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Matkul: SIG Berbasis Web

Cara Kerja Internet dan Halaman Web

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 [ugm.id/danylaksono](https://www.ugm.id/danylaksono)



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Today: Dasar Internet dan WebPage

- Bagaimana internet bekerja?
- Bahasa dan Protokol komunikasi inter-net
- IP Address dan Domain Name
- Bagaimana halaman web dibuat?

LOCALLY ROOTED, GLOBALLY RESPECTED

UGM.AC.ID

Buka Elok
(elok.ugm.ac.id)

Cari Mata Kuliah
SIG berbasis Web
(kode: sigweb)

Enrollment Key:

sigweb2021



eLOK

e-Learning: Open for Knowledge Sharing



Buka MS Teams
dan masukkan
kode kelas:

ijsv5kk

atau

Buka

**[https://gdugm.link/
team-sigweb](https://gdugm.link/team-sigweb)**



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Bagaimana Internet Bekerja?

Dasar Internet dan WebGIS



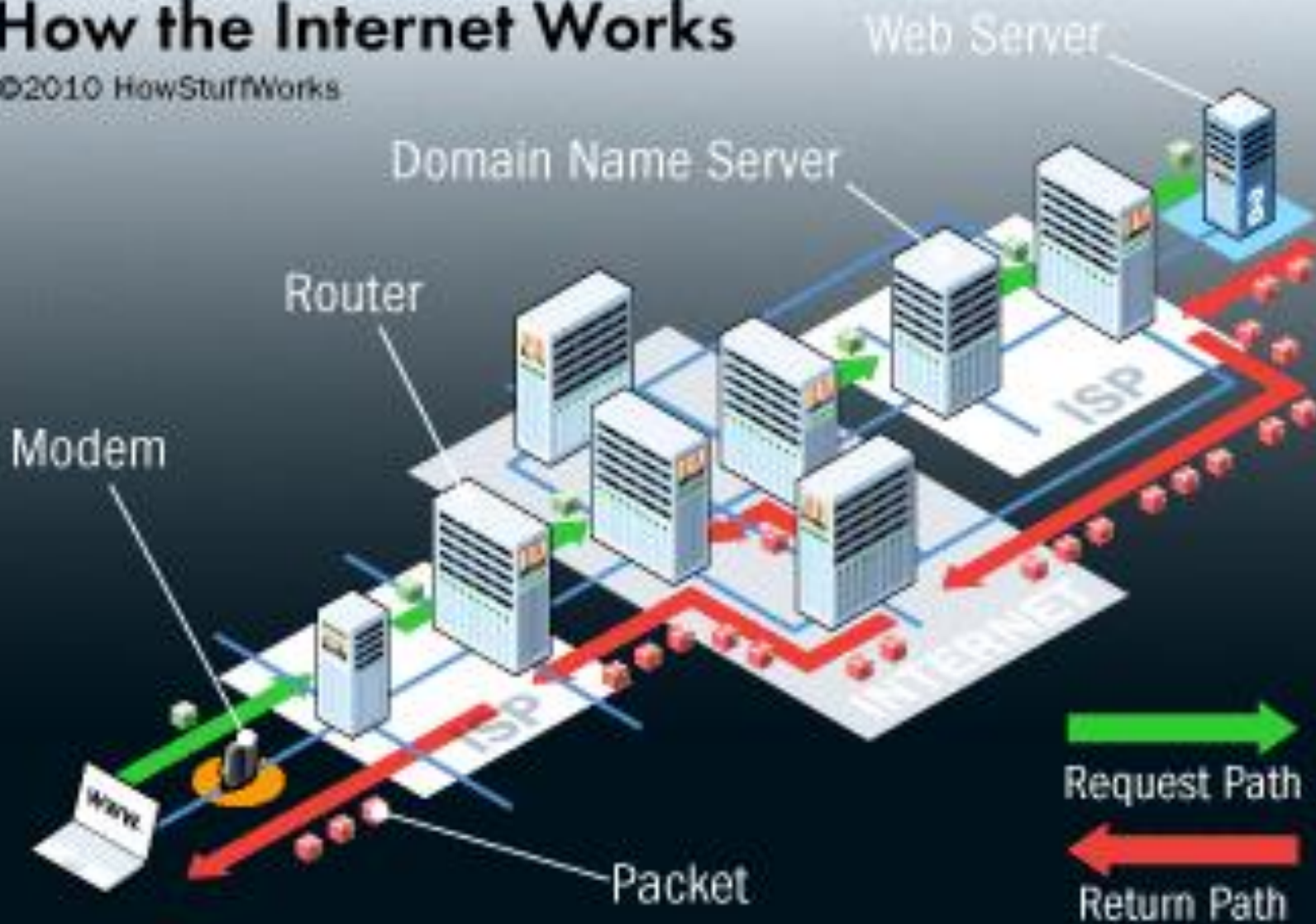
DISKUSI:

Buka sebuah halaman website (misal: geodesi.ugm.ac.id), kemudian simpan halaman tersebut (ctrl+s) pada drive lokal

