

TERSE: INTELLIGENT BROWSING EXTENSION

Devin Burke | Joshua Ray

Overview

Terse is a browser extension for Google Chrome that summarizes any open webpage that is primarily text-based, such as a news article, encyclopedia entry, or blog post. It displays the primary sentences and topics of the page.

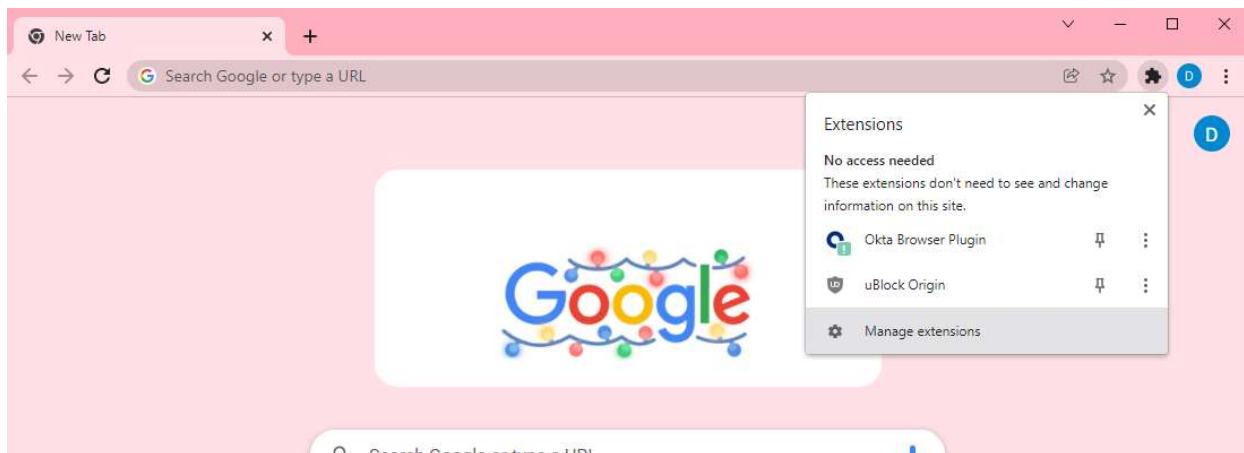
Implementation Instructions

Terse is not presently on the Google Chrome store, so you must install the extension manually. If you do not have Chrome, you may download it from google.com/chrome.

First, download the Terse extension source code from GitHub.com using the following command:

```
git clone https://github.com/devinsburke/CourseProject.git C:\terse
```

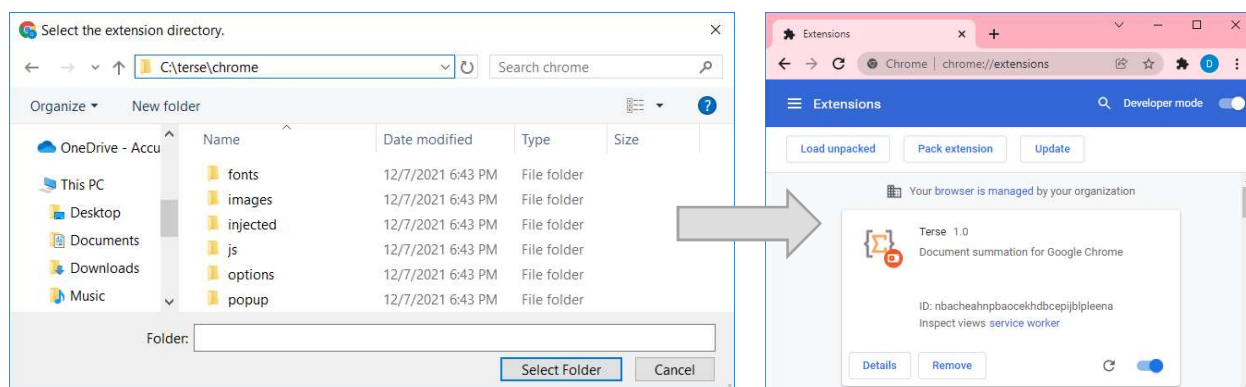
Next, open Google Chrome and navigate to the extensions page by visiting <chrome://extensions/> or by clicking the **puzzle piece** icon and choosing **Manage extensions**:



From the **Extensions** page, enable **Developer mode** by clicking the toggle in the page's top-right corner. Three buttons will appear in the upper half of the screen, as shown below:



Click **Load unpacked**, and then browse to **C:\terse\chrome**. If you downloaded the GitHub repository to a different folder, input that folder and select the **chrome** subfolder within.



The **Terse 1.0** extension will then appear in your extension list.

