school
of advanced
studies

школа
перспективных
исследований

The Digital Revolution and the Hackers Culture.

Elective course
3rd module (Feb-Mar) 2019

Fabio Grazioso

Lecture 3/4

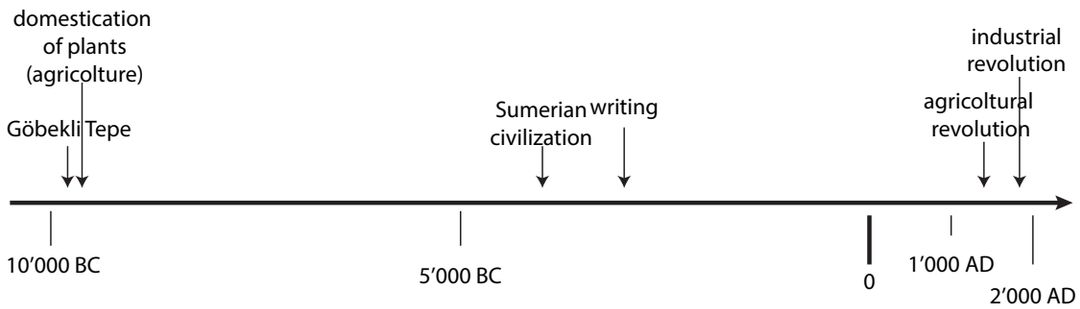
summary

- Historic timeline of relevant events
- Some reflections upon Digital Technology and Culture
- Something about the concept of hacking

I think that I will develop in parallel those themes all along the course

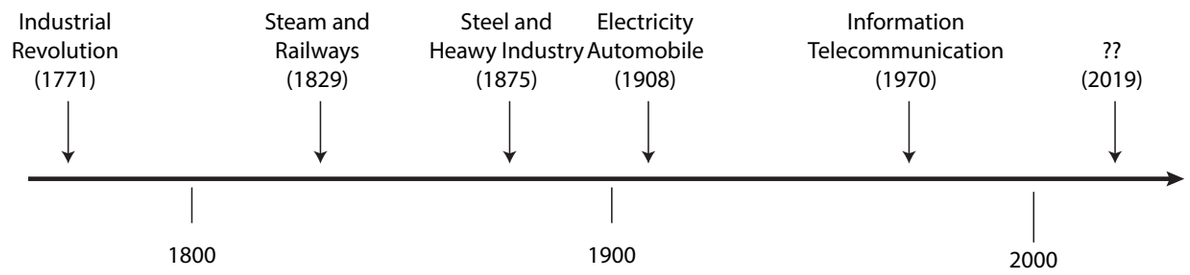
Historic perspective

History timeline



Recent History timeline

Kondratiev cycles



Kondratiev cycles

The theory that historical changes occur in cycles of roughly 50 years.
Prosperity - Recession - Depression - Improvement

some relevant events

Relevant events

- 1969 DARPA starts to work on data transmission technologies

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- 1970 the UNIX operating system is written

the 1970 is the year when it became a project on it own. The work started earlier, at **Bell Labs**.
It was a project with **MIT** and **General Electric** to develop a time-sharing system, called Multiplexed Information and Computing Service (**Multics**), allowing multiple users to access a mainframe simultaneously. Dissatisfied with the project's progress, Bell Labs management ultimately withdrew.
Bell Labs researchers started to develop their own project, with a team led by Thompson and Ritchie, with the concepts of **computer processes** and device files, a **command-line interpreter**, and some small utility programs. The resulting system, much smaller than the envisioned Multics system, was to become Unix.

Relevant events

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- 1970 the UNIX operating system is written
- 1975 Microsoft is founded

In 1975 Microsoft was founded 1975, by **Bill Gates** and **Paul Allen** in Albuquerque, New Mexico.

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Taito corp., (Japan) releases the first blockbuster **arcade video game**

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War Games (1983)

you will see a scene of a character playing a videogame in one of the movies in our list

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- 1979 Walkman

In 1979 Sony released a portable cassette player that changed listening habits by allowing people to listen to music on the move.

