

PHP

TechGuide - Alura, FIAP e PM3

PHP

Level 1

PHP - Fundamentals:

PHP is a programming language that allows web developers to create dynamic content that interacts with databases. PHP is basically used for developing web based software applications.

Knowing the primitive types

Declaring variables, considering the different types

Using conditional structures ('if', 'else')

Knowing the assignment and comparison operators

Using repetition structures and loops ('while', 'for')

Using functions, passing parameters and arguments

Manipulating methods

Manipulating arrays and lists

Contents

WebSiteDocumentation PHP (<https://www.php.net/manual/en/index.php>)

WebSiteGeeksForGeeks: PHP | <https://www.geeksforgeeks.org/php-introduction/>)

WebSiteW3Schools: PHP Variables (https://www.w3schools.com/php/php_variables.asp)

WebSiteW3Schools: PHP Strings (https://www.w3schools.com/php/php_string.asp)

WebSiteW3Schools: PHP Operators (https://www.w3schools.com/php/php_operators.asp)

WebSite W3Schools: PHP if...else - https://www.w3schools.com/php/php_if_else.asp
Conditionals (

WebSite W3Schools: PHP Loops (https://www.w3schools.com/php/php_looping.asp)

WebSite W3Schools: PHP Functions https://www.w3schools.com/php/php_functions.asp
(

YouTube freeCodeCamp.org: PHP Programming https://www.youtube.com/watch?v=OK_JCrrv-c
Language Tutorial - Full Course (

YouTube Traversy Media: PHP For Beginners | <https://www.youtube.com/watch?v=BUCiSSyIGGU>
Crash Course (

PHP - Collections:

A collection represents a group of objects, known as its elements. They are like containers that group multiple items into a single unit. Some collections allow duplication of elements and some do not. Some are ordered and some are unordered.

Learning the uses and differences between arrays, lists, stacks, hash maps, heaps

Working with Iterators, Generators and Collections

Contents

WebSite Documentation: PHP <https://www.php.net/manual/en/language.types.array.php>
Arrays (

Article PHP Collection (<https://jmsyst.com/libs/php-collection>)

Article Collection objects in PHP <https://dev.to/fahrenheit/collection-objects-in-php-1cbk>
(

Article Collections — How to <https://medium.com/@pogulailo/collections-how-to-improve-your-php-code-fd319ee52e13>
improve your PHP code (

Article PHP Iterators and <https://medium.com/@mena.meseha/php-iterators-and-generators-2516a5f99b7f>
Generators (

YouTube Program With Gio: How To Work With <https://www.youtube.com/watch?v=E4FUeWa3WQk>
Arrays In PHP (

YouTube Daily Tuition: List() Function In PHP - In <https://www.youtube.com/watch?v=Z--VCmcFenU>
5 Minutes (

YouTube Gary Clarke: PHP Collections Objects <https://www.youtube.com/watch?v=4j1NEmc0yqo>
Tutorial (

YouTube Echo PHP: PHP Generators and Iterators - https://www.youtube.com/watch?v=dTnis2_jlPs)
Quick Guide (

Object-oriented Programming Concepts:

Object-oriented programming (OOP) is a programming paradigm based on the concept of 'objects', which can contain data and code: data in the form of fields (often known as attributes or properties), and code, in the form of procedures (often known as methods). A common feature of objects is that procedures (or methods) are attached to them and can access and modify the object's data fields. Some of the main concepts are classes and instances, inheritance, and encapsulation.

How objects work

Creating and using constructors

What classes are

Creating and using Methods

How encapsulation works

What inheritance is

What polymorphism is

How interfaces work

What abstractions are

Contents

WebSite MDN Web Docs: Object-oriented programming (https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/Object-oriented_programming)

WebSite Geeks for Geeks: Object Oriented Programming (OOPs) Concept in Java (<https://www.geeksforgeeks.org/object-oriented-programming-oops-concept-in-java/>)

WebSite W3Schools: Object-Oriented Programming Style (<https://www.w3schools.blog/object-oriented-programming-style>)

Article What is object-oriented programming? OOP explained in depth (<https://www.educative.io/blog/object-oriented-programming>)

YouTube Programming with Mosh: Object-oriented Programming in 7 minutes (<https://www.youtube.com/watch?v=QJjY2TNyl-8>)

YouTube	freeCodeCamp.org: Intro to Object Oriented Programming - Crash Course (	https://www.youtube.com/watch?v=SiBw7os-_zI)
YouTube	Traversy Media: JavaScript OOP Crash Course (ES5 & ES6) (	https://www.youtube.com/watch?v=vDJpGenyHaA)

PHP - Error handling:

Error handling refers to the response and recovery procedures from error conditions present in a software application. In other words, it is the process comprised of anticipation, detection and resolution of application, programming or communication errors.

Knowing and handling the most common exceptions

Knowing the types of errors and in which situations they can occur

Using 'try' and 'catch' for error handling

Learning about error handlers

Creating specific exceptions according to your application's needs

Contents

WebSite	Documentation - PHP Exceptions (	https://www.php.net/manual/en/language.exceptions.php)
WebSite	W3Schools: PHP Exception Handling (	https://www.w3schools.com/php/php_exception.asp)
Article	Handle exceptions gracefully (	https://medium.com/eleven-labs/handle-exceptions-gracefully-552dcd407a10)
YouTube	Dani Krossing: What Are Error Handlers in PHP (	https://www.youtube.com/watch?v=ZW9HavbryB4)
YouTube	Program With Gio: OOP Error Handling In PHP (	https://www.youtube.com/watch?v=XQ5Pd-6HnjK)

PHP - Persistence:

The concept of "data persistence" refers to ensuring that the information inputted into an application will be stored in a medium where it can be retrieved consistently. In other words, they are permanent records that are not lost when the session is closed.

