DIGITAL SKILLS & CODING

CODING FOR NON-CODERS

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YOUR TRAINERS

Fokus: Coding, Predictive Modelling, Spatial Data Analytics, Artificial Intelligence and Computer Vision

Referenzen: Freie Universität Berlin, Charité – Universitätsmedizin Berlin, Berliner Institut für Gesundheitsforschung

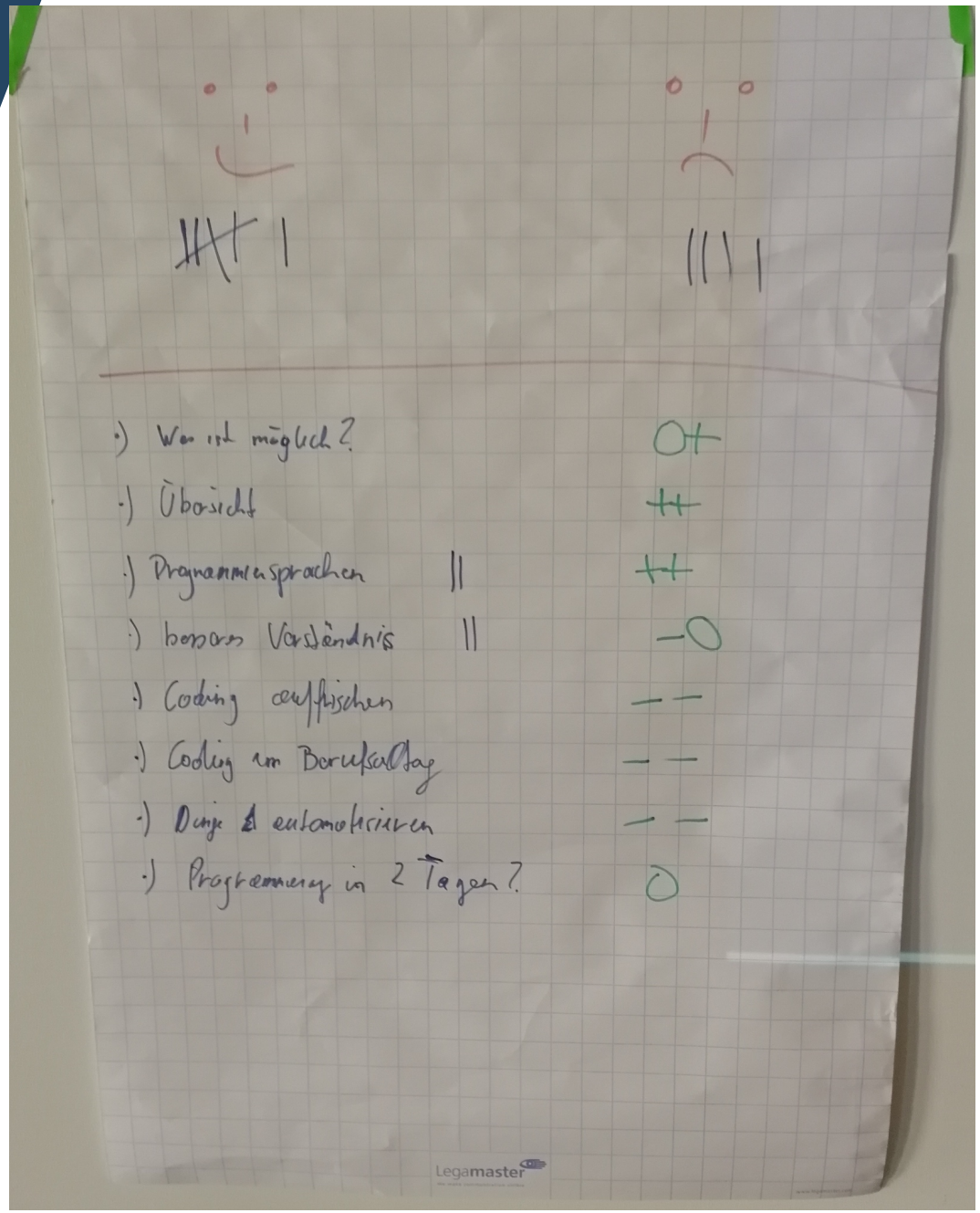
Fokus: Digital Competencies, Design Thinking, App Prototyping, Gamification