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- 1978 Space Invaders (videogame)
- 1979 Walkman
- 1981 MS/DOS operating system

Motorola was the first company to produce a handheld mobile phone. A full charge took roughly 10 hours, and it offered 30 minutes of talk time. It was priced at $3,995 in 1984, its commercial release year, equivalent to $9,634 in 2018.

Relevant events

- 1981 3 1/2 floppy disk

Before that: 8-inch, 5 1⁄4-inch (full height), and 3 1⁄2-inch drives

Relevant events

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Motorola DynaTAC 8000x

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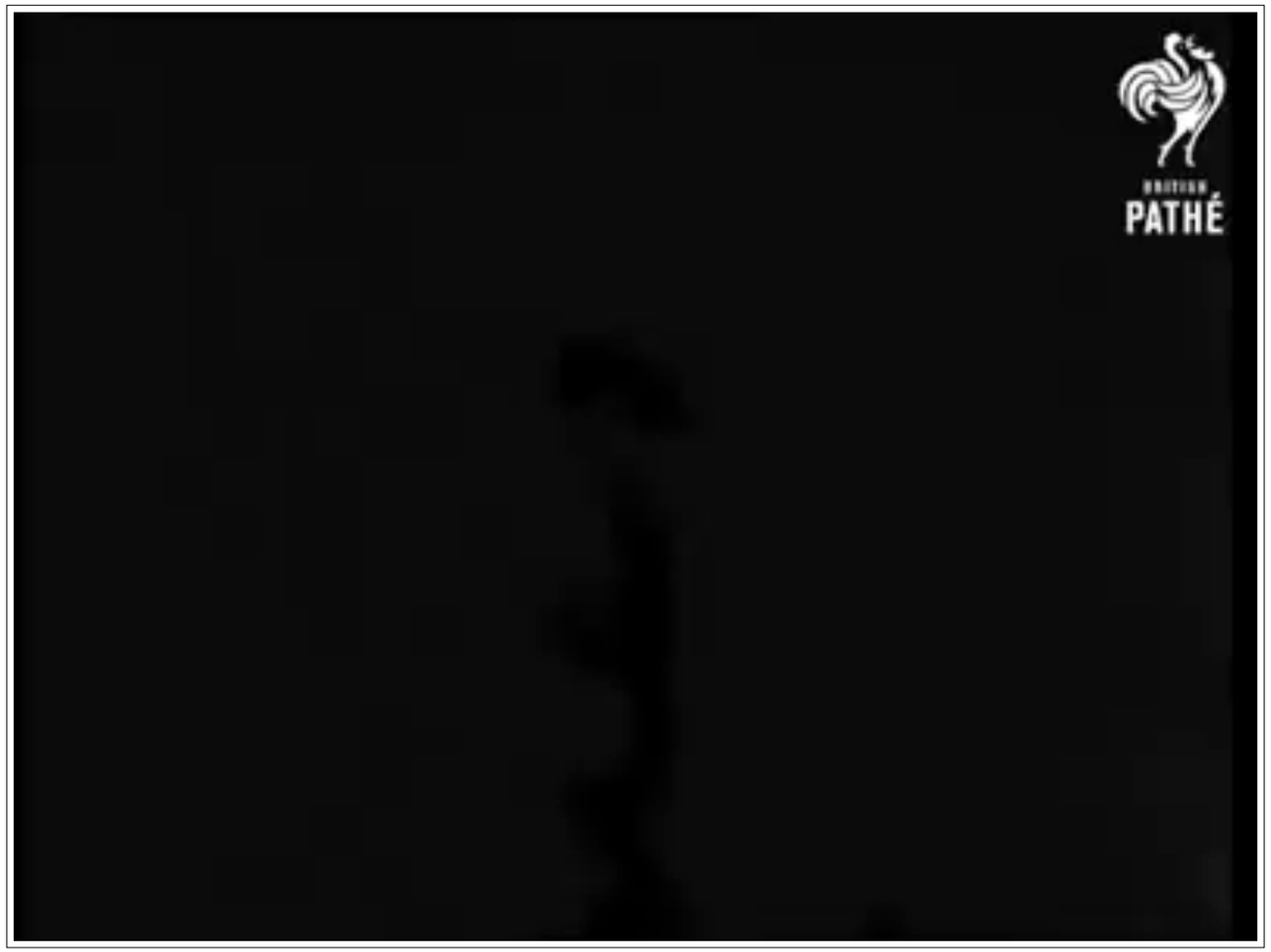