*Darimana halaman tersebut berasal?
Apa tipe file yang disimpan tersebut?*

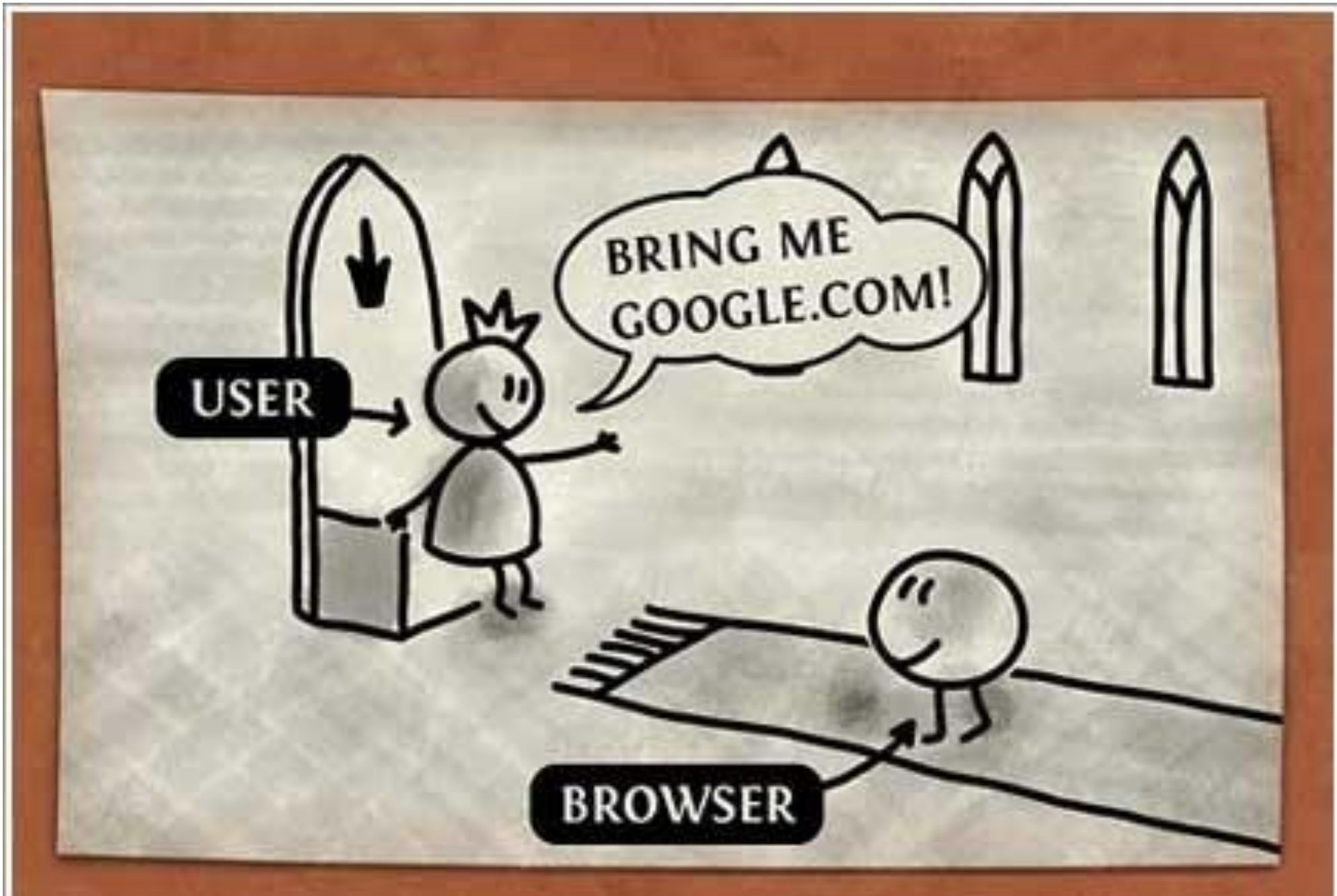
How the Internet Works

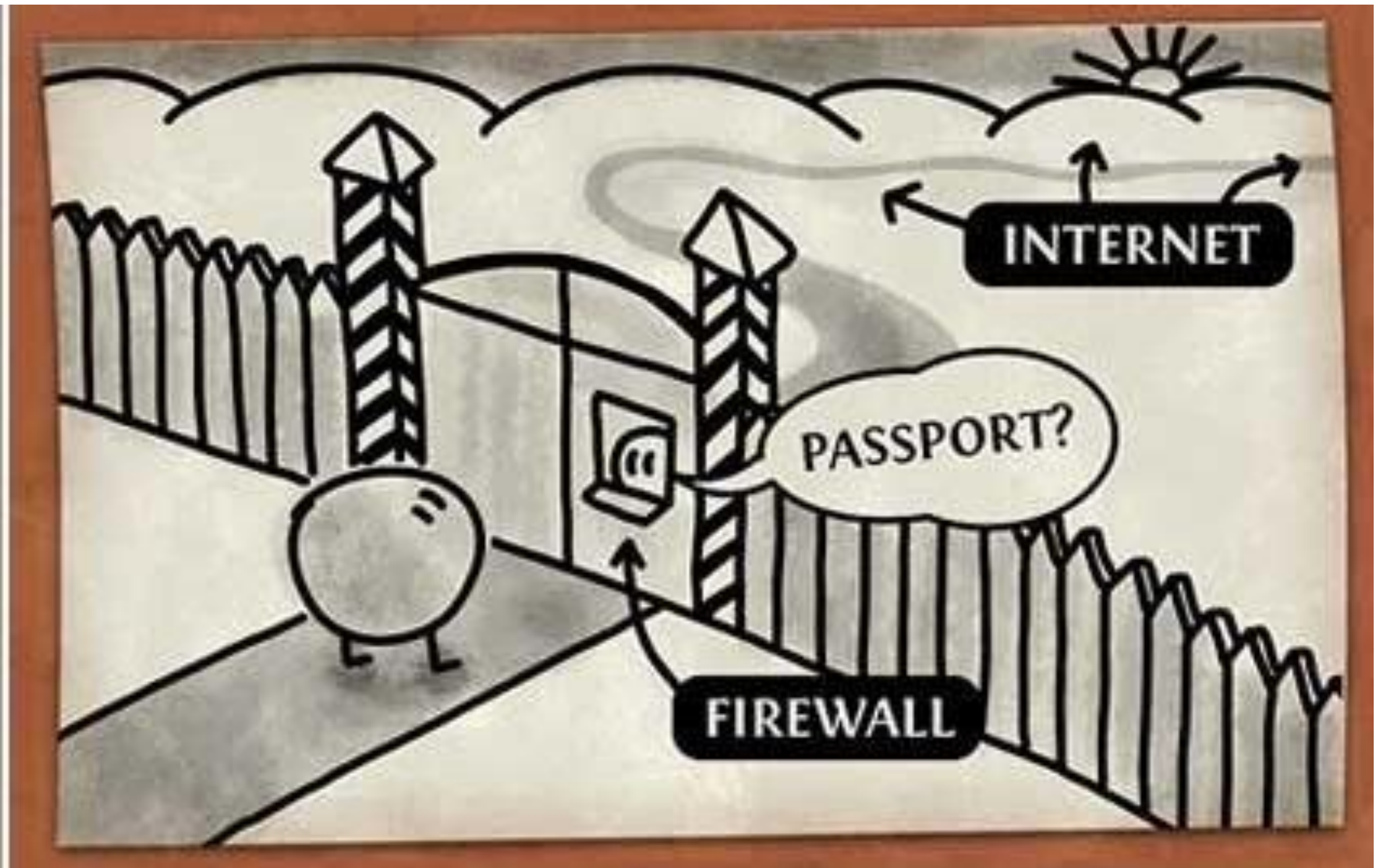
©2010 HowStuffWorks



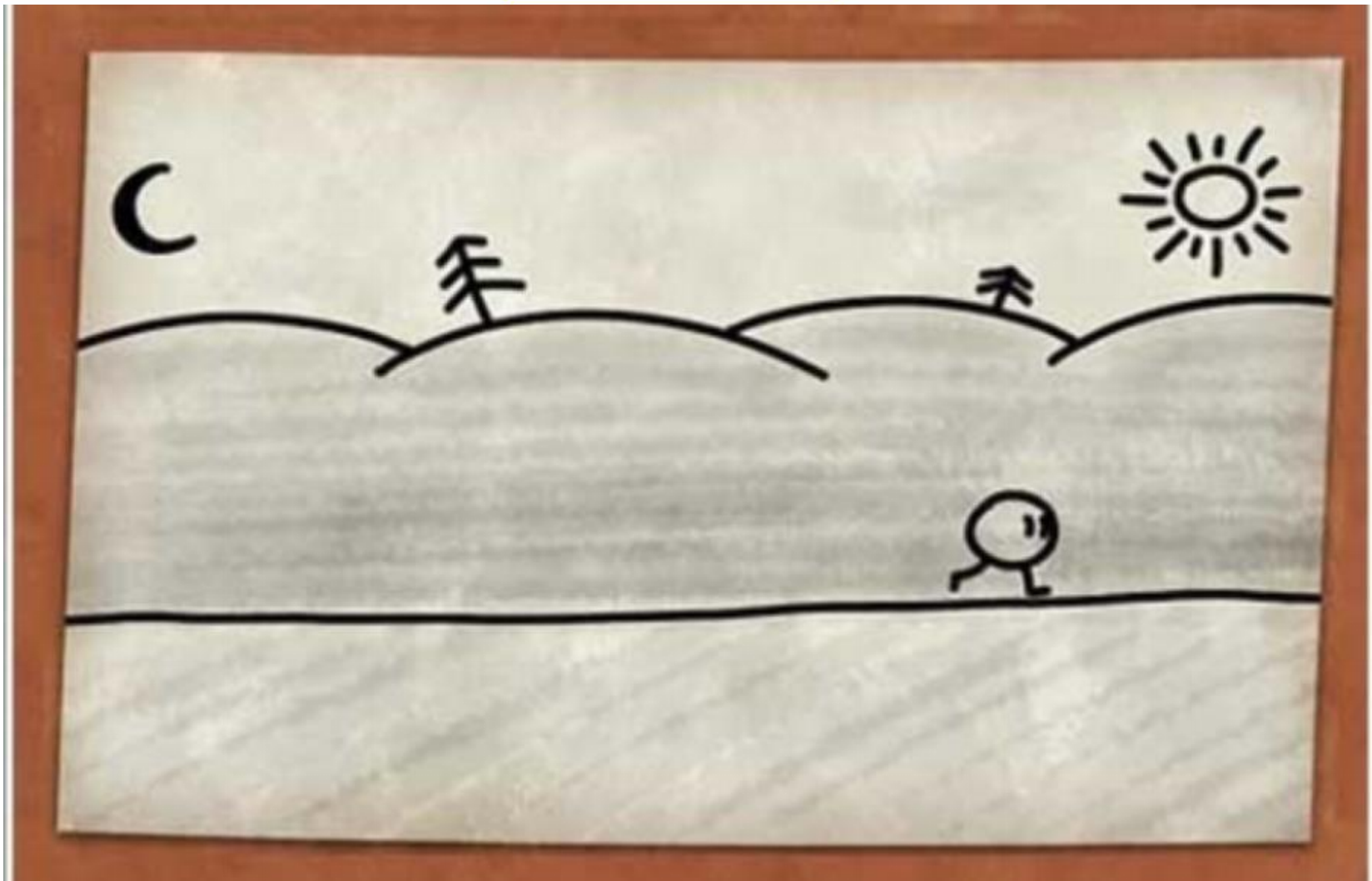
Internet yang kita kenal terdiri dari berbagai komponen yang saling berhubungan

