COMP5531
January 2024

Class Notes by Bipin. C. Desai

Pl. see: https://users.encs.concordia.ca/~bcdesai/CopyForward.pdf

Co:ordinates

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Any email message sent to me, from a 'free' email service or a 'smart' device, will be deleted by my email filter and hence would never be read much less replied..

Usual Grading Scheme

Assignments: 4-5:   10%

On-line Quiz: 23   60%

Projects: 1-2   30%

There will be a short quiz towards the end of **each** lecture.
You would have to log-into CrsMgr and
click on the quiz link to start the on-line quiz

Schedule

COMP 5531-NN(class) - Wed. 5:45PM- 8:15PM -H501SGW
COMP 5531-NNNI (Lab) - Wed. 3:15PM- 5:05PM - H831SGW
COMP 5531-NNNJ (Lab) - Wed 8:30PM-10:20PM -H827 SGW

Facebook Expects to Be Fined Up to $5 Billion by F.T.C.

https://www.nytimes.com/2019/04/24/technology/facebook-ftc-fine-privacy.html

Facebook fined for data breaches in Cambridge Analytica

www.theguardian.com/technology/2018/jul/11/facebook-fined-for-data-breaches-in-cambridge-analytica-scandal

Google hit with £44m GDPR fine over ads

https://www.bbc.com/news/technology-46944696

Google fined record €2.4bn by EU over search engine results

https://www.theguardian.com/business/2017/jun/27/google-braces-for-record-breaking-1bn-fine-from-eu

Google Fined Record $5 Billion by EU, 90 Days to Stop 'Illegal Practices'

https://www.bloomberg.com/news/articles/2018-07-17/
google-said-to-have-11th-hour-call-with-eu-ahead-of-android-fine

Google va payer plus de 150 millions de dollars - données des enfants

https://ici.radio-canada.ca/nouvelle/1282501/
Google-youtube-protection-donnees-enfants

High Tech Extortion Racket

Harpers Magazine, September 2020

Meta offers Canadian Facebook users $51M to settle lawsuit in 4 provinces

Legal action started in **2012** - Debbie Douez sues Facebook for using her photo in an advertisement.

Twitter Sues Nonprofit That Tracks Hate Speech

Center for Countering Digital Hate said it had received a letter accusing it of trying to hurt the social platform with its research

OSN and

Group work

Form group: of 4

Assignment 0: Must be done before end of week 1 : Max marks 0.5

Form a group and register in CrsMgr:

Change email address to ENCS account

Choose a leader or vote for one.

<u>Choice (1):</u> Form your group by uploading a file that contains the student information of your group members. Choose a group leader

If you intend to lock you group right after your group is created, this is the right choice. Other students are unable to join your group unless it is unlocked by one of the group members.

<u>Choice (2):</u> Join one of the existing course groups that are not full and not locked!

Vote for group leader

FORMING A GROUP (OFF-LINE) AND UPLOADING THE GROUP INFORMATION

Write the student information of your members in a text file according to the following format: (the information for the group leader must be put in the first line):

Student id of the Group Leader

Student id of 2nd Group Member

...

Student id of the last Group Member

When the file is uploaded, you would be shown your group and are required to confirm it.

Example of what happens if YOU do not enter a peer evaluation

Title	Weight	Max Mark	Due Date	Work Type
PRJ	40.00	100.00	Aug-18-2009(Tuesday)	Group Work

Late submission penalty rate: 33%/day

Submission date: Aug-19-2009(Wednesday)

Days late: 1 days

Late penalty (max_mark * days_late * late_submission_penalty_rate): 33.00

Marker's mark: 82.00

Final mark (marker_mark - late_penalty): 49.00

Final weight: 0.00

You did not participate in the peer review and get '0' weight for all your group works!

Marker's Notes:

Group 2

Name Status

Done

What happens if YOU enter an "illegal" peer evaluation

The range of peer evaluation is between 0 1nd 100 and can be done for a marked entity as soon as it is posted

Deadline for the peer evaluation is within one day of
the marked entity's due date

The range of peer evaluation is between 0 to 100

Any value outside this 'honorable' range would is a
violation of this rule

ALL peer evaluations, for the marked entity, submitted
outside the legal range are deleted and
the person making even a single such non-honorable
mark is considered NOT to have done that peer
evaluation

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Objectives

- Concepts and use data models(E-R, RDM, unstructured)

- Intro. To the Relational database management systems (RDBMS)

- Query languages (Relational Algebra & Calculus, SQL)

- Concepts of checks, assertions, and triggers.

