

Computer Ethics

CHAPTER 3

PRIVACY

PROF. ALAA EL-HALEES

Outline

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Cloud Computing

Mobile Privacy

Definition

Information can be categorized as that which is **public** and that which is **private**.

Public information is assumed to be able to be used without permission.

Private information cannot be legally used without permission from its owner.

Definition

Public Information About You

Full name

Home address

Phone number-

Court judgments against you

Courses you've taken

Private Information About You

Grades in specific courses

Medical records

Salary

Bank account

Telephone bill

Definition



Privacy: “The claim of individuals, groups or institutions to determine for themselves **what** information about them is communicated to others.”

Definition

Example by Joke

Google's pizza

- Hello! Gordon's pizza?
- No sir it's Google's pizza.
- So it's a wrong number? Sorry
- No sir, Google bought it.
- OK. Take my order please
- Well sir, you want the usual?
- The usual? You know me?
- According to our caller ID data sheet, in the last 12 times, you ordered pizza with cheeses, sausage, thick crust.
- OK! This is it ...
- May I suggest to you this time ricotta, arugula with dry tomato.?
- What? I hate vegetables.
- Your cholesterol is not good, sir.

Definition

- How do you know?
- We crossed the number of your fixed line with your name, through the subscribers guide.
- We have the result of your blood tests for the last 7 years.
- Okay, but I do not want this pizza!,I already take medicine ...
- Excuse me, but you have not taken the medicine regularly, from our commercial **database**, 4 months ago, you only purchased a box with 30 cholesterol tablets at Drugsale Network.
- I bought more from another drugstore.
- It's not showing on your credit card statement
- I paid in cash
- But you did not withdraw that much cash according to your bank statement

Definition

- I paid in cash
- But you did not withdraw that much cash according to your bank statement
- I have other source of cash
- This is not showing as per you last Tax form unless you bought them from undeclared income source.
- WHAT THE HELL?
- I'm sorry, sir, we use such information only with the intention of helping you.
- Enough! I'm sick of google, facebook, twitter, WhatsApp. I'm going to an Island without internet, cable TV, where there is no cell phone line and no one to watch me or spy on me
- I understand sir but you need to renew your passport first as it has expired 5 weeks ago

Definition

Example:

Microchipping humans wields great promise, but does it pose greater risk?

Neuralink is a device that will be surgically inserted into the brain using robotics by neurosurgeons. This device can then be used to operate smartphones and computers without having to touch it.

https://www.youtube.com/watch?v=j_ETiO5Fy8Q

Definition

Privacy is not only important to those who have something to hide, that for those with nothing to hide privacy is also is needed.

Because no one has nothing to hide, no one like all people to see his photos, know his credit card number, know his bills ,....etc.

Definition

Today's war on privacy is closely related to the dramatic advances in technology. We've seen in recent years. **Technology ends privacy.**

Video cameras observe personal moments; computers store personal facts; and communications networks make personal information widely available throughout the world.

Although some specialty technology may be used to protect personal information, but the advanced technology do the reverse.

Definition

Technology by itself doesn't violate our privacy or anything else: it's the people using this technology and the policies they carry out that create violations.

Definition

“ Some games is automatically granting permission to read your Gmail, Google Drive data, photos , videos, and full access to all data in the Google account, and access browser and maps histories. And the most important issue, you give him the right to now your location”

Is an example of privacy invasion

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Ethics of Data

Privacy in Data is a fundamental human right recognized in all major international agreements regarding human rights such as Article 12 of the Universal Declaration of Human Rights.

Ethics of Data

The ethics of data privacy are:

1) Data must be obtained for a specified purpose

For example:

A private medical doctor discloses his patient list to his wife, who runs a travel agency, so that she can offer special holiday deals to patients needing recovery. Disclosing the information for this purpose would be incompatible with the purposes for which it was.

Ethics of Data

2) Personal data should also be collected by means.

For example:

Unauthorized access to another person's bank account records or credit card information is an example of unlawful means of collecting personal data.

Ethics of Data

3) Data should be relevant and not go beyond those purposes;

For example:

A University lecturer who is organising a field-trip for his students. He asks them to complete a form on which they have to give various details including their ethnicity and religion without explaining why he needs this personal information.

