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NAME: Charpale Abhishek

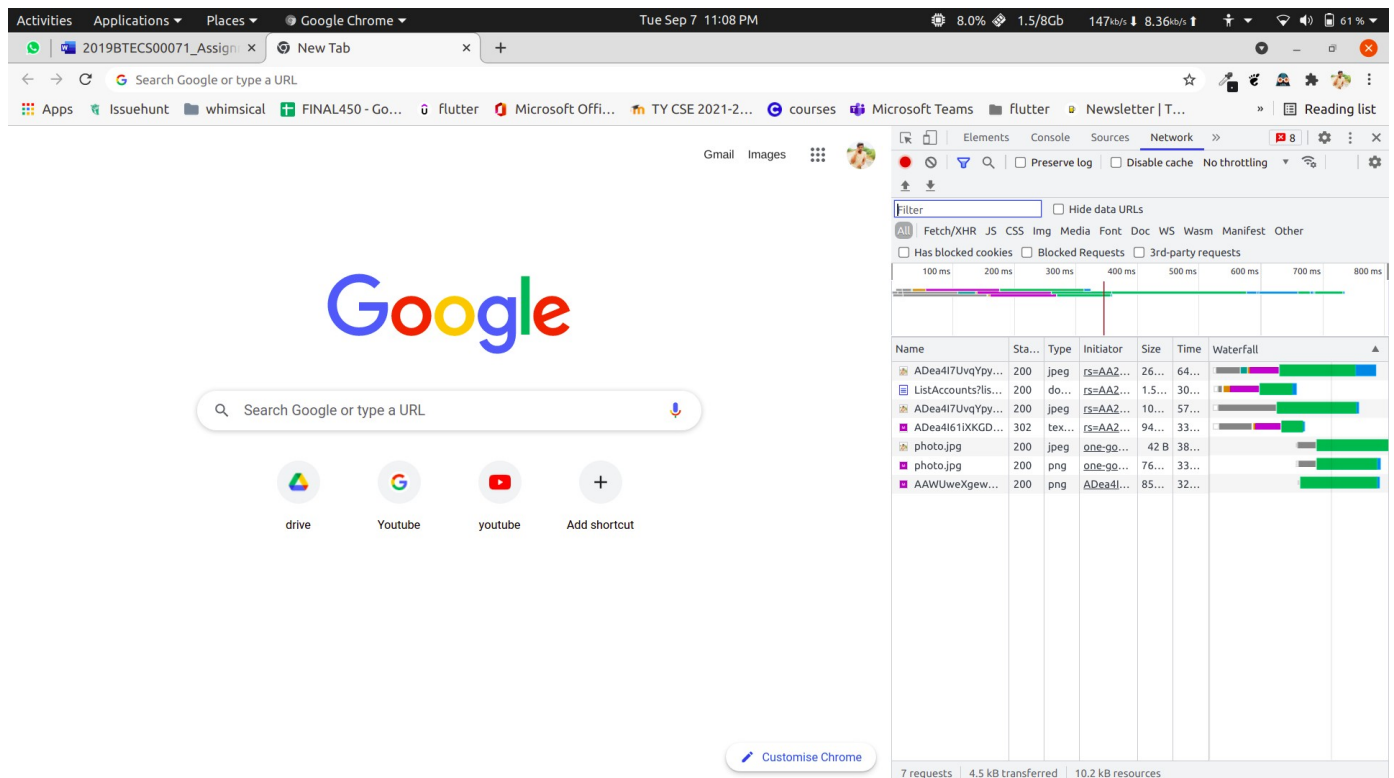
Practical No. 3 To study web browser and its Developer Tools option.

1. Problem Statement 1:

Install different web browsers on your machine. Go through the Developer Tools option of the browser.

Ans -

A. Chrome -



B. Brave -

The screenshot shows the Brave Web Browser interface. The main content area displays the Brave Rewards interface with a Bitcoin background. It shows statistics: 266 Trackers & ads blocked, 3.2 MB Bandwidth saved, and 14 seconds Time saved. The time is 23:11. There are buttons for YouTube and Coding Blocks. A 'WELCOME BONUS' section mentions claiming up to \$600 in rewards. A 'Brave Rewards' section offers to earn rewards for viewing sponsored background images. A 'Start using Rewards' button is present. A 'Customise' button is at the bottom. On the right, a network waterfall chart is visible, showing various resources loaded, including CSS files, JavaScript files, and images. The chart includes columns for Name, Status, Type, Initiator, Size, Time, and Waterfall. The total requests are 22, with 1.1 MB transferred and 1.2 MB resources. The finish time is 486 ms, and the DOMContentLoaded time is 27 ms.