Knowing how to use PDO

Making insertions, changes and removals in a database

Creating queries on a database using filters

Contents

Article (The only proper) PDO tutorial (<https://phpdelusions.net/pdo>)

Article A Simple PHP (PDO) + MySQL <https://towardsdev.com/a-simple-php-pdo-crud-application-part-1-378d2396838>)

Article PHP PDO basic https://medium.com/@pyk_ouo/php-pdo-basic-database-crud-93dced2bc3d)

Article Connecting to MySQL with PDO (<https://medium.com/@jpmorris/connecting-to-mysql-with-pdo-493d9549c1dc>)

YouTube Traversy Media: PDO Crash Course (<https://www.youtube.com/watch?v=kEW6f7Pilc4>)

YouTube Dani Krossing: Connect To Database Using PDO In OOP PHP (<https://www.youtube.com/watch?v=yWJFbPT3TC0>)

PHP - Files and Streams:

Streams are the way of generalizing file, network, data compression, and other operations which share a common set of functions and uses. In its simplest definition, a stream is a resource object which exhibits streamable behavior. That is, it can be read from or written to in a linear fashion, and may be able to seek an arbitrary location within the stream.

Opening, reading and manipulating files

Applying wrappers and filters on streams

Using streams

Knowing encodings and character sets

Contents

WebSite W3Schools: PHP Stream Functions (https://www.w3schools.com/php/php_ref_stream.asp)

Article Good Practices: use stream in PHP (<https://dev.to/anastasionico/good-practices-use-stream-in-php-1bdj>)

Article A Guide to Streams in PHP: In-Depth Tutorial With Examples (<https://stackify.com/a-guide-to-streams-in-php-in-depth-tutorial-with-examples/>)

Article Getting Started with Input and Output Streams in PHP 8 (<https://www.section.io/engineering-education/php-io-streams/>)

YouTube	WebDevHero: How to read and write files with PHP (	https://www.youtube.com/watch?v=_9aY_Y28pmo)
YouTube	Joe Casabona: How to Process a File with PHP (	https://www.youtube.com/watch?v=WaJulvGPvz8)

Level 2

PHP - Composer:

Composer is a tool for dependency management in PHP. It allows you to declare the libraries your project depends on and it will manage (install/update) them for you.

Managing dependencies

Including third-party libraries

Contents

WebSiteDocumentation: Composer (<https://getcomposer.org/doc/>)

WebSiteW3Schools: PHP Composer (<https://www.w3schools.in/php/php-composer>)

Article	What is Composer? (https://www.digitalocean.com/community/tutorials/what-is-composer)
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YouTube	Gary Clarke: PHP in 60 SECONDS - Composer Dependency Manager (https://www.youtube.com/watch?v=ZZ3vFgs810o)
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YouTube	Adam Thomas: Using Composer to Manage PHP Packages and Dependencies (https://www.youtube.com/watch?v=SgQl0z7PxKk)
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PHP - Testing:

Software testing is the process of evaluating and verifying that a software product or application does what it is supposed to do. The benefits of testing include preventing bugs, reducing development costs and improving performance.

Using unit tests

Using integration testing

Using behavioral testing

Using mocks

Contents

Article	How to Test PHP Code With PHPUnit (	https://www.freecodecamp.org/news/test-php-code-with-phpunit/)
Article	Top 10 Popular PHP Testing Frameworks And Tools (	https://www.softwaretestinghelp.com/php-testing-framework-tools/)
Article	How to test a PHP app? PHP unit testing and more (	https://tsh.io/blog/php-unit-testing/)
Article	Manager's Guide to PHP Testing (	https://www.zend.com/blog/php-testing)
Article	Testing PHP Applications (	https://www.honeybadger.io/blog/php-testing/)
YouTube	Full Stack Jack: Test Driven Development Tutorial in PHP for Beginners (	https://www.youtube.com/watch?v=iHLlixZChnk)
YouTube	Program With Gio: PHPUnit Tutorial (	https://www.youtube.com/watch?v=9-X_b_fxmRM)
YouTube	Program With Gio: PHPUnit Tutorial Part 2 - Mocking (	https://www.youtube.com/watch?v=EhkeoV8nfCQ)
YouTube	Søren Spangsberg Jørgensen: Unit Testing with PHP Unit (	https://www.youtube.com/watch?v=a5ZKCFINUKU)

PHP - MVC:

Model-view-controller (MVC) is a software architectural pattern commonly used for developing user interfaces that divide the related program logic into three interconnected elements. This is done to separate internal representations of information from the ways information is presented to the user.

Understanding the concept of the MVC (Model-View-Controller) pattern

Splitting the responsibilities between the MVC layers

Contents

WebSite	JavaTPoint: PHP MVC Architecture (	https://www.javatpoint.com/php-mvc-architecture)
Article	How to build a simple PHP MVC framework (	https://www.giuseppemaccario.com/how-to-build-a-simple-php-mvc-framework/)
Article	Create your own MVC framework in PHP (	https://medium.com/@nggggg/create-your-own-mvc-framework-in-php-af7bd1f0ca19)
YouTube	freeCodeCamp.org: Use PHP to Create an MVC Framework - Full Course (	https://www.youtube.com/watch?v=6ERdu4k62wI)

YouTube Quick Programming: PHP MVC Framework <https://www.youtube.com/watch?v=q0JhJBYi4sw>)
from scratch (

YouTube The Codeholic: Building PHP https://www.youtube.com/playlist?list=PLLQuc_7jk_Uk_QnJMPndbdKECcTEwTA1)
MVC Framework from Scratch (

Laravel:

Laravel is a free and open-source PHP framework for developing web systems that use the MVC (model, view, controller) pattern.