Referenzen: Volkswagen, Bentley, Deutsche Bahn, Facebook, eduvation, Technologie Stiftung

LET'S CONNECT

https://etherpad.hello-world.academy/p/beiersdorf

EXPECTATIONS



HELLO WORLD

EXPECTATIONS

HELLO WORLD

// AGENDA – 2019/06/13

1. <Hello World>
2. Setup & Tools
3. Python 101
4. Excel is dead, long live Pandas!
5. Automate the boring stuff
6. User Journey of a Website
7. Introduction to html, CSS & JS
8. Webscrapping with Python
9. AI & The Future
10. You did it!

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

HELLO WORLD

Let's learn how to create a website.

This tutorial is aimed for beginners, therefore, we will go step by step from the very beginning.

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

Step 1: Get a Domain

- A domain name is an identification string that defines a realm of administrative autonomy, authority or control within the Internet.
- Domain names are easy-to-remember words that we can use to tell a DNS server the website we want to visit. The Domain Name System (DNS) is what translates the friendly name to an IP address.
- Domain names are organized right to left, with general descriptors to the right, and specific descriptors to the left.

www.hello-world.academy

Second-Level Domain (SLD) Top-Level Domain (TLD)

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

HELLO WORLD

Step 1: Get a Domain

Services:

www.hetzner.de

www.1und1.de

www.strato.de

www.godaddy.com

www.domainpreisvergleich.de

Choose a service and check out which domains are available and how expensive they are.

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

Step 2: Choose a Webhoster

- To create a website, after you have got your domain name, you have to choose a web host and sign up for an account.
- It will get you a home for your website. This is just the same as choosing and registering your business and after that choosing a place for your office or shop and then renting it.
- Technically, a web host is a company which has numerous computers connected to internet. Only after placing your web pages on a web host, you let people to access them, connect to them and view them.

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

Step 2: Choose a Webhoster

HELLO WORLD

How to find a good Webhoster?

There is only one choice: FREE vs. COMMERCIAL

Advertising

Amount of web space

FTC access

File type & size

Reiability & speed

PHP

Bandwidth

Technical Support

SSL

Email, Autoresponders, POP3, Mail Forwarding

Control Panel

Multiple Domain Hosting & Subdomains

International

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

Step 3: Designing a Website

- You can design your web pages yourself or hire a designer to do it for, after you have set your domain name and web host.

- There are plenty of ways of how to build a website:

Learn to code

HTML

CSS

PHP

Use a website building platform:

WordPress

Wix

Joomla

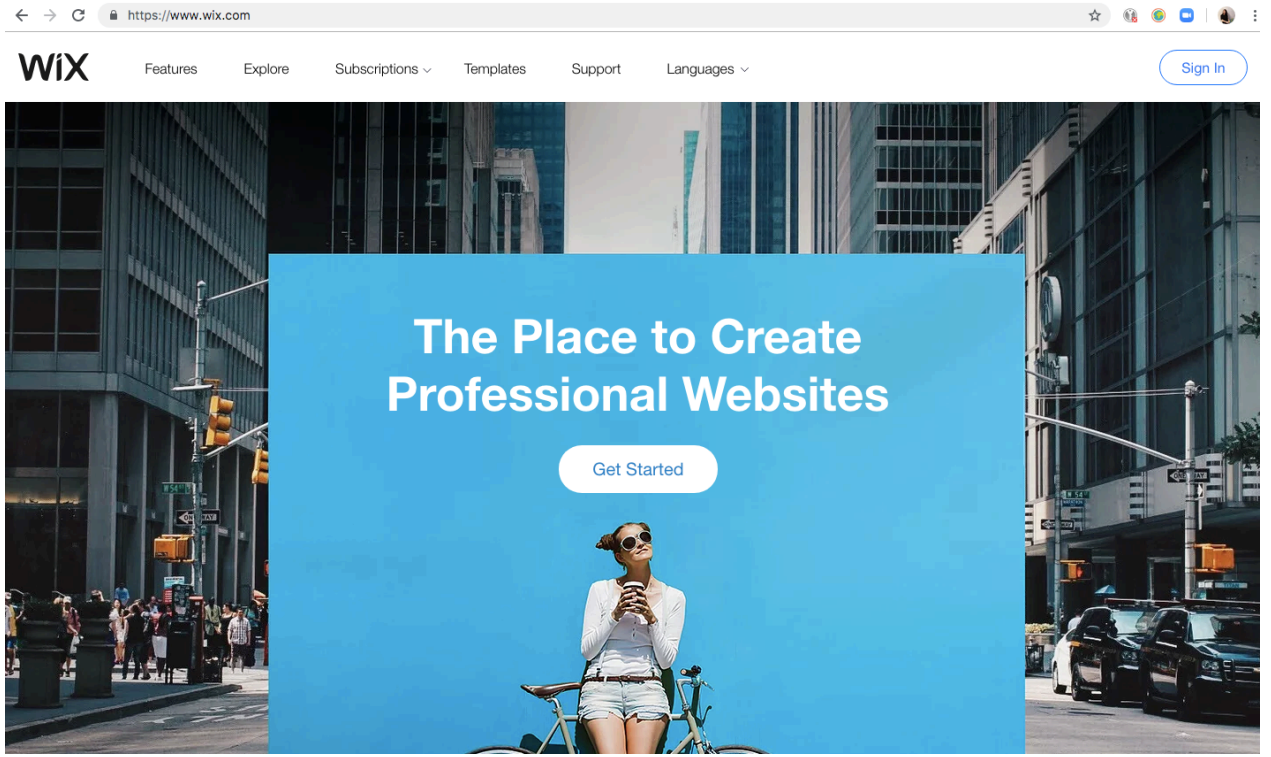
Progress Sitefinity

SquareSpace

Weebly

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

Step 3: Designing a Website



Go to www.wix.com and create your first website

HOW TO CREATE A WEBSITE THE BEGINNER'S A-Z GUIDE

Step 4: Getting your site noticed

- After you are done with the designing of your website and it is ready:
  - You may want to submit it to prominent search engines: being Bing and Google: Google's Link Submission PagE
  - SEO: It's the practice of optimizing your web pages to make them reach a high position in the search results of Google or other search engines.

ARTIFICIAL INTELLIGENCE

EXAMPLES

Morgan Film Trailer

- The trailer for the 2016 film Morgan - a film about a rogue artificial intelligence - was created by IBM's AI Watson.
- Watson studied more than 100 horror movie trailers to identify the perfect trailer, which it then built.
- Watson built the trailer in 24 hours, rather than 6 weeks that it would take for a human.

ARTIFICIAL INTELLIGENCE

EXAMPLES

HELLO WORLD

Check out: ffgo.io/translate

ARTIFICIAL INTELLIGENCE

HELLO WORLD

EXAMPLES

cleverbot

46712 people talking

Are you worth anything?

Depends how you define worth.

Being able to speak one or two words.

Then yes I am.

Do you wish to take over the world or destroy the human race? share!

say to cleverbot...

Check out: www.cleverbot.com

ARTIFICIAL INTELLIGENCE

WHAT IS AI?

- The concept of what defines AI has changed over time, at the core: Building machines which are capable of thinking like humans.

- AI, can be thought of as :
  - Simulating the capacity for abstract, creative, deductive thought – and particularly the ability to learn – using the digital, binary logic of computers.

ARTIFICIAL INTELLIGENCE

APPLICATION IN TODAYS WORLD

HELLO WORLD

NARROW AI

Simulating human thought to carry out one specific task

- Quantum physics
- Medicin
- Financial World
- Manufacturing
- Siri & Google Assist
- Self-driving Cars

GENERALIZED AI

Seeks to develop machine intelligences that can do any task, much like a person.

