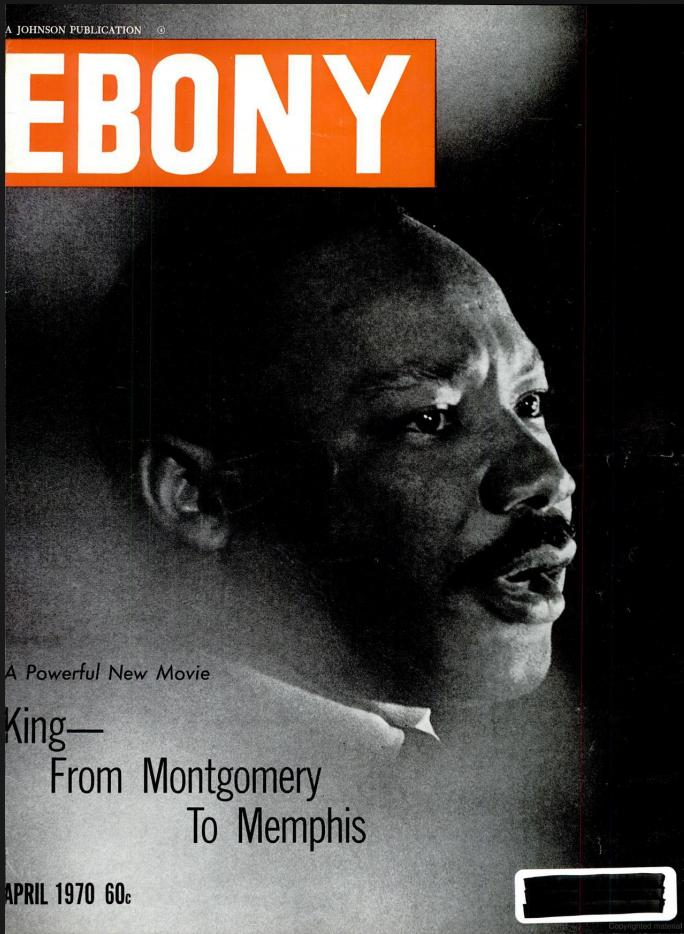


<https://ezproxy.library.dal.ca/login?url=https://fod-infobase-com.ezproxy.library.dal.ca/PortalPlaylists.aspx?wID=106275&xtid=148962>

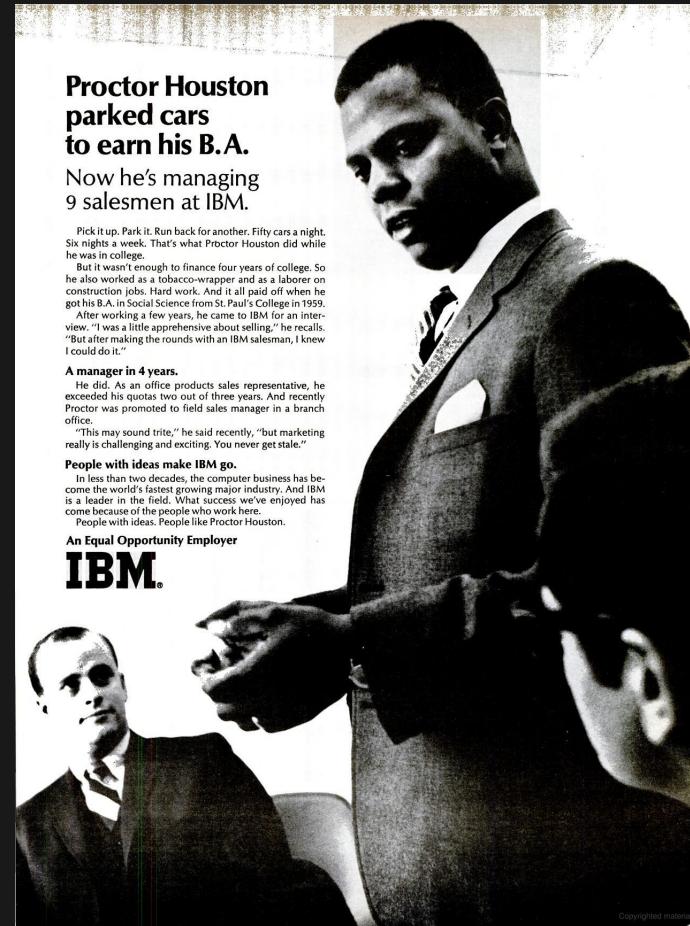
The US Civil Rights Movement

- Struggle for social justice by and for African Americans (mostly 1950s and 60s)
- Laws: Civil Rights Acts: 1957, 1960, **1964 (employment)**, 1968 (housing), Voting Rights Act 1965. 24th Amendment to US Constitution
- Court decisions: Brown v Board of Education (1954), Loving v Virginia (1967)
- Overview: [Wikipedia](#)

Historical Background



The December 1970 cover of Ebony Magazine showing Civil Rights leader Dr. Martin Luther King, Jr., who was assassinated in 1968.