LOCALLY ROOTED, GLOBALLY RESPECTED









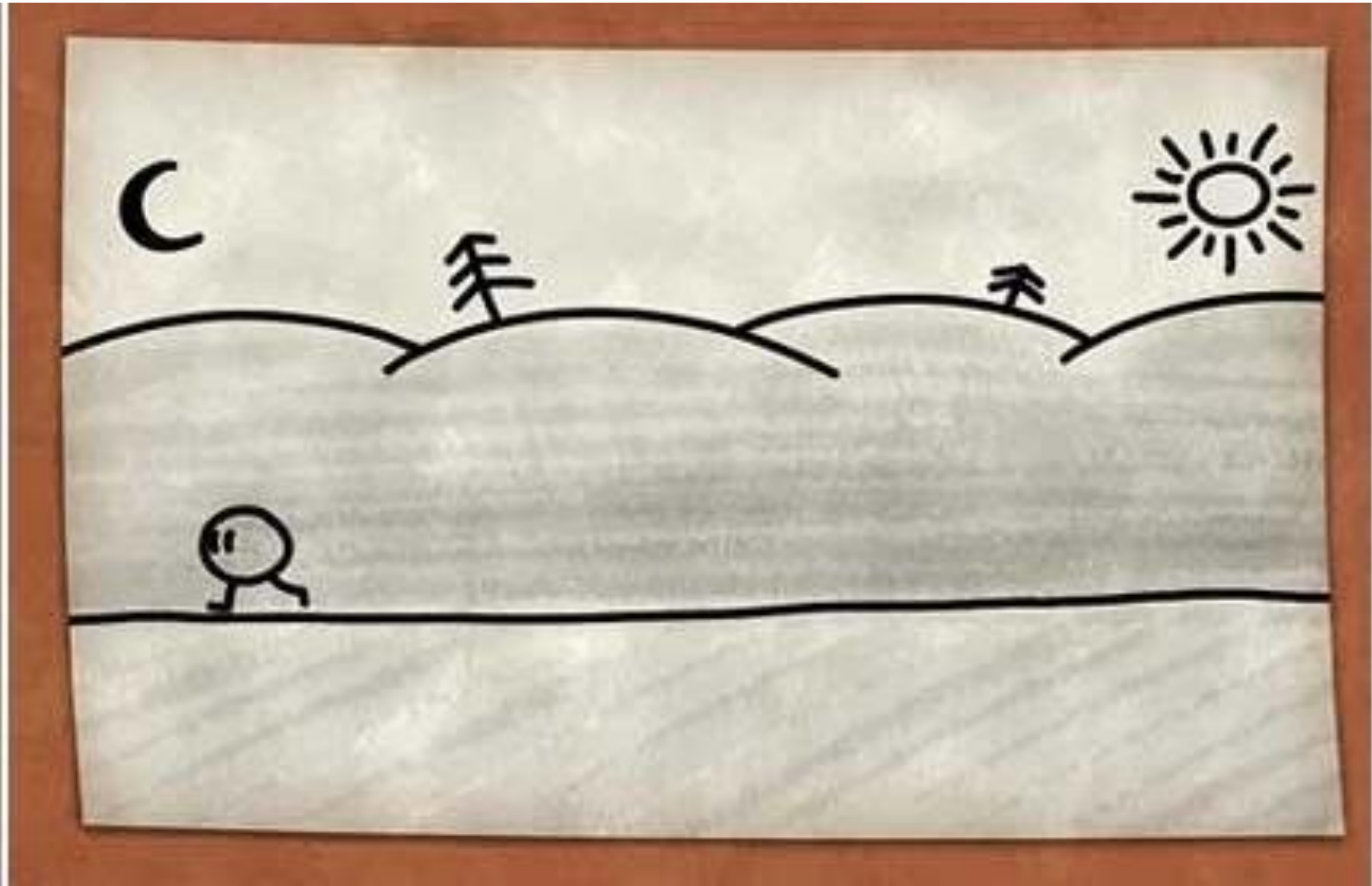


WEBSITE

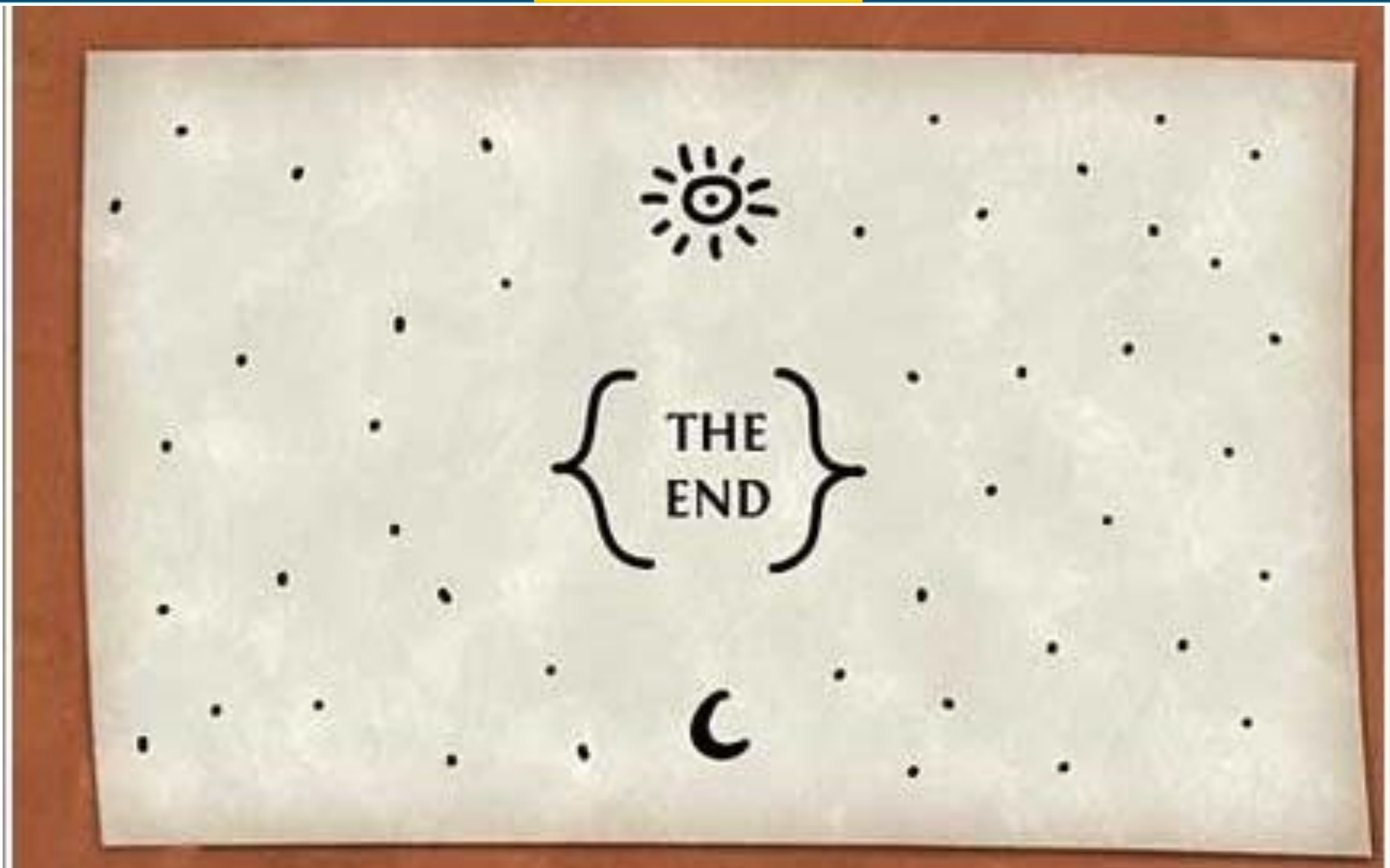
SIGN IN!
I'M FEELING LUCKY!
ADVANCED SEARCH!

