

# Introduction to Python

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# Index

- Topic 1: What is python and why is it important?
- Topic 2: Python Basics
- Topic 3: Pandas
- Topic 4: Numpy



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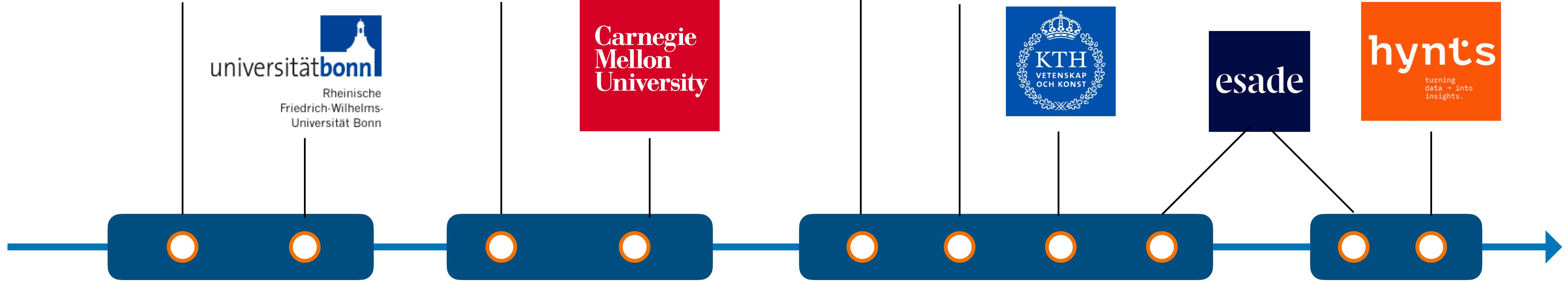
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# Topic 1: What is Python and why is it important?

# What is Python?



- Versatile, and powerful **programming language**
- Concise, and **easy to learn**, use and read
- **Large python community** (Widely used)
- Large number of libraries (Big data, Machine Learning)
- **High demand** in the job market