Ethics of Data

4) Data should be kept up to date;

For example, old data may prevent person from getting a job, a loan or from being able to buy a house.

Ethics of Data

5) Data should be kept for no longer than is necessary for that purpose;

For example:

A bank holds personal data about its customers. This includes details of each customer's address, date of birth and mother's maiden name. The bank uses this information as part of its security procedures. It is appropriate for the bank to retain this data for as long as the customer has an account with the bank.

Ethics of Data

6) Data should be kept safe from unauthorized access, accidental loss or destruction.

For example:

An employee in a company under pressure to get the report finished by the deadline, he decides that he will have to work at home over the weekend in order to finish on time.

He put the information about medical reports onto a flash and takes it home.

After finishing the report he leaves the flash at home and forgets about it.

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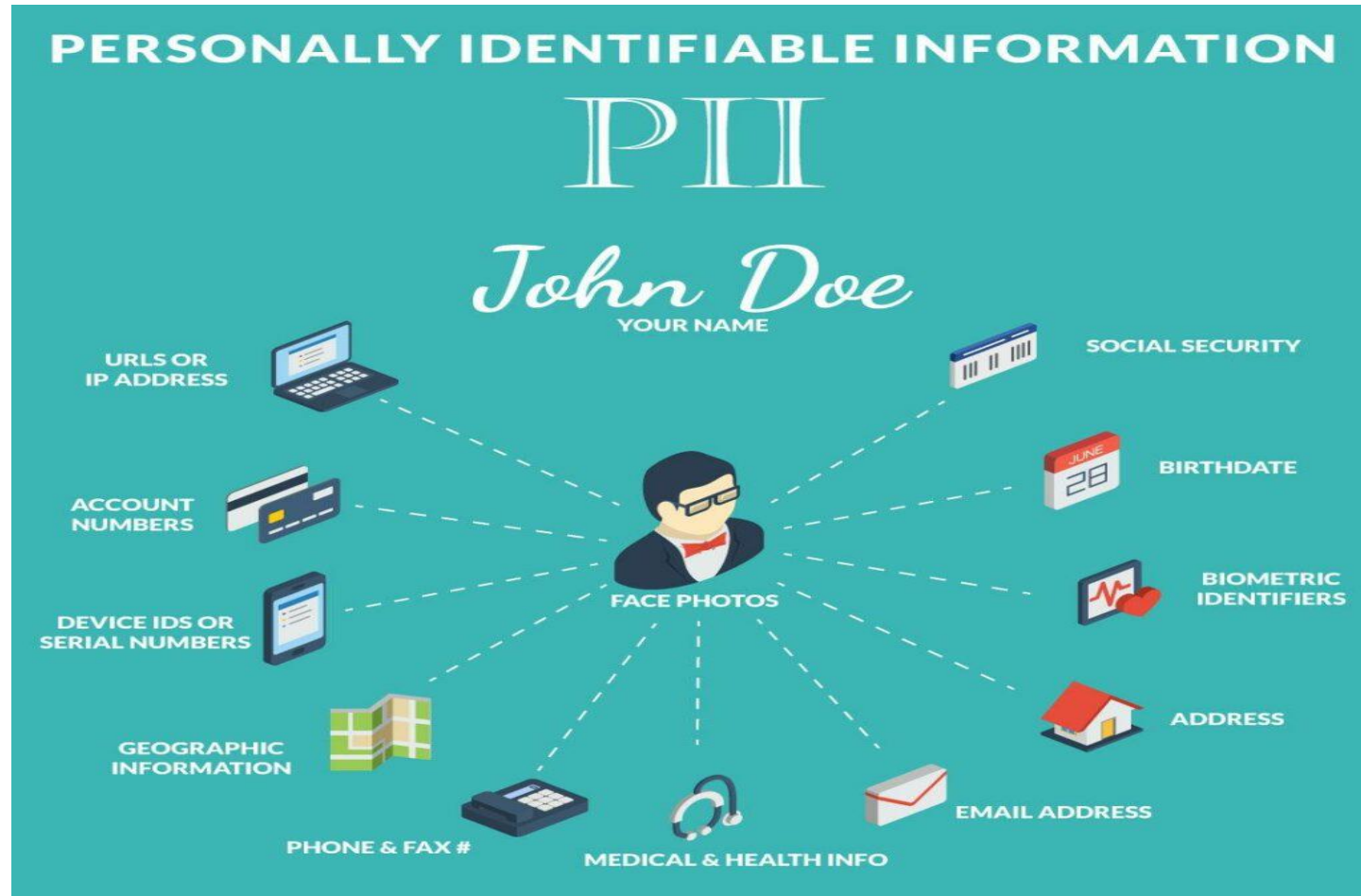
Information privacy is the privacy of personal information and usually relates to personal data stored on computer systems.