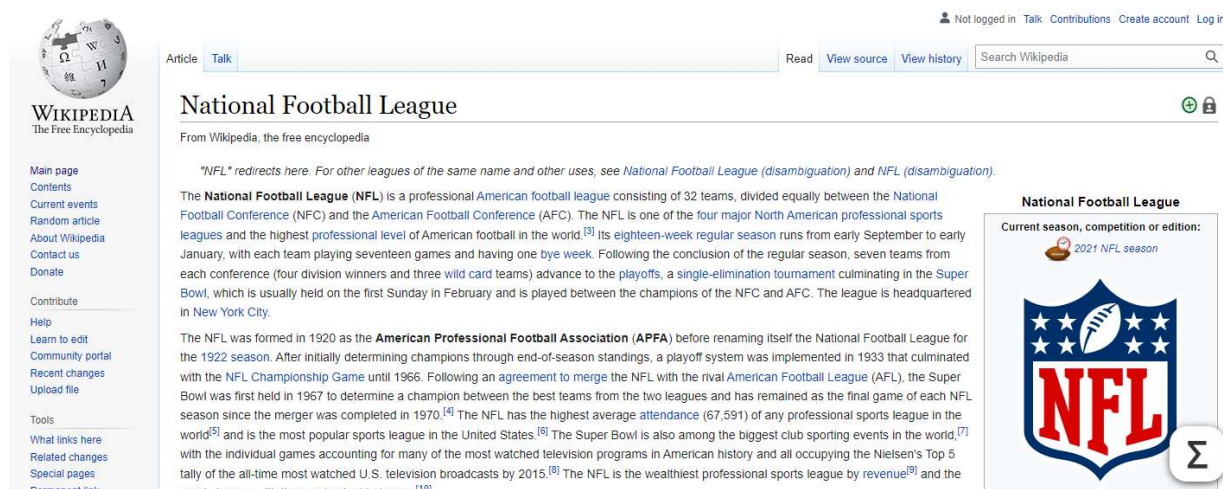
Usage Instructions

Automatic Summarization

By default, the Terse icon (denoted by a sigma symbol) will appear in the bottom-right corner of each webpage you visit, if the page has at least a dozen sentences of prose content. The best candidates are news articles, encyclopedia entries, and blog posts. The visibility of this icon is configurable (see *Manual Summarization*).

Also, by default, Terse will not attempt to summarize any website's landing page or search page. For example, *website.com* will not be summarized, but *website.com/mypost* will. The reason these pages are suppressed is that they typically contain lists of pages or excessive visual content rather than prose, and thus the summarization results are typically quite poor. This suppression is configurable in the Options screen (see *Configuration*).

The example below uses the Wikipedia entry for National Football League, available at https://en.wikipedia.org/wiki/National_Football_League, as an example.



The screenshot shows the Wikipedia article for the National Football League. The page includes the Wikipedia logo, navigation links, and the main article content. A Terse icon, represented by a sigma symbol (Σ), is located in the bottom right corner of the page. The article text describes the NFL as a professional American football league consisting of 32 teams, divided equally between the National Football Conference (NFC) and the American Football Conference (AFC). It mentions the league's history, the Super Bowl, and its status as the most popular sports league in the United States.

Hover over the Terse icon in the bottom-right to see the summary. Below is the summary generated for the National Football League article, along with an explanation of what each section means.

National Football League

Summarized a 6838 word document in 1030 words, cutting read time by 29 minutes

Official Description

Professional American football league

Topics (Word Clusters) | 20

REGULAR SEASON | 25

SUPER BOWL | 25

FOOTBALL LEAGUE | 21

NATIONAL FOOTBALL | 14

AMERICAN FOOTBALL | 12

NATIONAL FOOTBALL LEAGUE | 11

PROFESSIONAL FOOTBALL | 11

WILD CARD | 10

FOOTBALL CONFERENCE | 9

UNITED STATES | 9

NFL GAMES | 9

NIGHT FOOTBALL | 8

PRESEASON GAMES | 7

THURSDAY NIGHT | 7

FREE AGENTS | 7

AMERICAN FOOTBALL LEAGUE | 6

WILD CARD TEAMS | 6

CHAMPIONSHIP GAME | 6

SPORTS LEAGUE | 6

DRAFT PICKS | 6

Summary (Key Sentences) | 26

- The National Football League (NFL) is a professional American football league consisting of 32 teams, divided equally between the National Football Conference (NFC) and the American Football Conference (AFC)
- The NFL was formed in 1920 as the American Professional Football Association (APFA) before renaming itself the National Football League for the 1922 season
- Following an agreement to merge the NFL with the rival American Football League (AFL), the Super Bowl was first held in 1967 to determine a champion between the best teams from the two leagues and has remained as the final game of each NFL season since the merger was completed in 1970
- After the league merged, it was reorganized into two conferences: the National Football Conference (NFC), consisting of most of the pre-merger NFL teams, and the American Football Conference (AFC), consisting of all of the AFL teams as well as three pre-merger NFL teams
- The league's licensing wing, NFL Properties earns the league billions of dollars annually; Rozelle's tenure also marked the creation of NFL Charities and a national partnership with United Way
- The league mandated a twelve-game regular season for each team beginning in 1935, later shortening this to eleven games in 1937 and ten games in 1943, mainly due to World War II
- In March 2021, the NFL officially adopted a seventeen-game schedule

Official Description

Meta data description from the page, usually shown on search engines.