Getting to know the features of the Laravel framework

Working with routes

Using Blade files

Using its ORM features

Dealing with dependency injection

Contents

WebSiteDocumentation: Laravel (<https://laravel.com/docs/8.x/readme>)

WebSiteW3Schools: Laravel - Introduction (<https://www.w3schools.in/laravel/intro>)

Article An Introduction to Laravel <https://dev.to/thedevdrawer/an-introduction-to-laravel-development-features-benefits-and-getting-started-5gdg>)
Development: Features, Benefits, and Getting Started (

Article Laravel — An <https://medium.com/@dygorodrigues/laravel-an-introduction-106def508752>)
Introduction (

Article Introduction to Laravel... <https://medium.com/@lonewookie/introduction-to-laravel-for-an-eight-year-old-72889cdce9c2>)
for an Eight-Year-Old (

YouTube Matt Socha: Understand Laravel basics <https://www.youtube.com/watch?v=MYyJ4PuL4pY>)
in 25 minutes (

YouTube Traversy Media: Laravel From Scratch 2022 <https://www.youtube.com/watch?v=MYyJ4PuL4pY>)
4+ Hour Course (

YouTube freeCodeCamp.org: Laravel PHP Framework <https://www.youtube.com/watch?v=ImtZ5yENzgE>)
Tutorial - Full Course for Beginners (

PHP - Symfony:

Symfony is an open source PHP, full-stack MVC framework, and incorporates many features and good development practices of the PHP domain.

Getting to know the main features of the framework

Using components

Defining resources and routes

Twig templates

Contents

WebSiteDocumentation: Symfony (<https://symfony.com/doc/current/index.html>)

Article Symfony, a small introduction (<https://medium.com/@disjfa/symfony-a-small-introduction-cf6b92904771>)

Article Symfony Tutorial for Beginners on How to get Started — Web Hints (https://medium.com/@web_hints/symfony-tutorial-for-beginners-on-how-to-get-started-web-hints-74246732f63)

YouTube freeCodeCamp.org: Symfony PHP Framework Tutorial - Full Course (<https://www.youtube.com/watch?v=Bo0guUbL5uo>)

YouTube Code With Dary: Symfony 6 for Beginners | Symfony Full Course (<https://www.youtube.com/watch?v=QPky3r2prEI>)

YouTube Cap Coding: How to build simple CRUD API service with Symfony 5 for beginners (<https://www.youtube.com/watch?v=QPky3r2prEI>)

PHP - Communication with APIs:

An API is an interface that software developers use to program interaction with software components or features outside their own code. An even simpler definition is that an API is the part of a software component that is accessible to other components.

Understanding what a REST API is

Knowing the basic HTTP communication commands

Getting to know cURL

Building APIs in Laravel

Knowing how to make authenticated requests for Web APIs

Contents

Article Laravel API Tutorial: How to Build and Test a RESTful API (<https://www.toptal.com/laravel/restful-laravel-api-tutorial>)

Article How to make API in Laravel 9 (<https://dev.to/shanisingh03/how-to-make-api-in-laravel-9-310g>)

Article	How to use cURL to test a REST API (	https://terminalcheatsheet.com/guides/curl-rest-api)
YouTube	Traversy Media: PHP REST API From Scratch (	https://www.youtube.com/watch?v=OEWXbpUMODk)
YouTube	Envato Tuts+: How to Build a REST API With Laravel - PHP Full Course (	https://www.youtube.com/watch?v=YGqCZjdgJJk)
YouTube	Coding Reflections: How to use PHP cURL to Handle JSON API Requests (	https://www.youtube.com/watch?v=ZlsdbVOQJNc)

PHP - XDebug:

Xdebug is a PHP extension which provides debugging and profiling capabilities.

Using and enhancing var_dump with XDebug

Analyzing and understanding the execution stack

Debugging the code

Debugging remotely with Docker

Contents

WebSiteDocumentation: XDebug (<https://xdebug.org/docs/>)

Article	How to Use Xdebug for Advanced PHP Debugging (	https://deliciousbrains.com/xdebug-advanced-php-debugging/)
Article	xDebug with Docker and PhpStorm (	https://pablofmorales.medium.com/xdebug-with-docker-and-phpstorm-786da0d0fad2)
Article	Learn How to Debug PHP with Xdebug and VsCode (	https://www.cloudways.com/blog/php-debug/)
YouTube	The Codeholic: Debugging PHP7.4 with XDebug 2 and VsCode (	https://www.youtube.com/watch?v=LNlvugvmCyQ)
YouTube	Program With Gio: How To Install Xdebug 3 with Docker & PhpStorm - Full PHP 8 Tutorial (	https://www.youtube.com/watch?v=7YuYxbYd3P0)

Level 3

PHP - Asynchronous:

In asynchronous programming the functions are not executed in order. With asynchrony, we can interrupt the code to get some other information needed to

continue execution. This means that the code waits for another part of the code and while it waits it executes the other parts.

Learning how to use sockets

Getting to know reactive programming libraries

Learning about coroutines

Contents

WebSite	GeeksForGeeks: How to make async functions in PHP? (	https://www.geeksforgeeks.org/how-to-make-async-functions-in-php/)
Article	PHP async (	https://www.educba.com/php-async/)
Article	Using Asynchronous Processes in PHP (	https://dev.to/webong/using-asynchronous-processes-in-php-7io)
Article	PHP asynchronous programming brief (	https://medium.com/@mena.meseha/php-asynchronous-programming-brief-8d44790abb6c)
YouTube	Sergey Zhuk: Introduction to ReactPHP and asynchronous PHP (	https://www.youtube.com/watch?v=7ISfntKmhdk)
YouTube	Neos CMS: Introduction to Asynchronous PHP and ReactPHP (	https://www.youtube.com/watch?v=zm1mU8Vk31Y)
YouTube	International PHP Conference: Asynchronous PHP In Examples (	https://www.youtube.com/watch?v=RU7bCWJXEfg)

PHP - Functional programming:

Functional programming is a programming paradigm premised on using functions. Functions are, according to this paradigm, at the epicenter of a code base.