Privacy concerns exist wherever personally identifiable information is collected and stored.

Information Privacy

Personally identifiable information (PII) is information that, when used alone or with other relevant **data**, can identify an individual. PII may contain direct identifiers (e.g., passport information) that can identify a person uniquely, or quasi-identifiers (e.g., race) that can be combined with other quasi-identifiers (e.g., date of birth) to successfully recognize an individual.

Information Privacy



Information Privacy

- The key to **de-identification** is the removal of the 'identifiers' of personal information so that the information is not about an identifiable person.
- Examples of a **direct identifier** include, an individual's name, address, telephone number or student ID.
- An **indirect identifier** allows information to be connected until an individual can be identifiable. Examples can include, a client number, vehicle registration number, or demographic **data** such as date of birth and gender.

Information Privacy

De-identification is the process used to prevent someone's personal identity from being discovered.

Name	Age	Gender	Test score
*	25	F	98
*	26	M	78
*	23	F	93
*	26	M	92
*	23	F	98
*	25	F	86

Information Privacy

Information privacy issues can arise in response to information from a wide range of sources, such as:

- Birth Certificates
- Driver Licenses
- Car Registrations
- Property Records
- Marriage License
- Census Records
- Telephone Directories
- Consumer Surveys
- Passports
- Visas

Information privacy

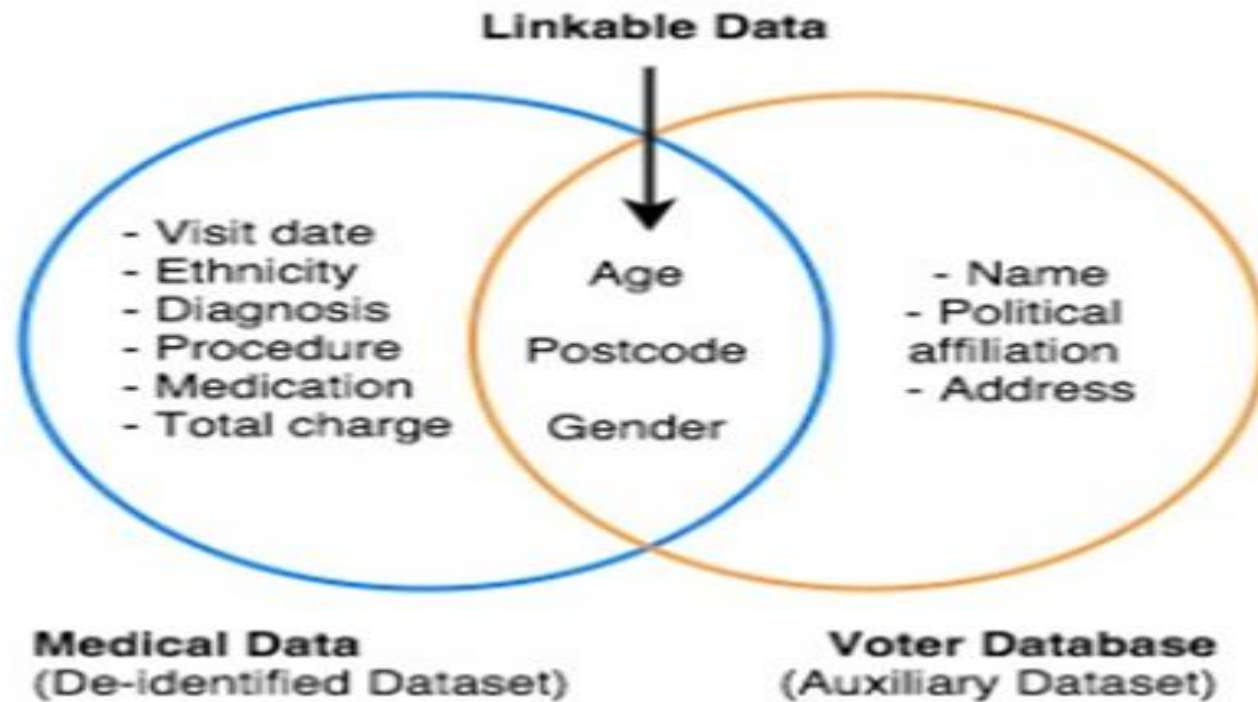
Computer matching - combining and comparing information from different **databases** (using National Identification number number, for example, to match records)