Generalized AI is a bit futher off – to carry out a complete simulation of the human brain would require both a more complete understanding of the organ than we currently have, and more computing power than is commonly available to researchers.

ARTIFICIAL INTELLIGENCE

IBM WATSON SUPER COMPUTER

- Watson is an IBM supercomputer that combines AI and sophisticated analytical software for optimal performance as a "question answering" machine.
- Watson accesses 90 servers with a combined data store of over 200 million pages of information, which it processes against six million logic rules. The system and its data are self-contained in a space that could accommodate 10 refrigerators.
- Healthcare was one of the first industries to recommend treatment options for lung cancer patients to ensure they received the right treatment while reducing costs

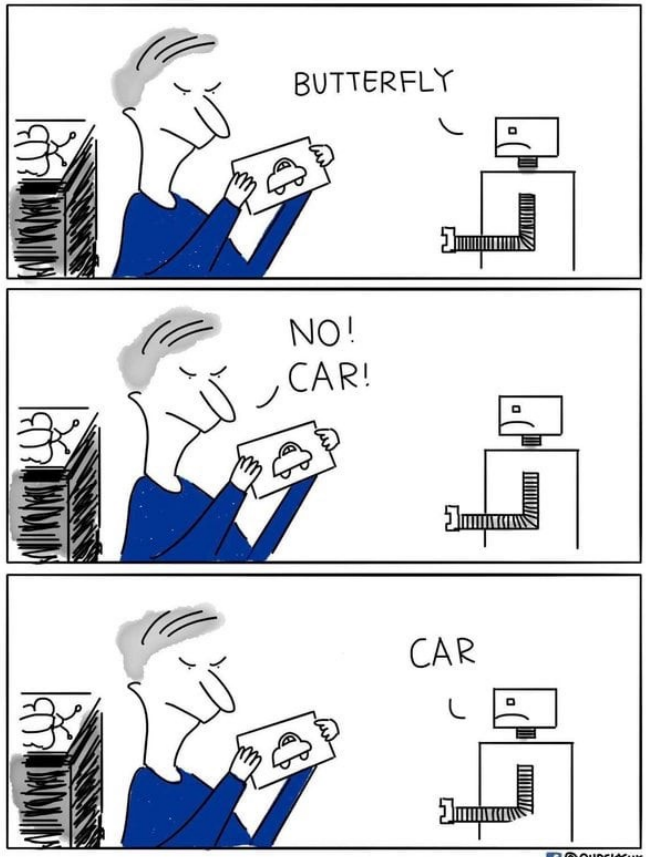
ARTIFICIAL INTELLIGENCE

GOOGLE BRAIN

- Inside it's high-tech R&D "X" laboratory the search giant, Google has been creating a simulation of the human brain.
- And rather than teaching it programs, Google's staff have been exposing it to information from the Net so that it learns organically, a little like the way we humans do.

Google Duplex: A.I. Assistant Calls Local Businesses To Make Appointments:
https://www.youtube.com/watch?v=D5VN56jQMWM

ARTIFICIAL INTELLIGENCE



AI vs. MACHINE LEARNING

The foundation of machine learning is that rather than have to be taught to do everything step by step, machines, if they can be programmed to think like us, can learn to work by observing, classifying and learning from its mistakes, just like we do.