Topics (Word Clusters)

Most frequent word combinations on the page. You can often guess an article's subject given these topics.

Summary (Key Sentences)

List of the most relevant sentences on the page, in order that they appear on the page. Relevance is judged by how similar each sentence is to the whole page.

For example, a sentence about one specific player probably won't be included because the words in that sentence don't appear many times in the overall page.

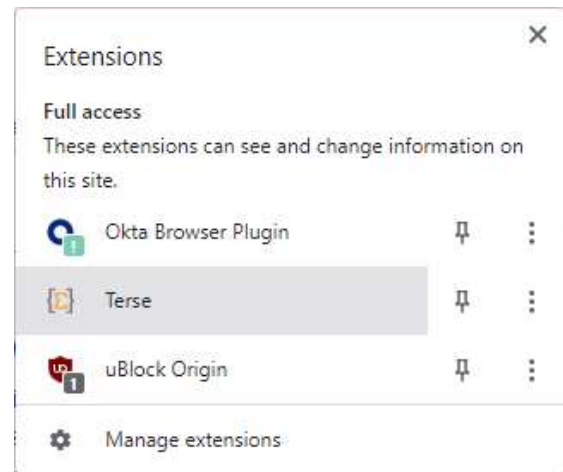
To adjust the number of sentences shown, see *Configuration*.

Manual Summarization

You may disable the Terse icon displaying automatically (see *Configuration*). In this case, when you wish to summarize an open page, you may still do so by clicking the extension icon in the Chrome browser toolbar, denoted by a puzzle piece.

Then, click **Terse** to view the generated summary in a popup window.

You may permanently show Terse in your toolbar by clicking the **Pin** icon to the right of the extension.

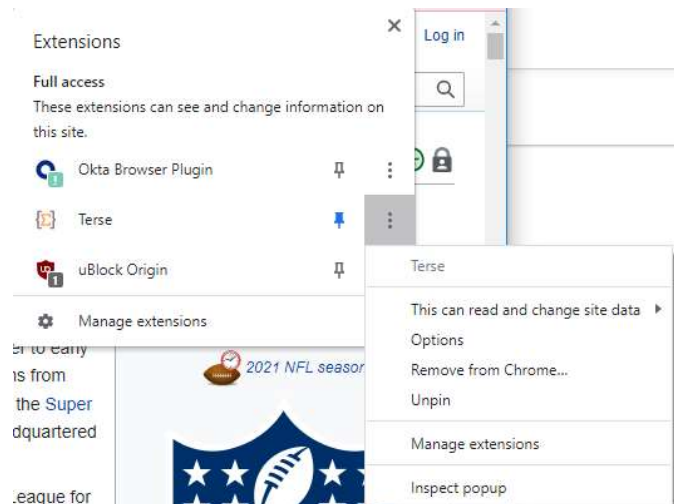


Configuration

The extension has settings to adjust visibility, summarization length, and suppression on certain pages.

To access these options, click the Extension (puzzle) icon in the top-right of your Chrome toolbar, then click the three dots next to Terse, and finally click **Options**. Alternatively, if you pinned the Terse icon in your toolbar, you may simply right-click it and click **Options**.

This will open a new tab that allows you to maintain the following settings:



1. Show terse icon on all pages

When enabled, the Terse extension icon will be shown on the bottom right corner of all pages deemed applicable to summarize. This allows for quick utilization of the extensions summarization capability by simply hovering over the injected icon.

2. Suppress Terse icon on landing and search pages

When enabled, the extension icon will not be visible on any website landing page, meaning the home page of a given website. Home pages often do not contain large amounts of text and are mostly used for navigation purposes, meaning summarization is extremely unlikely to be useful. In addition, the icon will be hidden on search engine pages such as Google or Bing, as these results are also very navigation focused.

3. Summary size

This setting allows modification of the length of the generated page summary, with 3 available options of 5%, 10%, and 15%. By default, 10% is the selected option, meaning when a page is summarized it will target a summarization size of 10% of the original text-based content.

The Options page also contains a **Sample Results** section, which outlines extension performance against previously recorded results from end users against randomly selected Wikipedia articles. This section is purely informative but advertises a sentence selection accuracy of roughly 76% when compared to optimal user selected results.