GOOGLE.COM?



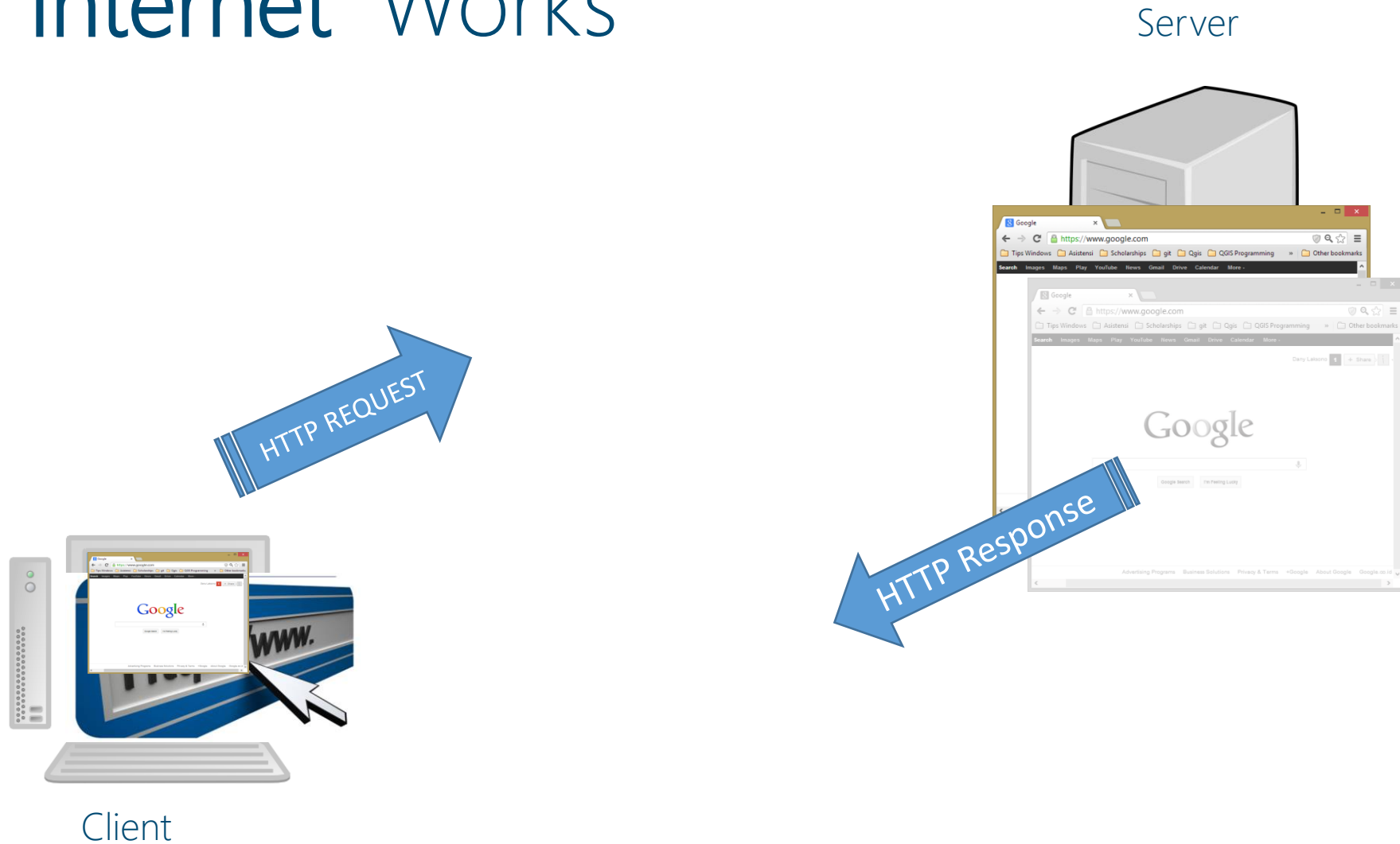






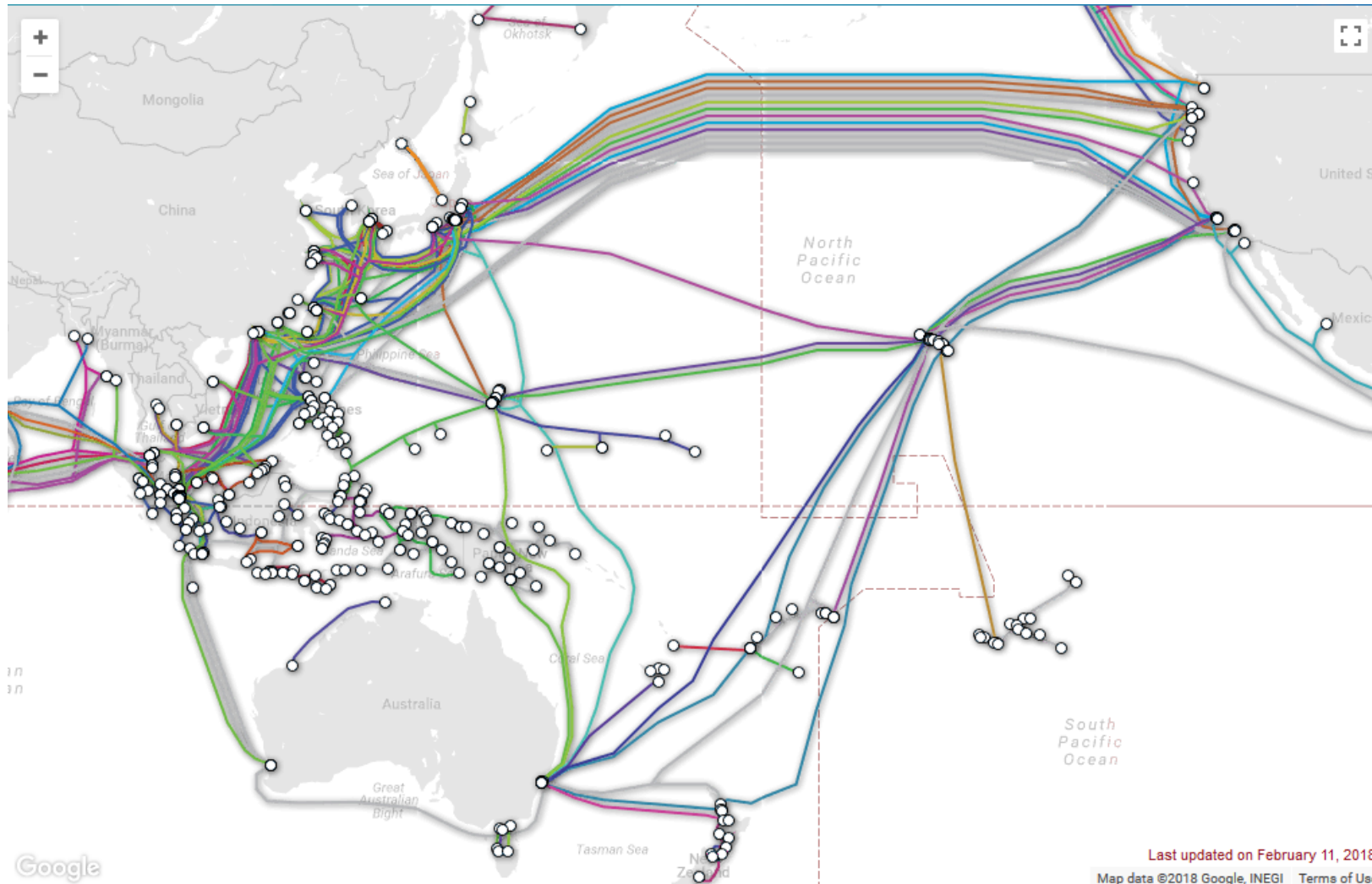


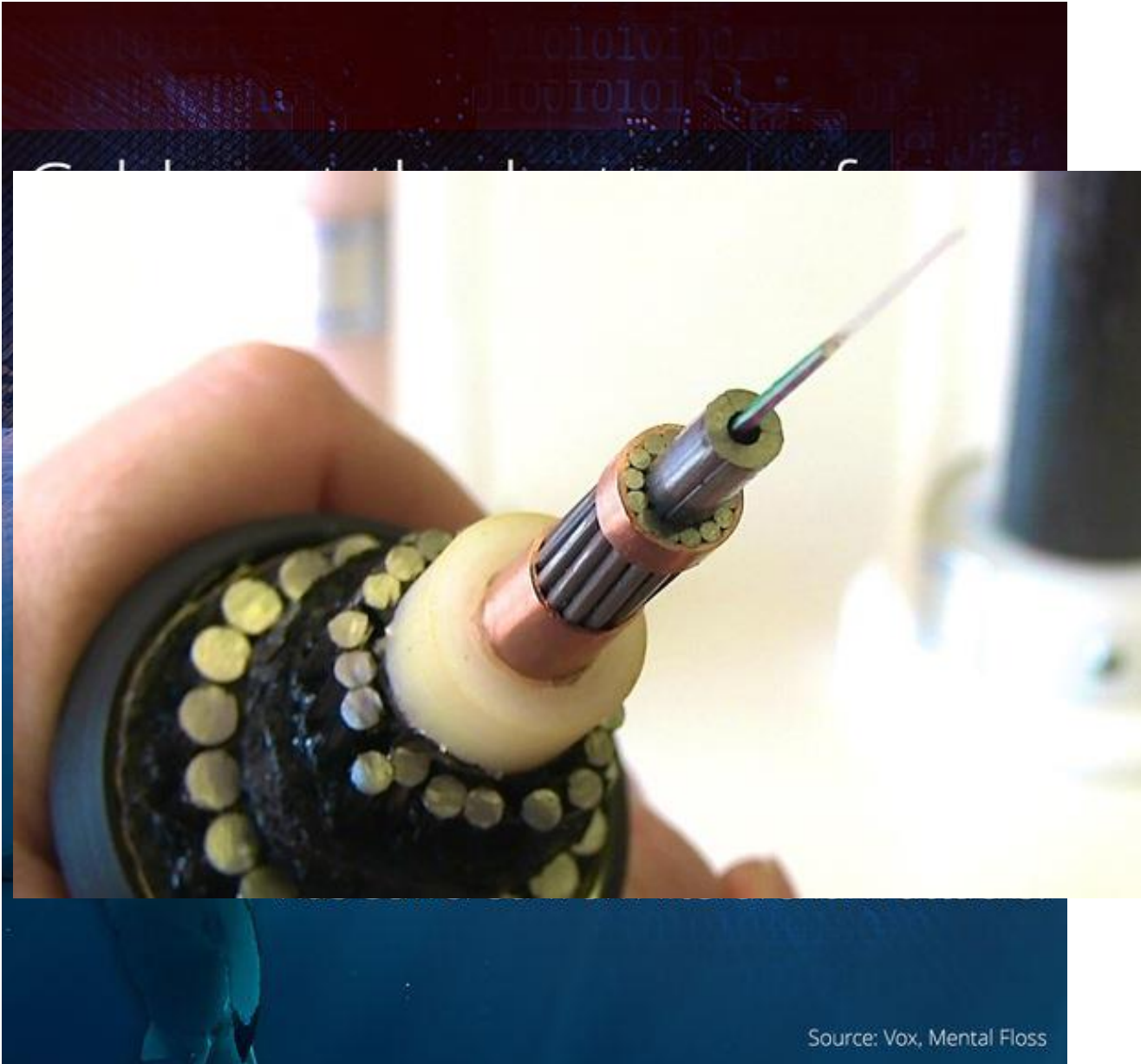
How 'Internet' Works



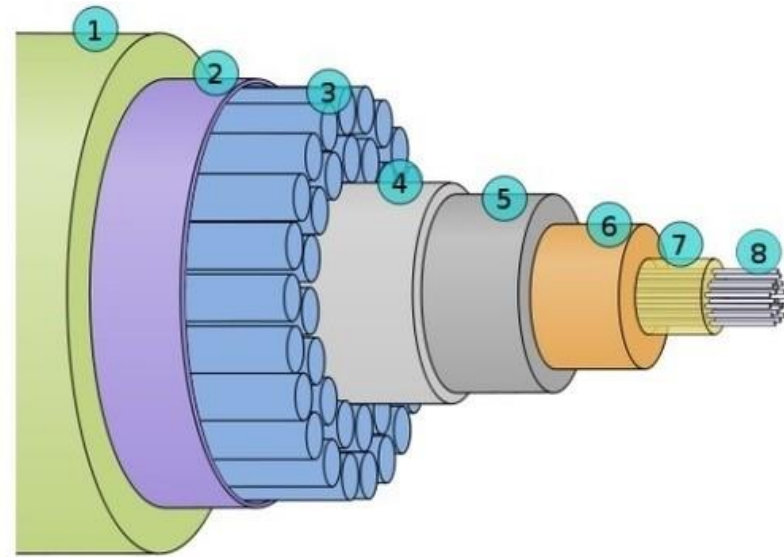


How 'Internet' Works





Source: Vox, Mental Floss



A cross section of the shore-end of a modern submarine communications cable.

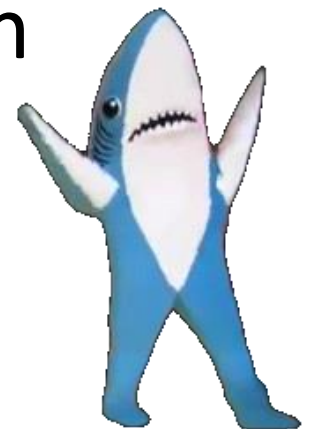
- 1 – Polyethylene
- 2 – Mylar tape
- 3 – Stranded steel wires
- 4 – Aluminium water barrier
- 5 – Polycarbonate
- 6 – Copper or aluminium tube
- 7 – Petroleum jelly
- 8 – Optical fibers



How 'Internet' Works

Beberapa kesimpulan

- **Client** adalah perangkat yang melakukan akses terhadap website (orang/manusia yang mengakses juga dapat disebut client)
- **Server** adalah perangkat keras maupun lunak komputer yang berfungsi untuk menyimpan halaman web pada alamat tertentu
- Komunikasi antara klien dan server dilakukan dengan **bahasa dan protokol tertentu**
- Komunikasi antara klien dan server membentuk **internet**
- Selain manusia, hiu juga makan **kabel internet**





Internet Servers:

~High Specifications Computers

Spesifikasi server PPIDS (<http://10.40.109.252>):

- Large Capacity (~3 TB) + Backup drives
- RAM 32 GB (Max 768 GB)
- Windows Server 2008 R2
- Multi-core Xeon Processor
- Intel Xeon E5-2640v3





One of Google's Server room





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Bahasa dan Protokol Internet