Understanding in-depth about functions in PHP

Getting to know arrays manipulation functions

Performing function composition using pipelines

Contents

Article	Functional Programming in PHP: Part I (	https://agiroloki.medium.com/functional-programming-in-php-part-i-9015b3d6b03)
Article	Functional Programming with PHP Generators (	https://medium.com/ifixit-engineering/functional-programming-with-php-generators-837a6c91b0e3)

Article	Functional PHP: a first approach (	https://medium.com/@Apiumhub/functional-php-a-first-approach-d771bebbe02a)
YouTube	miss google: Functional Programming with PHP | PHP Advanced Concepts (	https://www.youtube.com/watch?v=GrX9NLBtzcw)
YouTube	Dr.Arnold Fuentes: Basic Functional Programming in PHP (	https://www.youtube.com/watch?v=o76bfjPRiyE)

Microservices architecture:

Microservices are an architectural approach in which software consists of small independent services that communicate with each other and are organized according to their business domains.

Learning the concept of planned architecture for microservices

Performing communication using APIs

Improving the scalability of a system

Contents

WebSite	Google Cloud: Microservice architecture style (	https://learn.microsoft.com/en-us/azure/architecture/guide/architecture-styles/microservices)
WebSite	Amazon: What are microservices? (	https://aws.amazon.com/en/microservices/)	
Article	The What, Why, and How of a Microservices Architecture (	https://medium.com/hashmapinc/the-what-why-and-how-of-a-microservices-architecture-4179579423a9)
Article	Understanding Microservices: From Idea To Starting Line (	https://medium.com/free-code-camp/microservices-from-idea-to-starting-line-ae5317a6ff02)
YouTube	TechWorld with Nana: Microservices explained - the What, Why and How? (	https://www.youtube.com/watch?v=rv4LlmLmVWk)
YouTube	ByteByteGo: What Are Microservices Really All About? (And When Not To Use It) (	https://www.youtube.com/watch?v=_Oyy5PFOlcU)
YouTube	InfoQ: Mastering Chaos - A Netflix Guide to Microservices (	https://www.youtube.com/watch?v=CZ3wluvmHeM)
YouTube	freeCodeCamp.org: Microservice Architecture and System Design with Python & Kubernetes – Full Course (	https://www.youtube.com/watch?v=hmkF77F9TLw)

Containers:

Containers are software packages that contain all the elements needed to run in any environment.

Kubernetes (also known as k8s or "kube") is an open source container orchestration platform that automates many of the manual processes involved in deploying, managing, and scaling containerized applications.

Isolating your software to run independently

Deploying software in clusters

Modularizing your system into smaller packages

Getting to know the Docker platform

Getting to know Kubernetes

Contents

WebSite IBM: Containers (<https://www.ibm.com/en-us/cloud/learn/containers>)

WebSite HPE: What are containers? (<https://www.hpe.com/us/en/what-is/containers.html>)

WebSite Google Cloud: What are Containers? (<https://cloud.google.com/learn/what-are-containers>)

WebSite Azure: What is a container? (<https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-a-container/>)

WebSite Kubernetes - Documentation (<https://kubernetes.io/docs/tutorials/kubernetes-basics/>)

Article Red Hat: What is Kubernetes? (<https://www.redhat.com/en/topics/containers/what-is-kubernetes>)

Article Azure: What is Kubernetes? (<https://azure.microsoft.com/en-us/topic/what-is-kubernetes/>)

YouTube freeCodeCamp.org: Docker Tutorial for Beginners (<https://www.youtube.com/watch?v=eLiHH9Bu04E>)

YouTube freeCodeCamp.org: Docker Containers and Kubernetes Fundamentals – Full Hands-On Course (<https://www.youtube.com/watch?v=kTp5xUtcaw>)

YouTube TechWorld with Nana: Kubernetes Tutorial for Beginners [FULL COURSE in 4 Hours] (<https://www.youtube.com/watch?v=X48VuDVv0do>)

Object Calisthenics:

Object Calisthenics are basically programming exercises, as a set of 9 rules to help write better object-oriented code.

Getting to know the rules of Object Calisthenics

Simplifying classes and methods

Keeping code shorter and more cohesive

Contents

Article	Clean Code — Object Calisthenics in Javascript (	https://medium.com/@davidsen/clean-code-object-calisthenics-f6f4dec07c8b)
Article	Object Calisthenics: Principles for Better Object-Oriented Code (	https://blog.avenuecode.com/object-calisthenics-principles-for-better-object-oriented-code)
Article	Object Calisthenics (	https://developerhandbook.stakater.com/content/architecture/object-calisthenics.html)
YouTube	Nick Chapsas: 9 rules for cleaner code | Object Calisthenics (	https://www.youtube.com/watch?v=gyrSiY4SHxI)

Reflection and attributes:

Reflection objects are used for obtaining type information at runtime. The classes that give access to the metadata of a running program are in the System.Reflection namespace.