- Database design and web-programming including: HTML, Javascript, PhP – design/implementation of a real application.

The extent to which you would master these depends entirely on **you**:
A conductor does not play any instrument, nor does the coach play on the ice/field.

A medal (any colour) needs lots of training –before the event!

Counting & calculating

Data base

Data ba$$$$$e

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Data

Where does data come from?

Records of status
Operation of organizations
Data + action $\rightarrow$ more data

What to record
   Legal and traditional commitments
   cost of recording and preserving the records

Data + Algorithm $\rightarrow$ Programs +++

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Computers

Jacquard machine - 1804
Textile weaving machine
  Pattern controlled by punched cards (first input device)

Charles Babbage:
Difference Engine – 1832
Analytical Engine - no funds
      Processor, storage, input device, output device
      Partially completed in 1910
      Fully programmable
First programmer: Lady Lovelace -Ada (daughter of Byron- the poet)
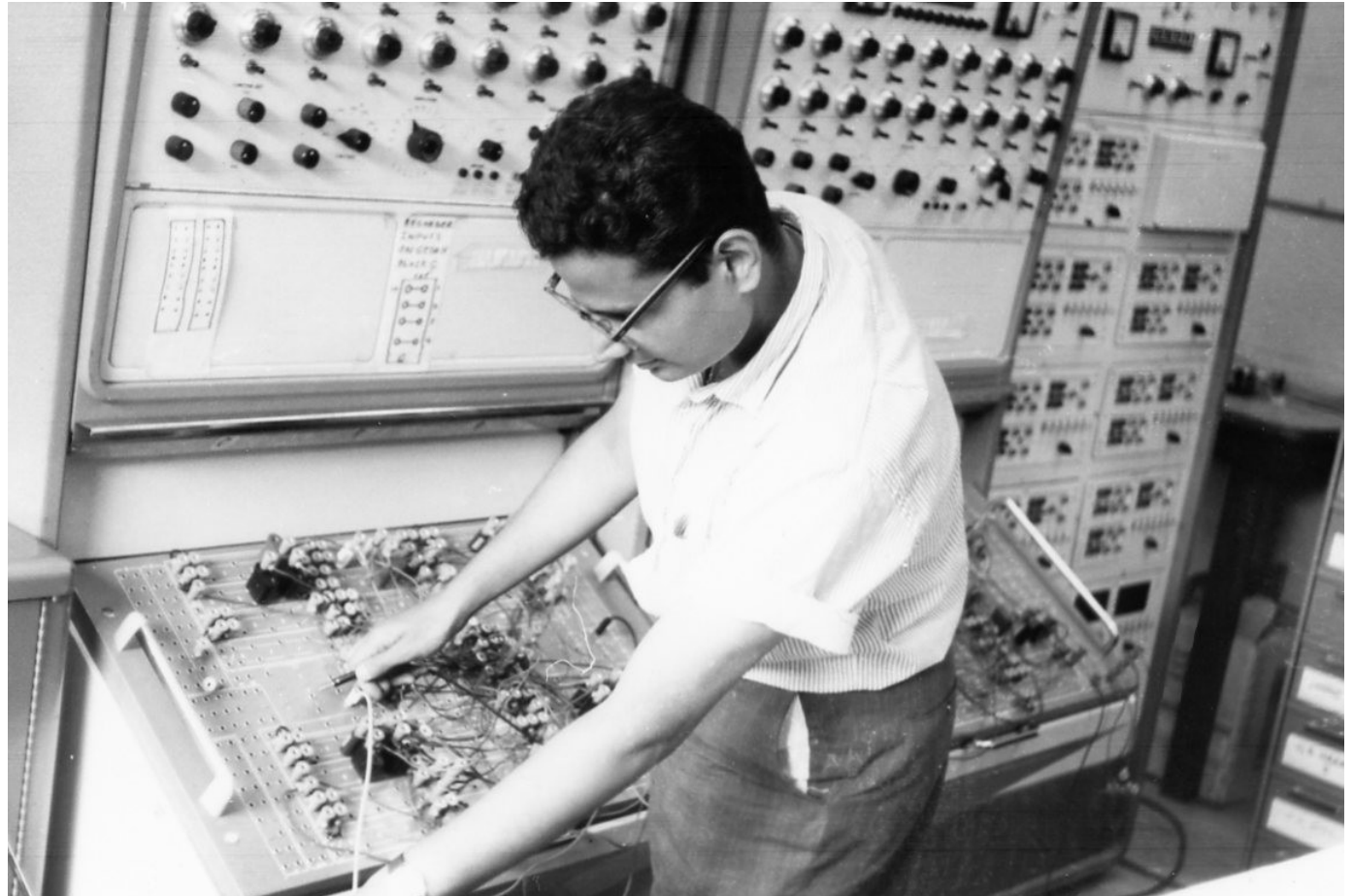
US Census-
 Hollerith and the tabulating machine – used punched cards
1911 -Computing-Tabulating-Recording Company ▶ IBM

