- Company (source) [Facebook / Amazon / Netflix]
    - Stack detail
    - Why this stack (if not already described)

Facebook (https://www.quora.com/What-is-the-technology-stack-for-Facebook)

Section A: Facebook's Client Side.

Facebook is primarily built on the three cornerstones of the World-Wide Web which every Programmer should know, which are:

1. **HTML**: HyperText Markup Language. Used for developing rich client side web pages using semantic markup elements that are interpreted by the browser. References: HTML.
2. **CSS**: The Cascading Style Sheets. Used for defining HTML semantic elements and markup by implementing rules called cascades, which is a determinant factor in the visual effects of a webpage. References: CSS.
3. **JavaScript**: is a dynamic programming language, formerly implemented as ECMAScript, is used to implement certain functionalities unavailable in HTML, such as geographical features and cookie sessions. Facebook uses JSON (JavaScript Object Notation) and AJAX (Asynchronous JavaScript and XML) too, References: JavaScript Language (http://en.wikipedia.org/wiki/javascript).

In Summary Facebook's visuals are determined by the above client-side technologies.

Section B: Facebook's Server Side

Alright Facebook, was originally built on the LAMP Server stack. Download the LAMP Stack by Apache Friends here. It's actually an abbreviation which is composed of four cornerstones required in server-side development, that is back-end. They are:

1. **Linux**: A free and open-source operating system, developed by the Linux Foundation. Get a reference article: Linux OS.
2. **Apache**: A free open-source HTTP Server, known fully as the Apache HTTP Server, is used for the deployment and management of web pages written in server-side scripts, such as PHP or Perl. A reference: Apache Server.
3. **MySQL**: An open-source RDBMS (relational-database management system) used for managing databases and queries. Reference: MySQL Database.
4. **PHP**: A general-purpose programming language developed originally by Rasmus Lerdorf in 1994, primarily for web development particularly server-side scripting and command-line scripting. Reference: PHP Language.

Section C: Facebook's Stability

Fact is, PHP isn't really engineered for powering a website with over a billion accounts. Yes, that's a fact. At that moment, I think a hammer would have hit Mark on the head. Yes, use a more compact language to achieve the goal. Yes, it would have seemed elusive for Facebook engineers to take down Facebook for about a month for an unprecedented code restructuring from a language such as PHP to C++ or perhaps C. So, Facebook engineers devised a means of upgrading their site with no harm being done to its users. "Build an engine that perhaps syntactically compiles PHP and Hack a syntactically similar language we will invent but more compact to PHP code to intermediate bytecode, or into C++ Code, and call it Hip-Hop Virtual Machine for PHP (HHVM)." Yes, that is what they did. So, Apart from the LAMP stack, Facebook's is built on these technologies:

1. **HHVM**: Hip-Hop Virtual Machine. An engine built by Facebook Inc. that transforms PHP to C++ Code. More references on HHVM.
2. **C++**: A middle-level programming language developed by Bjarne Stroustrup. Facebook uses an Already compiled PHP code to executable bytecode in C++. More references on C++
3. **Hack**: A relative to PHP, created and developed by Facebook to enable quick runtime and more functionalities like PHP. More references on Hack Programming Language.

In Summary, Facebook uses the following technologies to stabilize and increase the speed and processing of billions of requests that occur every single time a user just simply "comments", excluding uploading, and more tedious stuff.

Section D: Facebook's Messenger Application

Facebook *probably* implements these technologies for it's messenger application:

1. **Haskell**: A statically typed language. It's paradigm is conceptualized on functional programming. More references on Haskell.
2. **Erlang**: A general-purpose, concurrent functional programming language, with a garbage-collected runtime system (automatic memory management) More references on Erlang.
3. **C++**: Native C++ code, enabling Facebook Messenger, to run on cross-platform devices.

As stated above, Facebook probably implements these technologies on it's messenger platform.

Section E: Facebook's Database Implementation

Facebook uses the following database technologies, for proper sorting of users data, results feed, and indexing or searching.

