



AN INTRODUCTION TO NETCENTRIC DEVELOPMENT

History of the web and MVC

COS216
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A BRIEF HISTORY OF THE INTERNET

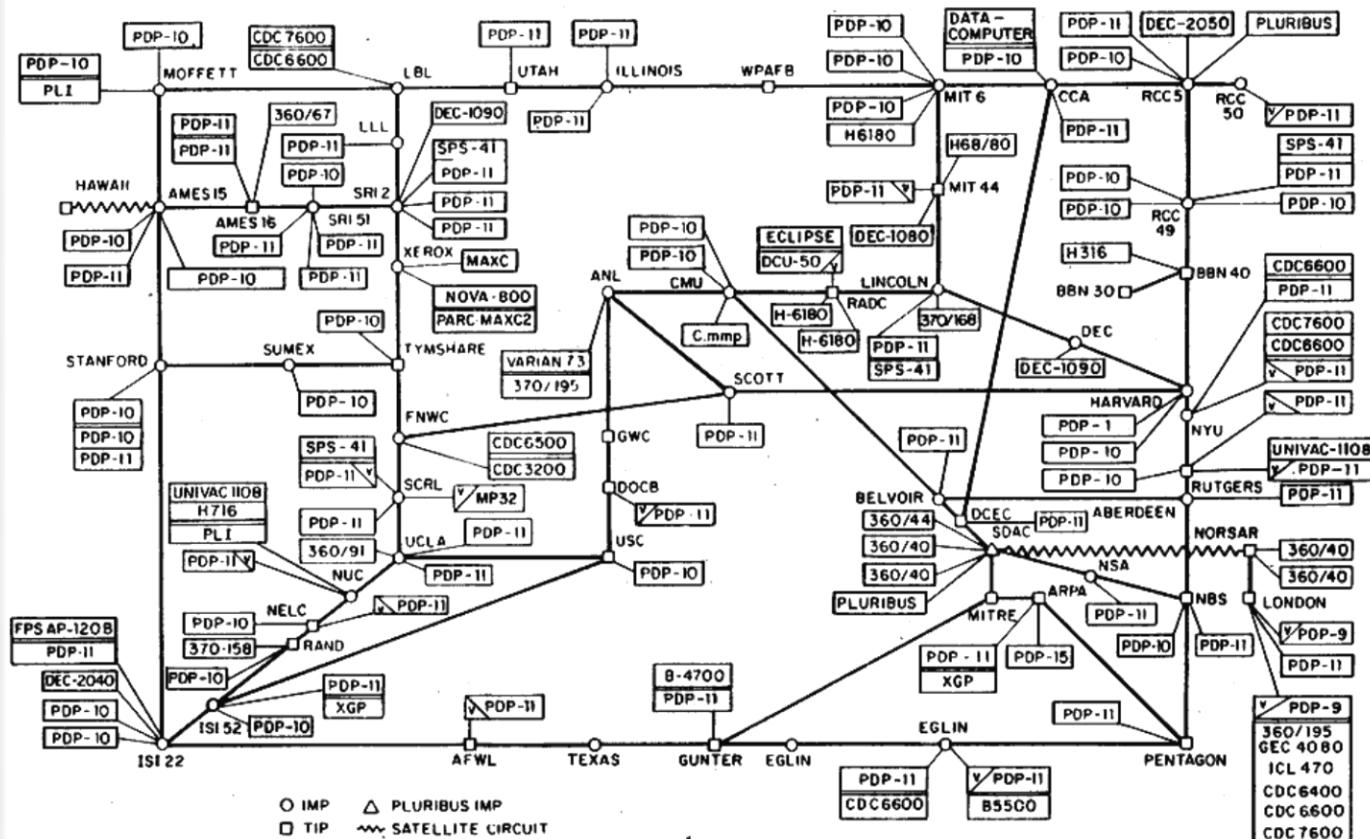
- Advanced Research Projects Agency Network (ARPANET)
- Established in 1969
- Funded by the United States Department of Defence
 - Project of the Advanced Research Projects Agency (ARPA)
 - Answer simple research question: can two computers communicate with each other
- Early packet switching network
 - First network to implement the protocol suite TCP/IP
 - Technical foundation of the modern Internet
- Decommissioned in 1990

A BRIEF HISTORY OF THE INTERNET

<https://www.youtube.com/watch?v=9hIQjrMHTv4>

ARPANET LOGICAL MAP

ARPANET LOGICAL MAP, MARCH 1977



(PLEASE NOTE THAT WHILE THIS MAP SHOWS THE HOST POPULATION OF THE NETWORK ACCORDING TO THE BEST INFORMATION OBTAINABLE, NO CLAIM CAN BE MADE FOR ITS ACCURACY)

ARPA NETWORK MAP - 1974

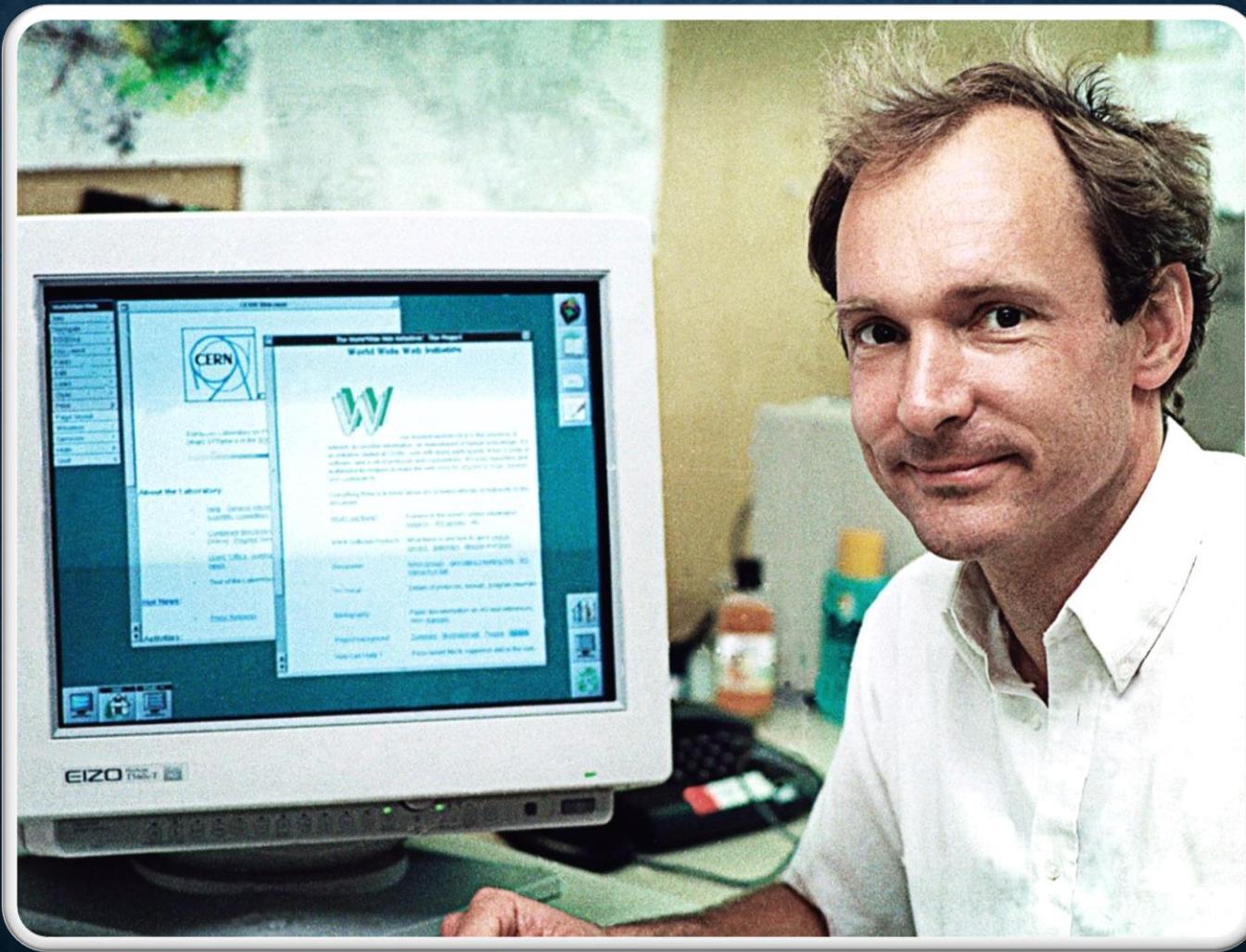


A BRIEF HISTORY OF THE WEB

- World Wide Web (WWW)
- ARPANET vs Internet vs WWW
- Established in 1989
- Created by Tim Berners-Lee
- Project of the European Organization for Nuclear Research (CERN)
- A service that operates over the internet to exchange information
- Hypertext pages that link to other pages