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- 1989 World Wide Web (hypertext HTML language)

```
<!DOCTYPE html>
<html>
    <head>
        <title>Example<title>
        <link rel="stylesheet" href="sty
    </head>
    <body>
        <h1>
            <a href="/">Header</a>
        </h1>
        <nav>
            <a href="one/">One</a>
            <a href="two/">Two</a>
            <a href="three/">Three</a>
        </nav>
```

In March 1989 Berners-Lee issued a proposal to the management at CERN for a system called "Mesh" that referenced ENQUIRE, a database and software project he had built in 1980, which used the term "web" and described a more elaborate information management system based on **links** embedded in readable text: "Imagine, then, the references in this document all being associated with the network address of the thing to which they referred, so that while reading this document you could skip to them with a click of the mouse." Such a system, he explained, could be referred to using one of the existing meanings of the word **hypertext**, a term that he says was coined in the 1950s. There is no reason, the proposal continues, why such hypertext links could not encompass multimedia documents including graphics, speech and video, so that Berners-Lee goes on to use the term hypermedia.

Relevant events

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- 1991 Linux (Linus Torvalds)

Linus Torvalds is a Finnish-American software engineer who is the creator, and for a long time, principal developer of the Linux kernel, which became the kernel for operating systems such as the Linux operating systems, Android, and Chrome OS.
He started reading the book of professor Andrew Tanenbaum's “Operating Systems: Design and Implementation”, in which Tanenbaum describes MINIX, a version of Unix.
Torvalds then started to create his own operative system: his M.Sc. thesis was titled “Linux: A Portable Operating System”.

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- 1989 World Wide Web (hypertext HTML language)
- 1990 Web Browser
- 1991 Linux (Linus Torvalds)
- 1993 Windows 3.1

Relevant events

- 1998 Google

Julian Assange, “When Google Met WikiLeaks”, OR Books (2016)

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Relevant events

- 1998 Google
- 2001 Wikipedia

Aaron Swartz - Wikimedia at the Crossroads (online essay) (2006)

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Relevant events

- 1998 Google
- 2001 Wikipedia
- 2003 Skype

based on a peer-to-peer technology

Relevant events

- 1998 Google
- 2001 Wikipedia
- 2003 Skype
- 2004 Facebook

where were you when FB was launched? What did you think?

Relevant events

- 1998 Google
- 2001 Wikipedia
- 2003 Skype
- 2004 Facebook
- 2005 16% of world population have access to the internet

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- 2004 Facebook
- 2005 16% of world population have access to the internet
- 2006 iPhone
- 2009 WhatsApp

Relevant events

- 2010 30% of world population have access to the internet

Relevant events

- 2010 30% of world population have access to the internet
- 2015 Windows 10
- 2017 55% of world population have access to the internet

Digital Culture

mostrare il documentario su Cuba

background ideas

- Information age
  - and its consequences
- from atoms to bits
- from reality to representation of reality
  - (postmodernity)

Some key concepts

- What is **real**? is matter more real than information?
- What is **identity**? what makes “you” really you?
- When we embrace a **new technology**, what we “trade” for it?
  - What are the long-term **consequences**?
  - The advantages are in the interest of who?

Those are questions, **open** questions.
It is crucial to try to answer, but there is no final answer.

