



VSR://edu/2020/evs/

08 – Server-side Development

//// Design of Distributed Systems

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MSc. Mahda Noura

VSR.Informatik.TU-Chemnitz.de

1 Server-Side Development

In order to build a website, you need knowledge in...

Marketing

Design

Client-Side Code

Browser

Server-Side Code

Web Server

Databases

OS

Management

SEO SEM Support
UI/UX Design Responsive Photoshop
HTML5 CSS JavaScript XML
Bootstrap jQuery AngularJS Cordova
IE, Chrome, Firefox DOM AJAX MobileDev
Webservices Architecture OOP
PHP ASP.NET Java Python nodeJS
Sockets Load Balancing Caching
Apache IIS Security Protocols
MySQL MS SQL Oracle NoSQL
Linux Windows Server Storage
Routing DNS Devices
Git / SVN Tooling Documentation



Why is server-side programming necessary at all?

- Hide app code
- More complex business logic
- Direct access to backend systems
- Better security control
- Overcome browser restrictions
- Browser compatibility



Which development
languages exist?

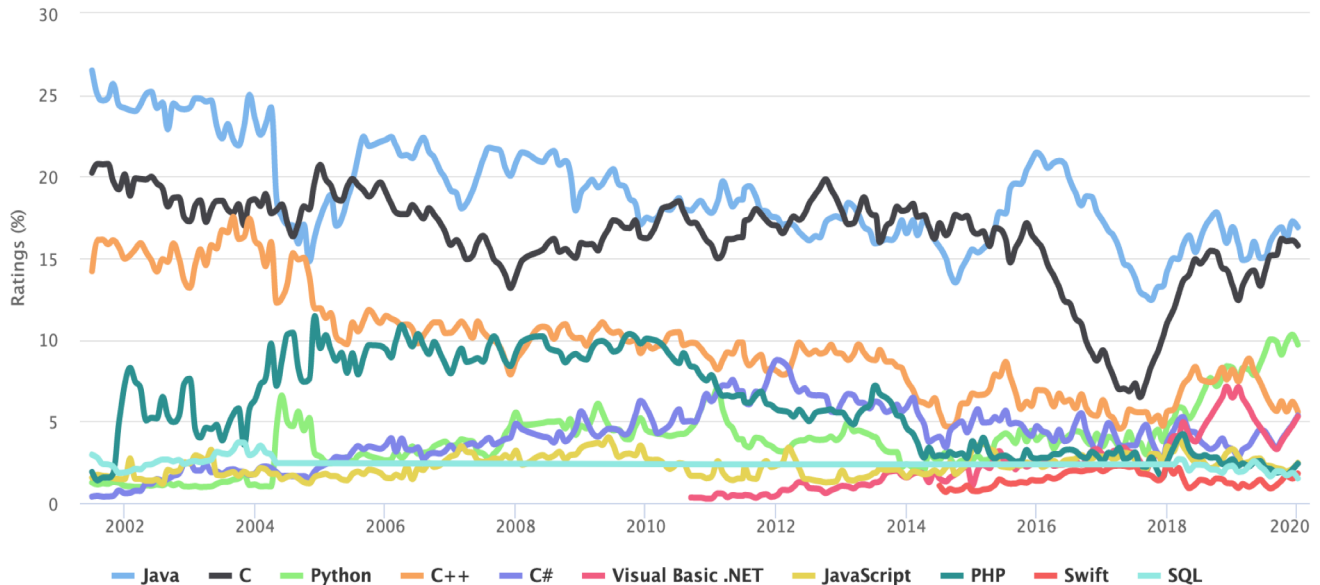
Web programming languages

ASP	(*asp)
ASP.NET	(*aspx, *.cshtml)
ColdFusion ML	(*cfm)
Go	(*go)
Haskell	(*hs)
Java	(*jsp)
JavaScript (NodeJS)	(*js)
Lasso	(*lasso)
Lua	(*lp *.op *.lua)
Perl	(*cgi, *.ipl, *.pl)
PHP	(*php)
Python (Flask, Django, Pyramid)	(*py)
R	(*rhtml)
Ruby (on Rails)	(*rb, *.rbw)