Computers

1930 Vennevar Bush ► an analog computer ►Differential Analyzer

Programming an
analog computer

Computers

1934 James Hilton wrote GoodBye Mr. Chips in 4 days-£50 a royalty!

1939-1843 Howard Aiken and IBM
  ► Mark I (mechanical) Mark IV (vacuum tube)
1939 Atanasoff/Berry   Iowa State
1943 Digital computer- Colossus (UK)
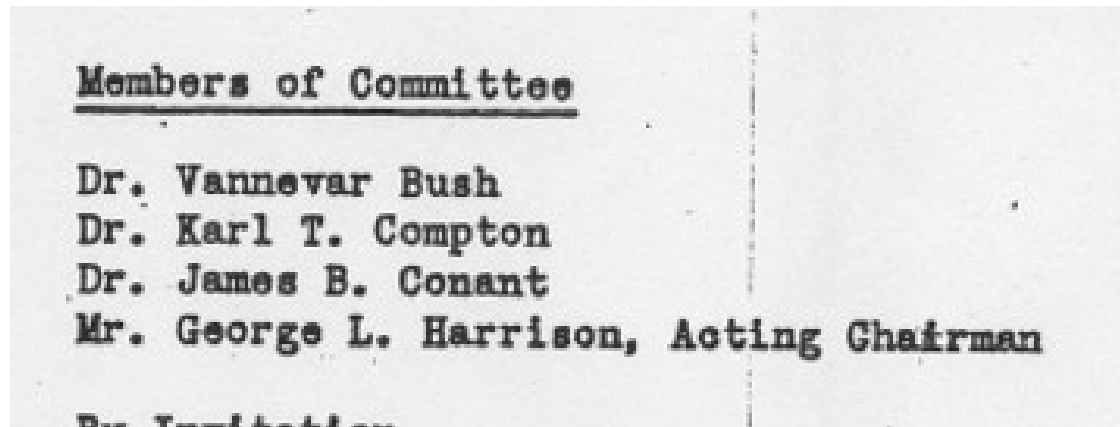1945 Eniac (USA)
1949 Manchester Mark I

https://www.britannica.com/technology/computer/The-first-computer

1945

Feb. 4-11 Yalta conference: Decide Europe's re-organization

April 30 Hitler commits suicide

May 8 Armistice day

March-July: Interim committee for the deployment of the Atomic bomb,

Members of Committee

Dr. Vannevar Bush
Dr. Karl T. Compton
Dr. James B. Conant
Mr. George L. Harrison, Acting Chairman

July: Final report of the interim cmt.   & a press statement on dropping the
        bomb(s)

July: Publication(The Atlantic, July, 1945) of *As We May Think*
        by VANNEVAR BUSH concept of linked documents

https://www.theatlantic.com/magazine/archive/1945/07/as-we-may-think/303881/

 August: Most of the Japanese forces have been defeated
      August 6 US drops atomic bomb on Hiroshima
      August 9 US drops atomic bomb on Nagasaki