Information privacy

Example:

Information matching between **travel Agent** and **Google maps** can give robber how to go to home of someone who is in vacation.

Information privacy



Information privacy

Secondary use - use of personal information for a purpose other than the one it was provided for.

A basic privacy rule is that personal information should only be used for the purpose for which it was originally collected—the “**primary purpose**.”

Information privacy

Example:

Credit card companies sell your name and information for targeted marketing.

Example

When you start a new job your photo might be taken for an employee ID card. If the marketing department also wants to use your image for a brochure, they would need your approval.

Information privacy: Opt-in

Opt-in

- An opt-in agreement requires organizations to obtain **explicit approval** from the user before collecting and processing their personal **data**.
- Law in Europe

Opt-in

For example, look at how Spotify uses an opt-in form.

Confirm email

Password

What should we call you?

Date of birth

Day


Month

Year

☐ Male ☐ Female ☐ Non-binary

☐ Share my registration data with Spotify's content providers for marketing purposes. Note that your data may be transferred to a country outside of the EEA as described in our privacy policy.

☐ I'm not a robot


reCAPTCHA
[Privacy](#) - [Terms](#)

By clicking on Sign up, you agree to Spotify's [Terms and Conditions of Use](#).

To learn more about how Spotify collects, uses, shares and protects your personal data please read Spotify's [Privacy Policy](#).

SIGN UP

Information privacy: Opt-on

Opt-out

- An opt-out consent does not require organizations to obtain the user's consent before collecting and processing their personal **data**. It refers to **allowing users to take action to withdraw** their agreement to the processing of their personal **data**.
- Default in the US

Information privacy: Opt-on

Example

Please do not send me the following types of communications:

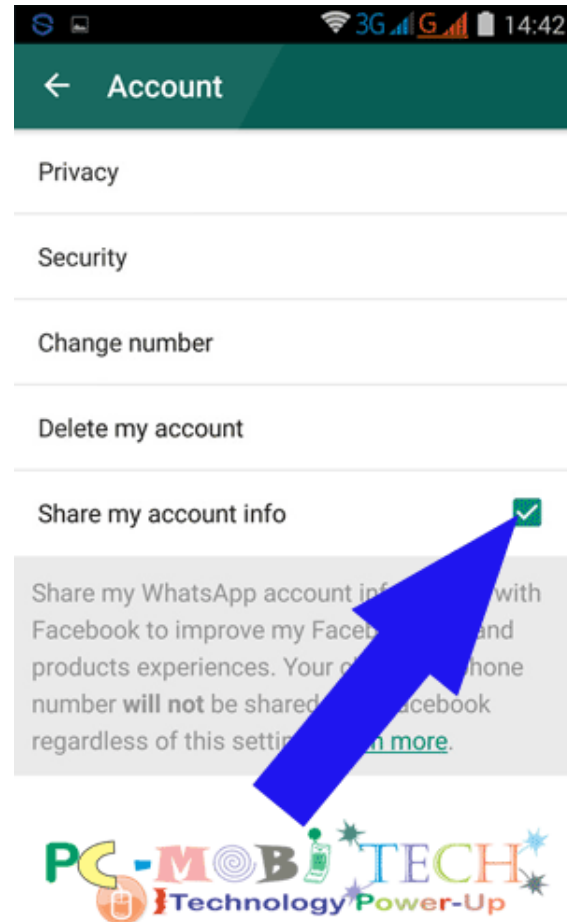
<input checked="" type="checkbox"/> Newsletter	<input type="checkbox"/> Industry News
<input type="checkbox"/> Special Deals	<input type="checkbox"/> Quarterly Account Updates