TIM BERNERS-LEE



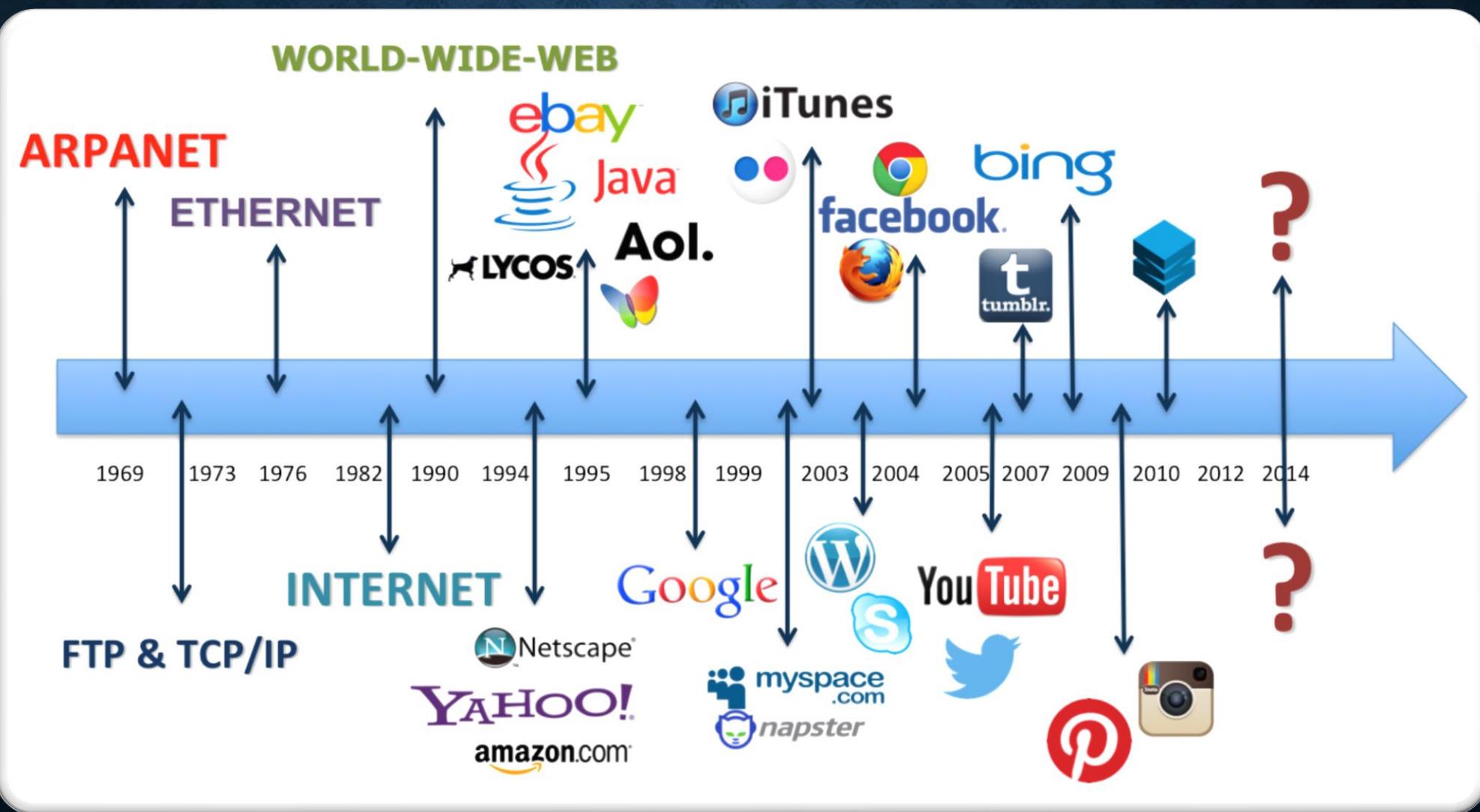
FIRST WEB SERVER



A BRIEF HISTORY OF THE WEB

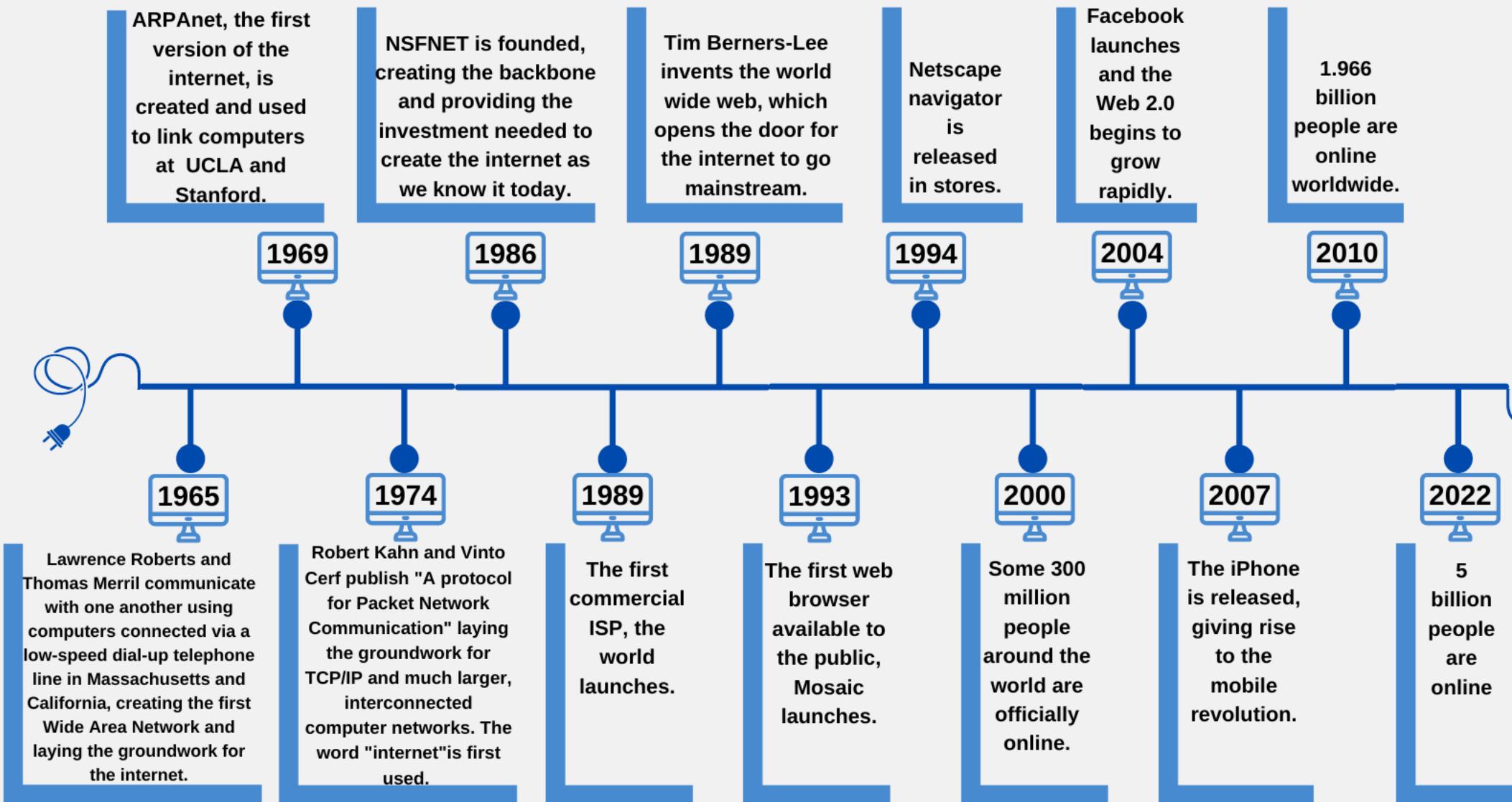
- 1980 – 1991: Invention and implementation of the web
- 1992 – 1995: Growth of the web
- 1996 – 1998: Commercialization of the web
- 1999 – 2001: Dot-com boom and bust
- 2002 – 2015: The web becomes ubiquitous
- 2015 – present: A new distributed web

TIMELINE OF THE WEB





Timeline of the Internet



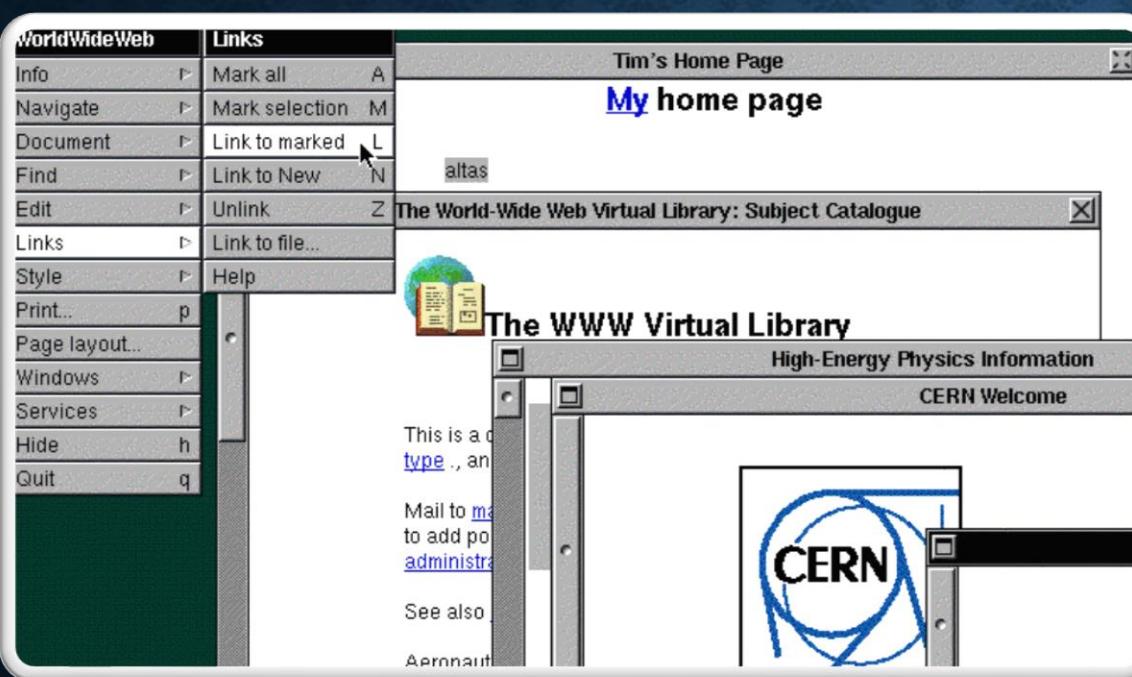
EVOLUTION OF THE WEB

- Web 1.0: 1990 – 2002
 - Basic exchange of information, often static data
- Web 2.0: 2002 – 2015
 - Sharing content ad hoc
 - Blogs, RSS, Wikipedia, YouTube, PayPal
- Web (2.5): 2004 – present
 - Sharing of large quantities of self generated content
 - Social media, mobile apps, tagging and tracking
- Web 3.0: 2015 – present
 - Distributed technologies
 - Blockchain, Ethereum, Dapps, distributed DNS