Late 1940s
End of colonization, and new ones?
 https://en.wikipedia.org/wiki/Decolonisation_of_Asia - /Nakba
1950s
Development of the digital computers
1960
Concept of wide area network, ARPANET, packet transmission
Early databases
1970s
TCP/IP protocol, Relational Databases, SQL – IBM a late R-DBMS starter
Time sharing, multi-tasking. IBM and the effective end of Usain anti-monopoly law applications. Birth of PC and DOS -drop-out kid wonder!
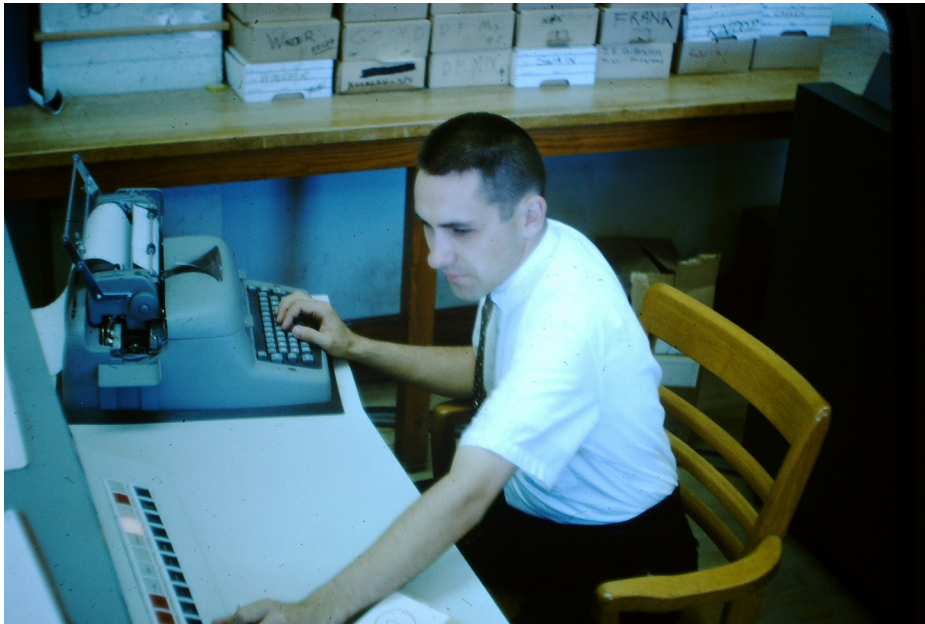1980s
Commercialization of the internet, ISPs,
    Hypertext, HTML, HTTP, OODB
1990s
Web browsers, search engines, massive data collection, tracking
21st Century
NoSQL, OSN, more drop-out billionaires, AI, LLM, Internet colonization
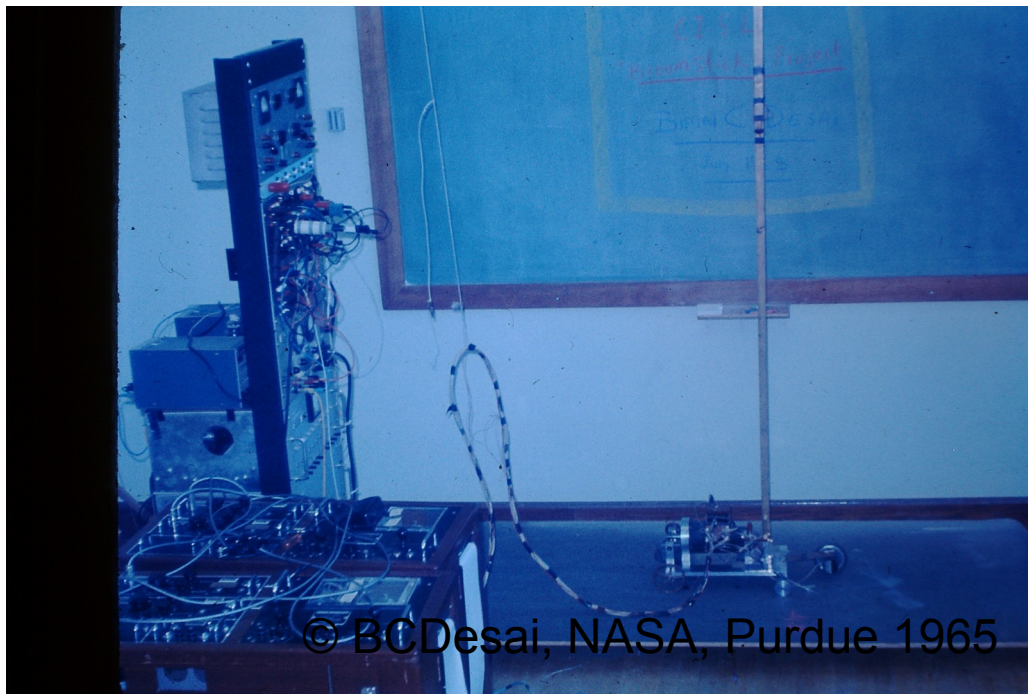
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Allan Gondeck on an IBM1620 1964