2. Problem Statement 2:

1. Visit https://en.wikipedia.org/wiki/Computer_science on various browsers.

a. On Chrome -

The screenshot shows the Google Chrome browser displaying the Wikipedia page for 'Computer science'. The address bar shows the URL 'en.wikipedia.org/wiki/Computer_science'. The page features a banner for the '2021 edition of Wiki Loves Monuments photography competition'. The main content area includes a definition of computer science, its fields, and a list of contents. The left sidebar contains navigation links for the Wikipedia main page, contents, current events, random article, about Wikipedia, contact us, and donate. The right sidebar contains a search bar and a 'Log in' button. The bottom of the page shows the 'Computer science' title and a small logo.

b.On Brave -

The screenshot shows the Brave web browser interface. The address bar displays the URL `en.wikipedia.org/wiki/Computer_science`. The page content includes the Wikipedia logo, a sidebar with navigation links, and the main article text. A banner at the top of the article area promotes the '2021 edition of Wiki Loves Monuments photography competition'. The article text defines computer science as the study of algorithmic processes, computational machines, and computation itself. It also includes a table of contents and a diagram illustrating the foundations of information, algorithms, and architectures.

Activities Applications Places Brave Web Browser Tue Sep 7 11:36 PM 12... 1.7/8Gb 0b/s 0b/s 53 %

w Computer science - Wikip... +

en.wikipedia.org/wiki/Computer_science

Not logged in Talk Contributions Create account Log in

Article Talk Read Edit View history Search Wikipedia

2021 edition of Wiki Loves Monuments photography competition is now open!
Help improve the coverage on Indian cultural heritage in Wikipedia!

Computer science

From Wikipedia, the free encyclopedia

*For the journal, see [Computer Science \(journal\)](#). For the University Interscholastic League academic event, see [Computer Science \(UIL\)](#).
"Computer sciences" redirects here. For the American corporation, see [Computer Sciences Corporation](#).*

Computer science is the study of algorithmic processes, computational machines and computation itself.^[1] As a discipline, computer science spans a range of topics from theoretical studies of algorithms, computation and information to the practical issues of implementing computational systems in hardware and software.^{[2][3]}

Its fields can be divided into theoretical and practical disciplines. For example, the theory of computation concerns abstract models of computation and general classes of problems that can be solved using them, while computer graphics or computational geometry emphasize more specific applications. Algorithms and data structures have been called the heart of computer science.^[4] Programming language theory considers approaches to the description of computational processes, while computer programming involves the use of them to create complex systems. Computer architecture describes construction of computer components and computer-operated equipment. Artificial intelligence aims to synthesize goal-orientated processes such as problem-solving, decision-making, environmental adaptation, planning and learning found in humans and animals. A digital computer is capable of simulating various information processes.^[5] The fundamental concern of computer science is determining what can and cannot be automated.^[6] Computer scientists usually focus on academic research. The Turing Award is generally recognized as the highest distinction in computer sciences.

Contents [hide]

- History
- Etymology
- Philosophy
- Fields
 - Theoretical computer science
 - Theory of computation