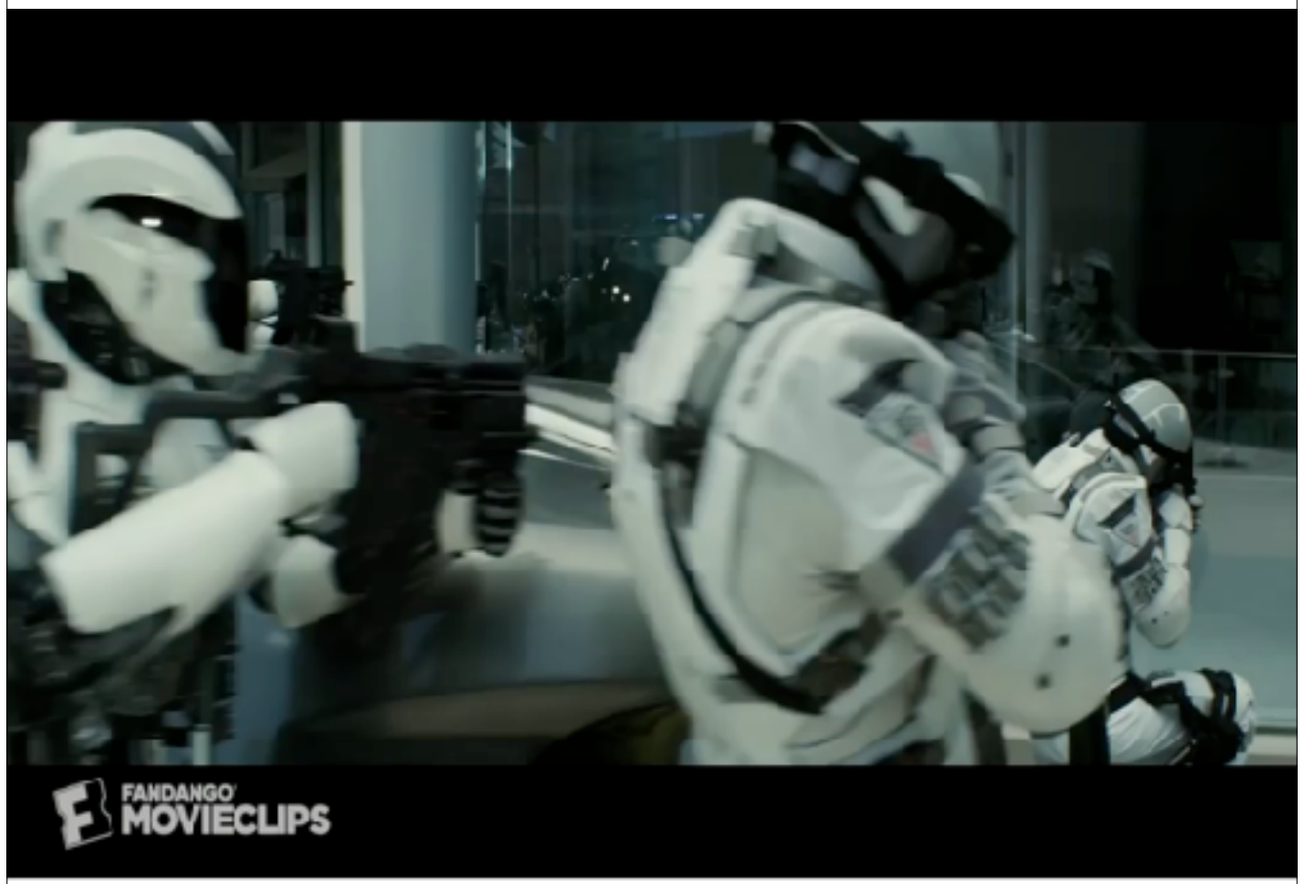
What is reality?

- «Reality is that which, when you stop believing in it, doesn't go away.» - Philiph K. Dick

- examples where he touches upon this concept:
  - "*We Can Remember It for You Wholesale*" (short story) (film adaptation: Total Recall (1990) (2012))
  - "Flow My Tears, the Policeman Said" (novel) (1974)

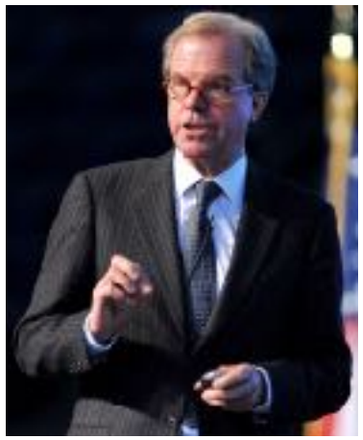
plot synopses from wikipedia:

"**We Can Remember It for You Wholesale**"
Douglas Quail works a menial office job in the "not too distant future." His biggest dream has always been to visit Mars, but is constantly dissuaded by his wife, who is annoyed by this fantasy. Quail eventually discovers Rekal Incorporated, a company specializing in memory implants and supporting artifacts, and decides to get some to satisfy his dream. Quail also fantasized about being a government agent and pays extra to have this added. To the shock of the Rekal technicians, Quail's memories reveal that he really is a secret agent who has been to Mars. Suddenly undergoing a personality change, Quail berates the technicians for blowing his cover.
The Rekal representative, McClane, refunds half of Quail's money and sends him home. Quail decides that his new memories are fake and that the staff just simply botched their job, and manages to get a full refund. He returns home still believing the memories are fake, but discovers a box of fauna smuggled from Mars in his desk. He confronts his wife about whether or not he has actually been to Mars, and she angrily leaves him. Two armed men suddenly enter and reveal that Quail has a telepathic transmitter in his head that allows them to read his thoughts. They then have a conversation that is both verbal and mental which leads to Quail suddenly remembering why he had his memories erased: Quail wasn't just a secret agent, he was an assassin who fought through several bodyguards on Mars and killed a political opponent for Earth's government.
With his memories returned, the armed men appeal to Quail to surrender, but Quail, with his abilities awakened as well, fights them, but flees, threatening to kill them should they follow. Wondering what to do, Quail's former commanders suddenly speak to him through the telepathic transmitter. Quail suggests going through another mind-wipe, but his commanders state that he will just get bored with his life and go to Rekal again or try to go to Mars. Quail comes up with another idea, to remove his current memory of being an assassin and implant a new and amazing memory of something exciting. His commanders agree, feeling that it is their obligation to help their former assassin.
Quail turns himself in and is placed with a psychiatrist to figure out what his own personal desires are: When he was young, Quail always envisioned that as a child he came across minuscule aliens that were going to launch a full invasion of Earth with their superior technology. However, Quail was so kind and accepting to the aliens


FANDANGO
MOVIECLIPS

Atoms and bits

- Nicholas Negroponte (architect) founder and chairman Emeritus of MIT Media Lab.
- Also founded the One Laptop per Child Association (OLPC)
- In 1992 first investor **Wired Magazine**. From 1993 to 1998 had a monthly column in the magazine. Basic theme: "**Move bits, not atoms**."
- Bestselling book **Being Digital** (1995).
  - forecasts on how the interactive world, the entertainment world and the information world would eventually merge.
  - belief that computers would make life better for everyone.
- Critics: failing to consider the historical, political and cultural realities with which new technologies should be viewed.
- Predicted wireless technologies.



Working The Edge
Nicholas Negroponte
Chairman Emeritus
MIT Media Lab
VIDEO PROVIDED BY UNIVERSITY OF PHOENIX LECTURE SERIES

Programmer Richard Stallman's 25-year crusade to banish proprietary software from planet Earth hasn't had many victories. Most recently, One Laptop Per Child stabbed RMS in the face by replacing its Stallman-approved freeware with a Windows operating system. OLPC head Nicholas Negroponte, who originally backed a free-software configuration, believes it's a necessary compromise to sell the low-price laptops in a Windows-centric world. Stallman's response compares Negroponte to a drug dealer handing out free samples at the playground.

credit: https://gawker.com GAWKER

Hackers Culture

technology insights

mostrare il documentario su Cuba

A short documentary about “hacking technology” in Cuba.

The Facebook (and social media) practices with links

what happens when we share a facebook (and other social media) hyperlink?