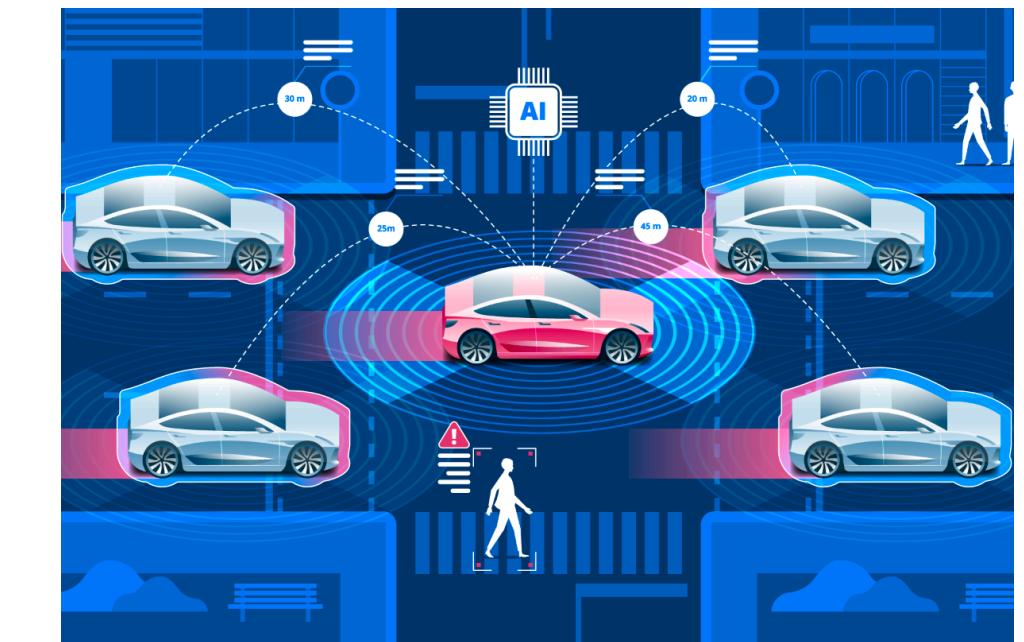
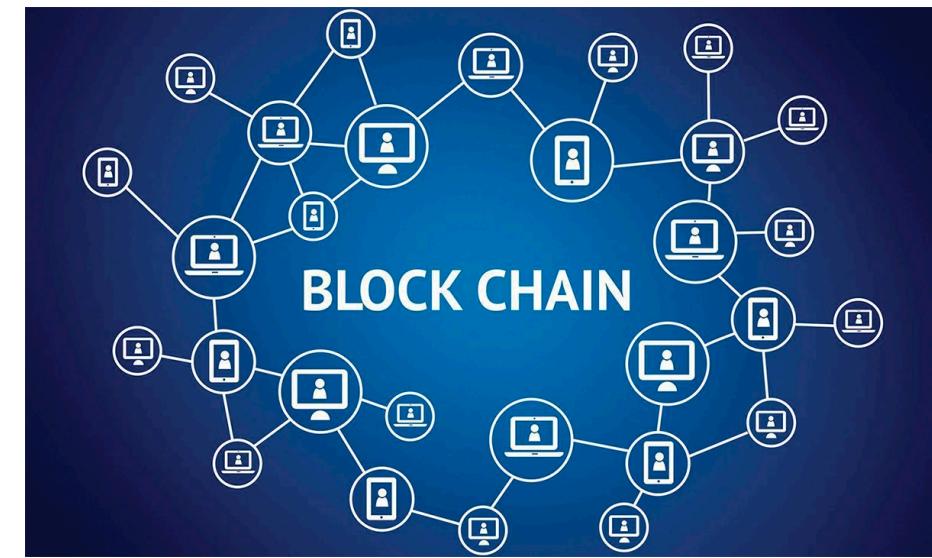
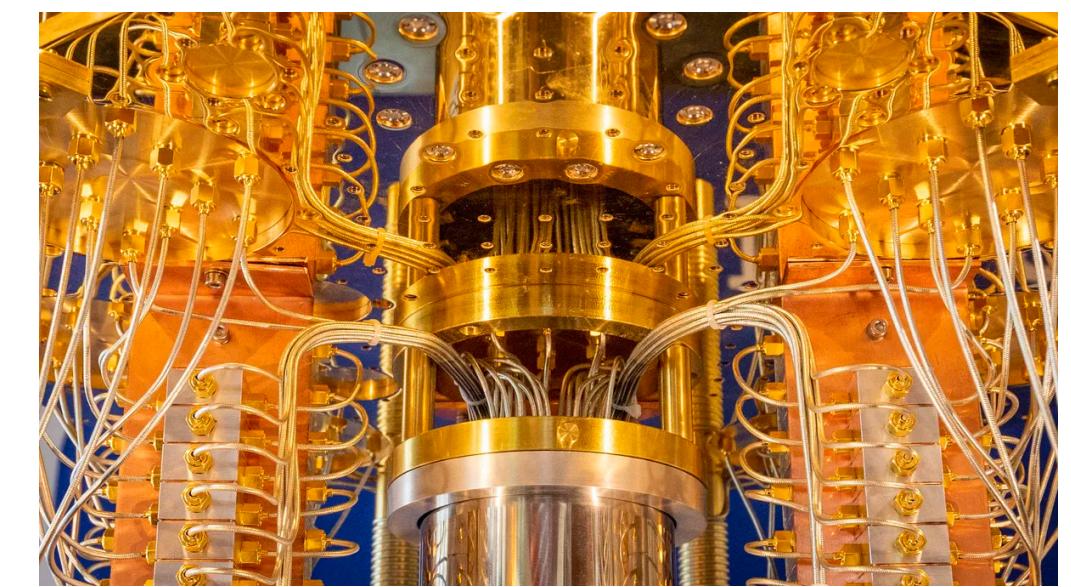
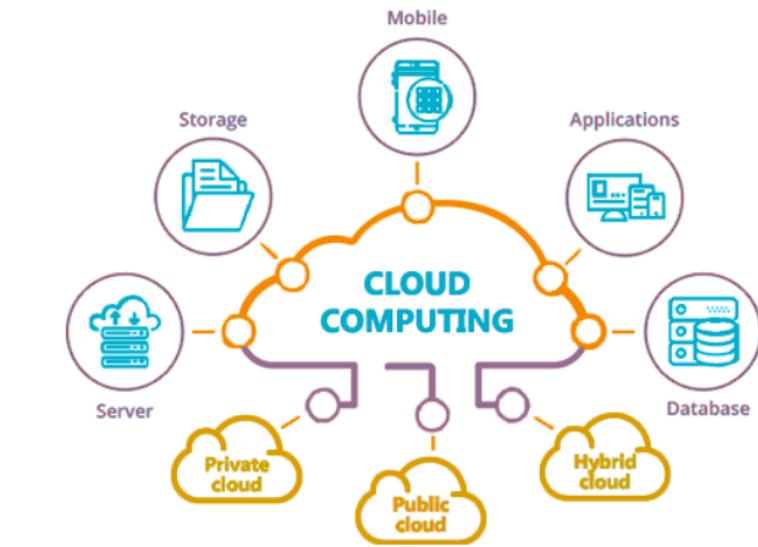
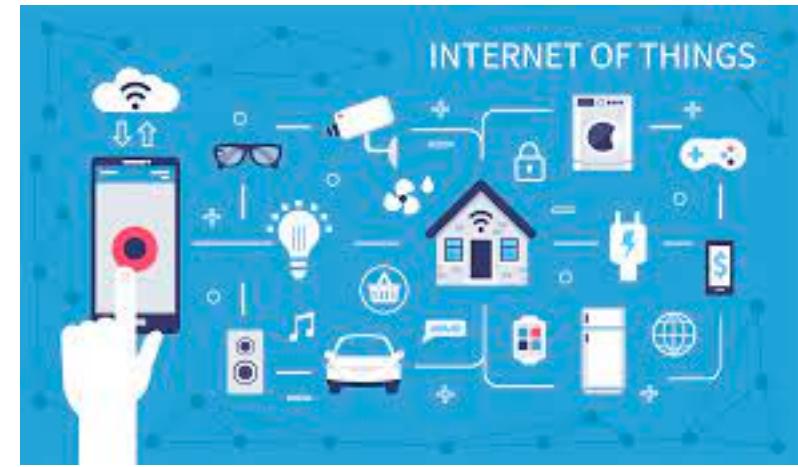
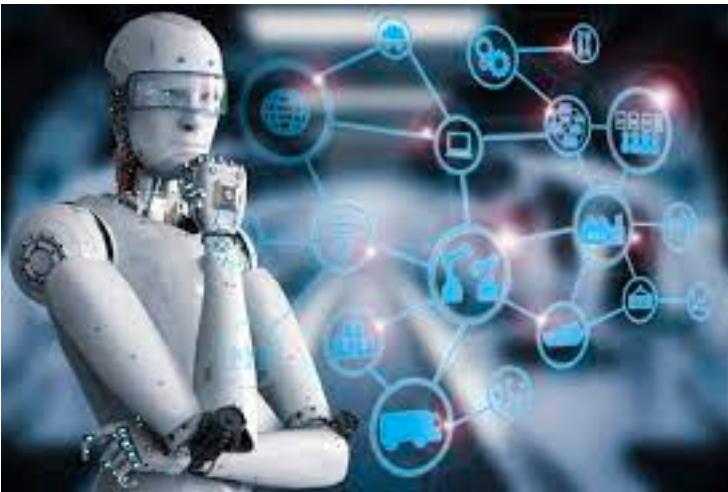
```
import tensorflow as tf
from tensorflow.keras.layers import *
from tensorflow.keras.models import Model, Sequential
from tensorflow.keras.applications.inception_v3 import InceptionV3

class ConvBlock(Model):