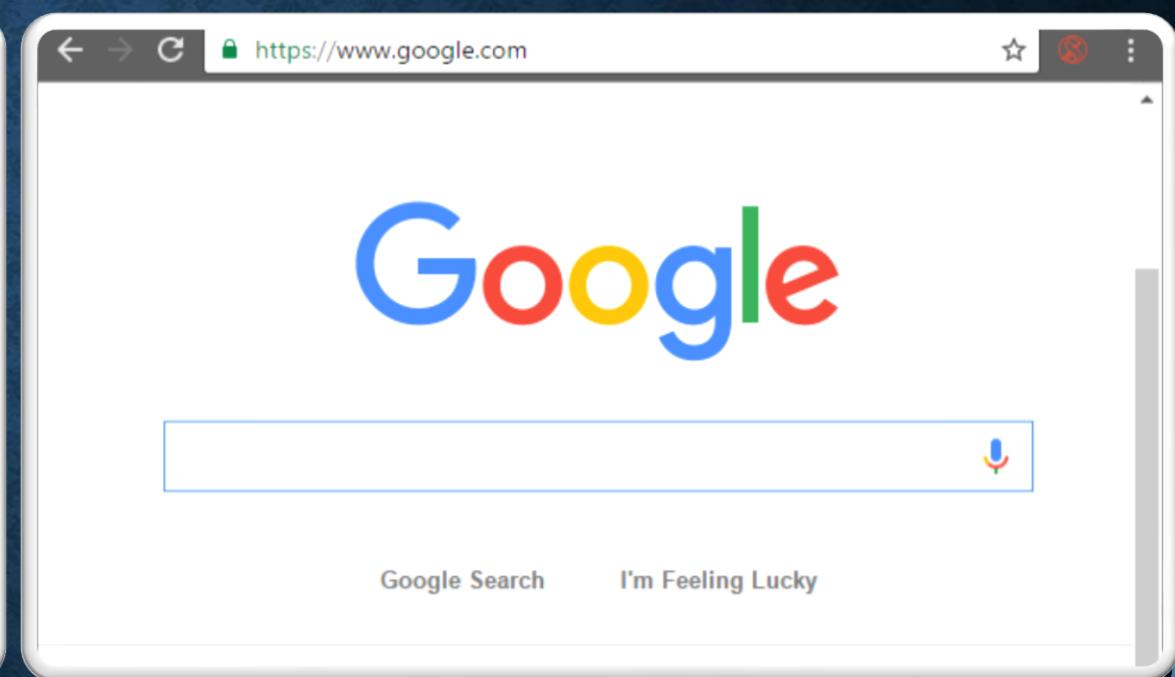
A BRIEF HISTORY OF BROWSERS

- Program used to display hypertext
- Has internal engines to display hypertext, render images, and execute scripts
- Many web protocols are used without browsers today (REST APIs)
- First browser named **WorldWideWeb**
 - Released in 1990
 - Later renamed to **Nexus**
- Widely used browser named **Mosaic**
 - Released in 1993
 - Later renamed to **Netscape**

EARLY BROWSERS



CURRENT BROWSERS



MODERN BROWSERS



Good
Browsers:

Brave
Mozilla Firefox
Google Chrome
Opera



Decent
Browsers:

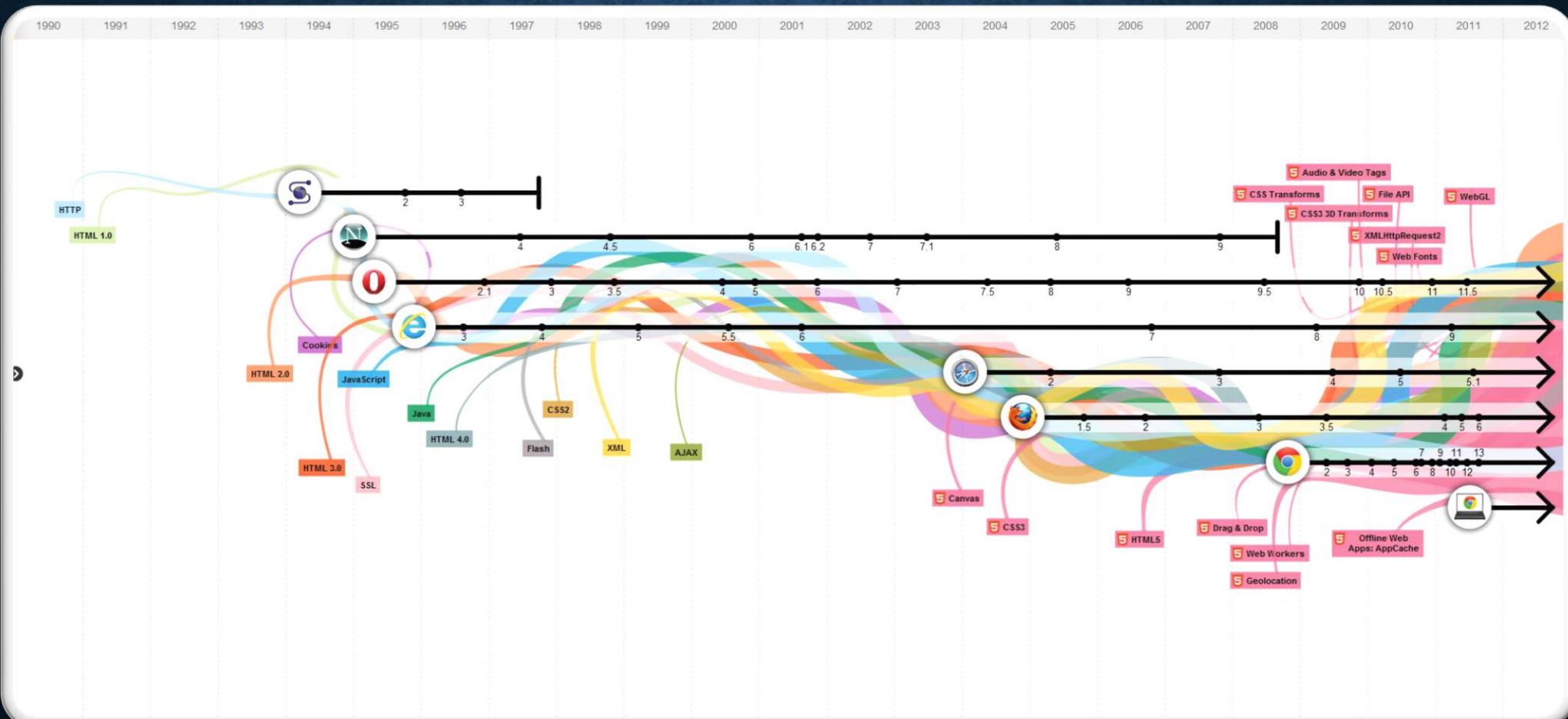
MS Edge
Apple Safari



Horrible
Browsers:

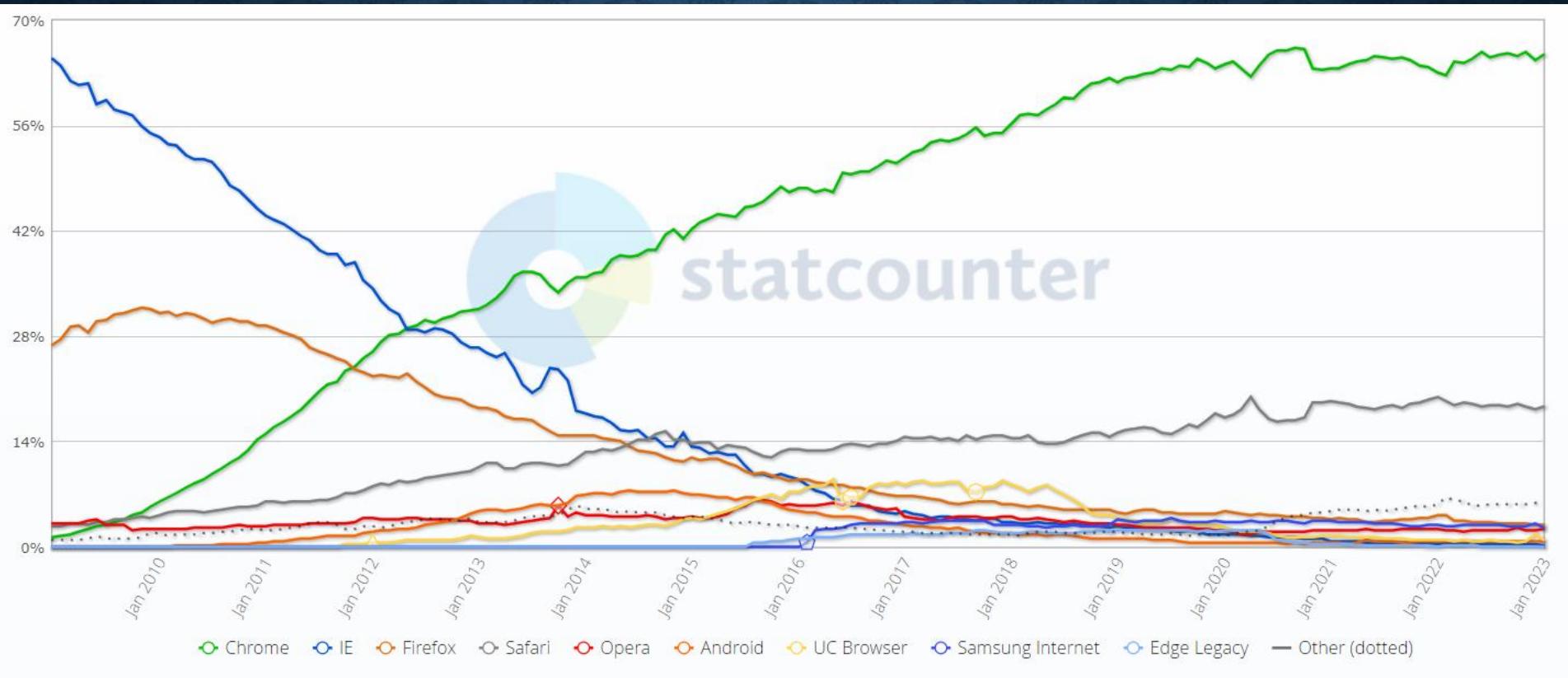
MS Internet
Explorer

TIMELINE OF BROWSERS



MARKET SHARE OF BROWSERS

Jan 2009 – Jan 2023



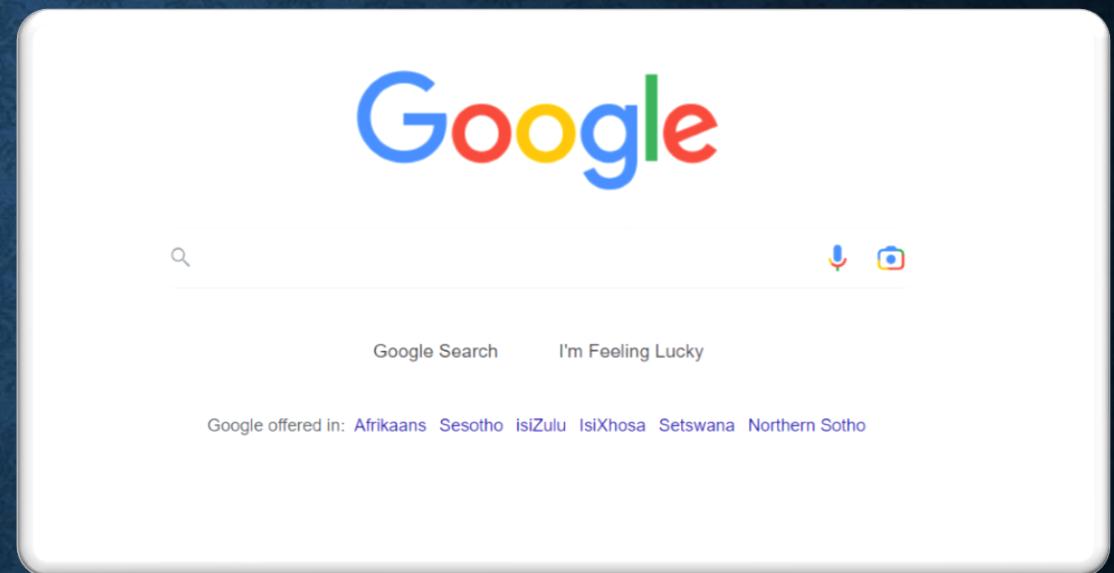
MARKET SHARE OF BROWSERS



GOOGLE - 1997



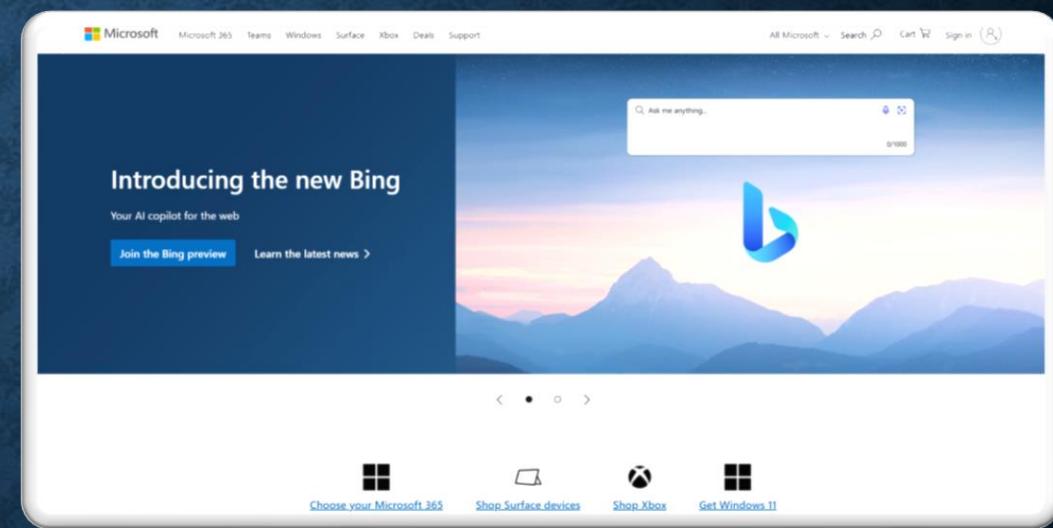
GOOGLE - 2023



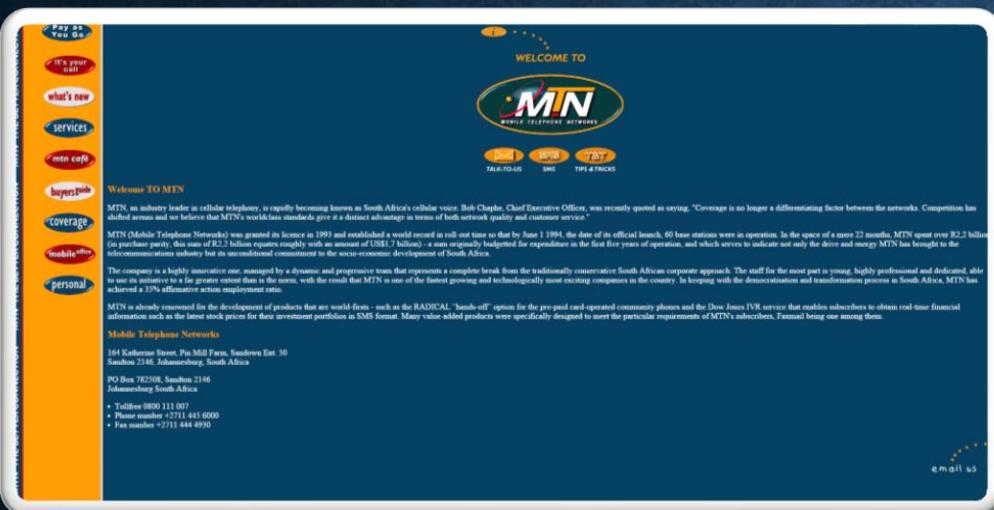
MICROSOFT - 199?



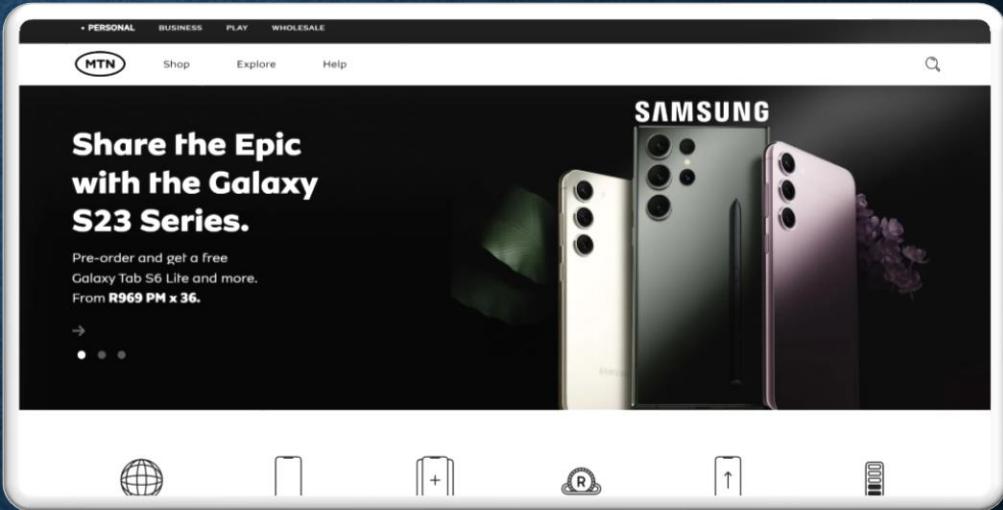
MICROSOFT - 2023



MTN - 1996



MTN - 2023



INTERNET SOLUTIONS - 1996



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There were more than 335 000 visits
to this Web site in February '98

This Site looks best with



It has been checked under
Lynx, NCSA Mosaic 2.0, NetManage's WebSurfer,
MS Internet Explorer 2.0 and Netscape 1.x

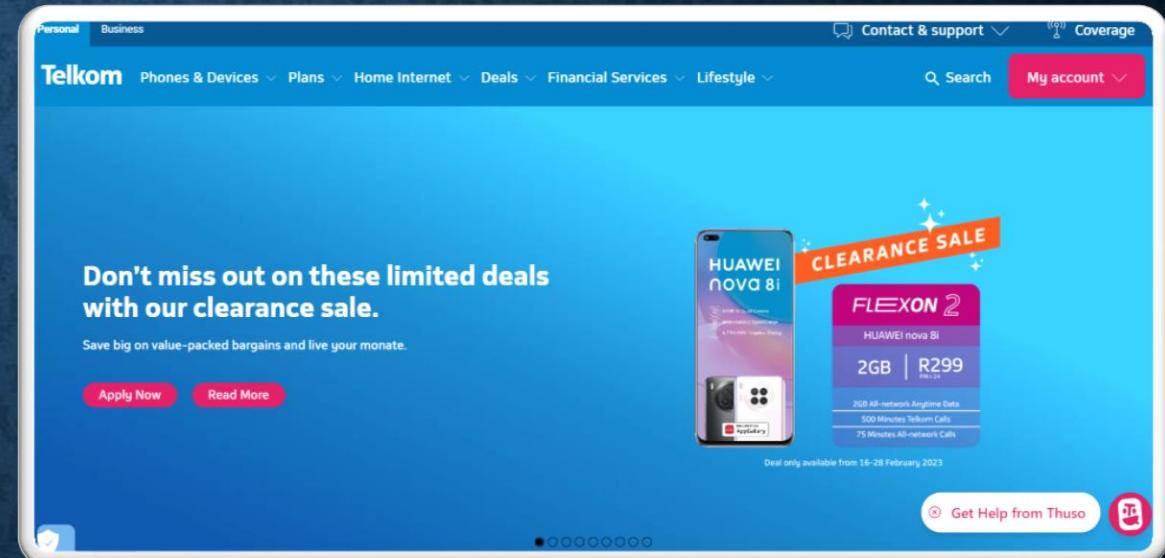
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TELKOM - 1998



