**Javascript engine:**

It is used to change human readable (high level language) code into machine Code(low level language).

Every browser has its own engine for example chrome uses v8 engine

But it is not limited to webs it becomes core component later like in node js runtime system.

Safari uses nitro,firefox uses spider monkey,opera uses v8 , explorer uses chakra then transferred into v8 engine.

**Js libraries :**

Between disagrements from 2005 to 2010 about standardization of Ecma Script.different libraires comes in to support javascript to hide / reduce/ remove inconsistency in its performance.since different browsers uses different form of standardization which brings complications for the developers for that :

Jquery

Mootloop

Prototype and some others comes in to support whereas after ajax new powerful tool.jquery outshines and used most as Js libraries which hide inconsistency in web browser base on js.a request send to server in background to do operations.

**Jquery :**

It is cross platform javascript library designed to simplify client side scripting it is free and open source software.with an aim ‘write less do more’ concept.

Its all implementation like method function everything is included into the single page mean if you have two pages one is html other is css and two separate j queries implemented on each page which brings complexity and its code becomes unmainable since there is no linkage or transfarable protocol available for j query to add its implementation into other apps or link one or more apps or pages together it is built with an aim to reduce complex long codes of javascirpt because at that time js is not standardize.

**Single page application :**

Because of the ajax and client slide libraries most business logic shift into client side as it increased size of the page and becomes inconsistent a page overall.since when there are more than one page it becomes difficult to move on the next page or navigate from one page to another page although a page in which your currently on have all implementataion present so how you go to the next page apart leaving implementation on the page your on it for that single page application comes in from 2010 work on it starts.

Libraries and frameworks :

In oct 2010 angular js becomes popular which manages client side apps better.like dependency injection two way data binding routing all gives by angular js managed over client but after time some problems comes in which frustrate developers and devs decide to redisghn angular framework.then facebook launch react which manages component state management and other things better and people shift on react.in 2013 feb vue js comes in which took some features of angular and react and makes implement in vue js.in 2016 angular 2 comes in and some people come in base on component architecture.since java scripit become popular because of this framework which is based on javascript standard.

**Node js :**

In 2008 google introduce chromium web browser initially afterwards with improvements called chrome uses v8 engine.since this engine not only used in web browsers but also in developing client side apps such as node js adopt it as runtime environment engine.

In 2009 ran dhal developed node js called unifying application around a single programming language which is both used in client side or server side rather than two languages separately used one for client script other for server script.node js lets developers to use command line tools for scripting server side. Later v8 used in desktop apps as well and in others too.