Information privacy: Opt-on

WhatsApp currently shares certain categories of information with [Meta Companies](#). The information they share with the other [Meta Companies](#) includes your account registration information (such as your phone number), transaction **data** (for example, if you use Facebook Pay or Shops in WhatsApp), service-related information, information on how you interact with businesses when using our [Services](#), mobile device information, your IP address

Information privacy: Opt-in

In the past:



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Collecting Data from Websites

Companies openly collect personal information about Internet users

Some Types:

- 1) Search Engine
- 2) Cookies
- 3) Social Networks

Search Engines

The fact is, search engines such as Google, Yahoo, and Microsoft Live Search all record and retain in their vast **data** banks any term that you query in addition to the date and time your query was processed, the IP address of your computer, enables the search engine to continue to know if requests are coming from that particular computer, even if the connection changes.

Google additionally stores your browser type and language.

Search Engines

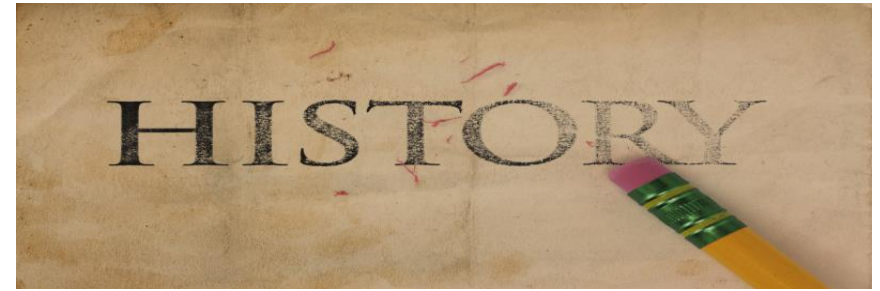
For example, if a user enters “brakes” as a search term, Google might display advertisements from automotive repair companies within the user’s geographic area. Although Google collects search information for advertising purposes, it also stores this information in a Google database.

Search Engines

Search Engines reveal a shocking amount of personal information about person such as gender, age, location, location history

In addition, It reveal information such as interests, family circumstances, political leanings, medical conditions, and more.

Search Engines



Example:

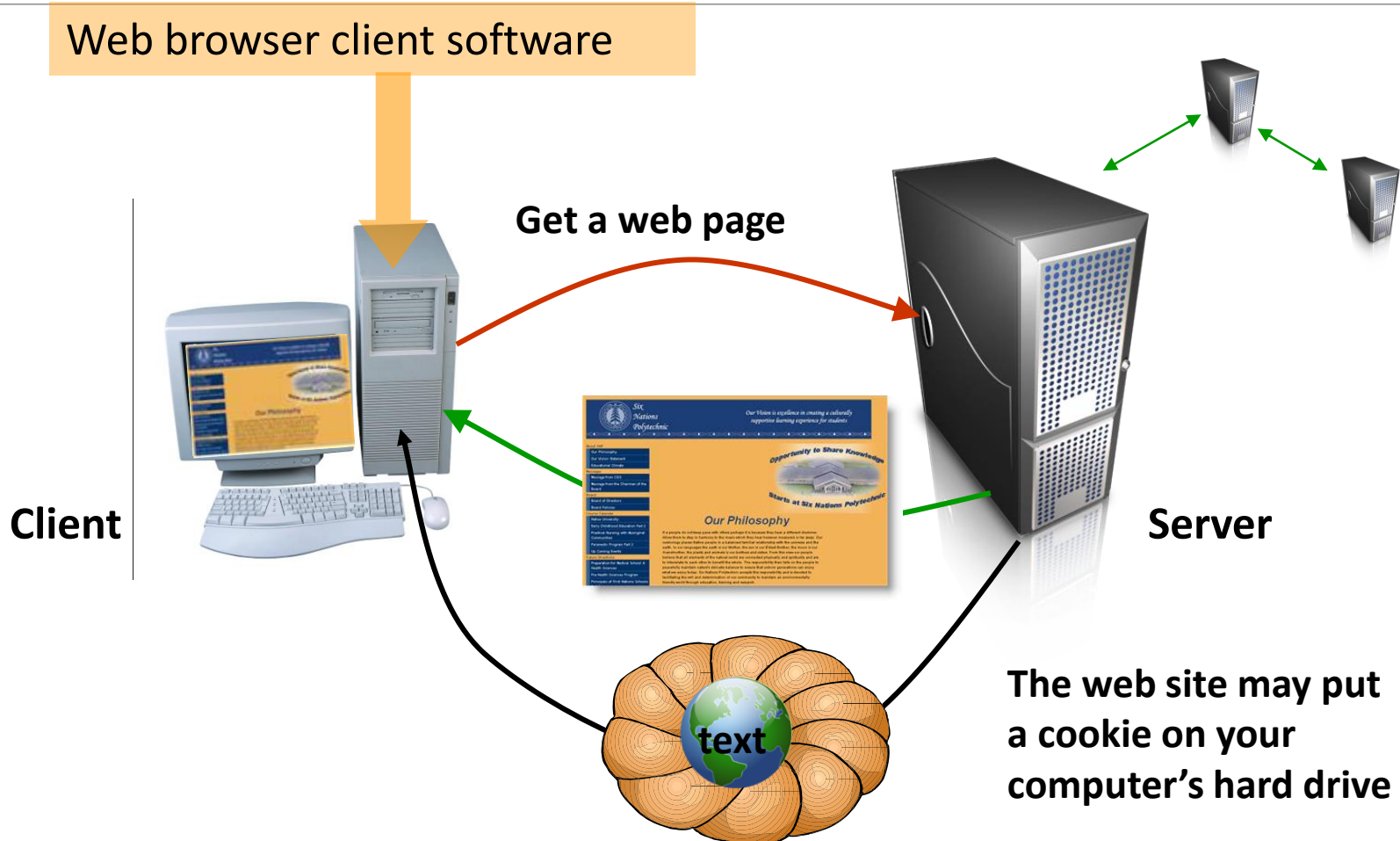
What Is The “***Right To Be Forgotten***”?