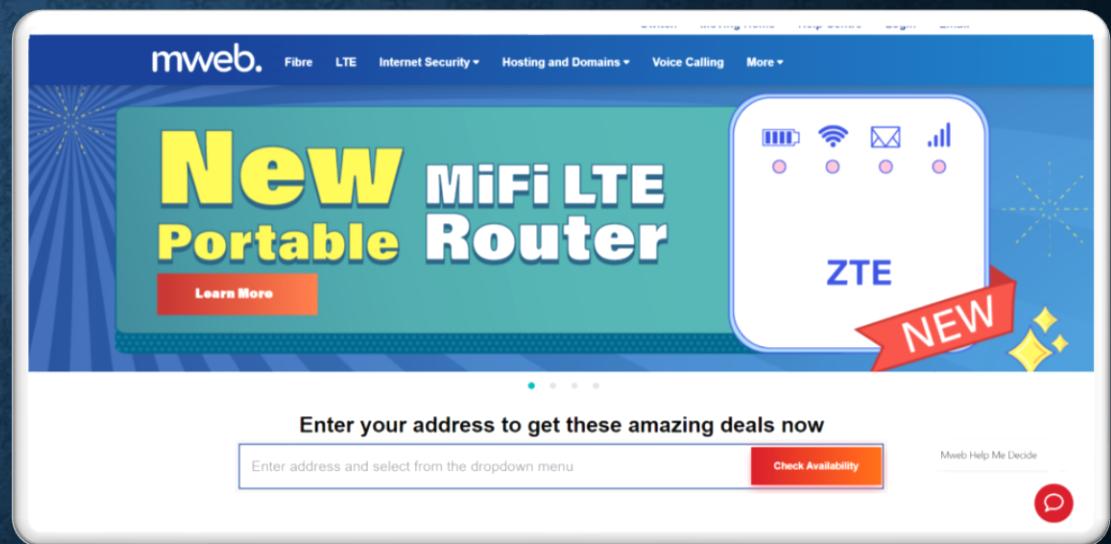
TELKOM - 2023



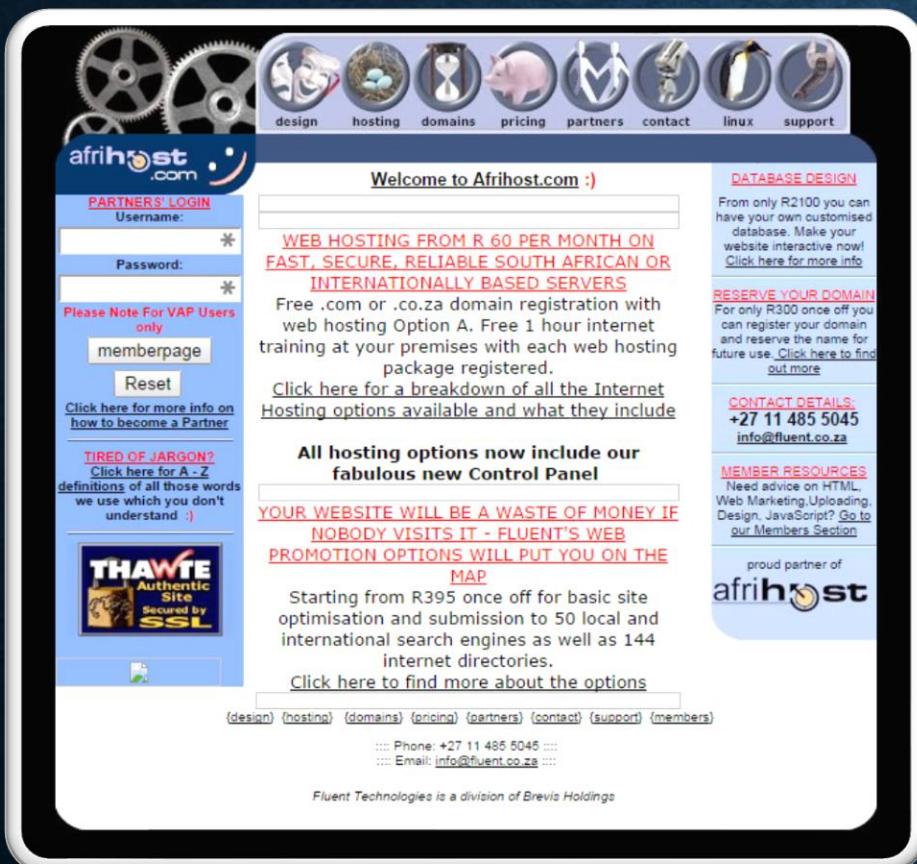
MWEB - 1998



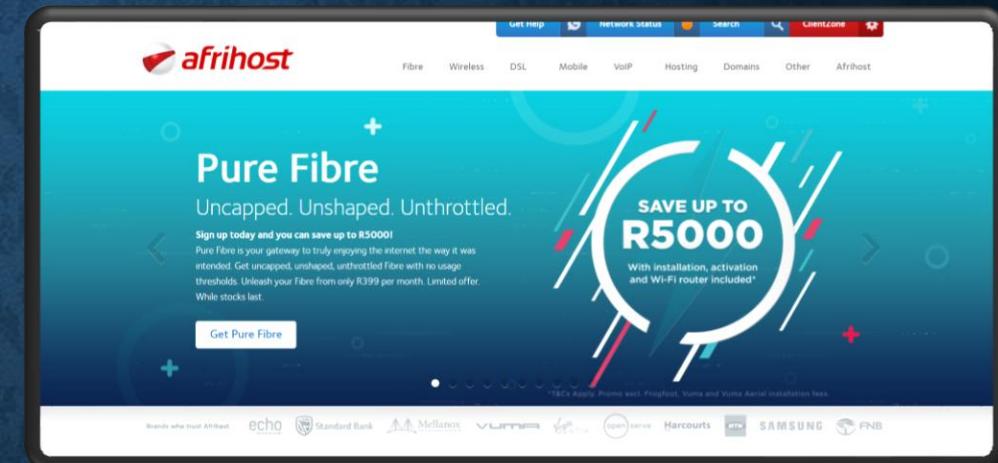
MWEB - 1998



AFRIHOST - 2001



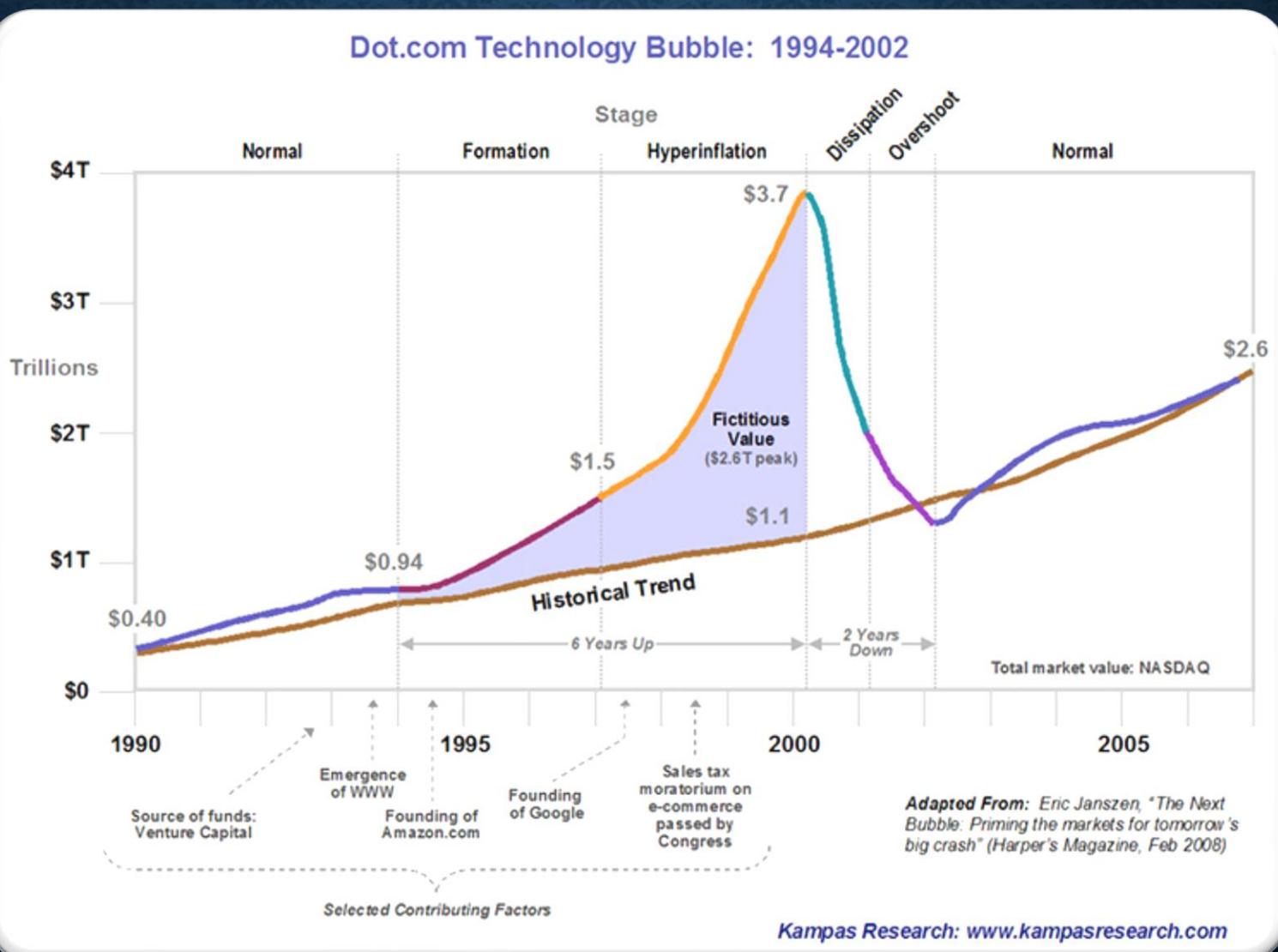
AFRIHOST - 2023



DOT-COM BUBBLE

- Financial bubble which spiked 1996 - 2000
- The advent of the commercialization of the web
- Exponential increase in investment
 - Internet-based companies in general
 - More specifically in domain registrations
 - Purchasing domains with the hope to sell them for a profit at a later stage
- Most expensive domains:
 - Insurance.com (2010): \$35.6 million
 - VacationRentals.com (2007): \$35 million
 - PrivateJet.com (2012): \$30.2 million

