

# Full Stack Web Development

WS2019 - BSA5 Ausgewählte Kapitel



Alija Sabic, MSc.

[sabic@technikum-wien.at](mailto:sabic@technikum-wien.at)

Smart Homes and Assistive Systems

September 27, 2019

# Outline

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# World Wide Web

## History



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- 1989: Tim Berners-Lee presents proposal at **CERN** for an information management system for sharing knowledge and resources over a computer network (*worldwide web*).
- Combined the notion of hypertext with the power of the Internet.
- Light-weight application (browser, tcp/ip - builtin)
- HTML Document

# World Wide Web

## Hypertext

Ted Nelson coined the term “hypertext”, during his *Xanadu* project, as a way of describing non-sequential wiring - text that branches and allows choice to the reader [1].

### Hypertext

- Hypertext is a concept (media type).
- Hypertext is not constrained to be (read) linear.
- Hypertext contains references (*hyperlinks*) to other hypertext (that readers can immediately access).
- Hypertext is not constrained to be text (graphics, videos, sounds).



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# World Wide Web

## Building Blocks



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- Markup language
- Uniform notation for addressing accessible resources
- Protocol for transporting messages over a network

# World Wide Web

## Web

- Web Page
- Web Site
- Web Application
  - Single-page Web Application
  - Multi-page Web Application
- Web 2.0
  - Communities
  - Collaboration



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## Internet



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## TCP/IP



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- Network Interface Layer
- Internet Layer
- Transport Layer
- Application Layer

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## Telnet



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## Secure Shell



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## Mail



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## File



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## Hypertext



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- Hypertext Transfer Protocol
- Hypertext Markup Language



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# TCP/IP

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- Roots of web technology can be found in the original Internet protocols (known collectively as [TCP/IP \[1\]](#)) developed in the 1980s

# TCP/IP

- Named after *Advanced Research Projects Agency (ARPA)* of the *acronym-next-pages Department of Defense (DoD)*



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# Listings I



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Acronyms

References

# Acronyms I

ARPA Advanced Research Projects Agency

CERN European Organization for Nuclear Research (Conseil européen pour la recherche nucléaire)

CSS Cascading Stylesheets

DOM Document Object Model

HTML Hypertext Markup Language

TCP/IP Transmission Control Protocol/Internet Protocol.  
Internet protocol suite

WWW World Wide Web



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Acronyms

References

# References I



- [1] L. Shklar and R. Rosen, *Web Application Architecture*, 2nd ed. West Sussex, England: John Wiley & Sons Ltd., 4 2009. [Online]. Available: <https://www.wiley.com/en-us/Web+Application+Architecture%3A+Principles%2C+Protocols+and+Practices%2C+2nd+Edition-p-9780470518601>

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References