In May 2014, the European Court Of Justice ruled that EU citizens have a “Right To Be Forgotten,” that they could request that search engines remove links to pages deemed private, even if the pages themselves remain on the internet.

Cookies

Cookies are pieces of information generated by a Web server and stored in the user's computer, ready for future access. The **data** varies with the web site - a commercial web site will collect demographics (that is, sex, age, and other advertising information) to learn more about you.

Cookies



Cookies


Cookies can be used to track what you do on the web – which sites you visit and what you do there. From this information, can build profiles about you.

Cookies

Cookies are not an invasion of privacy and they are ethical. Because cookies do not do anything to your computer, and are just a piece of data.

For website to use Cookies and to be ethical it should contain a statement like:

Cookies



Our website uses cookies

AllAboutCookies.org uses cookies to improve user experience. We also show safe, secure and non personal advertising to support this site. By using our website you consent to our cookies in accordance with our Cookie Policy. [Read more](#)

I AGREE

I DISAGREE

Cookies

Example:

Google agreed to pay \$17 million to 37 states and the District of Columbia in a wide-reaching settlement over tracking consumers online without their knowledge.

The case involved Google's go around of privacy settings in Apple's Safari browser to **use cookies** to track users and show them advertisements in 2011 and 2012.

“By tracking millions of people without their knowledge, Google violated not only their privacy, but also their trust.”

Cookies

There are first-party cookies that are placed by the site you visit, and then there are third-party cookies, such as those placed by advertisers to see what you're interested in and in turn serve you ads — even when you leave the original site you visited. (This is how ads follow you around the internet.)

Social Networks



Social Networks Sites that facilitate interaction between members through their self-published personal profiles

Through the site, individuals offer representations of their selves to others to peruse, with the intention of contacting or being contacted by others, to meet new friends, find new jobs, receive or provide recommendations, ...

Social Networks

Privacy

Nowadays, various social networks, with huge amount of **user-generated content**, are becoming a huge repository for private information. Unfortunately, users are not quite aware of the privacy risks.

users often think of such sites as safe and closed worlds where they can publish challenging and controversial materials, without being aware of the potential.

Social Networks

Example:

Man and his wife, were staying in a rented holiday villa, which thieves broke into and cleaned out, taking, amongst other things, \$388k wedding ring.