    def __init__(self, filters, kernel_size):
        super(ConvBlock, self).__init__()
        self.conv = Conv1D(filters, kernel_size, padding="same",
                          kernel_initializer="lecun_normal")
        self.bn = BatchNormalization()
        self.relu = ReLU()

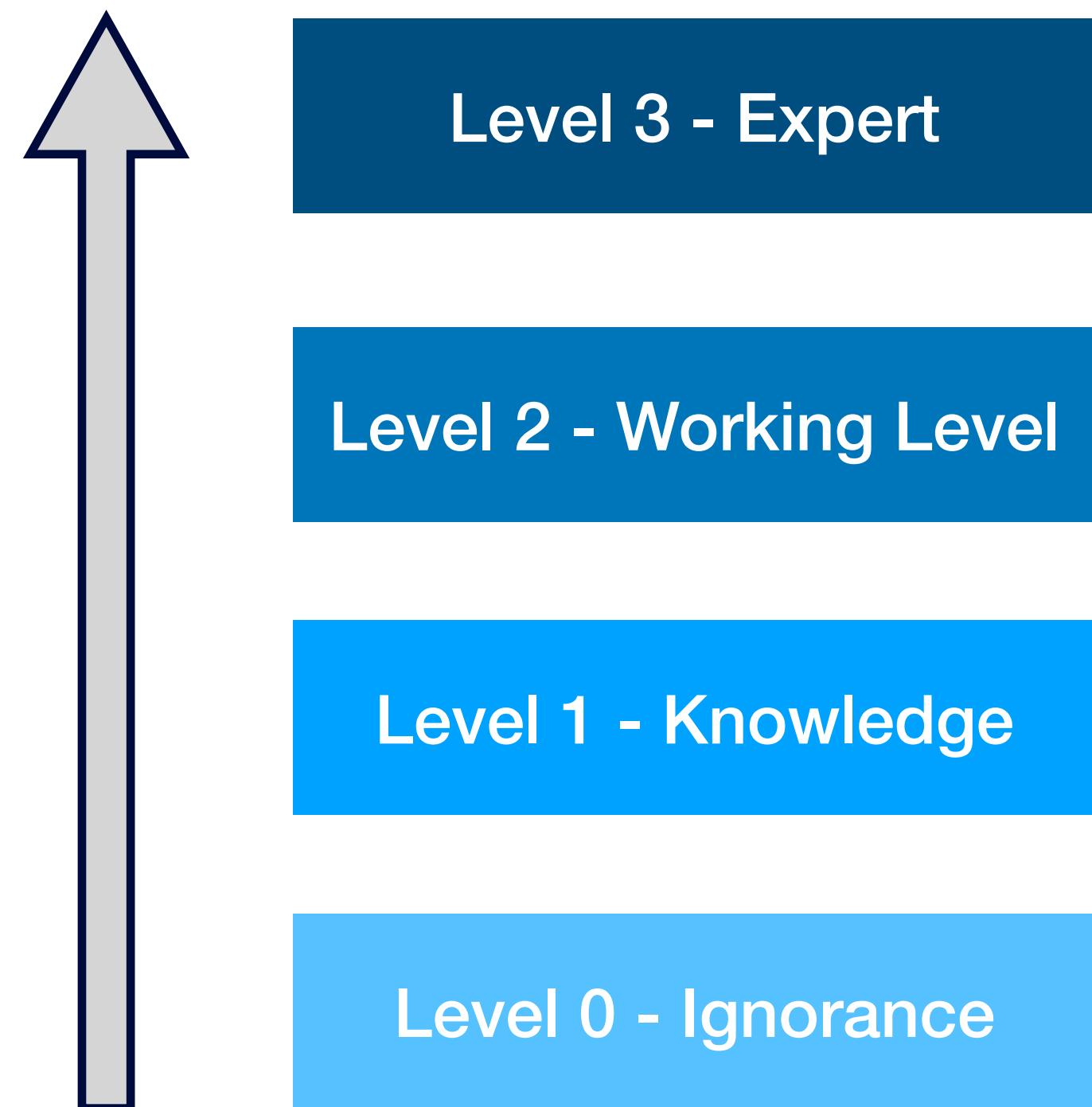
    def call(self, inputs):
        x = self.conv(inputs)
        x = self.bn(x)
        x = self.relu(x)
        return x
```