IBM Equal Opportunity Employer recruitment ad from Ebony Magazine, Dec 1970

Historical Background



William Murrell, engineer and entrepreneur
(1990).



An unknown woman builds core memory in the late 1960s, from a Raytheon Apollo 11 Press Kit.
(Shorey and Rosner, 2019)

Essay Topic 2: Core Instruction

In an essay of between 675 and 825 words, compare Murrell's story and IBM history to a contemporary (twenty-first century) story about Black, Indigenous, or People of Colour experience working for a tech company. Assess what has changed from Murrell's time at IBM to today, and what has remained the same.

When you assess a historical change, you evaluate it, or judge its quality: is it all different? mostly different? half way? mostly new? all new?

Essay Topic 2: Required Sources

This question is about the past *and* it is about the present. In your essay, **use material from McIlwain (2020)** to provide data about the Civil Rights Era. Optionally, listen to an [interview with McIlwain](#).

To provide data about BIPOC at a contemporary tech company, find one article about them.

The article must follow the guidelines in the syllabus. It must: be in English; be available to the teaching team; and be published in 2020 in a reputable publication (newspaper, magazine, broadcaster, try searching the Dal library for online access, [for example](#)). Each student writing this essay should find their own article.

Essay Topic 2: Connect to Civil Rights



Each essay topic has three parts:

1. Historical background
2. Core essay instruction
3. Required sources

Essay Topic 3: Connect to Entrepreneurs

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Essay Topics

Each essay topic has three parts:

1. Historical background
2. Core essay instruction
3. Required sources

Historical Background



Eckert-Mauchly Computer Corp. Engineering Group - 1949. Row 1: Fran Morello, Bob Shaw, Pres Eckert, Brad Sheppard, Frazer Welsh, John Mauchly, Jim Weiner, Al Auerbach, Betty Snyder; Row 2: John Sims, Marv Jacoby, Paul Winsor, Gerry Smoliar, Art Gehring, Betty Jay, Ed Blumenthal, Bob Mock, Jean Bartik, Herman Lukoff, Bernie Gordon, Ned Schreiner; Row 3: George Gingrich, Marv Gottlieb, Lou Wilson, Doug Wendell, Charlie Michaels, Ben Stad, Si Levitt, Larry Jones.

ECKERT-MAUCHLY COMPUTER CORPORATION

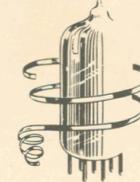
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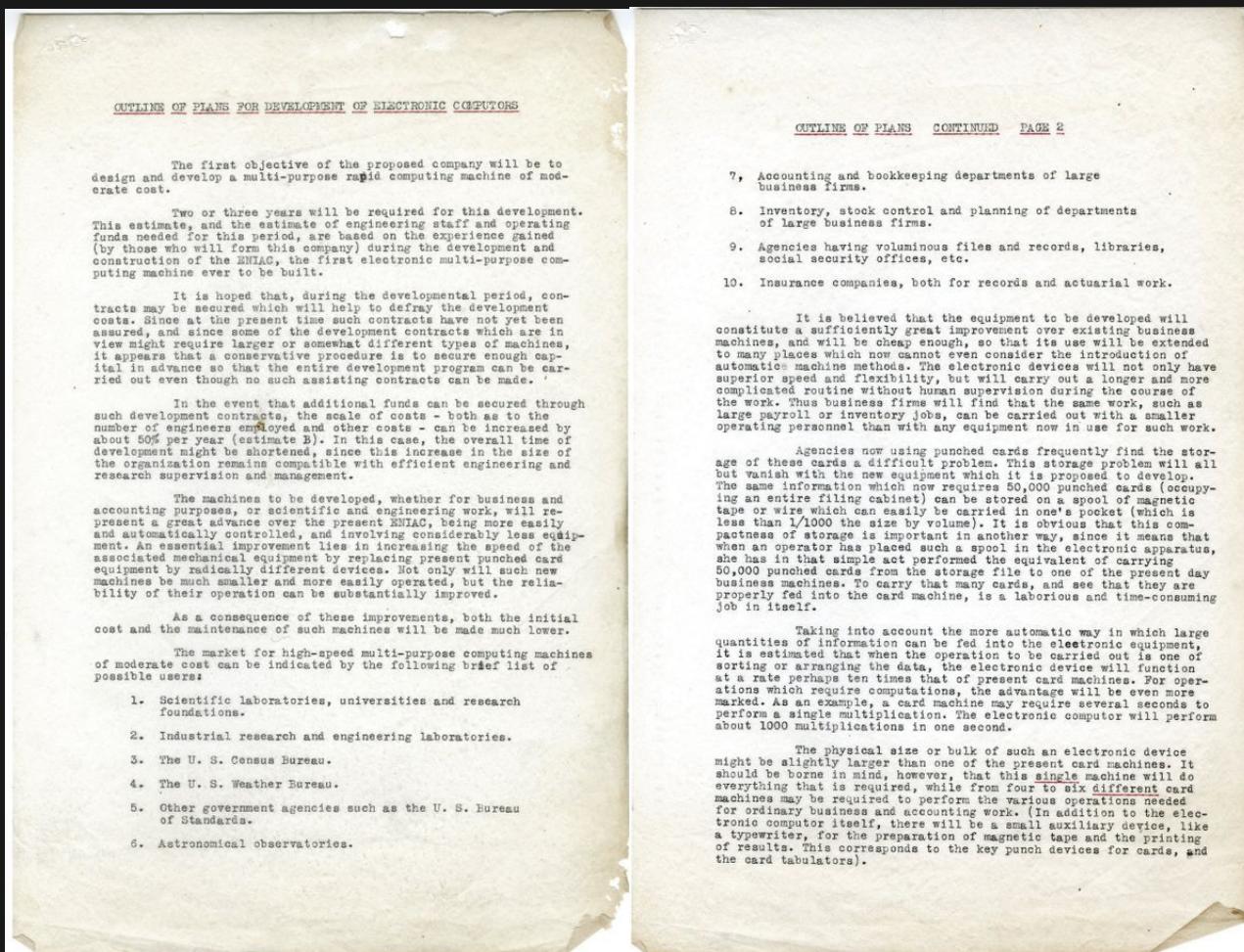