Writing code that reads object information and metadata at runtime

Getting class names at runtime and creating objects of a class

Contents

WebSite	Microsoft Docs: Reflection (C#) (	https://learn.microsoft.com/en-us/dotnet/csharp/programming-guide/concepts/reflection)
WebSite	GeeksforGeeks: Reflection in Python (	https://www.geeksforgeeks.org/reflection-in-python/)
Article	Reflection in C# (	https://medium.com/@ghadeer.kenawi/reflection-in-c-fa27d8f827f8)
Article	C# - Reflection (	https://www.tutorialspoint.com/csharp/csharp_reflection.htm)

YouTube	Raw Coding: C# Reflection Explained (	https://www.youtube.com/watch?v=cdG2JxuZvNI)
YouTube	Tutorials Point: C# - Reflection (	https://www.youtube.com/watch?v=wfDFI9A56Gs)
YouTube	Derek Banas: Java Reflection Tutorial (	https://www.youtube.com/watch?v=agnblS47F18)

Auxiliary Skill: Infrastructure and good practices

Git & GitHub - Fundamentals:

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

GitHub is a hosting service for software development and version control using Git.

Creating a repository

Cloning a repository

Committing, pushing and pulling to and from the repository

Reversing a commit

Creating branches and pull requests

Handling merge and conflicts

Contents

WebSiteGit Reference Book (<https://git-scm.com/book/en/v2>)

WebSiteGitHub Documentation (<https://docs.github.com/en>)

WebSite	GitHub Pages Documentation (https://docs.github.com/en/pages/getting-started-with-github-pages/about-github-pages)
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WebSite	W3Schools: Git Tutorial (https://www.w3schools.com/git/default.asp?remote=github)
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WebSiteGit School - Visualizing Git (<https://git-school.github.io/visualizing-git/>)

WebSiteDangit, Git!?! (<https://dangitgit.com/>)

Article	Git Tutorial - Explore The Commands And Operations In Git (https://medium.com/edureka/git-tutorial-da652b566ece)
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Article	Git and Github Quickstart Tutorial (https://medium.com/@prashantramnyc/git-and-github-quickstart-tutorial-654a71594dca)
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Article	Getting Started with Git and GitHub: A Complete Tutorial for Beginner (https://towardsdatascience.com/learn-basic-git-commands-for-your-data-science-works-2a75396d530d)
YouTube	Programming with Mosh: Git Tutorial for Beginners - Learn Git in 1 Hour (	https://www.youtube.com/watch?v=8JJ101D3knE)
YouTube	freeCodeCamp.org: Git and GitHub for Beginners - Crash Course (	https://www.youtube.com/watch?v=RGOj5yH7evk)
YouTube	Kevin Stratvert: Git and GitHub for Beginners Tutorial (	https://www.youtube.com/watch?v=tRZGeaHPoaw)
YouTube	Tech With Tim: Git Tutorial for Beginners - Git & GitHub Fundamentals In Depth (	https://www.youtube.com/watch?v=DVRQoVRzMIY)

HTTP - Fundamentals:

HTTP stands for Hyper Text Transfer Protocol. Communication between client computers and web servers is done by sending HTTP Requests and receiving HTTP Responses.

Understanding the difference between HTTP verbs

Testing requests and checking the status codes in the browser

Learning how to make a HTTP request on the command line with WGET

Downloading an image with WGET

Performing a POST

Contents

WebSite	W3Schools: What is HTTP? (	https://www.w3schools.com/whatis/whatis_http.asp)
WebSite	MDN Web Docs: An overview of HTTP (	https://developer.mozilla.org/en-US/docs/Web/HTTP/Overview)
WebSite	MDN Web Docs: HTTP request methods (	https://developer.mozilla.org/en-US/docs/Web/HTTP/Methods)
WebSite	HTTP Cats (https://http.cat/)		
WebSite	HTTP Dogs (https://http.dog/)		
Article	HTTP codes as Valentine's Day comics (	https://medium.com/@hanilim/http-codes-as-valentines-day-comics-8c03c805faa0)

Here Are the most popular <https://medium.com/free-code-camp/here-is-the-most-popular-ways-to-make-an-http-request-in-javascript-954ce8c95aaa>)
Articleways to make an HTTP request in JavaScript (

Traversy Media: HTTP Crash Course & <https://www.youtube.com/watch?v=iYM2zFP3Zn0>)
YouTube Exploration (

Curious Code: HTTP Request Methods - GET, <https://www.youtube.com/watch?v=tkfVQK6UxDI>)
YouTube POST, PUT, DELETE (

freeCodeCamp.org: Postman Beginner's <https://www.youtube.com/watch?v=VywxIQ2ZXw4>)
YouTube Course - API Testing (

JSON:

JSON stands for JavaScript Object Notation. It is a text format for storing and transporting data.

Creating an object

Transforming an object into a string

Transforming a string into an object

Manipulating an object

Contents

WebSiteW3Schools: JSON (https://www.w3schools.com/js/js_json_intro.asp)

MDN Web Docs: https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Global_Objects/JSON)
WebSite JSON (

MDN Web Docs: Working <https://developer.mozilla.org/en-US/docs/Learn/JavaScript/Objects/JSON>)
WebSite with JSON (

Web Dev Simplified: Learn JSON in 10 <https://www.youtube.com/watch?v=iiADhChRriM>)
YouTube Minutes (

Traversy Media: JSON Crash <https://www.youtube.com/watch?v=w1CWzNtE-M>)
YouTube Course (

Command Line - Fundamentals:

CLI is a command line program that accepts text input to execute operating system functions.

Knowing the most important commands

Contents

W3Schools: What is WebSite	Command Line Interface (CLI)? (	https://www.w3schools.com/whatis/whatis_cli.asp)
Microsoft Docs: Using command WebSite	line arguments for Windows Terminal (	https://docs.microsoft.com/en-us/windows/terminal/command-line-arguments?tabs=windows)
Advanced CLI: Commands Article	You Should Know as a Developer (	https://betterprogramming.pub/advanced-cli-commands-you-should-know-as-a-developer-7bc48c752a5e)
freeCodeCamp.org: Command Line YouTube	Crash Course (	https://www.youtube.com/watch?v=yz7nYlnXLfE)
Traversy Media: Command Line Crash Course YouTube	For Beginners - Terminal Commands (	https://www.youtube.com/watch?v=uwAqEzhyjtw)

Cloud - Fundamentals:

Cloud, or cloud computing, is the distribution of computing services over the Internet using a pay-as-you-go pricing model. A cloud is composed of various computing resources, ranging from the computers themselves (or instances, in cloud terminology) to networks, storage, databases, and everything around them. In other words, everything that is normally needed to set up the equivalent of a server room, or even a complete data center, will be ready to use, configured, and run.

