# Lesson41

## PHP

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PHP Fullstack course, Code Academy 2020

# Recursion

- A recursive function is one that calls itself, either directly or in a cycle of function calls

- Recursion function structure

- Factorial example

- Fibonacci example

# Generators

- Generators are functions that provide a simple way to loop, through data without the need to build an array in memory

- Yield statement is similar to a return statement, except that instead of stopping execution of the function and returning, yield instead returns a Generator object and pauses execution of the generator function.

# Design patterns
## Types of software design patterns

- Creational

- Structural

- Behavioral

- And more..

# Creational patterns

- Singleton

- Simple Factory

- Prototype

# Structural patterns

- Dependency Injection (DI)

- Adapter

- Decorator

- Facade

# Behavioral patterns

- Strategy

- Observer

- Visitor

# Design pattern resources
## Self learning

- https://designpatternsphp.readthedocs.io/

- https://refactoring.guru/design-patterns/php

- https://phptherightway.com/pages/Design-Patterns.html