1. **Cassandra**: A distributed wide-column store, noSQL database system developed by Apache for handling huge data, and is used by Facebook, for it's indexing and handling of user's data. More references: Apache Cassandra.
2. **HBase**: is an open-source, non-relational, distributed database modeled after Google's Bigtable and written in Java, and created by Apache. It runs on Apache's Hadoop. More references: Apache HBase.
3. **MariaDB**: is an open-source distributed, relational database system developed by the MariaDB Foundation. More references: MariaDB
4. **MySQL**: An open-source RDBMS (relational-database management system) used for managing databases and queries. Reference: MySQL Database.
5. **Hadoop**: is a collection of open-source software utilities that facilitate using a network of many computers to solve problems involving massive amounts of data and computation. Facebook implements this in analyzing user's data alongside **Hive**, which is believed to be created by Facebook. More references: Apache Hadoop.

The above database technologies are all centered on NoSQL, except the MySQL Database.

Section F: The Facebook Main Application

The Facebook application runs on multiple operating system platforms, which include: **Android, iOS, MacOS,** and **Windows**. Facebook is basically an Asynchronous Web Application. It implements these technologies that are integrated alongside Native C++:

1. **Java**: A general-purpose programming language that supports class-based and object oriented programming developed by Oracle Corporation. It is widely used for building Android Applications Reference: Java.
2. **Swift**: A general-purpose, compiled programming language developed by Apple Inc, for iOS, WatchOS, MacOS, and tvOS devices, as a rebuild and enhanced version of Objective-C. Reference: Apple Swift.
3. **C# and Xamarin.forms**: Guess Facebook integrates these technologies for building Facebook Applications for Windows devices.

Section G: Other Technologies

These are other technologies Facebook make use of:

1. **BigPipe**: that enables seamless rendering of pages through pipe-lining.
2. **Machine Learning**: a branch of artificial intelligence that aims on giving computers the ability to learn and analyze. Facebook probably uses this to analyze hate speech, fake news, and illegal accounts. More about Machine Learning.

3. **ReactJS and React Native**: a JavaScript framework developed by Facebook for building User-Interfaces, and for building native JavaScript applications. More about ReactJS and React Native.

Section H: Wrapping It Up

So in this answer session, I listed technologies used by Facebook. This are all the technologies in summary:

- HTML
- CSS
- JavaScript.
    - AJAX (Asynchronous JavaScript and XML)
    - JSON (JavaScript Object Notation)
- LAMP
    - Linux
    - Apache
    - MySQL
    - PHP
- HHVM
- C++
- Hack
- Haskell
- Erlang
- C++
- Apache Cassandra
- Apache HBase
- MySQL
- MariaDB
- Apache Hadoop
- Java
- Swift
- C# and Xamarin.forms
- BigPipe
- Machine Learning
- React JS/React Native

Amazon (https://ourtechroom.com/tech/amazon-technology-stack/)

Amazon is a multinational technology company based in the United States that specializes in eCommerce, cloud computing, and artificial intelligence (AI). Amazon was founded in 1994 and initially sold books online before expanding to other products and cloud computing services.

It is one of the world's top five companies, along with Google, Apple, Meta (Facebook), and Microsoft. Nowadays it is the world's largest eCommerce store as well as the world's largest cloud computing platform provider.

Programming languages, web servers, CDNs, webservers, analytics tools, business tools, DevOps tools, big data tools, and so on are all part of the technology stack. This large-tech gaint employs a variety of technology stacks; let us look at some of the most popular tech stacks employed by Amazon.

Programming Languages Used by Amazon

It is said that Amazon allows its developers to choose their programming language, as do all large corporations. According to Amazon's career as a Software development engineer, you must be proficient in at least one modern programming language such as Java (preferred), Objective C, or C++.

Java

Amazon's preferred programming language is Java.Java is a cross-platform, platform-independent, object-oriented, and highly secure programming language used to create web applications. It is also widely used in game development, cloud computing, big data, artificial intelligence, numerical computing, robotics, and the Internet of Things (IOT).Java is a very fast server-side programming language. There are numerous active community support and learning resources that will undoubtedly solve your programming challenges.