Knowing the difference between IaaS, PaaS and SaaS

Knowing the largest cloud providers

Specializing in a specific provider of your choice

Contents

Microsoft Azure: What WebSite	is cloud computing? (	https://azure.microsoft.com/en-us/resources/cloud-computing-dictionary/what-is-cloud-computing/)
Amazon AWS: What is cloud WebSite	computing? (	https://aws.amazon.com/en/what-is-cloud-computing/)
A beginner's guide to the Article	basics of what cloud computing is about (	https://scientya.com/a-beginners-guide-to-the-basics-of-what-cloud-computing-is-about-e8b3b7f25a30/)
Cloud Computing for Article	Beginners (	https://medium.com/hackernoon/cloud-computing-for-beginners-85d168959afb/)

What are Cloud Computing Services [IaaS, CaaS, PaaS, FaaS, SaaS] (<https://medium.com/@nnilesh7756/what-are-cloud-computing-services-iaas-caas-paas-faas-saas-ac0f6022d36e>)

YouTube Simplilearn: Cloud Computing Tutorial for Beginners (<https://www.youtube.com/watch?v=RWgW-Cgdlk0>)

YouTube Amazon Web Services: What is Cloud Computing? - Amazon Web Services (<https://www.youtube.com/watch?v=mxT233EdY5c>)

YouTube Ecourse Review: Cloud Computing Services Models - IaaS PaaS SaaS Explained (<https://www.youtube.com/watch?v=36zducUX16w/>)

SQL - Fundamentals:

Structured Query Language (SQL) is a standardized programming language that is used to manage relational databases and perform various operations on the data in them.

Knowing the most common SQL commands

Using SELECT to query a table

Using INSERT to insert data into a table

Using UPDATE to update a table

Using DELETE to remove data from a table

Using JOIN to connect data from multiple tables

Knowing the clauses (FROM, ORDER BY, etc.)

Contents

WebSiteW3Schools: Introduction to SQL (https://www.w3schools.com/sql/sql_intro.asp)

WebSiteAmazon AWS: What is SQL? (https://aws.amazon.com/what-is/sql/?nc1=h_ls)

ArticleFrom Basic to Intermediate SQL in 10 Minutes (<https://medium.com/analytics-vidhya/from-basic-to-intermediate-sql-in-10-minutes-42b960ed6f9e>)

ArticleSQL for Beginners 2022 — A Practical SQL Guide (<https://medium.com/@besimum/sql-for-beginners-2022-a-practical-sql-guide-1de6adb43d52>)

YouTube Kevin Stratvert: SQL for Beginners Tutorial (<https://www.youtube.com/watch?v=h0nxCDiD-zg>)

YouTube Fireship: Learn SQL in 23 Easy Steps (<https://www.youtube.com/watch?v=Cz3WcZLRaWc>)

freeCodeCamp.org: SQL Tutorial - Full Database Course for Beginners (<https://www.youtube.com/watch?v=HXV3zeQKqGY>)

SOLID:

SOLID has five principles that are considered best practices in software development that help programmers write cleaner code by separating responsibilities, reducing coupling, easing refactoring, and encouraging code reuse.

Contents

Article The S.O.L.I.D Principles in Pictures (<https://medium.com/backticks-tildes/the-s-o-l-i-d-principles-in-pictures-b34ce2f1e898>)

Article SOLID Principles every Developer Should Know (<https://blog.bitsrc.io/solid-principles-every-developer-should-know-b3bfa96bb688>)

YouTube Fireship: Solid in 100 Seconds (<https://www.youtube.com/watch?v=q0BGgQJcp7w>)

YouTube A Dev' Story: SOLID Design Principles Explained in a Nutshell (<https://www.youtube.com/watch?v=69sfWNzxTMc>)

YouTube Web Dev Simplified: Single Responsibility Principle Explained - SOLID Design Principles (https://www.youtube.com/watch?v=UQqY3_6Epbq)

Design Patterns:

In software engineering, a Design Pattern is a general, reusable solution to a commonly occurring problem within a given context in software design. It is a description or template for how to solve a problem that can be used in many different situations. Design Patterns are formalized best practices that the programmer can use to solve common problems when designing an application or system.

Getting familiarized with and applying the main Design Patterns

Contents

WebSite What's a design pattern? (<https://refactoring.guru/design-patterns/what-is-pattern>)

Article Design Patterns — Introduction (<https://henriquesd.medium.com/design-patterns-introduction-220f811db857>)

Article What Are Design Patterns and Do I Need Them? (<https://www.developer.com/design/what-are-design-patterns-and-do-i-need-them/>)

The 3 Types of Design Patterns All Developers Should Know (with code examples of each) (	https://www.freecodecamp.org/news/the-basic-design-patterns-all-developers-need-to-know/)
10 Design Patterns every Software Architect and Software Engineer must know (	https://ravindraelicherla.medium.com/10-design-patterns-every-software-architect-must-know-b33237bc01c2)
Modern-Day Architecture Design Patterns for Software Professionals (	https://betterprogramming.pub/modern-day-architecture-design-patterns-for-software-professionals-9056ee1ed977)
Web Dev Simplified: Design Patterns (Playlist) (	https://www.youtube.com/playlist?list=PLZIA0Gpn_vH_CthENcPCM0Dww6a5XYC7f)
Programming with Mosh: Design Patterns in Plain English (	https://www.youtube.com/watch?v=NU_1StN5Tkk)
Fireship: 10 Design Patterns Explained in 10 Minutes (	https://www.youtube.com/watch?v=tv-_1er1mWl)
Traversy Media: 5 Design Patterns Every Engineer Should Know (	https://www.YOUTUBE.com/watch?v=AWOf6Wo6gtg)

Clean Architecture:

Clean architecture is a way of developing software, such that just by looking at the source code of a program, you should be able to tell what the program does.

