

# Course Overview

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The world wide web (WWW) is often hailed as one of the most important inventions of the mankind in the past 30 years. **Search engines**, on the other hand, are an important reason why WWW has become so popular. After all, what use of a massive number of webpages can be, if one does not even know the URL of the right page?

A search engine serves as a purpose that can be stated as follows:

Given a **short** piece of description about a user's information needs, a search engine should return a list of URLs to websites that are **highly relevant** to what the user is looking for.

It is often difficult (if not impossible) to judge which webpage *best* suits the user – in most cases, this is as subjective as debating which is the best movie in history. As a result, it seems unlikely that one can come up with a scientific definition of a “perfect” search engine. How to achieve the aforementioned purpose, in spite decades of research, is still an on-going research topic.

Nevertheless, the development of search engines (e.g., Baidu, Bing, Google, Naver, Yahoo, etc.) has left behind a trail of good ideas towards building a popular search engine. The success of these engines has essentially proved that those ideas work quite well in practice. In this course, we will take a good look at many of the ideas, and thereby, discuss the inner workings of a search engine.