The
BINAC*

Binary Computer for
Engineering and
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"Eckert-Mauchly Computer Corp. Engineering Group - 1949. Row 1: Fran Morello, Bob Shaw, Pres Eckert, Brad Sheppard, Frazer Welsh, John Mauchly, Jim Weiner, Al Auerbach, Betty Snyder; Row 2: John Sims, Marv Jacoby, Paul Winsor, Gerry Smoliar, Art Gehring, Betty Jay, Ed Blumenthal, Bob Mock, Jean Bartik, Herman Lukoff, Bernie Gordon, Ned Schreiner; row 3: George Gingrich, Marv Gottlieb, Lou Wilson, Doug Wendell, Charlie Michaels, Ben Stad, Si Levitt, Larry Jones." (CHM).

Historical Background



Initial Eckert-Mauchly Computer Corporation Business Plan, 1946 (CHM)

Essay Topic 3: Core Instruction

In an essay of between 675 and 825 words, compare Eckert and Mauchly's history to a contemporary (twenty-first century) story about tech entrepreneurs. **Assess the degree to which Eckert and Mauchly's history is the same or different to a contemporary case.**

Consider at least one of the following aspects of their story:

- Their relationship to the government and the military;
- Their relationship to academics and researchers; or
- Their relationship to established companies, like IBM or Remington Rand.

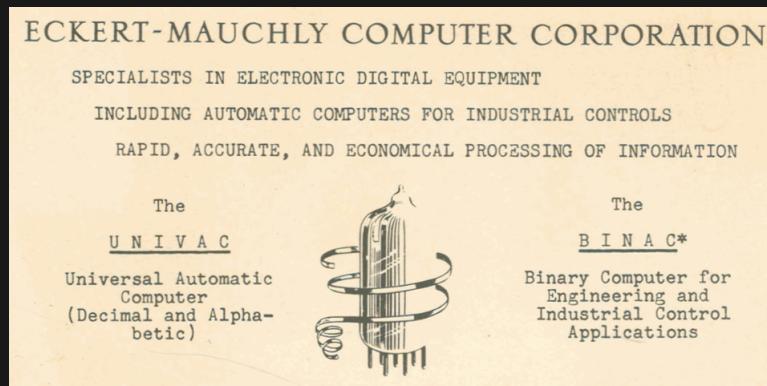
Essay Topic 3: Required Sources

This question is about the past *and* it is about the present. Your essay **must** use at least one chapter out of the Campbell-Kelly et al. (2014) chapters 4 and 5.

To provide data about an entrepreneur (or entrepreneurs) at a contemporary tech company, find one article about them.

The article must follow the guidelines in the syllabus. It must: be in English; be available to the teaching team; and be published in 2020 in a reputable publication (newspaper, magazine, broadcaster, try searching the Dal library for online access, for example). Each student writing this essay should find their own article.

Essay Topic 3: Connect to Entrepreneurs



Each essay topic has three parts:

1. Historical background
2. Core essay instruction
3. Required sources

Thank you for watching!

Dr. Aaron Sidney Wright

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