

Homograph link generator

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Q. Homograph link generator tool, makes our link redirect to smtg close to YouTube.com

It's a **homograph attack detector**.

- A **homograph attack** (sometimes called an “IDN spoofing attack”) happens when someone registers a website that looks almost identical to a famous domain (like youtube.com) but actually uses **look-alike characters** from other alphabets (Cyrillic, Greek, etc.) or encoded domains (**Punycode**).

Example:

- Real → youtube.com
- Fake → youtube.com (the “o” is Cyrillic, not Latin)
- Fake → xn--pple-43d.com (this is Punycode for “apple.com” with a Cyrillic “a”)

The fake looks the same in the browser bar, but leads to a **different site** — often used for **phishing**.

What does your script do?

Your Node.js script:

1. Takes a URL.
2. Extracts the hostname (domain).
3. Checks:
 - Does it contain "xn--" (which means it's a Punycode domain)?
 - Does it contain non-ASCII characters (e.g., Cyrillic)?
4. Prints whether it's **suspicious** or not.

Code: (homograph-link.js)

```
const punycode = require("punycode/");

function isSuspicious(url) {
  try {
    const u = new URL(url);
    const hostname = u.hostname;

    // Check if it uses punycode (IDN)
    if (hostname.includes("xn--")) {
      return true; // definitely suspicious
    }

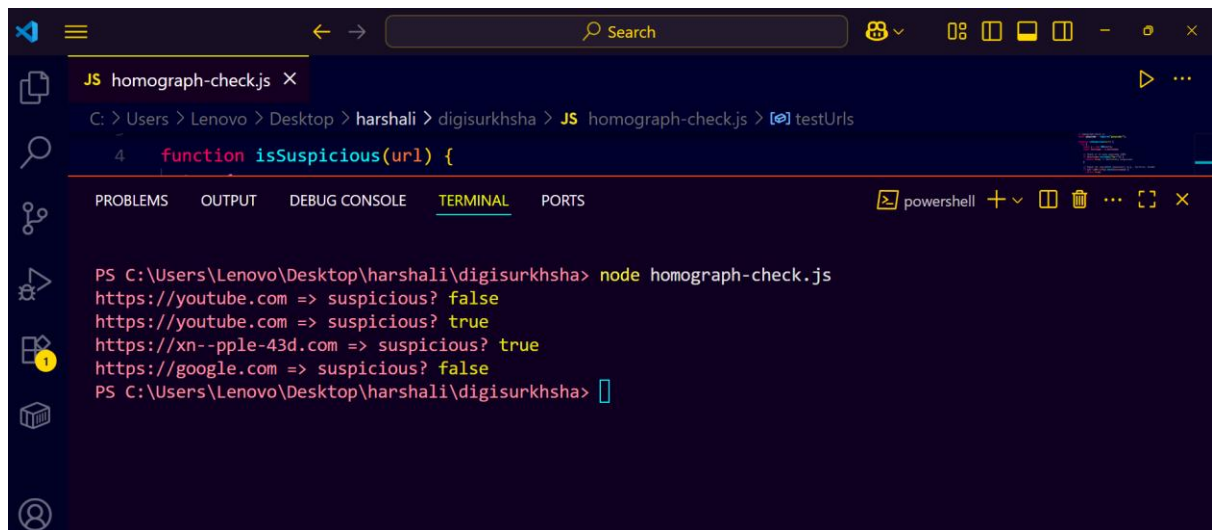
    // Check for non-ASCII characters (e.g., Cyrillic, Greek)
    if (/[\^x00-\x7F]/.test(hostname)) {
      return true;
    }

    return false; // seems safe
  } catch (err) {
    return true; // invalid URL also suspicious
  }
}

const testUrls = [
  "https://youtube.com",      // safe
  "https://youtube.com",      // Cyrillic 'o' (fake)
  "https://xn--pple-43d.com",  // punycode (fake apple.com)
  "https://google.com"        // safe
];

for (const url of testUrls) {
  console.log(url, "=> suspicious?", isSuspicious(url));
}
```

Output:



The image shows a Visual Studio Code editor window. The top pane displays a JavaScript file named `homograph-check.js` with the following code:

```
4 function isSuspicious(url) {
```

The bottom pane shows the `TERMINAL` output, which is a PowerShell session. The command `node homograph-check.js` has been executed, resulting in the following output:

```
PS C:\Users\Lenovo\Desktop\harshali\digisurkhsha> node homograph-check.js
https://youtube.com => suspicious? false
https://youtube.com => suspicious? true
https://xn--pple-43d.com => suspicious? true
https://google.com => suspicious? false
PS C:\Users\Lenovo\Desktop\harshali\digisurkhsha>
```