Cache is used to save the data/information for a fixed period of time on a computer.

It reduces the time taken by the website to access the data.

Used to improve the performance of the website.

**Cache can be of 2 types**

1. Client side cached
2. Server-side cache.

**Client-side caching:**

Used to cache the data/ files on the client machine well know caching is browser caching.

**Browser cache:**

Basically, frequently visited site speed can be increased with this type of caching. With this instead of requesting for data every time it will be saved in a client machine and immediately load the data without any delay

Eg: Application css files images, Js etc.

This will consume some memory on the client machine, but every browser has configuration option with which we can configure things to be cached.

Server-side caching:

As name suggest data is cached on the server and it can be done at any point of time on the server machine. Ed recent images viewed files etc

1. Page caching
2. CDN caching
3. Object caching
4. DataBase caching
5. Opcode caching

**1.DB cache:**

Need to be planned at the stage of development

Process need to be implemented to generate the data on website with database

Reduces disk space, cpu utilization, speed up the data access process.

**2.Object cache:**

Basically, object is collection of data. In object caching data can be stored locally so that it doesn’t have to be fetched frequently from the server this will speed up the server performance.

Eg: Video object, image object, file object

When user request for a data which is unchanged it can be fetched directly from the local memory instead of making addition call to db this will reduce the use of bandwidth.

1. Page cache:

Faster load page for the better performance because the entire page is cached. And saved in unused section of the ram this will not have any addition load or impact on the memory. On successive calls page will be sent from the cache.

1. **Content Delivery Network (CDN) Cache:**

Broder form of server-side data caching mechanism where in static content from the website will be hosted on the global accessible Proxy servers.

This will also reduce some overhead from the original servers where in the application is hosted.

4 major Type of caching types available are:

1. Web / browser caching
2. Data caching
3. Application/output caching
4. Distributes caching

Web / browser caching:

Web, browser, proxy and gate way caching works differently but overall goal is common to reduce the network traffic and latency.

Browser caching is lower scale happens for the user level. Speed up the navigation when the user want to visit the pages on the site.

Proxy gateway cach is used for larger scale DNS and Ip mapping and mail server record.

**Data Caching:**

Most used caching mechanism basically used when the data is called frequently that is less likely to change. This will avoid the call to the Db it will helps in loading your application faster and give better user experience. Data will be stored on the local memory of the server. This is the fastest way to retrieve the data. With this most recently used data will not be fetch from the db periodically.

When there Is a ajax call on the page this is give dramatically use experience.

**Application/Output Caching:**

Similar to data caching data caching but it caches the raw data set . which is nothing but the page HTML. Either it will cach the entire Page html or section of html or header info so on.

This type of caching drastically reduces the application load time to 50%

**Distributed Caching:**

Type of caching used for big dogs. Deals with high volume of data like google, youtube, amazon etc. with this data is pulled and stored on the distributed servers memory. Simply server the page don’t think about running out of memory

Cluster of cheaper machines. As on when needed new server can be added to the cluster.

Once it was nice to have feature now its like must have feature.