https://en.wikipedia.org/wiki/IBM_729

IBM 026 keypunches, IBM 1403 line printer and IBM 729 tape drives
https://commons.wikimedia.org/w/index.php?curid=17267381

IBM 7090 computer
https://commons.wikimedia.org/w/index.php?curid=2878809
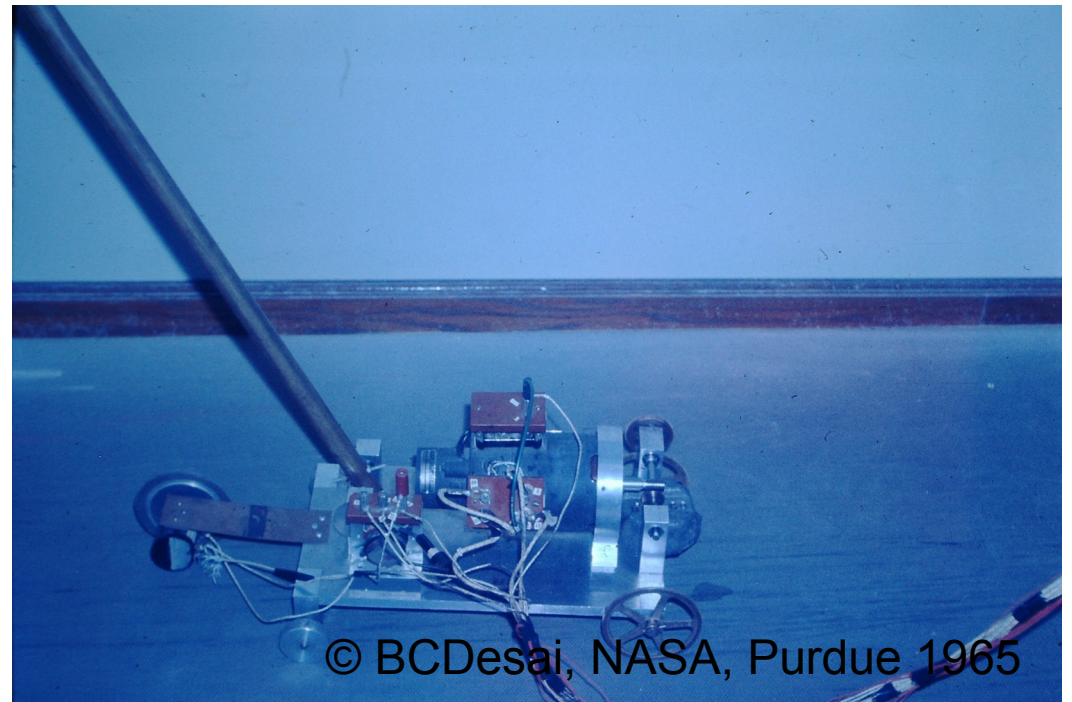
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Modelling:

Represent (approximate)
   -physical thing,
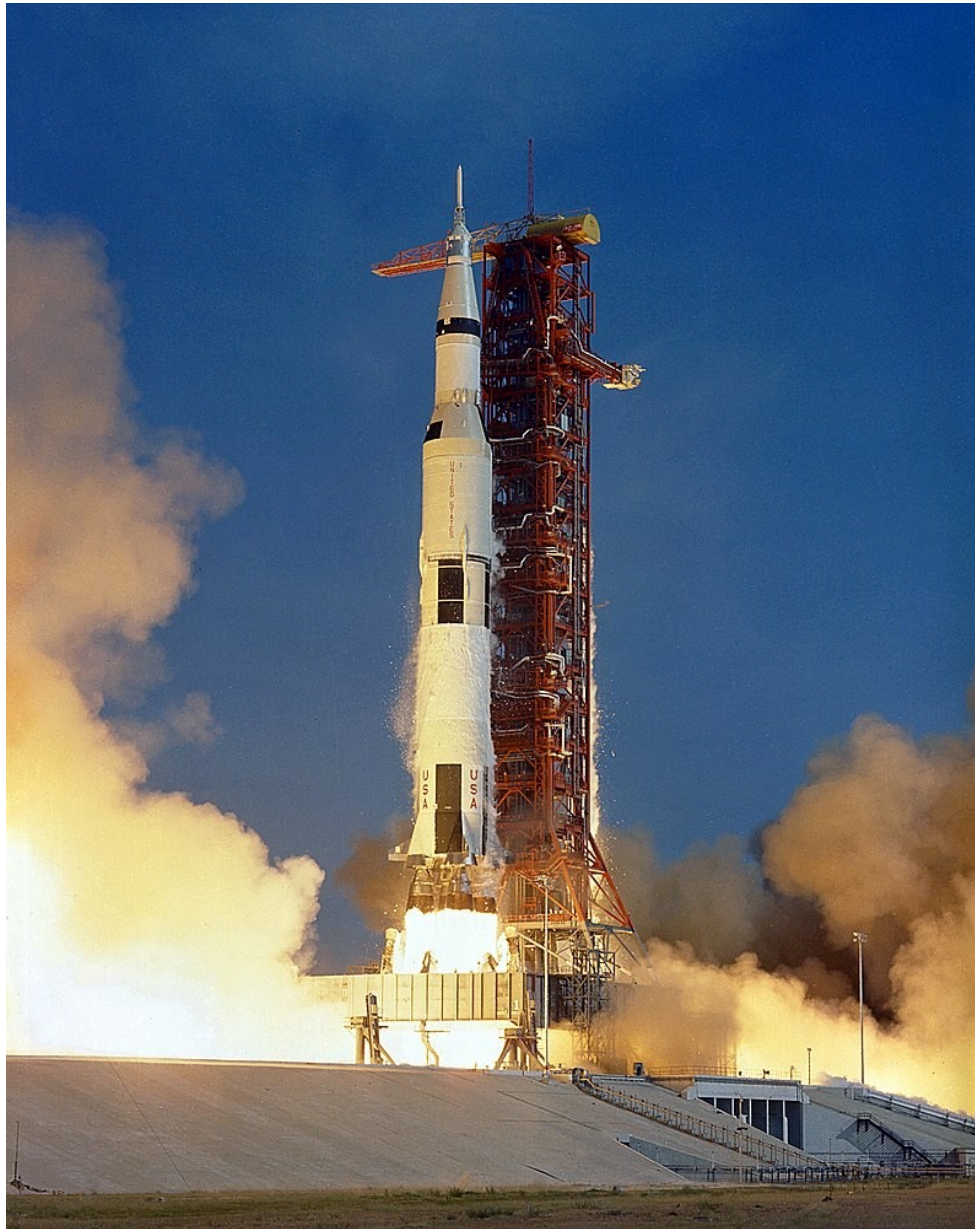   -conceptual thing

Broomstick stability control

Application:
Stability of rockets such
  as: Saturn V

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Saturn V - The Real thing – 1969

wikimedia.org/w/index.php?curid=6448924

Data deluge and exploitation: The Beginning!

Børre Ludvigsen, Dr. Bipin Desai; Dr. Yuri Rubinsky

http://www94.web.cern.ch/WWW94/Images/ClosingPanel/Closingpanel1.html

Constantine the Great
https://www.flickr.com/photos/yorkminster/5390106900/

Virtual empire built on data

https://www.economist.com/leaders/2016/04/09/imperial-ambitions