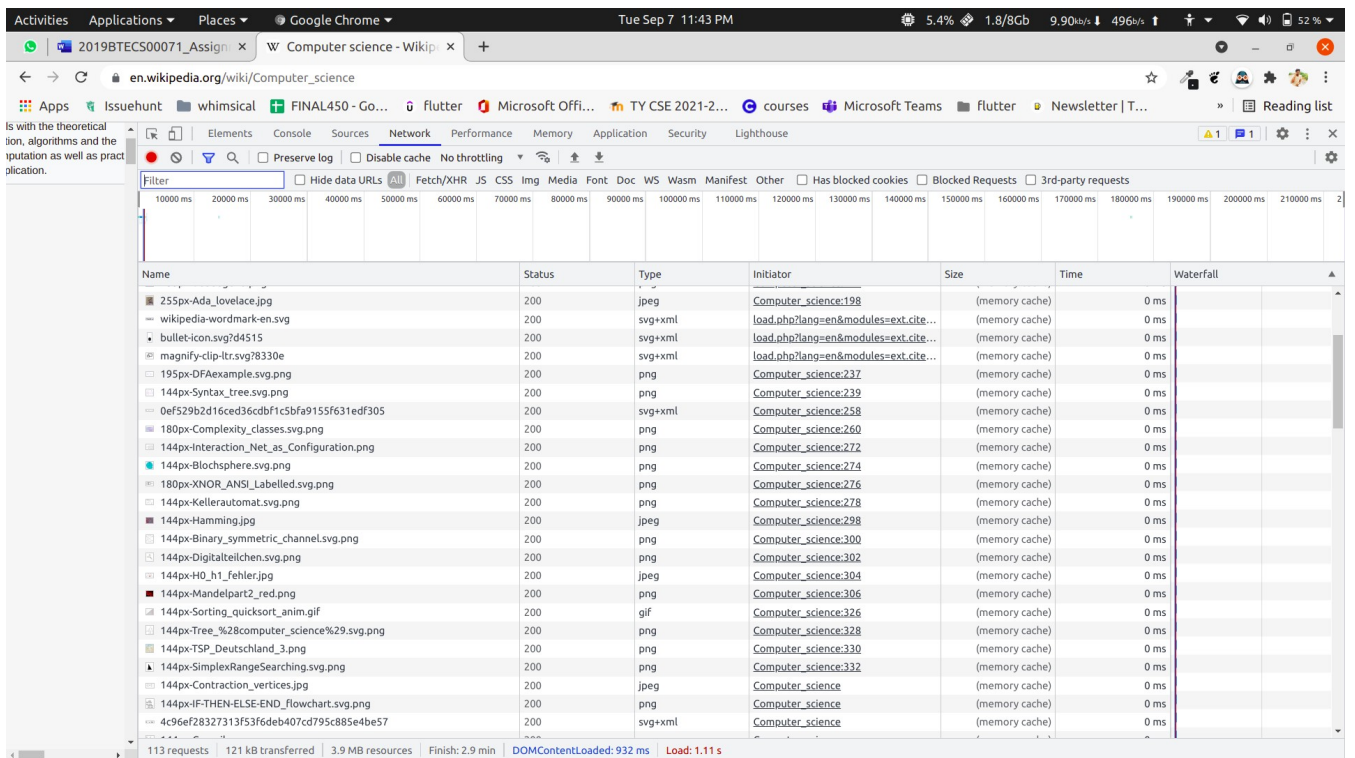
Computer science

Computer science deals with the theoretical foundations of information, algorithms and the architectures of its computation as well as practical techniques for their application.

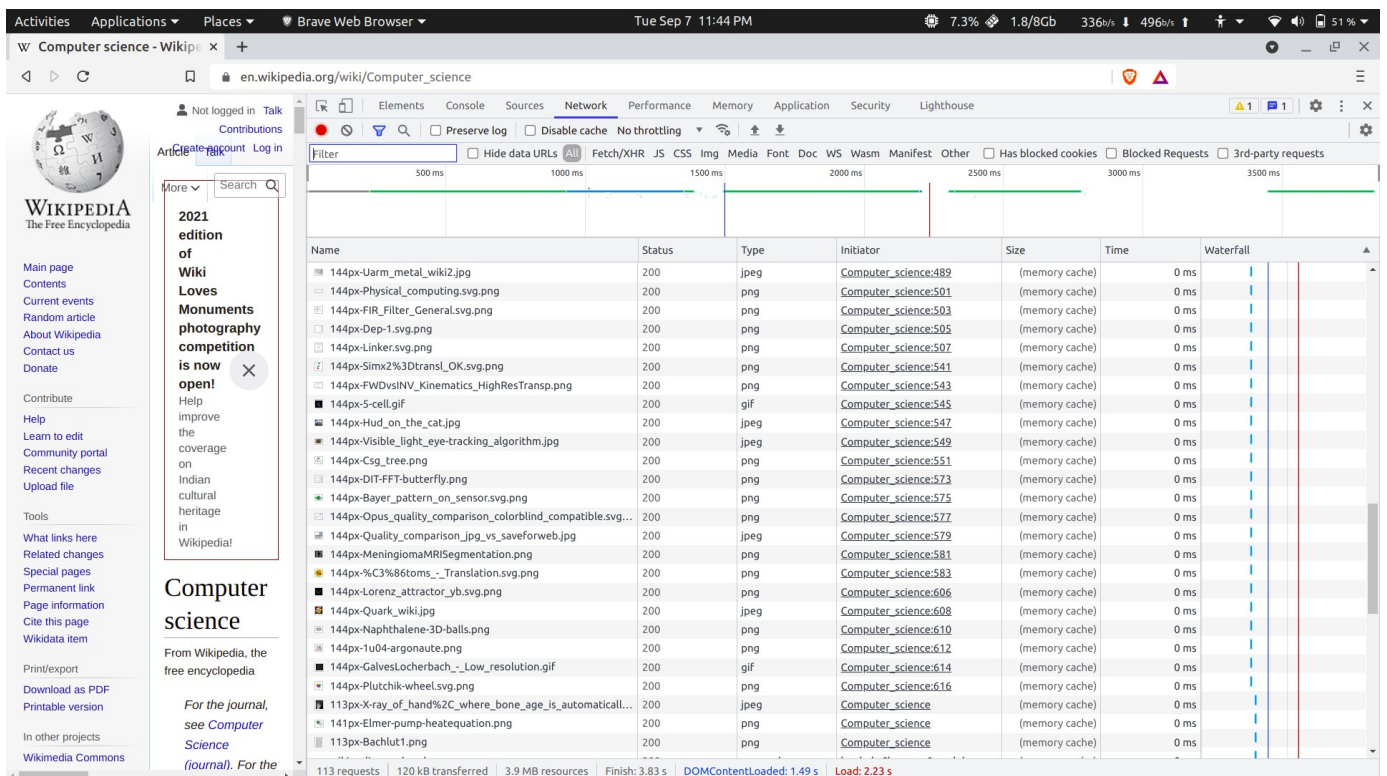
2. Using browser's Developer Tools option find out how many requests-response cycles are needed to load the page fully on your machine?