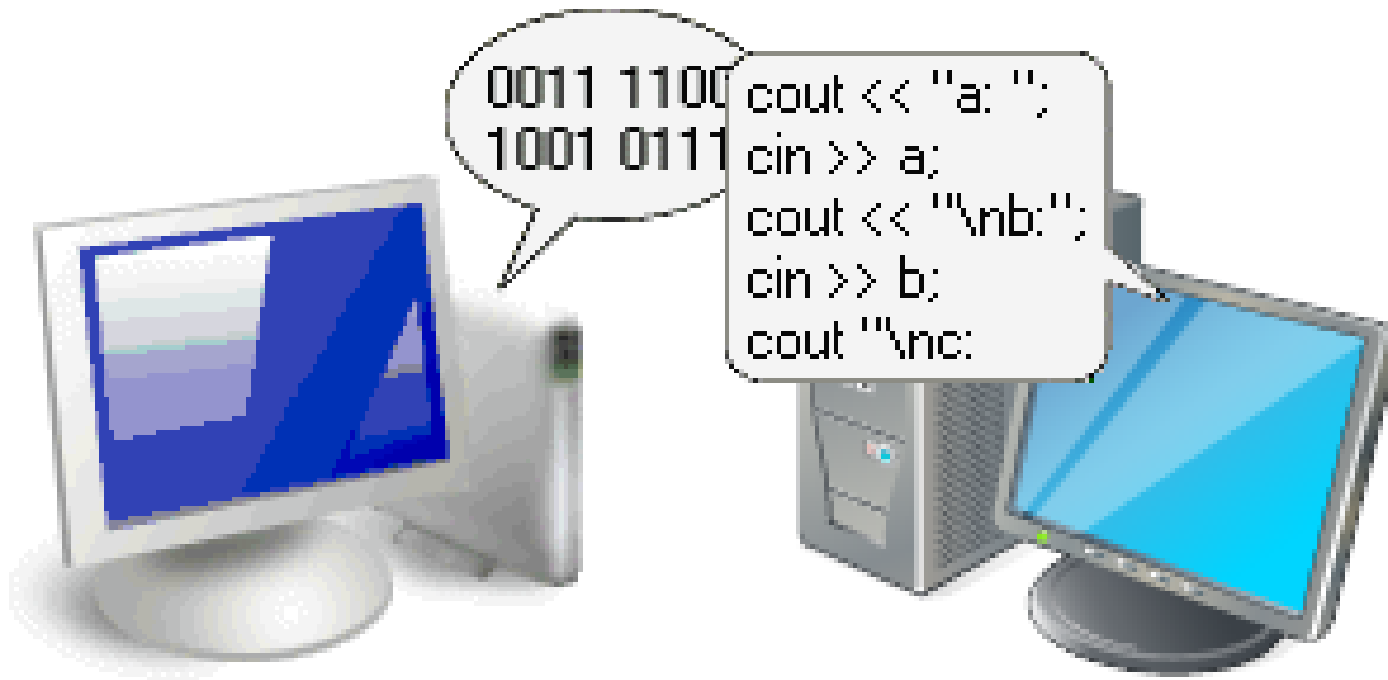
Dasar Internet dan WebGIS



How two people talk to each other:

- Languages
 - Transfer medium
 - Signs
 - Two sets of Brains
 - Two sets of Lips
- etcetera*

How computers talk to each other(?)



- Languages
- Transfer medium
- Signs
- Two sets of Brains
- Two sets of Lips
- etcetera*



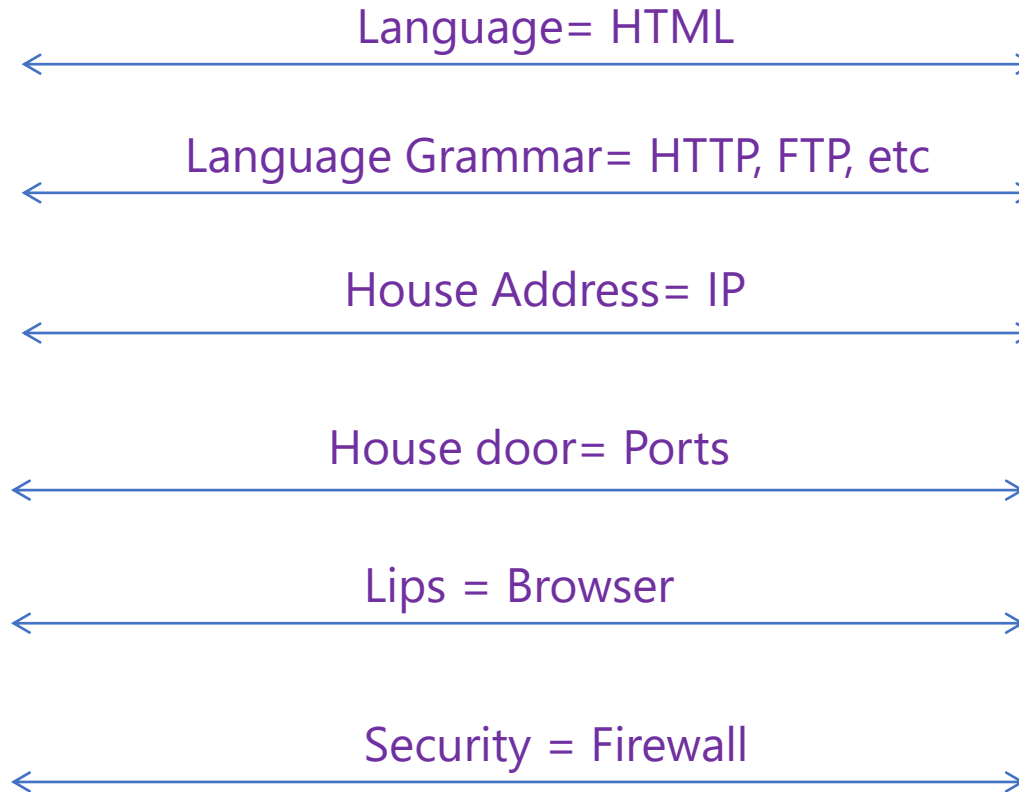
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Analogies

Client



Server

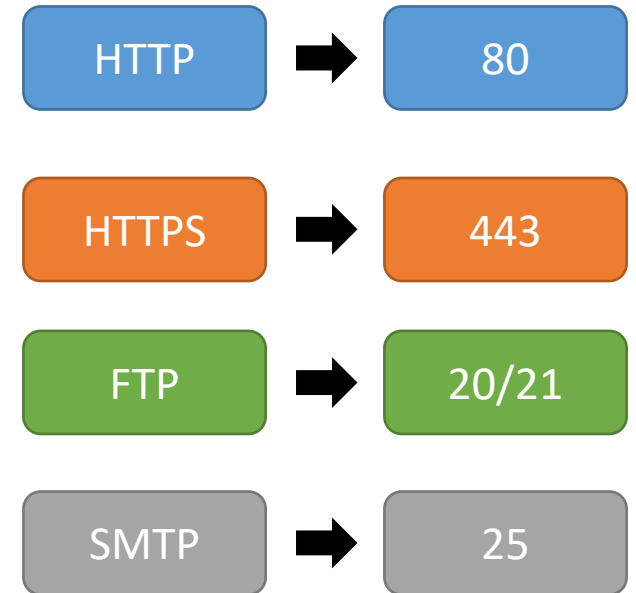


LOCALLY ROOTED, GLOBALLY RESPECTED



Internet (Application Layer) Protocols

- HTTP – Hypertext Transfer Protocol → **Webpages**
- FTP – File Transfer Protocol → **Files**
- SMTP – Simple Mail Transfer Protocols → **Emails**
- SSH – Secure Shells → **Credentials**
- Etc