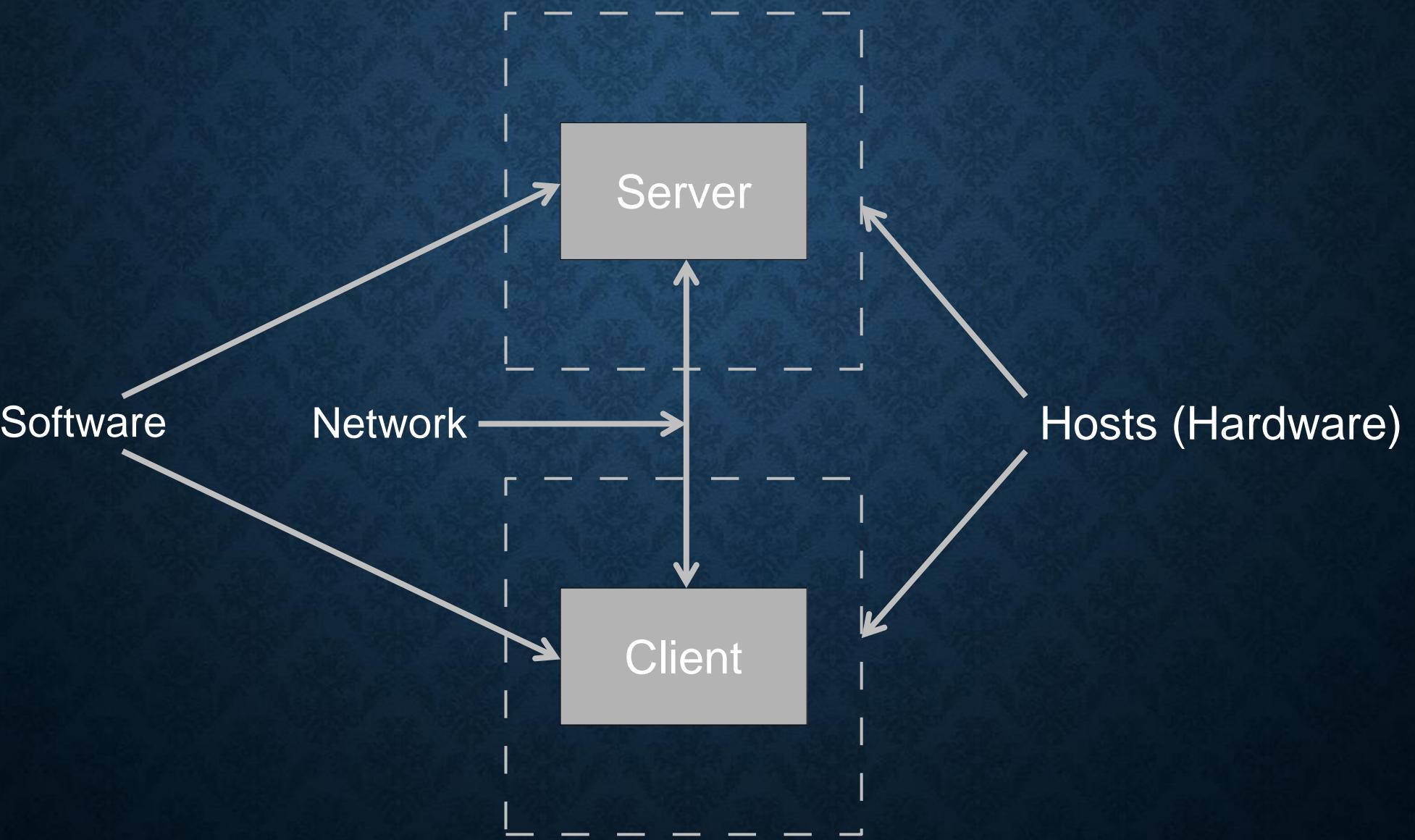
DOT-COM BUBBLE



AN OVERVIEW OF MVC

- Model-View-Controller (MVC)
- Architectural pattern for developing user interfaces
- Splits the system in 3 components
 - Each responsible for a separate task
 - Each with its own internal representation of the data
- Almost all web applications and many other user interfaces make use of MVC
 - Logical separation of concerns
 - Specialised development
 - Team development

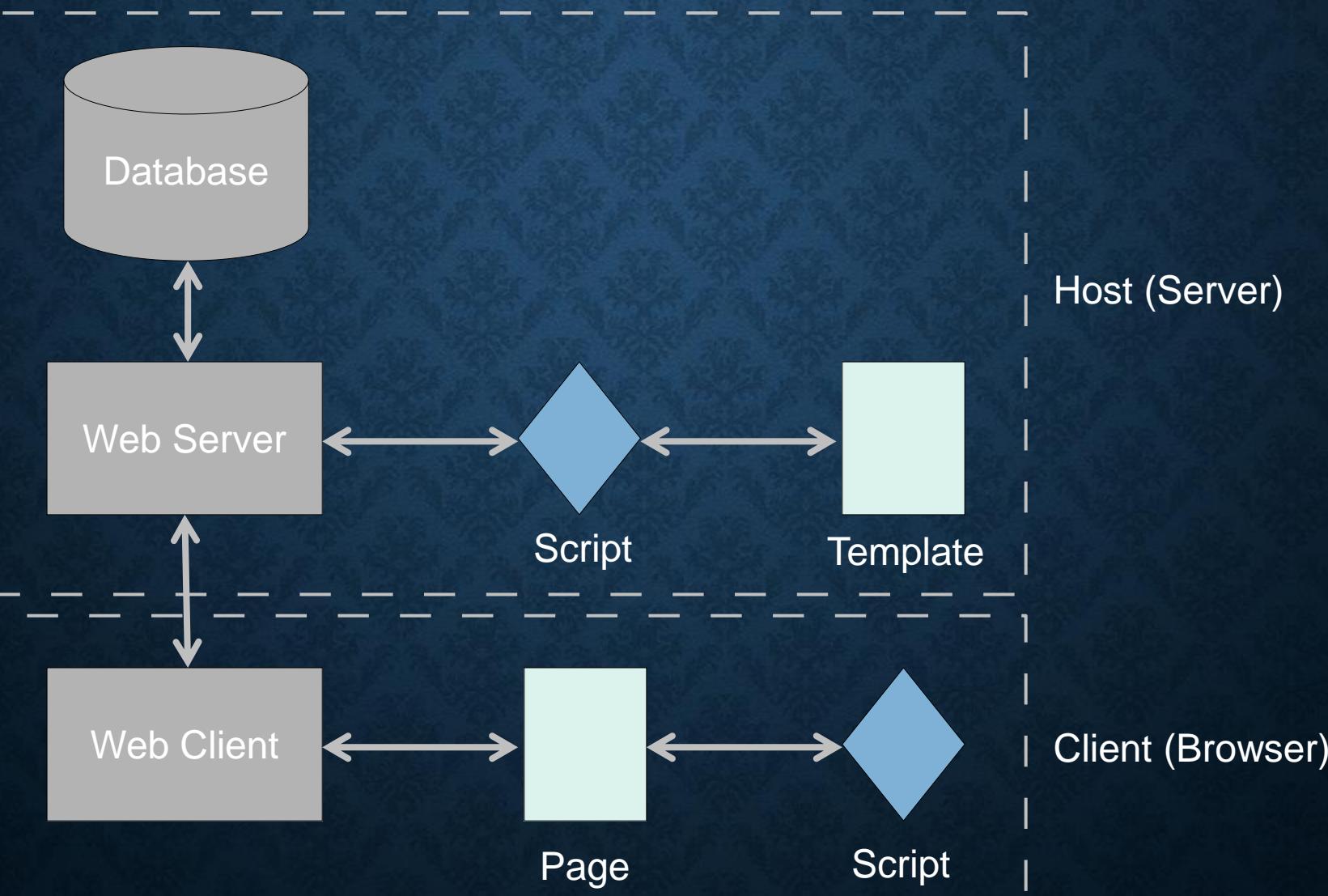
AN OVERVIEW OF MVC



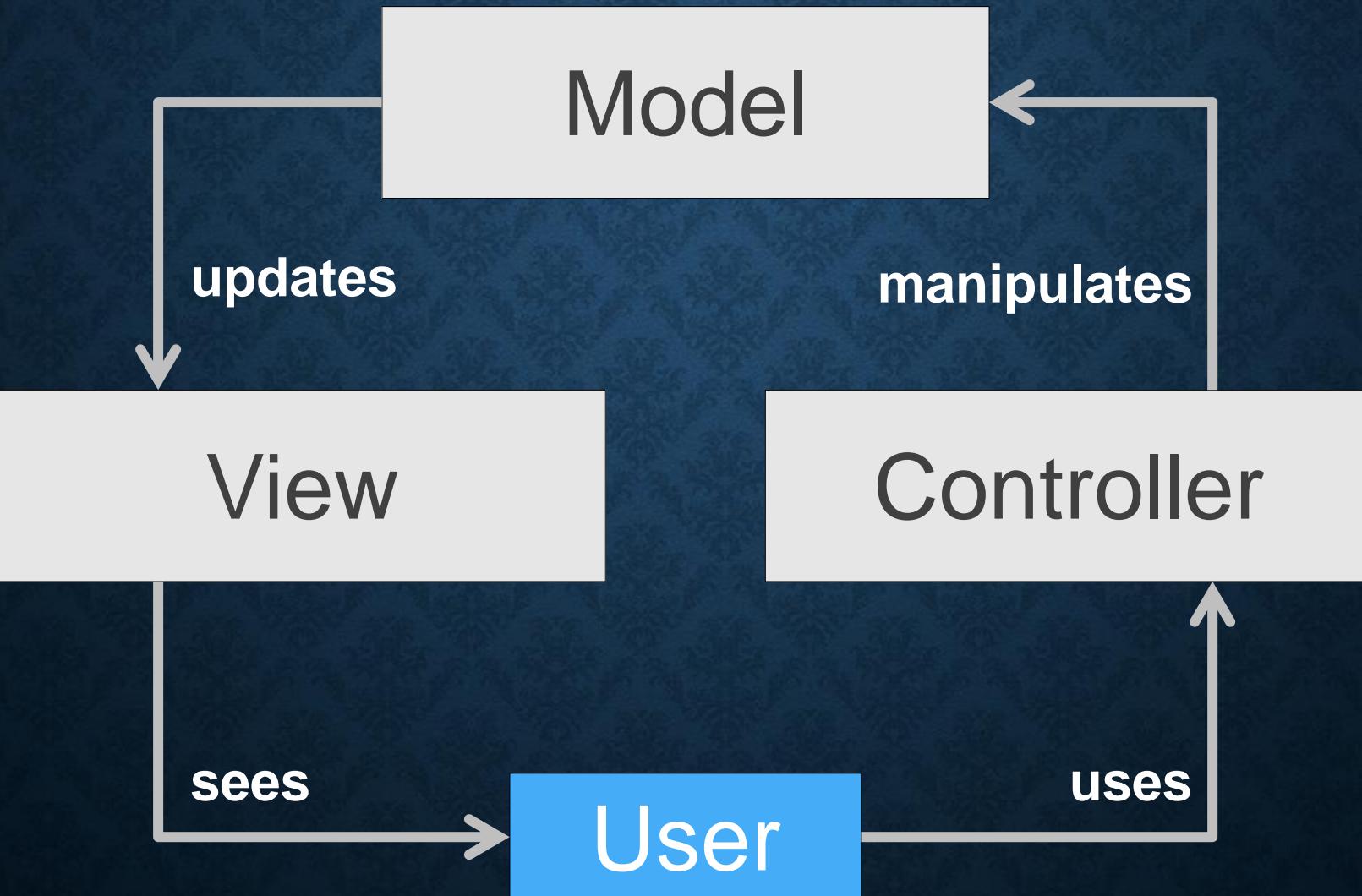
AN OVERVIEW OF MVC

- Why should logical concerns be separated?
- What is an architecture?
- What is a pattern?
- What is the difference between Design and Architecture?