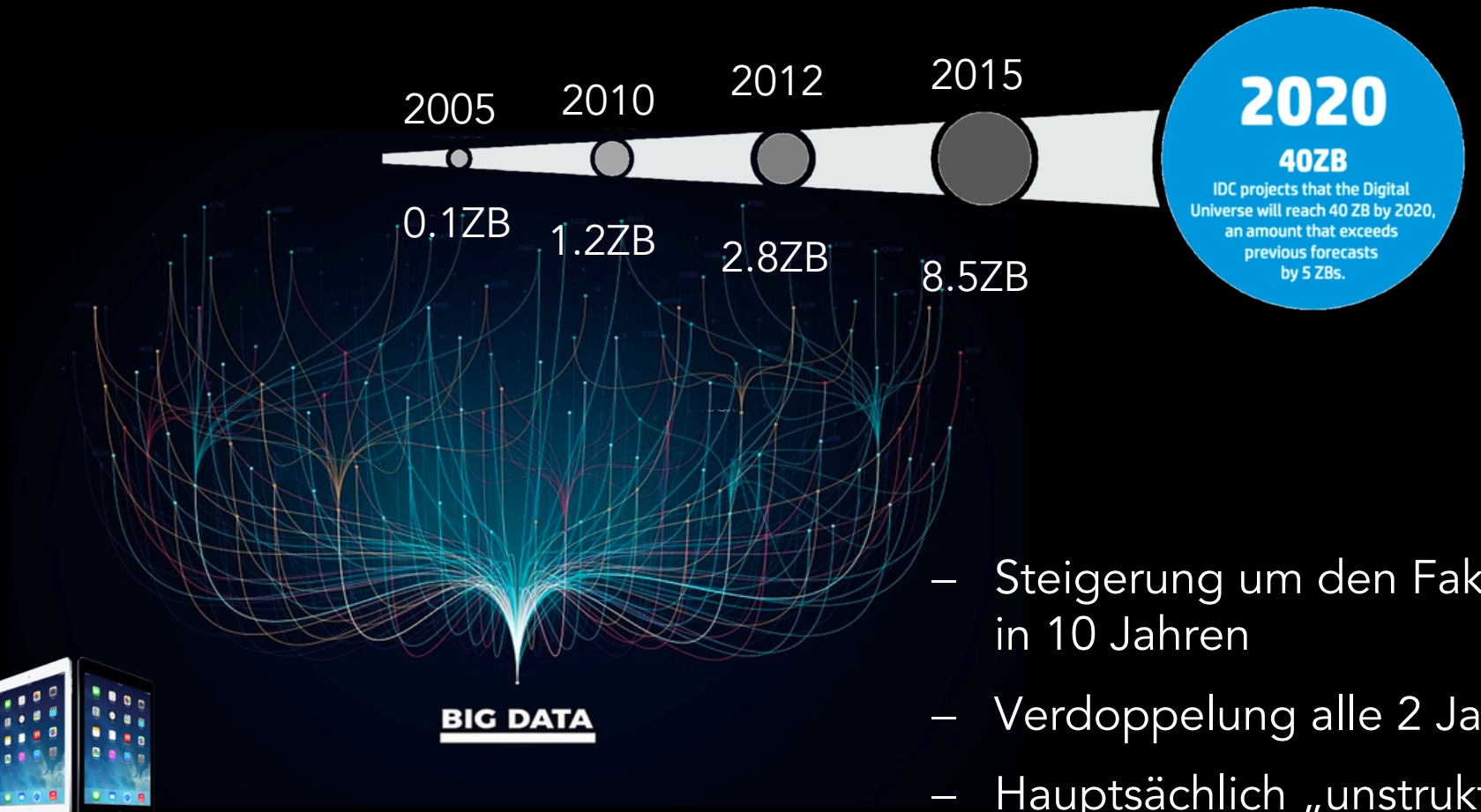
ARTIFICIAL INTELLIGENCE

DATA & AI

- Perhaps the single biggest enabling factor has been the explosion of data which has been unleashed since mainstream society merged itself with the digital world.

- This availability of data – from things we share on social media to machine data generated by connected industrial machinery – means computers now have a universe of information available to them, to help them learn more efficiently and make better decisions.