Top programming languages in general

TIOBE Programming Community Index

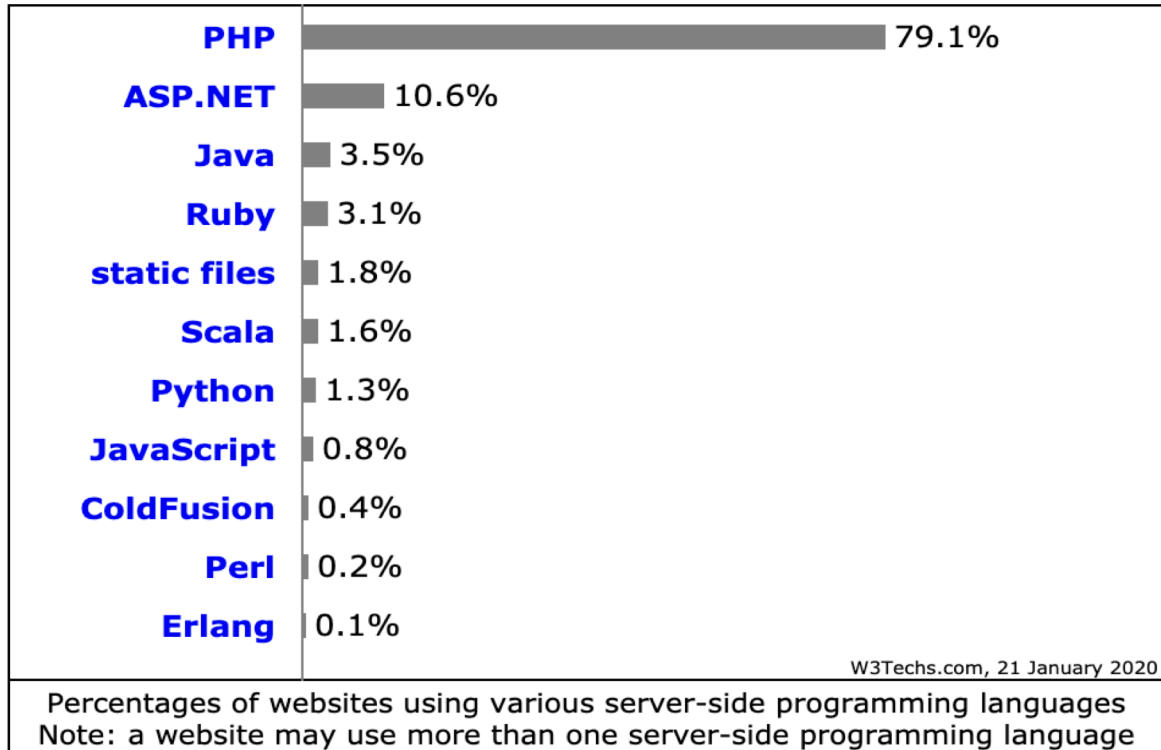
Source: www.tiobe.com



Top programming languages in general

Jan 2020	Jan 2019	Change	Programming Language	Ratings	Change
1	1		Java	16.896%	-0.01%
2	2		C	15.773%	+2.44%
3	3		Python	9.704%	+1.41%
4	4		C++	5.574%	-2.58%
5	7	⬆	C#	5.349%	+2.07%
6	5	⬇	Visual Basic .NET	5.287%	-1.17%
7	6	⬇	JavaScript	2.451%	-0.85%
8	8		PHP	2.405%	-0.28%
9	15	⬆	Swift	1.795%	+0.61%
10	9	⬇	SQL	1.504%	-0.77%