# Future trends & Challenges

- Artificial Intelligence (AI)
- Internet Of Things (IoT)
- Cloud Computing
- Big Data
- Blockchain
- Quantum Computing
- Metaverse
- Smart Cities
- Autonomous Vehicles

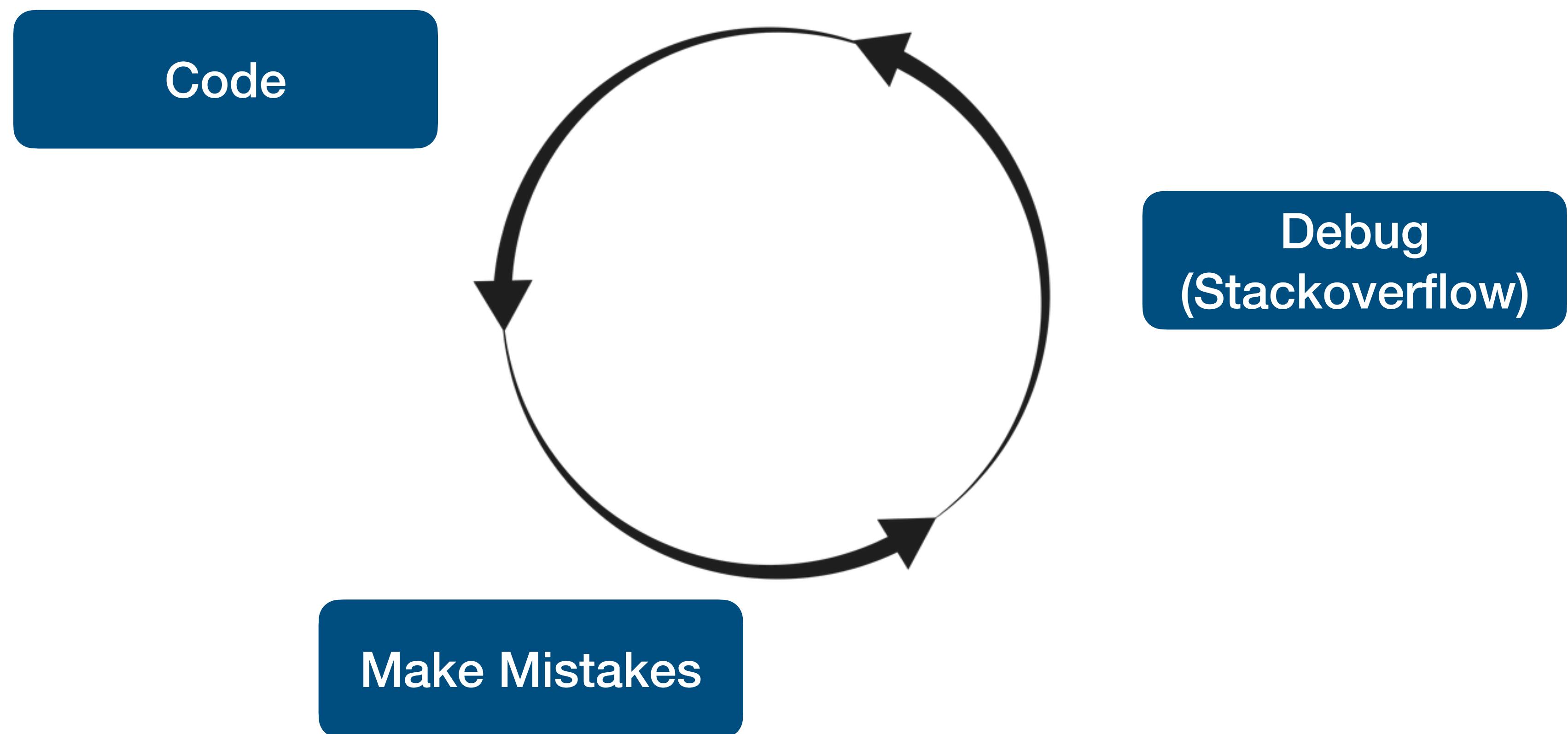


# Towards achieving level 1



# How do we learn it?

## 1. Learn by doing (The coding cycle)



# How do we learn it?



COURSES

ABOUT

The online coding school that invests in you

Train remotely to become a software engineer or data scientist and pay nothing upfront until you are earning \$50k or more.

START APPLICATION



# My Take

- Python (+ SQL) + Github + (maybe) Cloud Computing can completely change your work
- Do not stress over python. You will be perfectly fine without it.
- But it should be a must to (Harvard HBS):
  - Know about it
  - Understand what it is useful for
  - How it applies to companies now
  - As you are doing the EMIBA: Get an intuition on how to use it



# Topic 2: Python Basics

# Python Backbone

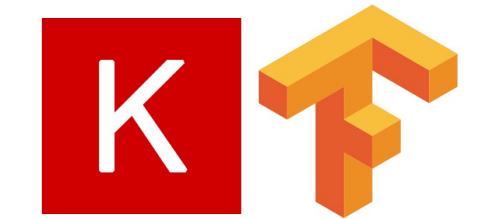
- Variables
- Programming mind
- Lists, Dictionaries
- Loops: for, if, elif, else, while
- Functions

```
In [7]: my_list = [1, 5, 12, 91, 102]
my_list_length = len(my_list)
for i in range(0,my_list_length):
    print(i, my_list[i] * my_list[i])
```

```
0 1
1 25
2 144
3 8281
4 10404
```

# Python Libraries

- Pandas
- Numpy
- Scikit Learn
- Tensorflow
- Keras



# Variables

- Types of variables: Float, int, text, boolean

# Operations

# If statements

# For loops

# While

# Introduction to functions

# Topic 3: Pandas

# What is Pandas?

- Dataframes

# Load a csv / tsv / excel file

# Operations with Columns

# Operations with rows

# Statistics on Data frames

# Groupby

# Apply function

# Topic 4: Numpy

# Datacamp Courses

## Python Fundamentals

Are you ready to gain the foundational skills you need to become a Python programmer? In this track, you'll learn the Python basics you need to start on your programming journey, including how to clean real-world data ready for analysis, use data visualization libraries, and even how to write your own Python functions.