Amazon now has its own free Amazon OpenJDK Standard Java distribution, which features long-term support and is regarded as the best alternative to Oracle's own JDK. Corretto is the name given to Amazon's Java version. It is a production-ready distribution that Amazon supports and maintains. It is backward compatible with Java SE.

C++

C++ is a general-purpose programming language that is primarily used by businesses because it efficiently utilizes computer resources and provides programmers with control over costly operations such as memory management.

C++ has been found to be effective in-system programming, embedded systems, resource constrained software, and other areas.

Python

Python is a multipurpose programming language that is primarily used by businesses to automate tasks as well as to conduct data analysis and visualization.

Perl

Perl is a popular open-source general-purpose and stable interpreted programming language due to its text manipulation capabilities and quick development cycle.

JQuery

When inspecting the amazon.com website, we found that the site is using Jquery and Amazon has its own version of UI called AmazonUIjQuery.

React and Angular

According to stackshare, amazon also uses react and angular. Angular is a powerful framework built by Google and React is built by Facebook

Database

According to Wikipedia, DynamoDB, RDS/Aurora, Redshift is the database used by Amazon.com.

Amazon is also the largest PaaS supplier, offering the following technology and tools as a platform service.

Amazon Web Service

Under Amazon Web Service it includes the following tools.

- Amazon S3
- Amazon EC2
- Amazon CloudFront
- Amazon RDS
- Amazon DynamoDB
- Amazon SQS
- Amazon VPC
- Amazon Redshift
- Amazon Elasticache
- Amazon EBS
- Amazon EMR
- Amazon Elastic Transcoder
- Amazon SimpleDB

Amazon S3

Amazon Simple Storage Service (Amazon S3) is a scalable, high-speed, web-based cloud storage service. Amazon Web Services provides storage via a web service interface or console. Amazon S3 is used for data storage, data archiving, application hosting for web app deployment, installation, and management, data backup, data lakes, IoT, and website hosting. (source)

Amazon EC2

Amazon EC2 is an abbreviation for Amazon Elastic Compute Cloud. It enables users to rent virtual machines on their own operating system, reducing the time required to set up a new server instance and providing quickly resizable compute capacity in the cloud.

Amazon CloudFront

Through Amazon CloudFront, Amazon provides global CDN services. Amazon CloudFront is designed to provide clients with high-speed, low-latency services for transferring content such as software, web videos, SDKs, or any other media.

Amazon RDS

Amazon RDS is an abbreviation for Amazon Relational Database Service, which provides managed SQL database services by automating time-consuming administrative tasks such as database setup, database migration, patching, recovery, and backups, making it easier to set up, operate, and scale relational databases in the cloud.

Amazon VPC

Amazon Virtual Private Cloud (Amazon VPC) is an Amazon virtual private network that logically separates/isolates from other virtual networks in the AWS Cloud. It is the networking layer for Amazon EC2.

Amazon Redshift

Amazon Redshift is a relational database management system (RDBMS) that is compatible with other RDBMS applications. Amazon Redshift is a fully managed, petabyte-scale cloud-based data warehouse solution. Redshift is intended for use with a wide variety of data sources and data analytics tools, and it is compatible with a number of existing SQL-based clients.

Netflix (https://maddevs.io/blog/tech-stack-of-prominent-companies/)

The Netflix app is based on multiple programming languages: Python, Node.JS, Java, Kotlin, and Swift. This is done to ensure all-round compatibility of the Netflix app across multiple platforms: browsers, smart TVs, smartphones, and gaming consoles.

The comprehensive library part of the stack is designed to offer users the most polished experience they've grown to expect from a streaming service. Netflix owes its user-friendly interface to React and JS UI libraries.

Given the app's heavy emphasis on cloud-based solutions, the team behind the streaming giant has opted to use Dynomite as the database cluster management service. It offers several exceptional advantages: for example, support for in-memory, pluggable, and persistent storage engines.