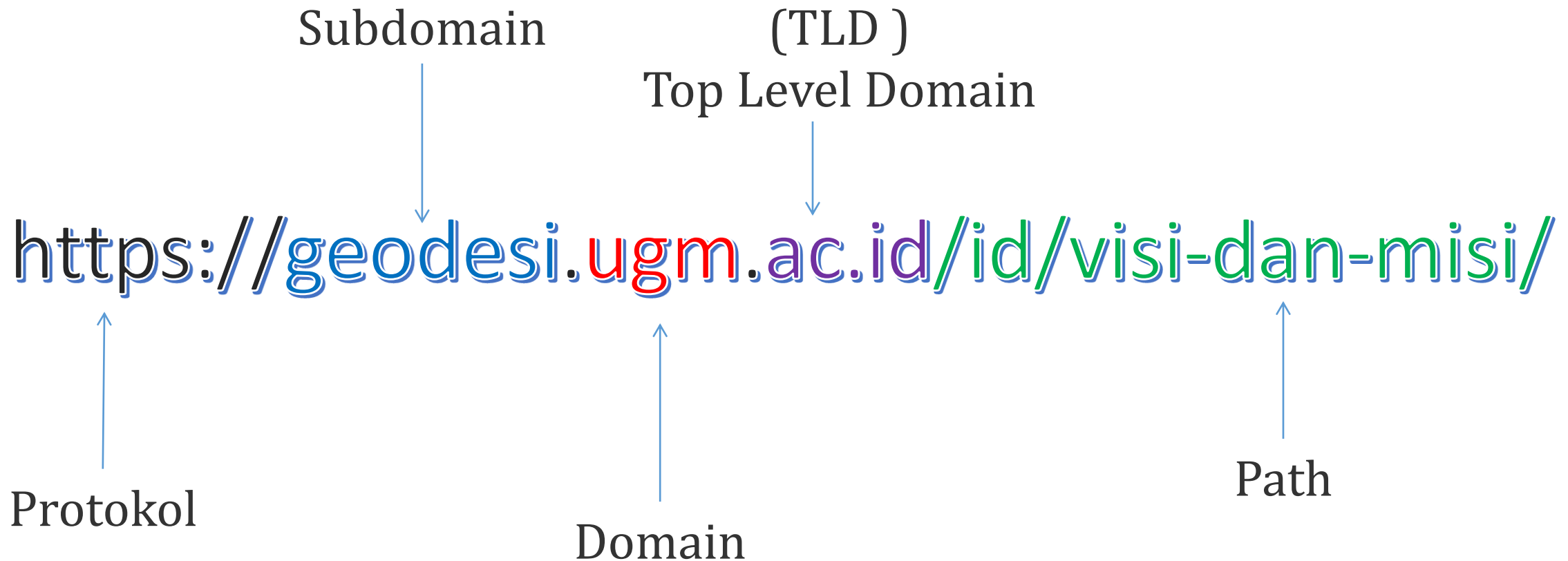


Note: These are merely for text/images/file transfer.

How about **Spatial Data**?

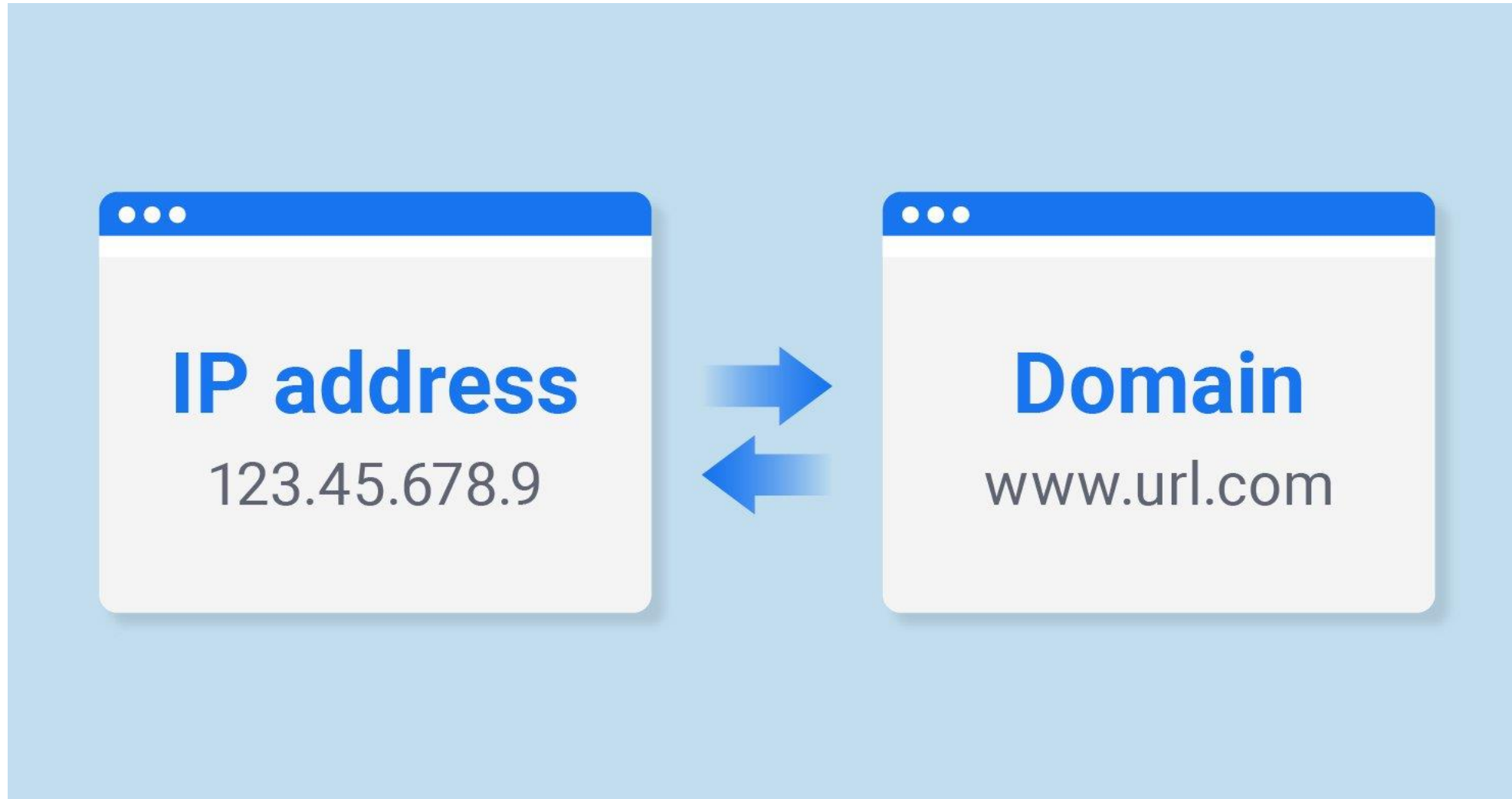


Membaca URL: Alamat Website





Membaca URL: Domain Name System





Membaca URL: Domain Name System

The screenshot shows the \$iteprice.org website interface. At the top, the logo "\$iteprice.org" is followed by the text "Website Worth & Domain Value Calculator - Buy & Sell Websites/Domains". Below this is a navigation bar with buttons for "Home", "Top", "Buy&Sell", "Tools", "About", and "Latest", along with three circular icons representing a key, a person, and a refresh symbol. The main content area features the question "How much is www.madeandi.com worth?". Below this, a yellow box displays the domain "madeandi.com" and states "estimated website price is \$ 4,105". A gold seal with a dollar sign and "\$ 4.1K" is shown below the price. To the left of the price, a red banner reads "COMODO Secure DNS" and a white box contains a "Warning: Unsafe Website Blocked!" message for "www.madeandi.com", listing "Malware" as the reason. At the bottom left of the screenshot, the text "\$iteprice.org" is visible, and at the bottom right, it says "Site Price calculated at 5/13/2015" with a blue refresh icon.