Your instructor Hugo will introduce you to how companies worldwide use Python to gain a competitive edge. Through hands-on coding exercises you'll then learn how to store, manipulate, and explore data using NumPy. Then it's time to level-up as you learn how to visualize your data using Matplotlib, manipulate DataFrames and dictionaries using pandas, and write your own functions and list comprehension. Start this track to add these essential Python skills to your data science toolbox.

[Switch Track](#)

Python 15 hours 4 Courses 1 Skill Assessment

## Data Scientist with Python ENROLLED

Gain the career-building Python skills you need to succeed as a data scientist. No prior coding experience required.

In this track, you'll learn how this versatile language allows you to import, clean, manipulate, and visualize data—all integral skills for any aspiring data professional or researcher. Through interactive exercises, you'll get hands-on with some of the most popular Python libraries, including pandas, NumPy, Matplotlib, and many more. You'll then work with real-world datasets to learn the statistical and machine learning techniques you need to train decision trees and use natural language processing (NLP). Start this track, grow your Python skills, and begin your journey to becoming a confident data scientist.

[Resume Track](#)

Python 88 hours 23 Courses 6 Projects 3 Skill Assessments

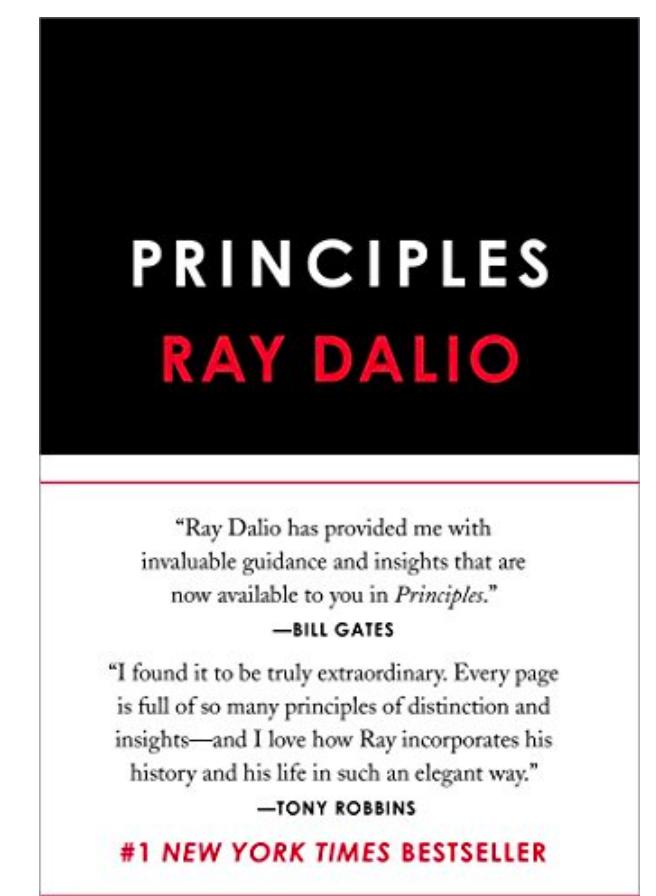
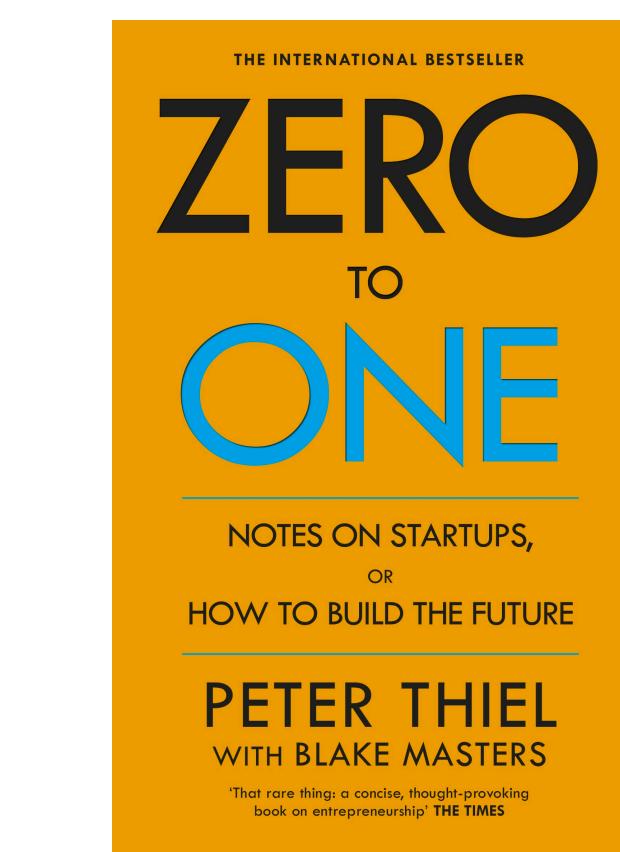
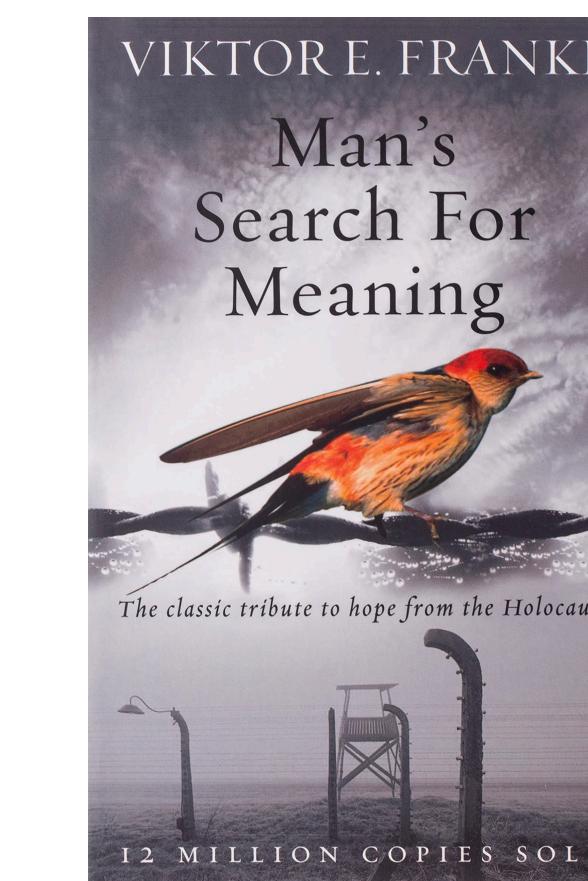
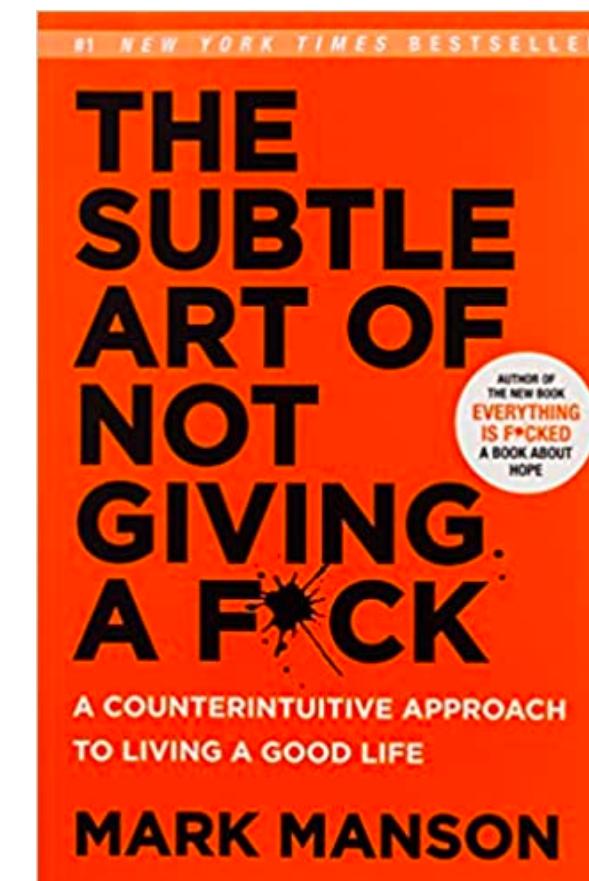
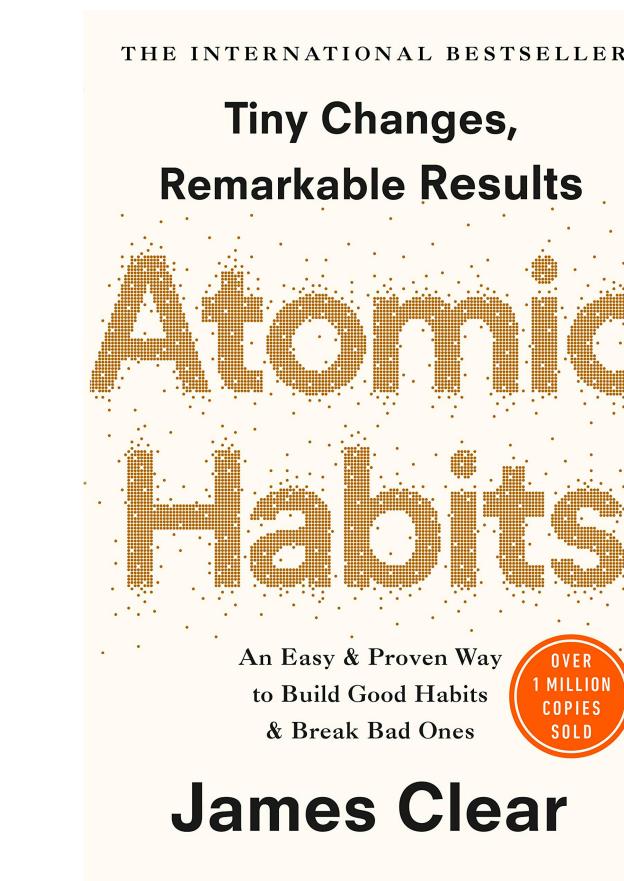
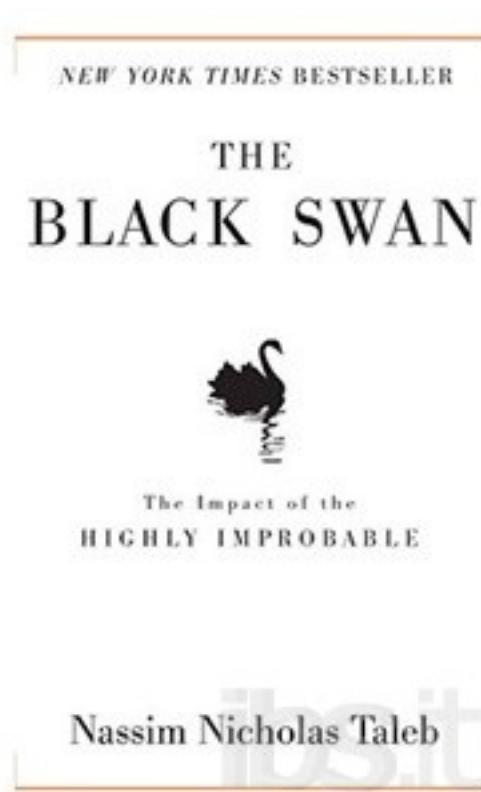
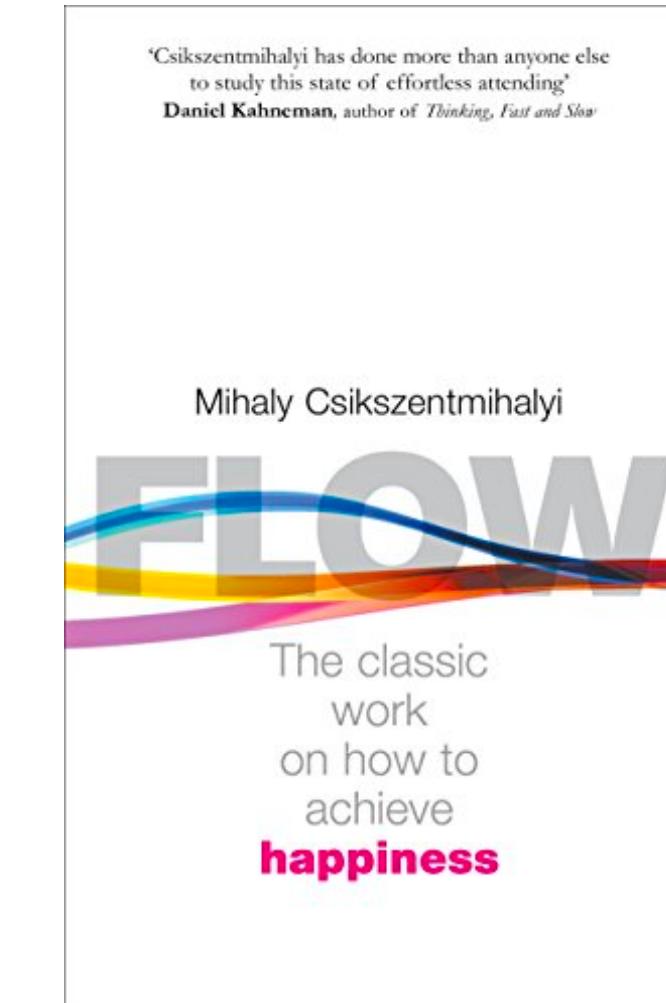
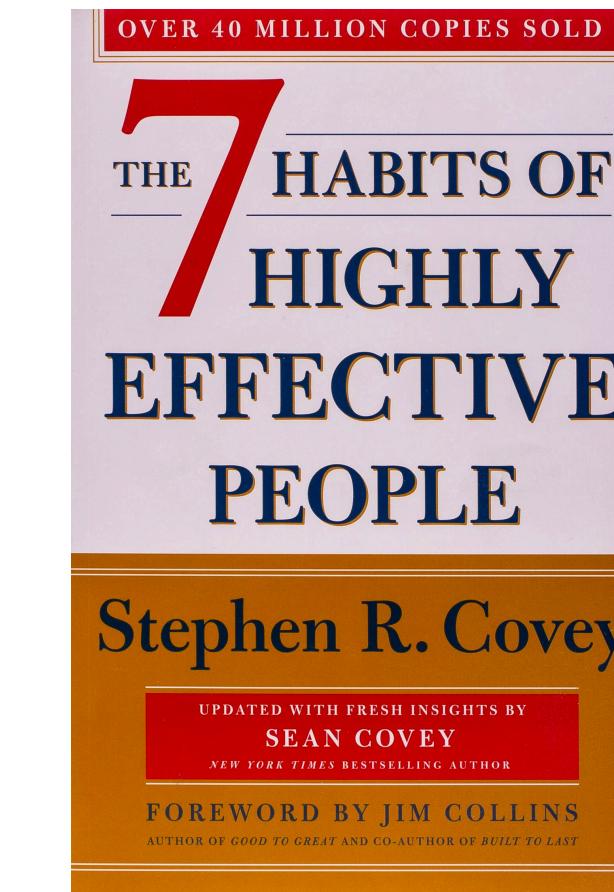