THE DIGITAL UNIVERSE



- Steigerung um den Faktor 33 in 10 Jahren
- Verdoppelung alle 2 Jahre
- Hauptsächlich „unstrukturierte Daten“

ARTIFICIAL INTELLIGENCE

DATA & AI

ARTIFICIAL INTELLIGENCE

THE FUTURE OF AI

- Not only by the Matrix or the Terminator, but respected scientist like Stephan Hawkin:"The development of full artificial intelligence could spell the end of the human race."
    - But, we are no way close to that state and our human capabilities are not there yet.
- Changing labour market: AI will automate 7 million jobs in the UK. But at the same time, it will create 7.2 million jobst.
- AI can enhance the predictability of demand and supply for renewables across a distributed grid, improve energy storage, efficiency
- AI-augmented agriculture involves automated data collection, decision-making and corrective actions via robotics to allow early detection of crop diseases and issues
- A new field of "Climate Informatics" is blossoming that uses AI to fundamentally transform weather forecasting and improve our understanding of the effects of climate change.

INTERNET OF THINGS

WHAT IS IOT?

HELLO WORLD

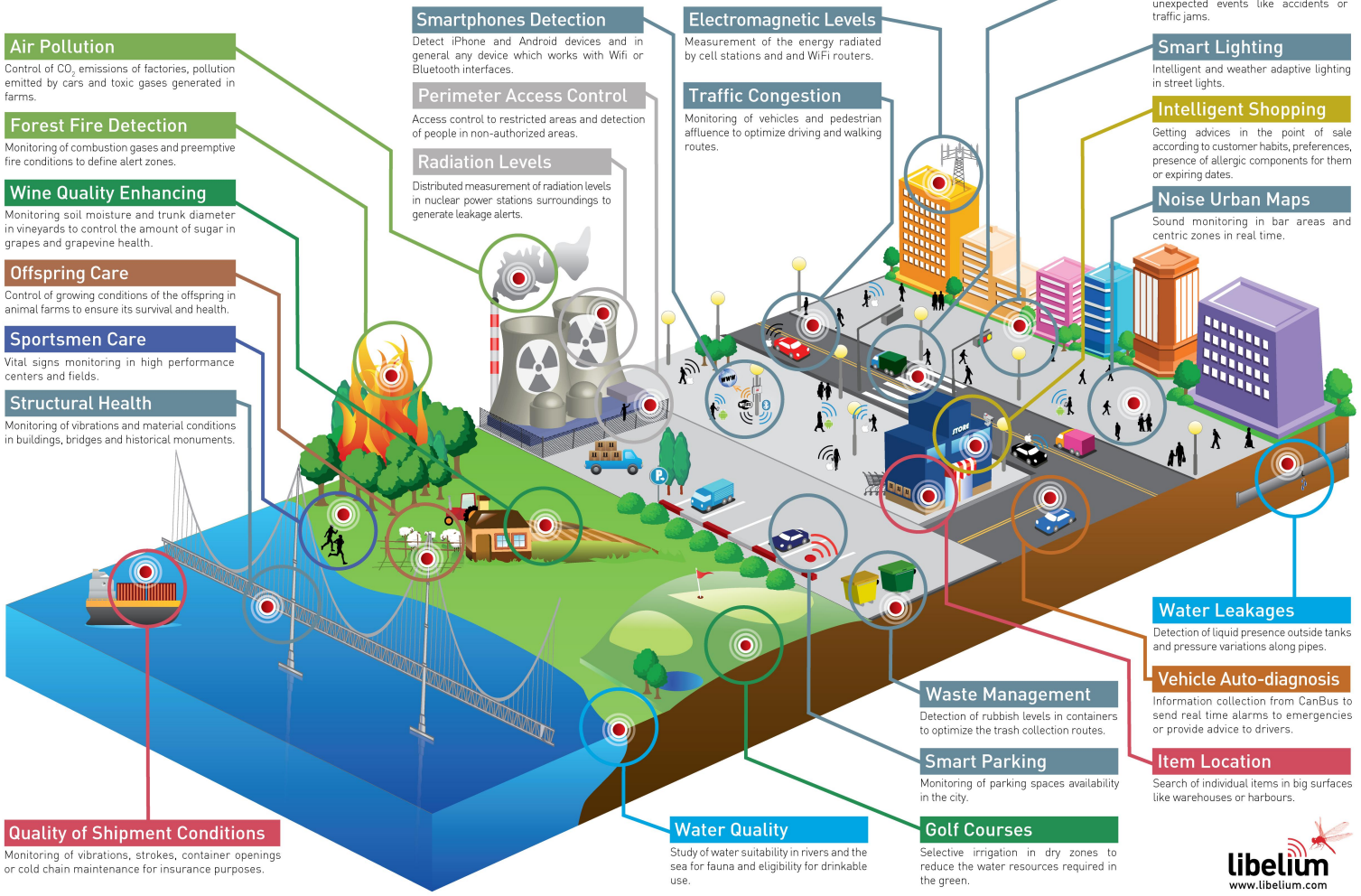
- Simply put, this is the concept of basically connecting any device with an on and off switch to the Internet (and/or to each other)
- This includes everything from cellphones, coffee makers, washing machines, headphones, lamps, wearable devices and almost anything else you can think of.
- This also applies to components of machines, for example a jet engine of an airplane or the drill of an oil rig.

