

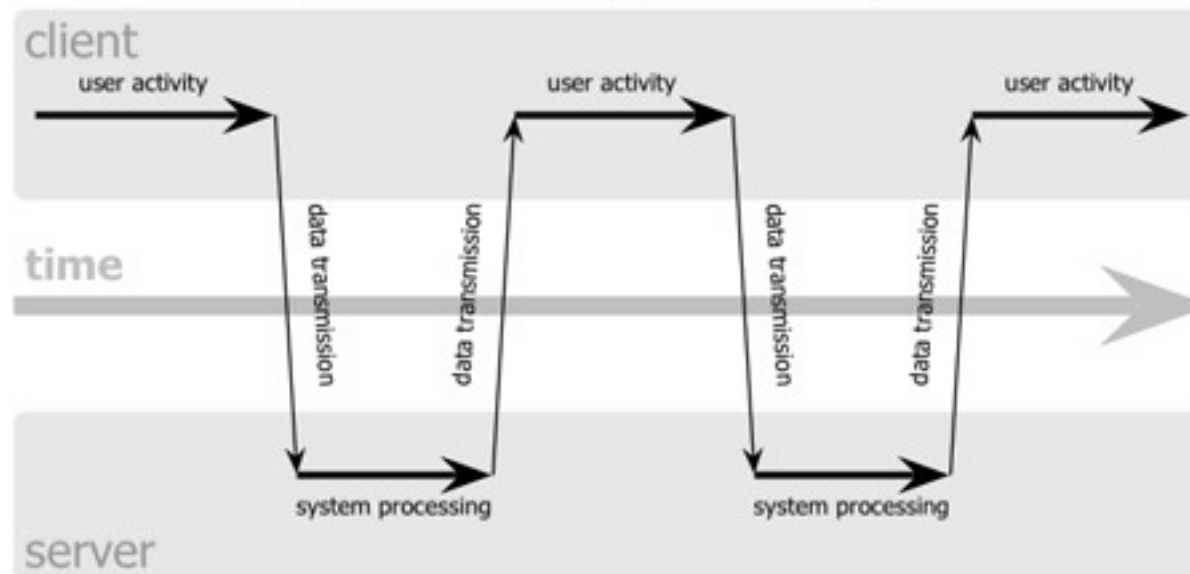
Ajax

- Asynchronous Javascript + XML
- Term by Adaptive Path
- “Dynamic HTML and remote scripting”
- Not technology itself, refers to combination of technologies
- Client side technology

Traditional web applications

- The application consists of several pages
- When the user clicks on a link, the browser fetches a new page from the server

classic web application model (synchronous)

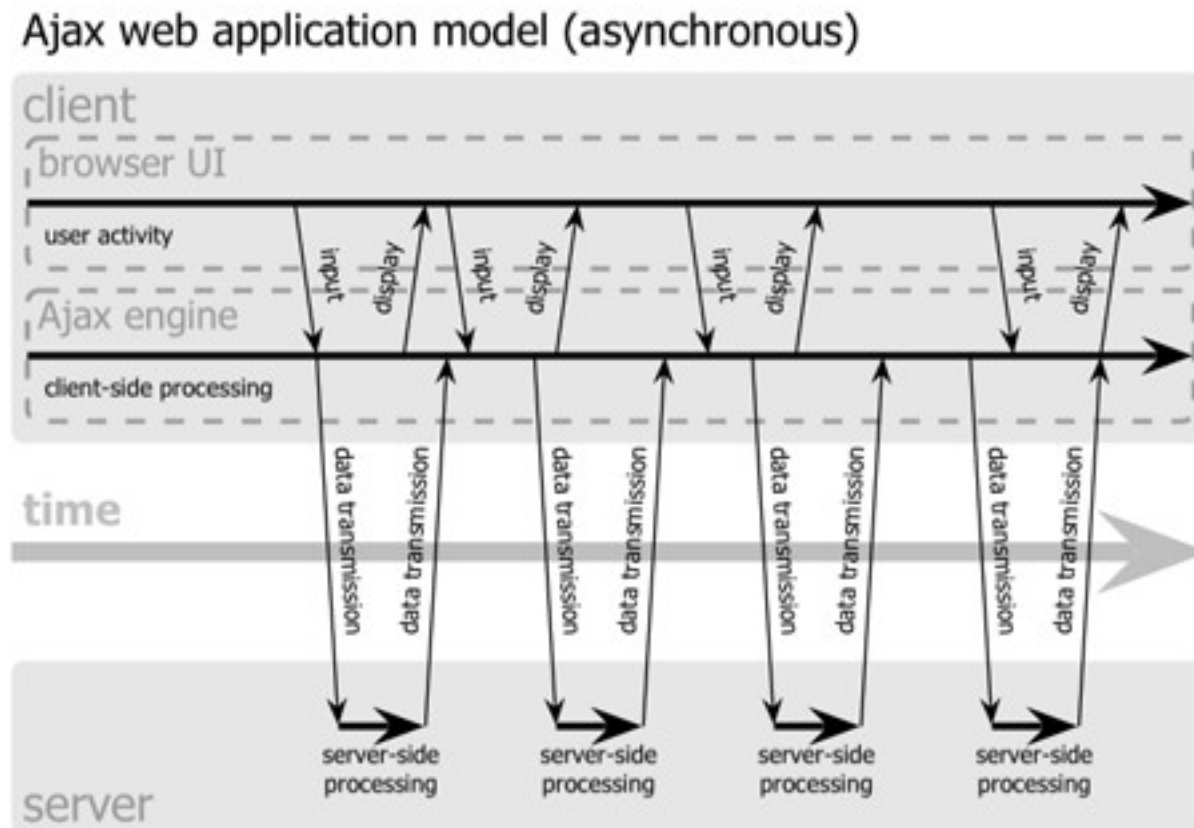


Cons

- Limited interaction
- Refresh on every load
- Latency
- A lot of cumulative network traffic

Ajax approach

- Web application in single page
- Updates on the page



Ajax approach continued

- Google uses Ajax extensively: Google Maps, Google suggest
- Alternatives to Ajax: Flash, Java

Ajax Components

- HTML + CSS for the layout
- DOM (Document Object Model) for modifying the page on the fly
- XML commonly used for data
- Javascript for scripting
- IFrame and XMLHttpRequest for asynchronous requests
- CSS+DOM+Javascript = DHTML

CSS

- Cascading Style Sheets
- Separates presentation from XHTML/HTML
- Rules consist of selector and style declaration
- Example: `h1 { color: red }` makes all h1 tags red

Javascript

- Embedded general use scripting language implemented in majority of web browsers
- Syntax resembles C and Java

DOM

- Document Object Model
- Description of HTML document is object-oriented fashion
- Tags are represented as nodes in a tree
- Scripting interface for accessing (Javascript)
- Global Javascript variable “document”
- Element identifiers
- Firefox DOM Inspector

IFrame

- HTML tag. “Inline frame”. Embeds a frame
- Can be created with DOM:
`document.createElement()` on the fly
- Can be hidden with CSS -> some data is loaded to the IFrame but not shown = asynchronous HTTP get.
- `onLoad` attribute
- Hack, difficult to use, but supported by majority of browsers

XMLHttpRequest

- Originally developed by Microsoft as a part of ActiveX in IE 5.0, nonstandard
- Mozilla 1.0 implemented native Javascript version
- Makes asynchronous HTTP Request
- Can be used to get any document with HTTP, not limited to XML despite name
- Browser support inferior to IFrame

Ajax Drawbacks

- Bookmarking difficult
- “Back” button behavior
- Inconsistencies between browsers
- Scripts can break easily