Contents

The Clean Architecture—Beginner's Guide (	https://betterprogramming.pub/the-clean-architecture-beginners-guide-e4b7058c1165)
Thoughts on Clean Architecture (	https://medium.com/android-news/thoughts-on-clean-architecture-b8449d9d02df)
Clean Architecture, the right way (	https://medium.com/gdg-vit/clean-architecture-the-right-way-d83b81ecac6)
Why use a Clean Architecture (	https://www.mytaskpanel.com/the-5-advantages-of-using-a-clean-architecture-all-you-need-to-know/)
Clean Architecture – Build Software like an Artisan (	https://flexiple.com/developers/clean-architecture-build-software-like-an-artisan/)
React Clean Architecture (	https://kpiteng.medium.com/react-clean-architecture-e4144a0788b6)

Article	Clean Architecture with Java 11 (	https://medium.com/slalom-build/clean-architecture-with-java-11-f78bba431041)
Article	A detailed guide on developing Android apps using the Clean Architecture pattern (	https://medium.com/@dmilicic/a-detailed-guide-on-developing-android-apps-using-the-clean-architecture-pattern-d38d71e94029)
YouTube	CodeOpinion: Clean Architecture Example & Breakdown (	https://www.youtube.com/watch?v=Ys_W6MyWOCw)
YouTube	Women Who Code: Clean Architecture Concepts (	https://www.youtube.com/watch?v=ouBSPdzbzvw)
YouTube	CodandoTV(Rods) - Simplifying Clean Architecture +MVVM in your mobile application - COMPLETE GUIDE (	https://youtu.be/8ehIZfyN1S0?si=l7-l5l4zsnYLIjD)

Domain-Driven Design (DDD) Concepts:

Domain-Driven Design (DDD) is an approach to software design and development that is first informed by business requirements. The program components (objects, classes, arrays, etc.) indicate the industry, sector, or business domain in which the business operates.

Modeling domains effectively

Basing complex projects on domain models

Getting to know the building blocks of DDD

Contents

Article	Domain-Driven Design: Everything You Always Wanted to Know About it, But Were Afraid to Ask (	https://medium.com/ssense-tech/domain-driven-design-everything-you-always-wanted-to-know-about-it-but-were-afraid-to-ask-a85e7b74497a)
Article	Domain-Driven Design in the era of Microservices (	https://medium.com/it-dead-inside/domain-driven-design-in-the-era-of-icroservices-de2be01821ed)
YouTube	Amichai Mantinband: Domain-Driven Design in 150 Seconds (	https://www.youtube.com/watch?v=8Z5IAkWcnlw)
YouTube	Domain-Driven Design Europe: What is DDD? (Eric Evans - DDD Europe 2019) (	https://www.youtube.com/watch?v=pMuiVlnGqjk)

Auxiliary Skill: Front-end

HTML - Fundamentals:

HTML is a markup language that defines the structure of your content. HTML consists of a series of elements, which you use to make it appear a certain way, or act a certain way. The enclosing tags can make a word or image hyperlink to somewhere else, can italicize words, can make the font bigger or smaller, and so on.

Learning which tags are required for basic HTML

Creating a text paragraph

Displaying an image

Knowing the difference between 'h1', 'h2', 'h3', etc.

Creating a hyperlinked text

Creating a form with relevant fields

Creating an ordered or unordered list of items

Creating a list of items within a dropdown list

Linking to a CSS file

Creating a table

Adding IDs and classes

Contents

WebSite W3Schools: HTML Introduction (https://www.w3schools.com/html/html_intro.asp)

WebSite W3Schools: HTML Elements (https://www.w3schools.com/html/html_elements.asp)

WebSite W3Schools: HTML Formatting Elements (https://www.w3schools.com/html/html_formatting.asp)

WebSite W3Schools: HTML Block and Inline Elements (https://www.w3schools.com/html/html_blocks.asp)

WebSite W3Schools: HTML Layout Elements (https://www.w3schools.com/html/html_layout.asp)

WebSite W3Schools: HTML Lists (https://www.w3schools.com/html/html_lists.asp)

WebSite W3Schools: HTML Tables (https://www.w3schools.com/html/html_tables.asp)

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WebSite	MDN Web Docs: https://developer.mozilla.org/en-US/docs/Learn/Getting_started_with_the_web/HTML_basics)
Article	HTML vs CSS: What's the Difference? https://learn.onemonth.com/html-vs-css/)
Article	Getting Started with HTML https://towardsdatascience.com/getting-started-with-html-98866c3e5c9e)
YouTube	Programming with Mosh: HTML Tutorial for Beginners - HTML Crash Course https://www.youtube.com/watch?v=qz0aGYrrlhU)
YouTube	freeCodeCamp.org: Learn HTML – Full Tutorial for Beginners https://www.youtube.com/watch?v=kUMe1FH4CHE)
YouTube	SuperSimpleDev: HTML & CSS Full Course - Beginner to Pro https://www.youtube.com/watch?v=G3e-cpL7ofc)

CSS - Fundamentals:

Cascading Style Sheets (CSS) is a style sheet language used for describing the presentation of a document written in a markup language such as HTML or XML. CSS can be used for very basic document text styling — for example, for changing the color and size of headings and links. It can be used to create a layout — for example, turning a single column of text into a layout with a main content area and a sidebar for related information. It can even be used for effects such as animation.