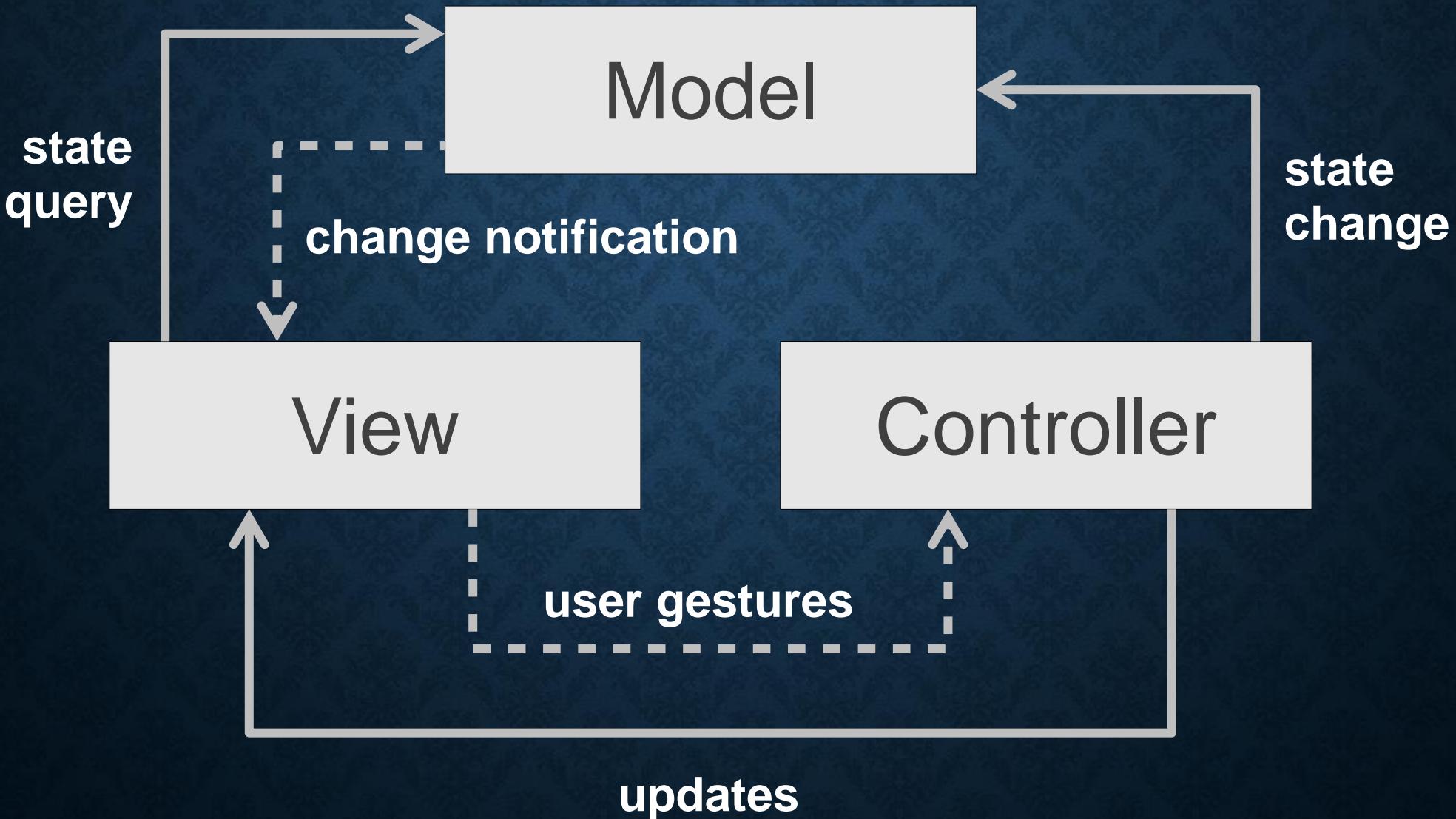
SOFTWARE PERSPECTIVE OF WEB SERVICES



AN OVERVIEW OF MVC



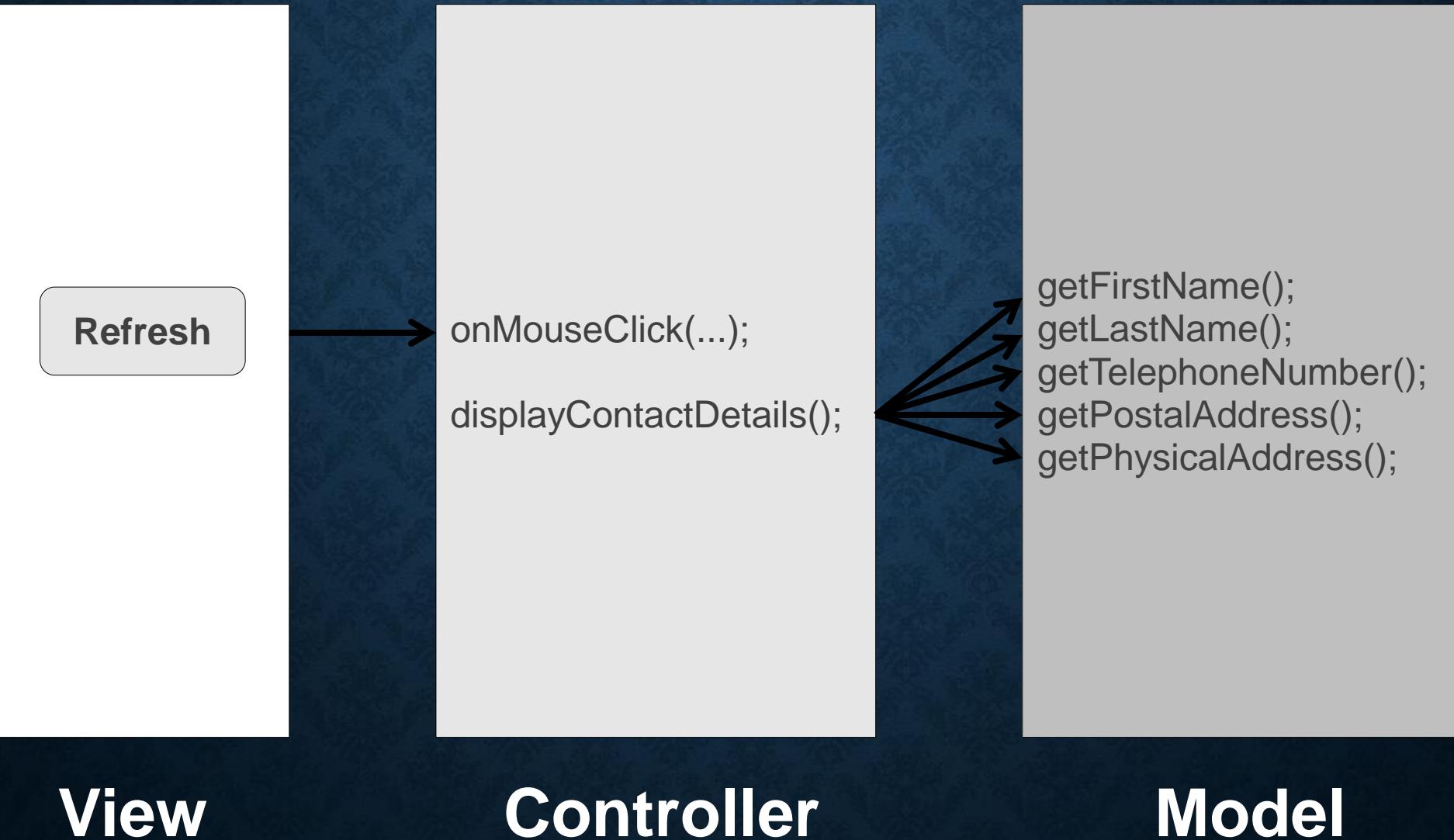
AN OVERVIEW OF MVC



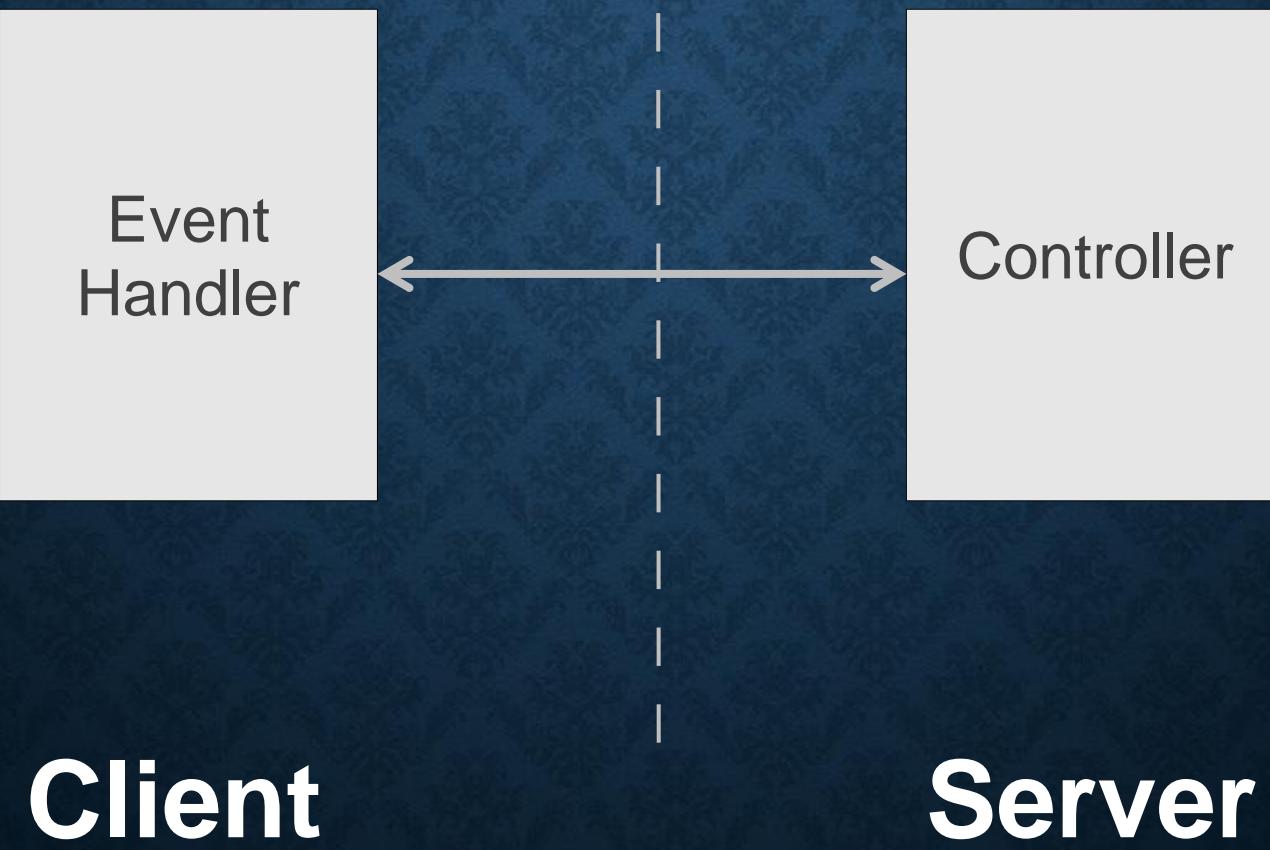
AN OVERVIEW OF API

- Application Programming Interfaces (API)
- How do the model, view, and controller interact?
- What about when different companies produce the components?
- An API provides:
 - A consistent interface to components or subsystems
 - Facilitates low coupling
 - Facilitates high cohesion