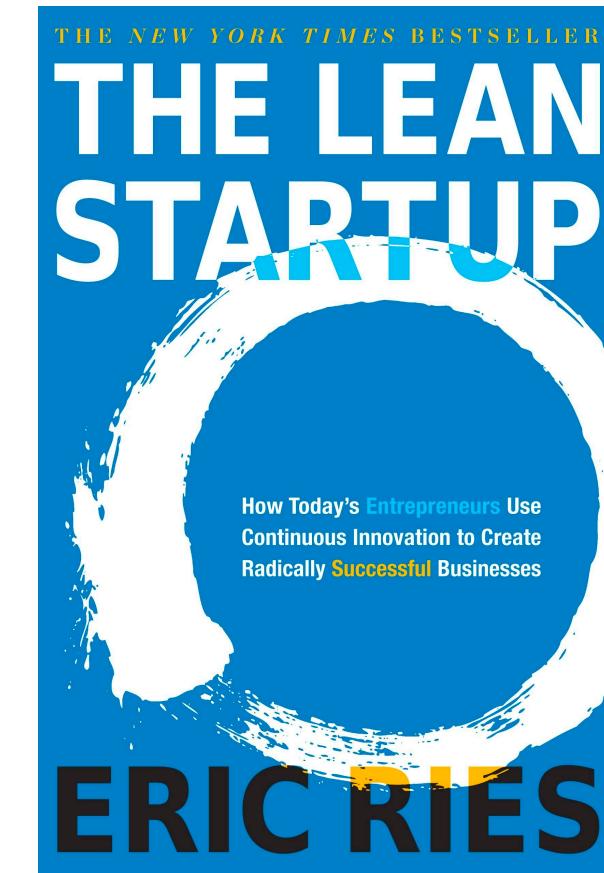
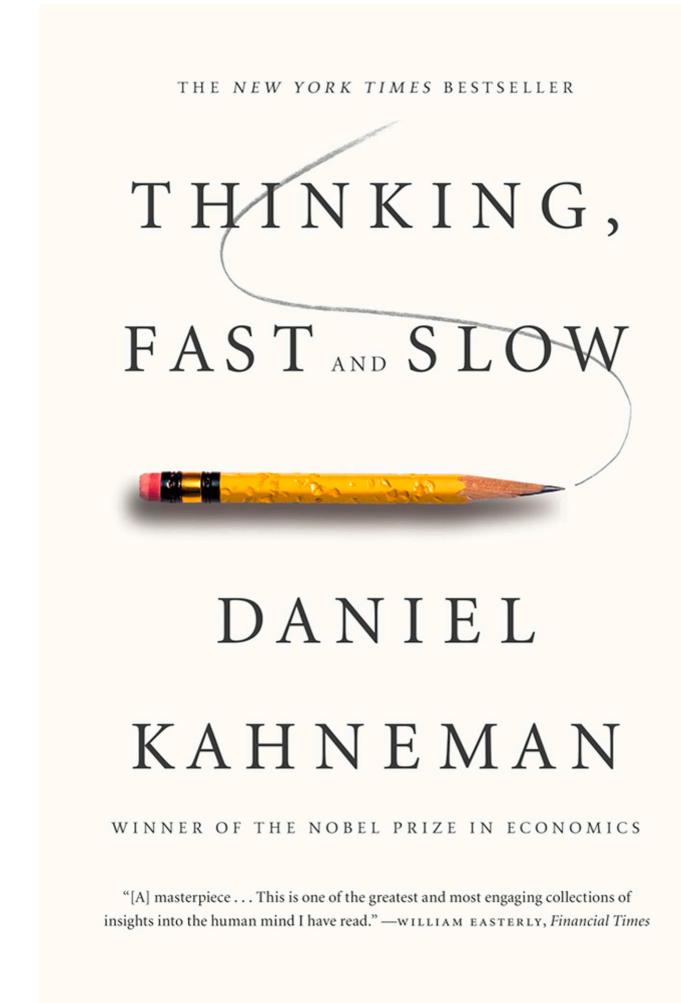
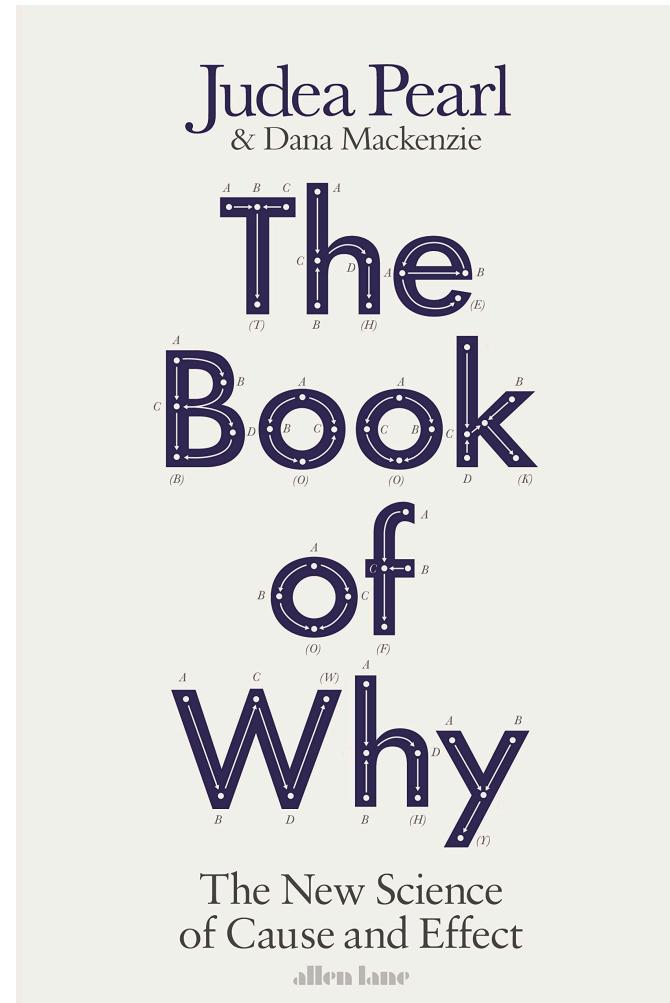
# My recommendations for the Master

- Talk to your colleagues. Networking, networking, networking!
- Read the materials and participate
- Ask questions
- Work on your own on the things that you believe can be better for yourself
- Enjoy & make friends
- READ!



# Read as many books as possible!

## Gaining a wide perspective is a long process



# **Feel Free to contact me whenever!**

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**Thank you!**