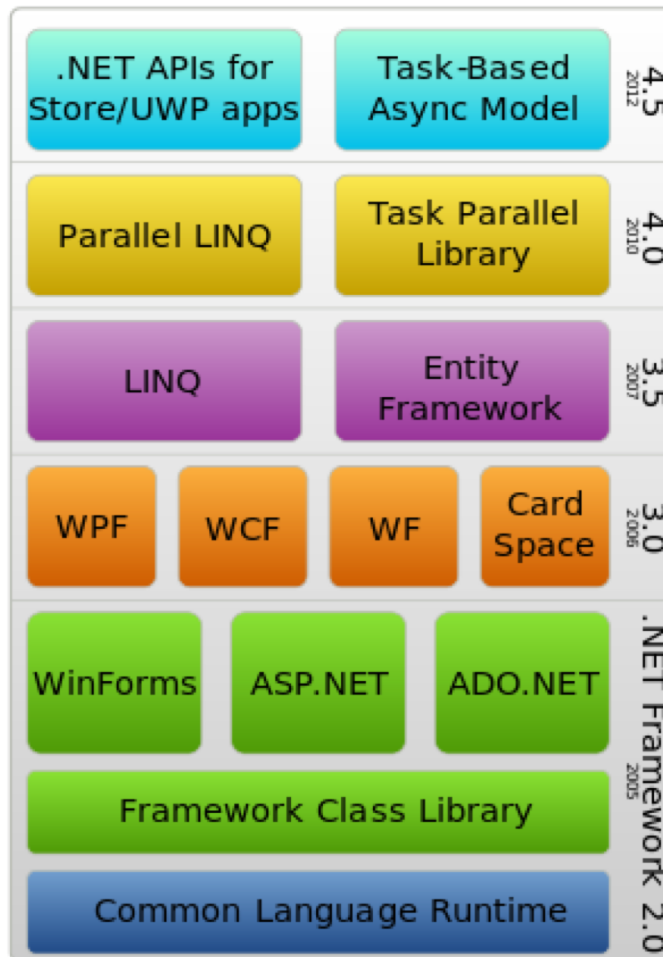
Top web programming languages



2 ASP.NET

The .NET Framework

- Runtime environment + collection of classes, APIs and services
- Primary objective: development and execution of applications based on different programming languages and platforms
- We will focus on Web development with the .NET framework and C#



ASP.NET

- is a Web Application Framework within .NET
- offers class functionalities that are available for all web applications
- released in 2002 as a successor to classic ASP
- ASP.NET pages are normally written in C# or VB
- ASP.NET 4.8 is the latest official version of ASP.NET
- ASP.NET 5 was expected to be an important redesign
- However, the development of ASP.NET 5 was stopped in favor of ASP.NET Core

Development Platform

- Originally only for Windows Platforms (.NET Framework)
- ASP.NET Core now also supports Linux/Mac (.NET Core)

Development Environments

- MS Visual Studio IDE
- MS Visual Studio Code

ASP.NET Web App Models

- ASP.NET Web Forms
- ASP.NET Web Pages
- ASP.NET MVC

- ASP.NET Webservices
- ASP.NET Web API



Install Microsoft **Visual Studio Community**

2.1

Web Forms

ASP.NET Web Forms

- Traditional approach since ASP.NET 1.0
- Component-based framework
- event driven application model
- not part of .NET Core



Write an ASP.NET WebForm
that outputs the name entered
in a TextBox

2.2

Web Pages

ASP.NET Web Pages

- Single Page application model
- Similar to scripting with ASP / JSP / PHP
- Razor syntax
- part of .NET Core



Write an ASP.NET Website that outputs the name entered in a TextBox

2.3

MVC

ASP.NET MVC

- Model View Controller application model
 - Separation of data model, user-interface and business logic
 - Promotes code reuse and automated testing
- Also part of .NET Core



Write an ASP.NET MVC Application
that outputs a provided name
multiple times on a website



Questions?

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