How could thieves have possibly known their location? The wife is broadcasting it via her Instagram account, with all her images tagged to locations via the photomap feature (An application put photo in map).

Social Networks

Privacy concerns

- Information about you that *you* post
- Information about you that *others* post
- Information about you the *social networking sites* collect and share with others.

Social Networks



Social Networks

Example:

Social networking's usage is hiring and firing decisions. There have been lots of companies recently who've asked for passwords out of their former workers and their potential new hires. This is due to the fact that the company believes they need to have the ability to observe the articles and upgrades from a societal networking user to find out whether they're engaged in the action that's damaging to the enterprise.

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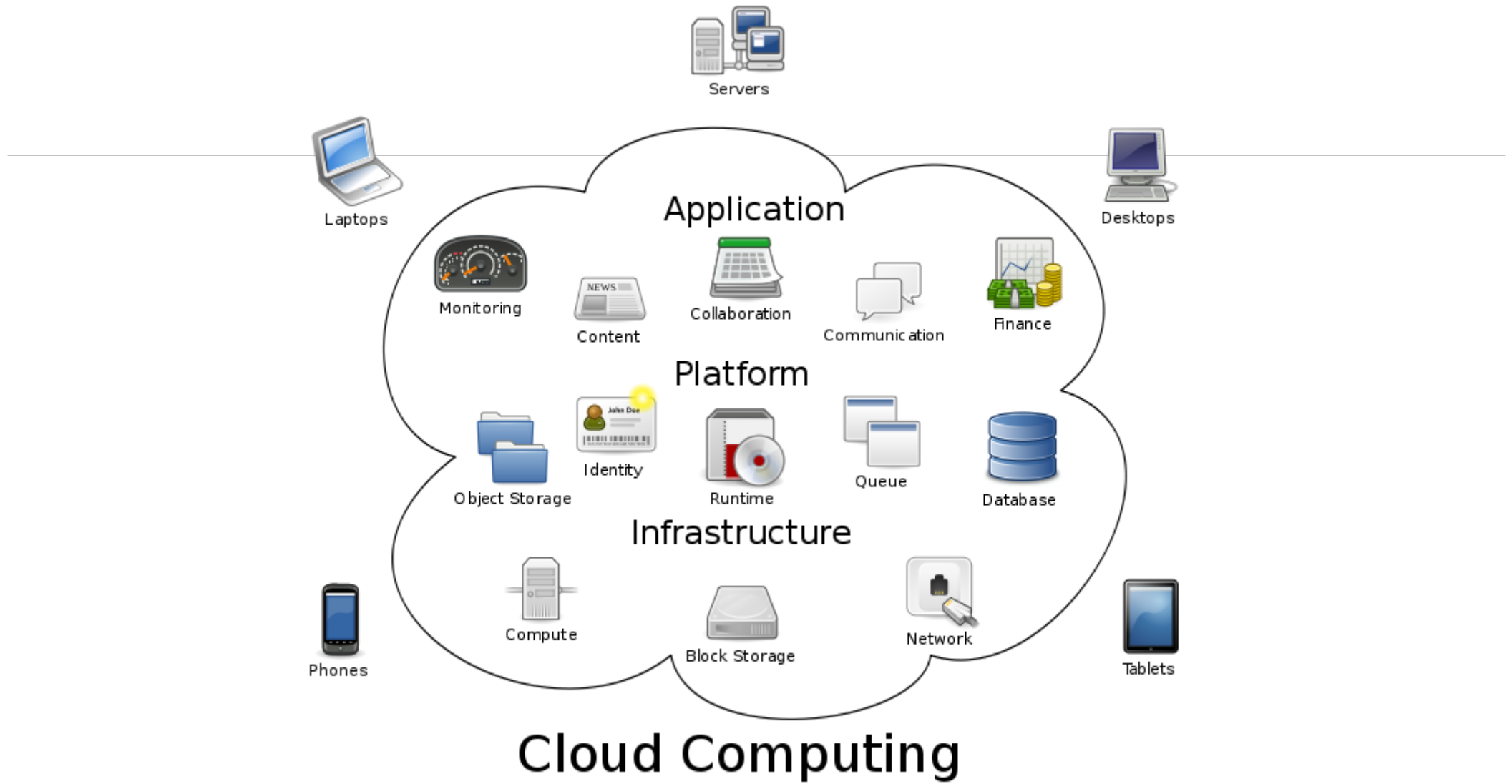
Websites

Cloud Computing

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Cloud Computing

Cloud computing describes the use of software, storage or processing services delivered over the web from massive datacentres



Cloud Computing

Privacy in cloud computing

Your **data**, files and every thing stored at third party server(cloud hosting vendor's),your e-mails, social networking records and everything stored in hosting.