The Facebook (and social media) practices with links

https://www.facebook.com/photo.php?fbid=10211539583798623&set=a.1026541677213&type=3&eid=ARCaTcHvZc9vYwS8a-9f4vJWKjetUpVOGyL2Hq4a3fsO6_Z-aUxkcsZx-IN44TdPOfWexlwstRDgeNBJ

The Facebook (and social media) practices with links

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The Facebook (and social media) practices with links

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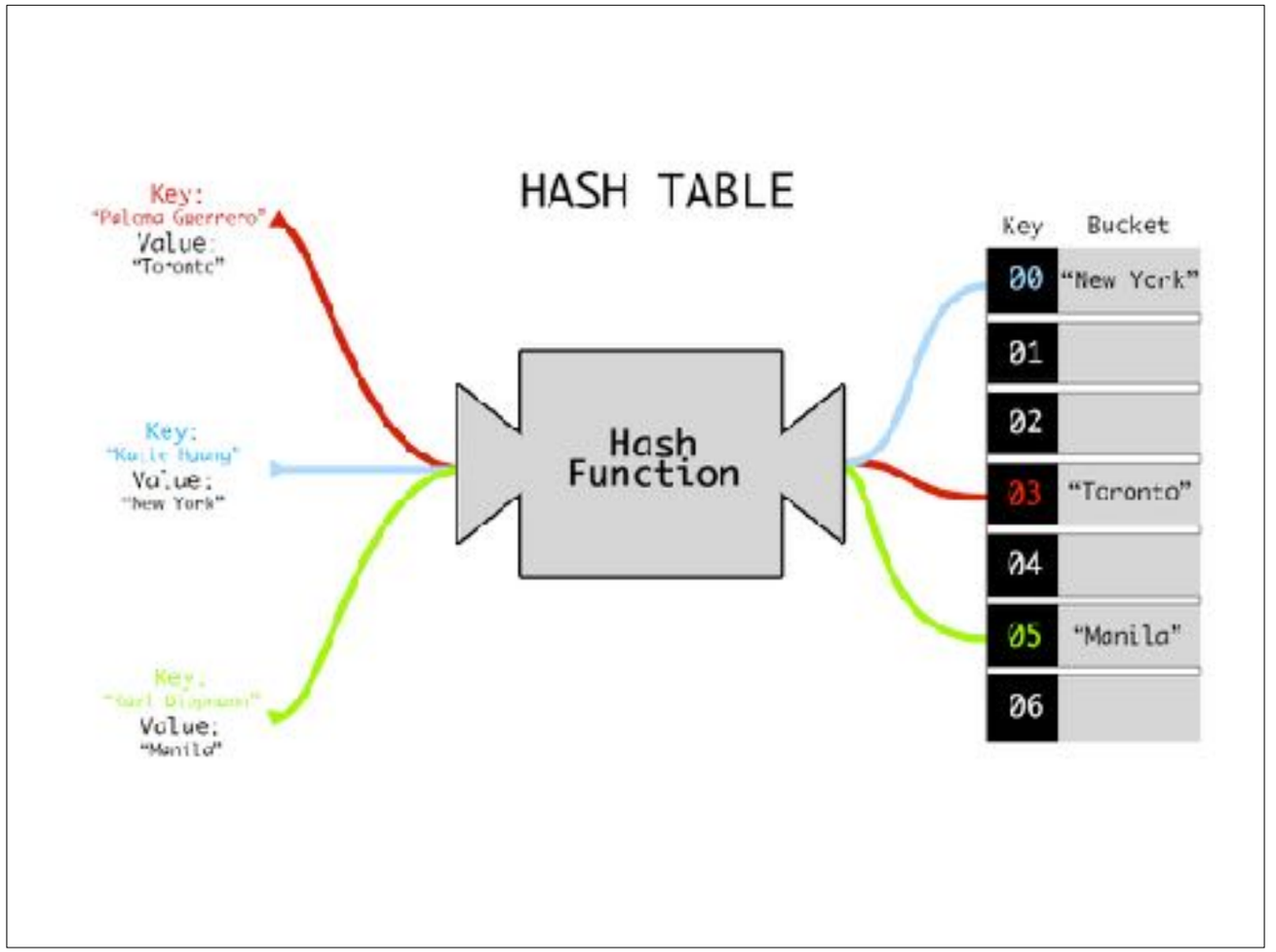

track users habits and other informations

Suggestion for the teamwork

- Conduct an on-line research, and find other instances in P. K. Dick's works, where he develops the ideas of:
  - reality and perception of reality (gnosticism)
  - identity