Ans:

Total **111** requests-response cycles are needed to load the page fully on Chrome.



Total **113** requests-response cycles are needed to load the page fully on Brave.



3. Using browser's Developer Tools option get the header information of the page.

× Headers Preview Response Initiator Timing Cookies

▼ General

Request URL: https://en.wikipedia.org/wiki/Computer_science

Request Method: GET

Status Code: 304

Remote Address: [2001:df2:e500:ed1a::1]:443

Referrer Policy: strict-origin-when-cross-origin

▼ Response Headers

accept-ranges: bytes

age: 7632

cache-control: private, s-maxage=0, max-age=0, must-revalidate

content-encoding: gzip

content-language: en

content-length: 70281

content-type: text/html; charset=UTF-8

date: Tue, 07 Sep 2021 16:14:05 GMT

last-modified: Tue, 07 Sep 2021 16:01:14 GMT

nel: { "report_to": "wm_nel", "max_age": 86400, "failure_fraction": 0.05, "success_fraction": 0.0 }

p3p: CP="See <https://en.wikipedia.org/wiki/Special:CentralAutoLogin/P3P> for more info."

permissions-policy: interest-cohort=()

report-to: { "group": "wm_nel", "max_age": 86400, "endpoints": [{ "url": "https://intake-logging.wikimedia.org/v1/events?stream=w3c.reportingapi.network_error&schema_uri=w3c/reportingapi/network_error/1.0.0" }] }

server: mw2338.codfw.wmnet

4. Using browser's Developer Tools option go through the DOM, CSS editor and JavaScript debugger options.

DOM –

🔍 📄 Elements Console Sources Network Performance Memory Application Security Lighthouse 1 1 ⚙️ ⋮ ✕

Styles Computed Layout Event Listeners **DOM Breakpoints** >>

No breakpoints

```
<!DOCTYPE html>
<html class="client-js ve-available" lang="en" dir="ltr">
  <head>...</head>
  ...<body class="mediawiki ltr sitedir-ltr mw-hide-empty-elt ns-0
ns-subject mw-editable page-Computer_science rootpage-Computer_s
cience skin-vector action-view skin-vector-legacy" cz-shortcut-
listen="true"> == $0
    <div id="mw-page-base" class="noprint"></div>
    <div id="mw-head-base" class="noprint"></div>
    ><div id="content" class="mw-body" role="main">...</div>
    ><div id="mw-data-after-content">...</div>
    ><div id="mw-navigation">...</div>
    ><footer id="footer" class="mw-footer" role="contentinfo">...
    </footer>
    ><script>...</script>
    ><script type="application/ld+json">...</script>
    ><script>...</script>
    <a accesskey="v" href="https://en.wikipedia.org/wiki/Compute
r_science?action=edit" class="oo-ui-element-hidden"></a>
  </body>
</html>
```

CSS editor –

StylesComputedLayoutEvent ListenersDOM Breakpoints>>

Filter: :hov .cls + [] ^

element.style {
}

body {
background-color: #f6f6f6;
overflow-y: scroll;
}load.php?la...in=vector:1

html, body {
font-family: sans-serif;
}load.php?la...in=vector:1

html, body {
height: 100%;
}load.php?la...in=vector:1

body {
margin: 0;
}load.php?la...in=vector:1

body {
display: block;
margin: 8px;
}user agent stylesheet

Inherited from html.client-js.ve-available

html {
font-size: 100%;
}load.php?la...in=vector:1

The diagram illustrates the CSS box model with four nested layers:

- margin:** The outermost layer, represented by a dashed orange border.
- border:** The second layer, represented by a solid yellow border.
- padding:** The third layer, represented by a dashed green border.
- content:** The innermost layer, represented by a solid blue rectangle with dimensions 592.800x719.200.

Each layer is labeled with its name and a dimension line indicating its extent.

JavaScript Debugger -