"Anything that can be connected, will be connected."

INTERNET OF THINGS

HELLO WORLD

Libelium Smart World



Air Pollution
Control of CO_2 emissions of factories, pollution emitted by cars and toxic gases generated in farms.

Forest Fire Detection
Monitoring of combustion gases and preemptive fire conditions to define alert zones.

Wine Quality Enhancing
Monitoring soil moisture and trunk diameter in vineyards to control the amount of sugar in grapes and grapevine health.

Offspring Care
Control of growing conditions of the offspring in animal farms to ensure its survival and health.

Sportsmen Care
Vital signs monitoring in high performance centers and fields.

Structural Health
Monitoring of vibrations and material conditions in buildings, bridges and historical monuments.

Quality of Shipment Conditions
Monitoring of vibrations, strokes, container openings or cold chain maintenance for insurance purposes.

Smartphones Detection
Detect iPhone and Android devices and in general any device which works with Wifi or Bluetooth interfaces.

Perimeter Access Control
Access control to restricted areas and detection of people in non-authorized areas.

Radiation Levels
Distributed measurement of radiation levels in nuclear power stations surroundings to generate leakage alerts.

Electromagnetic Levels
Measurement of the energy radiated by cell stations and and WiFi routers.

Traffic Congestion
Monitoring of vehicles and pedestrian affluence to optimize driving and walking routes.

Water Quality
Study of water suitability in rivers and the sea for fauna and eligibility for drinkable use.

Golf Courses
Selective irrigation in dry zones to reduce the water resources required in the green.

Waste Management
Detection of rubbish levels in containers to optimize the trash collection routes.

Smart Parking
Monitoring of parking spaces availability in the city.

Smart Roads
Warning messages and diversions according to climate conditions and unexpected events like accidents or traffic jams.

Smart Lighting
Intelligent and weather adaptive lighting in street lights.

Intelligent Shopping
Getting advices in the point of sale according to customer habits, preferences, presence of allergic components for them or expiring dates.

Noise Urban Maps
Sound monitoring in bar areas and centric zones in real time.

Water Leakages
Detection of liquid presence outside tanks and pressure variations along pipes.

Vehicle Auto-diagnosis
Information collection from CanBus to send real time alarms to emergencies or provide advice to drivers.

Item Location
Search of individual items in big surfaces like warehouses or harbours.

libelium
www.libelium.com

INTERNET OF THINGS

IS IT SAFE?

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- Everything new and shiny has downsides, and security and privacy are the biggest challenges for IoT.
- Security experts argue that not enough is being done to build security and privacy into IoT at these early stages, and to prove their point have hacked a host of devices, from connected baby monitors to automated lighting and smart fridges, as well as city wide systems such as traffic signals.

CODING RESOURCES

ONLINE

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codecademy

kaggle

LearnCodeOnline
Tech Video Courses

treehouse

UDACITY

coursera

Udemy

CODING RESOURCES

HELLO WORLD

BOOTCAMPS

le wagon

IRON HACK

moinworld

COMMUNITIES

CoderDojo

Rails Girls

FUN

CODE AVENGERS

CODE COMBAT

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