Learning the visual structure of a page, with 'margin' and 'padding'

Establishing the size with 'width' and 'height'

Learning about the position of an element ('static', 'relative' or 'absolute')

Learning about the display of an element ('block', 'inline', 'inline-block')

Learning how to position images in relation to text

Learning about alignment

Learning about font style

Learning the differences and advantages of using the different units of measurement in CSS (% , relative, etc)

Connecting to the elements (IDs, classes) of an HTML file

Changing the characteristics of an element when the mouse hovers over it

Learning box-sizing

Learning Flexbox

Learning Grid

Contents

WebSiteW3Schools: CSS Tutorial (<https://www.w3schools.com/css/>)

WebSiteW3Schools: CSS Introduction (https://www.w3schools.com/css/css_intro.asp)

WebSiteW3Schools: CSS Syntax (https://www.w3schools.com/css/css_syntax.asp)

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WebSiteMDN Web Docs: Cascade and inheritance (https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Cascade_and_inheritance)

WebSiteMDN Web Docs: display property (<https://developer.mozilla.org/en-US/docs/Web/CSS/display>)

WebSiteMDN Web Docs: Basic concepts of Flexbox (https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout/Basic_Concepts_of_Flexbox)

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ArticleCSS Tutorial: Learn the basics of CSS in 5 minutes (<https://medium.com/free-code-camp/get-started-with-css-in-5-minutes-e0804813fc3e>)

Article The Complete CSS Flex Tutorial (<https://jst.hashnode.dev/complete-css-flex-tutorial>)

Article The Complete CSS Grid Tutorial (<https://jst.hashnode.dev/css-grid-tutorial>)

YouTube Web Dev Simplified: Learn CSS in 20 Minutes (https://www.youtube.com/watch?v=1PnVor36_40)

YouTube freeCodeCamp.org: CSS Tutorial - Zero to Hero (Complete Course) (<https://www.youtube.com/watch?v=1Rs2ND1ryYc>)

YouTube SuperSimpleDev: HTML & CSS Full Course - Beginner to Pro (<https://www.youtube.com/watch?v=G3e-cpL7ofc>)

JavaScript - Fundamentals:

JavaScript is the world's most popular programming language and is one of the core technologies of the World Wide Web, alongside HTML and CSS. It has dynamic typing, prototype-based object-orientation, and first-class functions. It is multi-paradigm, supporting event-driven, functional, and imperative programming styles.

Knowing the primitive types

Declaring variables, considering the difference between 'var', 'let' and 'const'

Using conditional structures ('if', 'else')

Know the assignment and comparison operators ('=', '==', '===')

Using repetition structures and loops ('while', 'for')

Using functions, passing parameters and arguments

Manipulating arrays and lists

Getting data from an API

Making asynchronous calls using 'Async/Await', 'Promise', etc

Contents

WebSite W3Schools: JavaScript Syntax (https://www.w3schools.com/js/js_syntax.asp)

WebSite W3Schools: JavaScript Variables (https://www.w3schools.com/js/js_variables.asp)

WebSite W3Schools: JavaScript Operators (https://www.w3schools.com/js/js_operators.asp)

WebSite W3Schools: JavaScript Comparison and Logical Operators (https://www.w3schools.com/js/js_comparisons.asp)

WebSite	W3Schools: JavaScript Data Types (	https://www.w3schools.com/js/js_datatypes.asp)
WebSite	W3Schools: JavaScript Arrays (	https://www.w3schools.com/js/js_arrays.asp)
WebSite	W3Schools: JavaScript if, else, and else if (	https://www.w3schools.com/js/js_if_else.asp)
WebSite	W3Schools: JavaScript Iterables (while, for) (	https://www.w3schools.com/js/js_iterables.asp)
WebSite	W3Schools: JavaScript Functions (https://www.w3schools.com/js/js_functions.asp)
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WebSite	MDN Web Docs: A first splash into JavaScript (https://developer.mozilla.org/en-US/docs/Learn/JavaScript/First_steps/A_first_splash)
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WebSite	MDN Web Docs: if...else (https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/if...else)
WebSite	MDN Web Docs: while (	https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/while)
WebSite	MDN Web Docs: for (https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Statements/for)
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WebSite	MDN Web Docs: Template strings (https://developer.mozilla.org/en-US/docs/Web/JavaScript/Reference/Template_literals)
Article	An introduction to JavaScript's async and await (	https://medium.com/@zellwk/an-introduction-to-javascripts-async-and-await-edb313356677)
Article	Javascript: Map, Filter, and Reduce (	https://harsh-patel.medium.com/javascript-map-filter-and-reduce-51da071d6dc4)
YouTube	Aaron Jack: Learn JavaScript in just 5 minutes (	https://www.youtube.com/watch?v=c-I5S_zTwAc)
YouTube	Topknot Clare: JavaScript Basics in 10 Minutes (	https://www.youtube.com/watch?v=c-I5S_zTwAc)

YouTube Programming with Mosh: JavaScript Tutorial <https://www.youtube.com/watch?v=W6NZfCO5SIk>)
for Beginners - Learn JavaScript in 1 Hour (

YouTube freeCodeCamp.org: Introduction to <https://www.youtube.com/watch?v=y9oxzTGERs>)
JavaScript (

YouTube freeCodeCamp.org: Learn JavaScript - Full <https://www.youtube.com/watch?v=PkZNo7MFNFg>)
Course for Beginners (

TechGuide - Alura
Alura, PM3 e FIAP
O Techguide.sh é um projeto open source