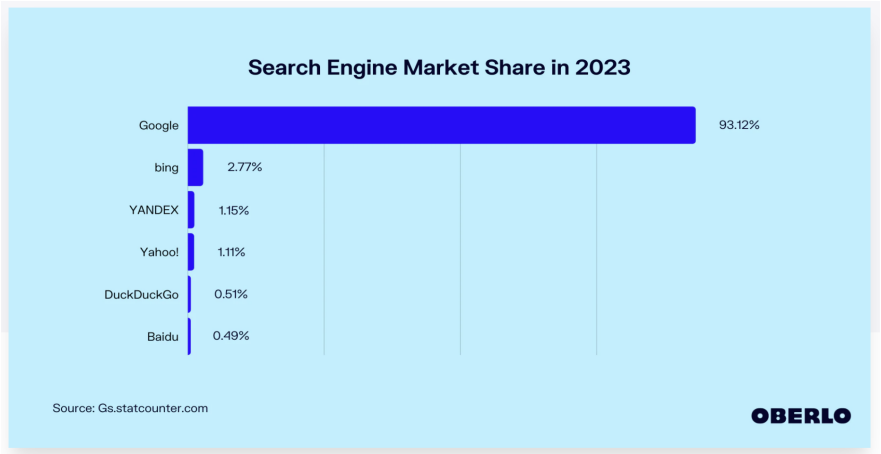
Read up on any innovative technology using NLP (by companies such as Google or IBM, for instance) and write a brief summary about the technology, what it achieves/does, and an overview of how it works (250 - 500 words).

The following summary takes a look at how NLP plays a vital role in making Google Search the most popular search engine. Google handle over 90% of all searches in the world. '*As of May 2023, a whopping 93.12% of all search queries conducted across all search engine providers are done through the internet giant.*' (Oberlo, 2023)



Source: oberlo.com

First of all, it is worth considering that Google Search uses NLP to make web content better and improve search results. Understanding how we speak and write online is made much easier with the aid of NLP methods. As mentioned by Vinutha M. et al. in their research, the machine learning model looks at the structure and meaning of the content to understand what we actually mean. Websites use these algorithms to show useful stuff when you search for something. It also helps optimise web content by finding and fixing mistakes, making it friendlier to search engines. It also looks at what users ask/request and shows them the right content based on that, helping us find better results by improving the clarity of our search queries. As a result, NLP helps websites rank higher in search and make users happy.

For example, based on this article by Google Cloud, natural language processing (NLP) is used for a wide range of applications. It helps in customer support by analysing and understanding user queries, sentiment analysis for social media monitoring, content recommendation systems, chatbots for interactive conversations, and language translation services

Now let's see how a search engine works with the help of the research made by Vinutha M. S. and M. C. Padma:

A search engine is a tool that facilitates information discovery on the internet by doing three crucial tasks—crawling, indexing, and ranking.

Figure 1 shows the procedure in action. When you conduct a search, the search engine deploys a bot called WebCrawler to find relevant web information. This information is kept in a database. But there's more! The search engine also performs some behind-the-scenes work, such as processing the content by eliminating unnecessary elements such as stop words and HTML tags, as well as stemming words to their base forms. The search engine then organises the content and builds an index database.

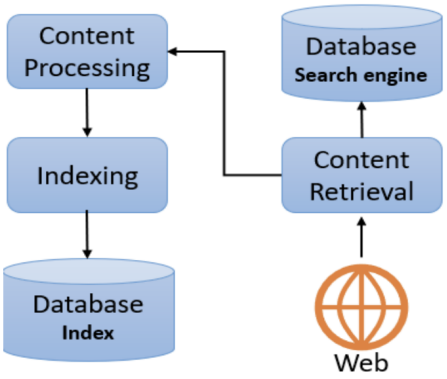


Figure 1. Schematic Architecture of Web Content Indexing Process (Source)

Figure 2 presents the content querying and retrieval procedure. When you type a search query into the search engine, it compares it to the index database and returns a list of URLs that match your query. It ranks these URLs according to their relevance. It then displays a preview (snippet) of each result. You can get the original content from the database by clicking on your desired result. It's like a portal to finding what you're looking for on the internet!

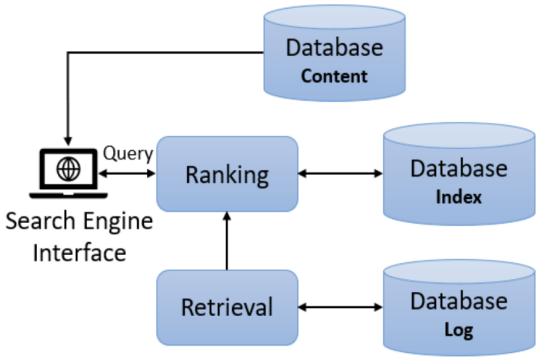


Figure 2. Schematic Architecture of Content Querying and Retrieval Procedure (Source)

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