People and businesses take advantage of all sorts of Internet-based services, they may well find trade secrets in the hands of competitors, private medical records made public, and e-mail correspondence in the hands of government investigators without any prior notice.

Cloud Computing

Privacy issues

Main issue is that information is no longer in your direct custody or control.

You no longer directly secure your data.

Information may be resident in a different authority or multiple authorities.

Cloud Computing

For example:

“We are notifying people about a bug that may have affected users who used Google to export their Google Photos content between November 21 and November 25,” explains a Google spokesperson in a statement. “These users may have received either an incomplete archive, or videos — not photos — that were not theirs. We fixed the underlying issue and have conducted an in-depth analysis to help prevent this from ever happening again. We are very sorry this happened.”

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Few devices know more personal details about people than the smartphones in their pockets: phone numbers, current location, often the owner's real name—even a unique ID number that can never be changed or turned off. photos and videos, also to monitor our heart rate, start the car remotely on a dark night, find a nearby restaurant, and pay for purchases on-the-spot.

Mobile Privacy

In addition, software applications for iPhone and Android phones—transmitted the phone's unique device ID to other companies without users' awareness or consent.

Mobile Threats and Attacks

Mobile devices make attractive targets:

- People store much personal info on them: email, calendars, contacts, pictures, etc.
- Sensitive organizational info too...
- **Can fit in pockets, easily lost/stolen**
- Built-in billing system: SMS/MMS (mobile operator), in-app purchases (credit card), etc.
 - Your device becomes your credit card
- Location privacy issues

Mobile Privacy

The average smartphone user these days has between 60 and 90 apps on their device. Most of these apps request some sort of information about you and the device you are using. They may want to know your name, your email address, or your real-world address. But because smartphones are so powerful, they can also get quite a bit more than that, such as your exact location. Some apps will even request access to the device's camera or microphone.

Mobile App Privacy Policy

If you run a mobile app that collects personal information from the app users, you need a **Privacy Policy** to comply with legislation around the world.

A **mobile app privacy policy** is a legal statement that must be clear, visible, and agreed to by all users. It must disclose how a mobile app gathers, stores, and uses the personally identifiable information it collects from its users.

Mobile App Privacy Policy

← Privacy Policy

If your organization signed a Dropbox for Business Agreement with Dropbox, that Agreement may have modified the privacy policy below. Please [contact your organization's Admin](#) for details.

Dropbox Privacy Policy

Posted: February 13, 2015

Thanks for using Dropbox! Here we describe how we collect, use and handle your information when you use our websites, software and services ("Services").

What & Why

We collect and use the following information to provide, improve and protect our Services:

Account. We collect, and associate with your account, information like your name, email address, phone number, payment info, and physical address. Some of our services let you access your accounts and your information with other service providers.

Services. When you use our Services, we store,

Mobile App Privacy Policy

TermsFeed

LOGIN



Privacy Policy Generator

What kind of personal information do you collect from users?

Click all that apply

- ☐ Email address
- ☐ First name and last name
- ☐ Phone number
- ☐ Address, State, Province, ZIP/Postal code, City
- ☐ Social Media Profile information (ie. from Connect with Facebook, Sign In With Twitter)
- ☐ Others

Select additional information you collect from a device (mobile/tablet)

Skip selecting an option if none apply to you

- ☐ Location (GPS)
- ☐ Phonebook (Contacts list)
- ☐ Camera (Pictures)



References

Ethics for the information age Ch.5

Ethics in Computing, Science, and Engineering: Ch 3

THE HANDBOOK OF INFORMATION AND COMPUTER ETHICS Ch. 6

Six **data** protection principles

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=EN#page=35>

Data Privacy in Cloud Computing

<https://binaryterms.com/data-privacy-in-cloud-computing.html>