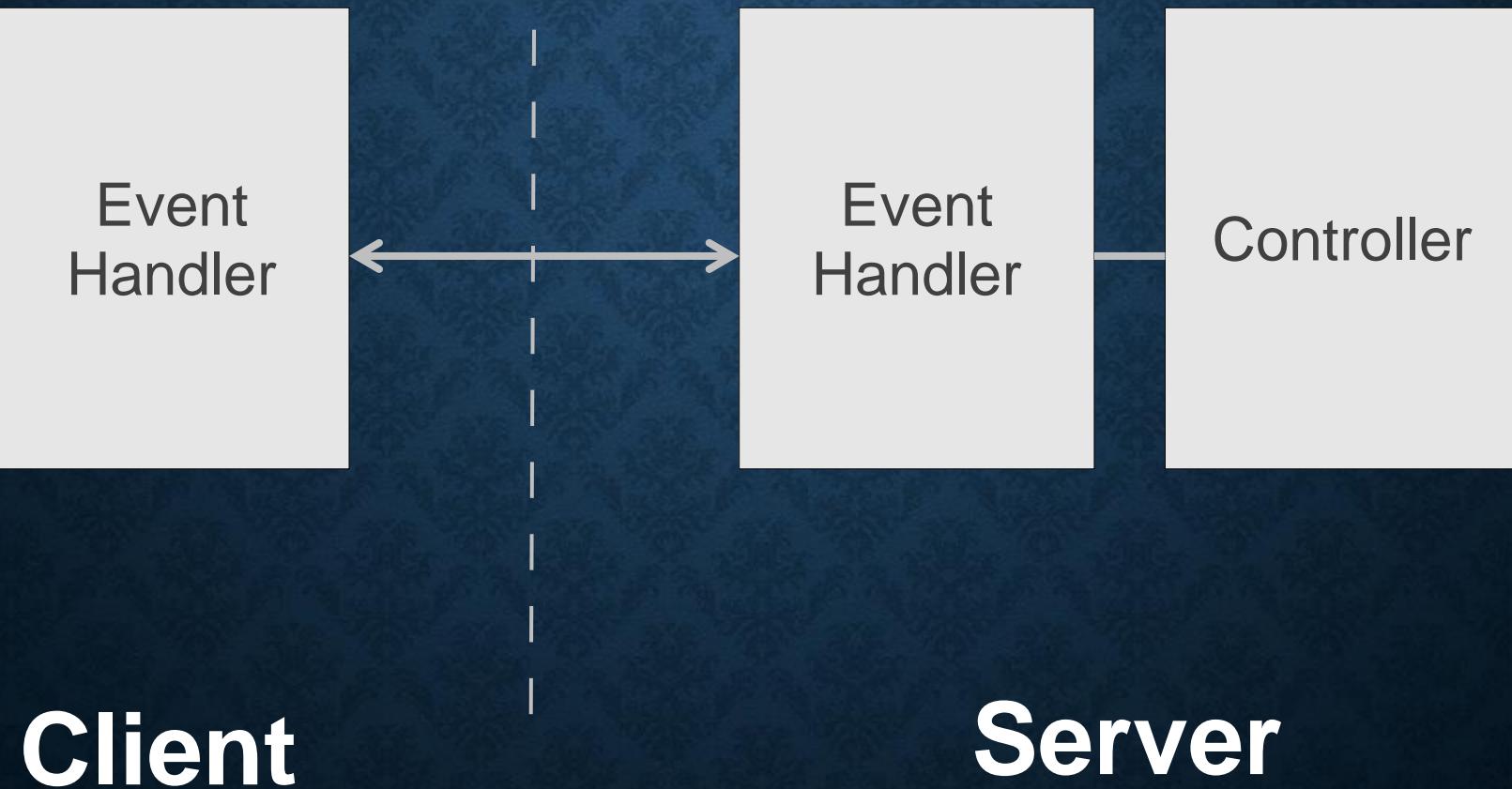
AN OVERVIEW OF API



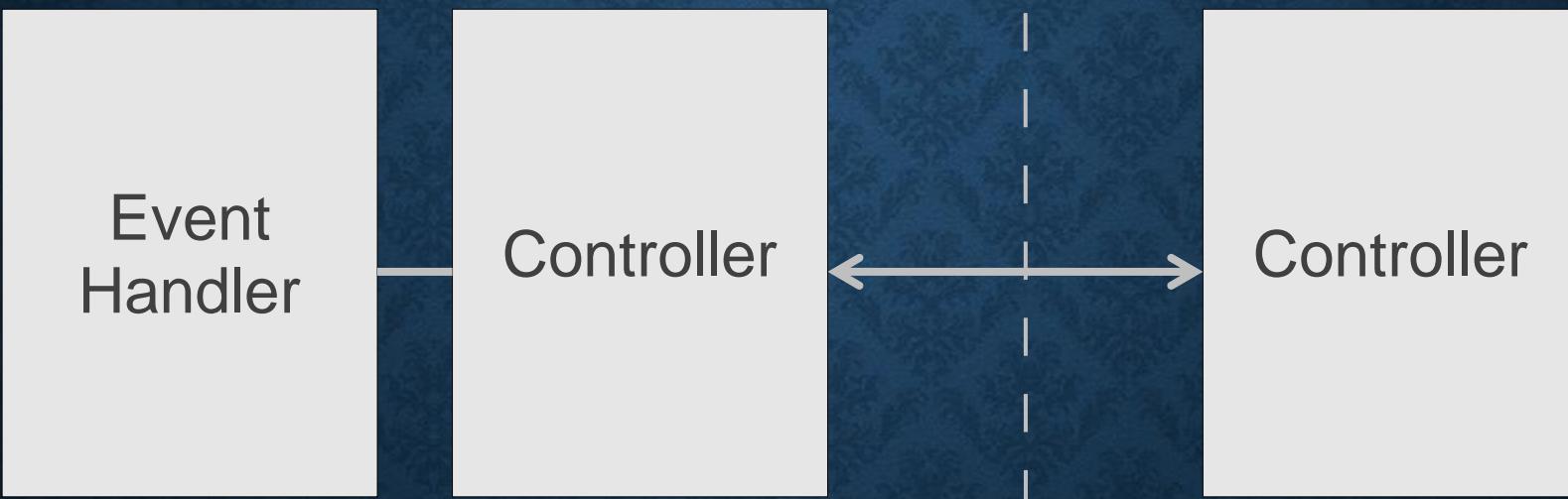
AN OVERVIEW OF API



AN OVERVIEW OF API



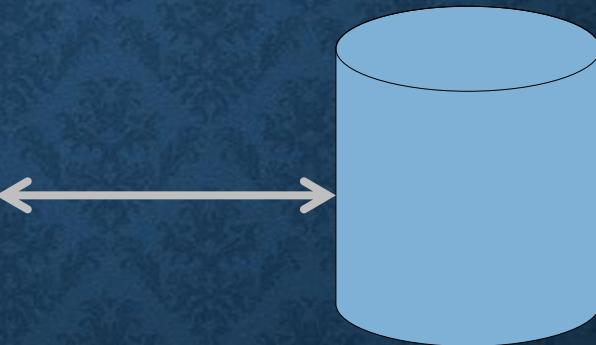
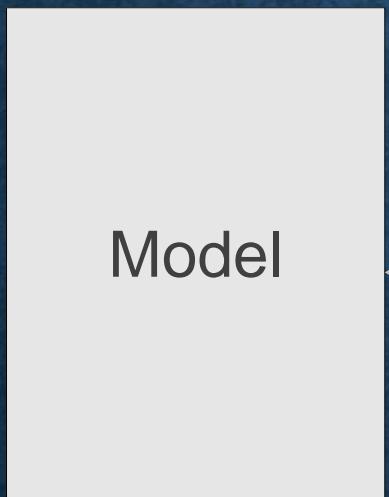
AN OVERVIEW OF API



Client

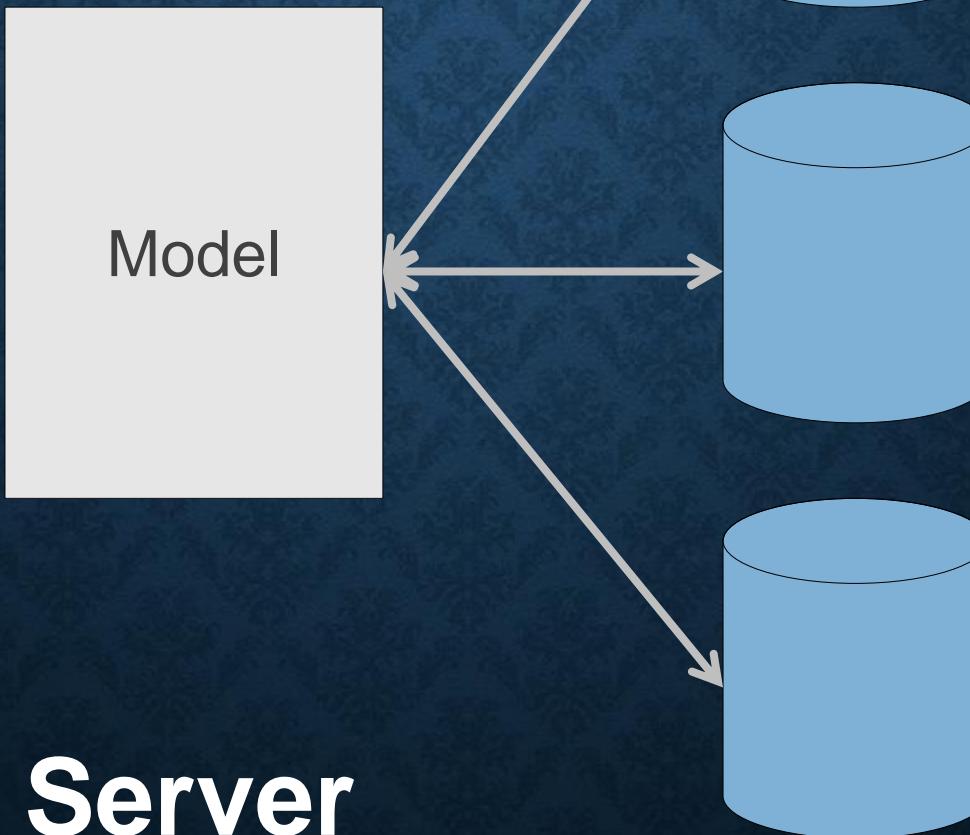
Server

AN OVERVIEW OF API



Server

AN OVERVIEW OF API





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QUESTIONS

What is the purpose of MVC?

- Separation of Concerns
- Faster development
- Better Management

What is an API and what are they used for?

- Application Programming Interface
 - Expose resources
 - High Cohesion
 - Consistent Interface