Nama Domain 'hanya'
Nama

Membeli **nama domain**
belum termasuk
membeli isi websitenya

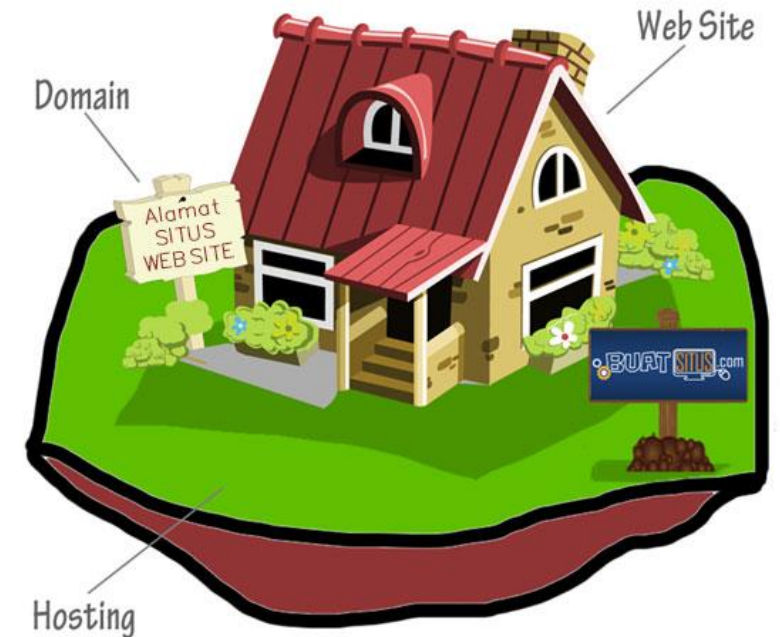
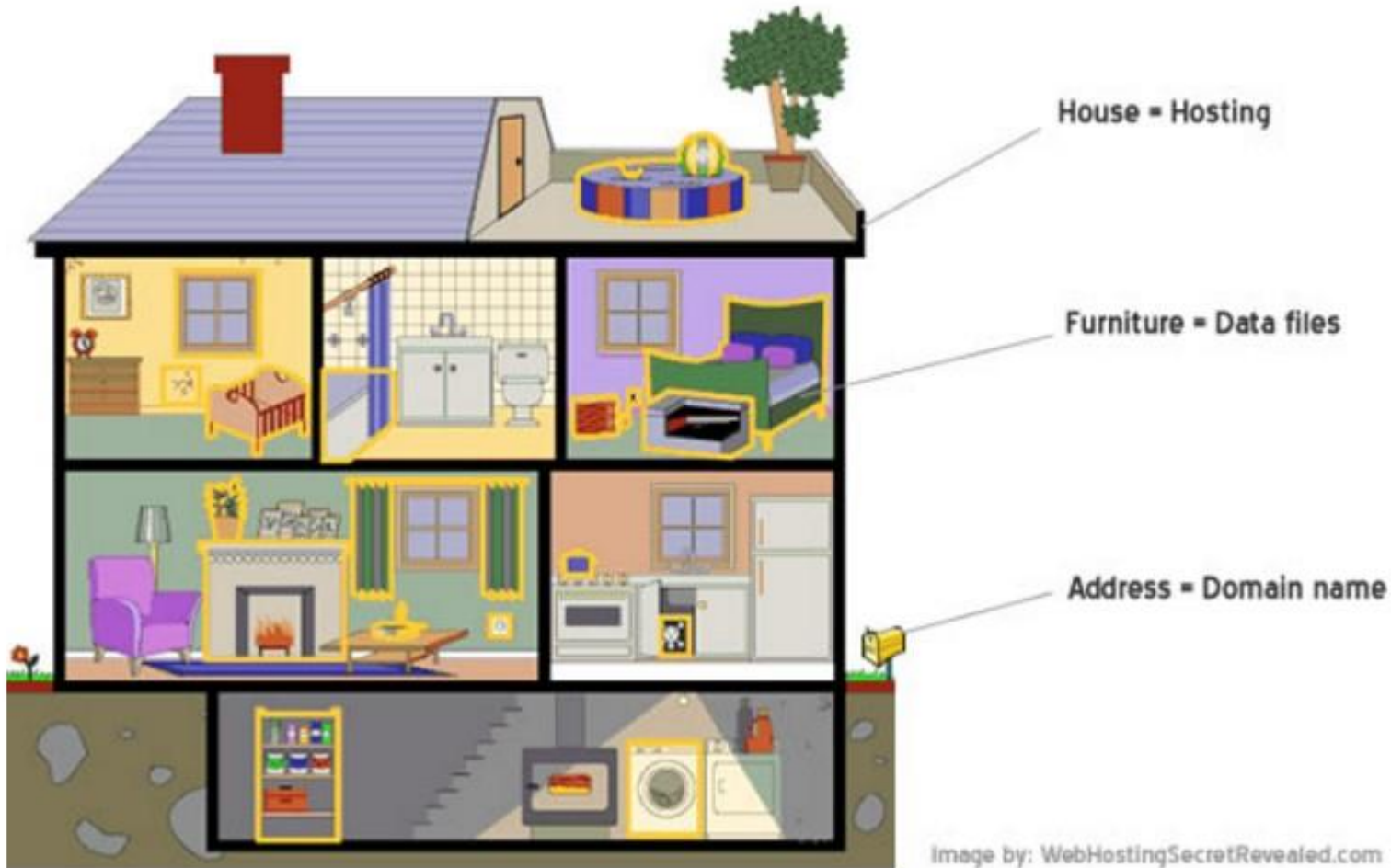


Membaca URL: Domain Name System





Web Hosting = Penyewaan Server



Domain adalah penunjuk lokasi

Website: file yang dibuat oleh Developer Web

Hosting: server tempat menyimpan file

Web Hosting = Penyewaan Server

SHARED HOSTING

■ Shared Hosting

Diibaratkan sebuah rumah dengan beberapa penghuni di dalamnya.

■ Akun Hosting

Diibaratkan para penghuni rumah.



■ Para penghuni/pengguna layanan shared hosting, berbagi **Resource & Kapasitas Server** bersama-sama.

Resource Server



■ Jadi, jika misalnya seseorang menggunakan kamar mandi terlalu lama, maka berpotensi mengganggu aktivitas teman anda yang lainnya.

Web Hosting:
Dimana **file HTML** yang dibuat oleh developer harus **diletakkan** agar dapat dibuka oleh jaringan seluruh dunia



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Bagaimana Halaman Web Disusun?

Dasar Internet dan WebGIS



Latihan

Buka halaman website (bebas, contoh: <http://csszengarden.com/>), kemudian:

1. Aktifkan **inspect element** (Chrome atau Firefox browser).
2. Klik-kanan > **View Page Source**. Lihat kode penyusun halaman website tersebut
3. Identifikasi yang manakah elemen **HTML**, **CSS** maupun **JS**



UGM student platform wins competition

A team of Indonesian Geodesy students from Gadjah Mada University (UGM) in Yogyakarta has won first place at the International Invention & Innovative Competition (InIIC), an event initiated by Malaysia-based event ...

[BACA SELINGKAPNYA](#)

a.dropdown-toggle 166.48 × 100

Color #FFFFFF

Font 12px Montserrat, Helvetica, Arial, sans-serif

Padding 40px 20px

ACCESSIBILITY

Name KEMAHASISWAAN

Role link

Keyboard-focusable

```

<!DOCTYPE html>
<html lang="id-ID" class="wf-opensans-n4-active wf-montserrat-n7-active wf-montserrat-n4-active wf-opensans-i4-active wf-opensans-n7-active wf-opensans-i7-active wf-lora-n4-active wf-lora-n7-active wf-lora-i4-active wf-active">
  <head>...</head>
  <body class="home page-template page-template-page-templates page-template-blank-page page-template-page-templatesblank-page-php page page-id-4"> == $0
    <header id="header" class="header-compact">
      <nav class="navbar navbar-default topbar">...</nav>
    </body>
  </html>

```

Elements Console Sources Network Performance Memory Application Security Lighthouse

1 1

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility

Filter :hov .cls +

```

element.style {
}

body {
  font-family: "Open Sans", Helvetica, Arial, sans-serif;
  font-size: 14px;
  line-height: 1.71429;
  color: #222;
  background-color: #fff;
}

```



Komponen Halaman Web





Minggu Depan

- Review HTML, CSS
- Javascript
- Bootstrap Framework



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TERIMA KASIH

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