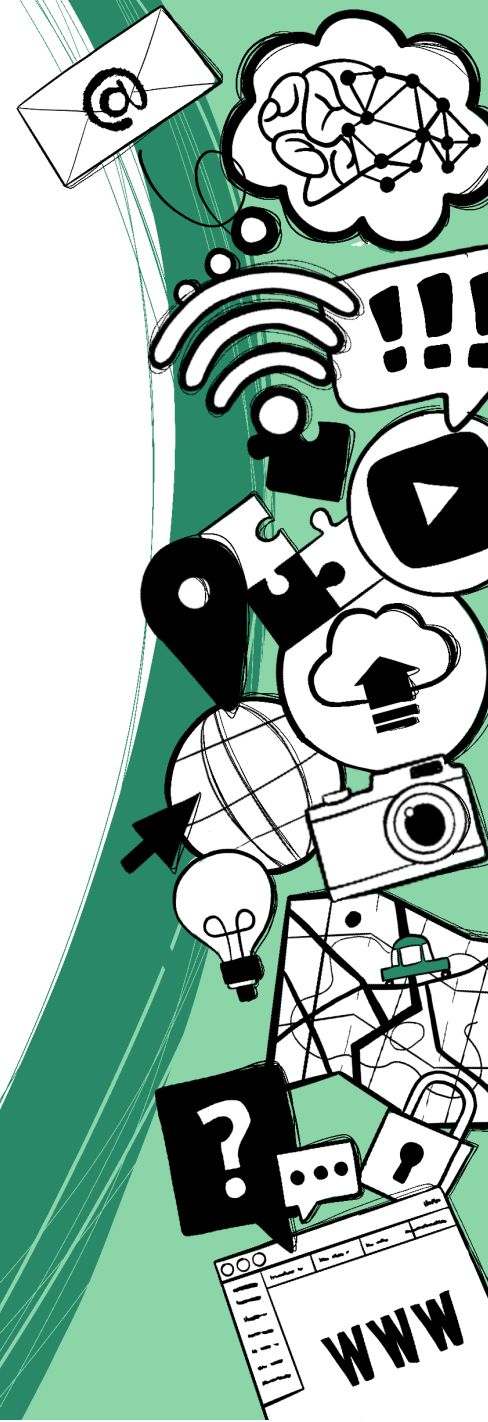


AI and Environment Climate Killer AI?



Climate Killer AI?

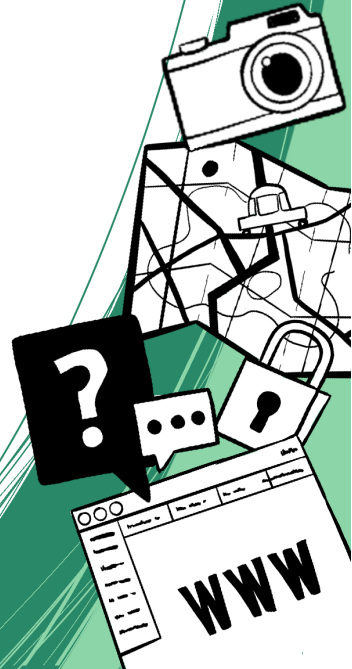
**total
population**



**7.98 billion
people**

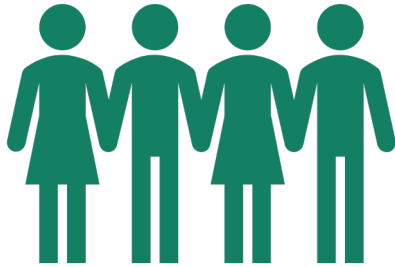
**How many people in the
world own a cell phone?**

**Guess in groups and write down
the number!**



Climate Killer AI?

**Total
population**

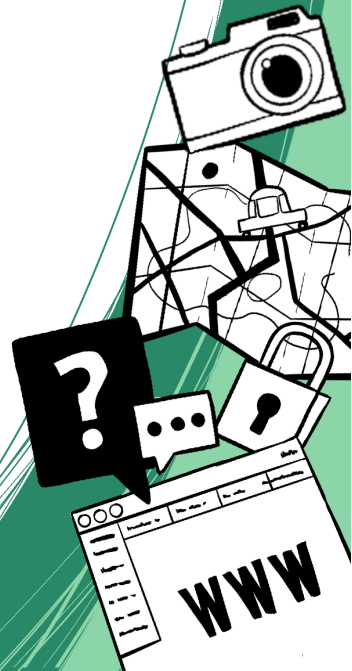


**7.98 billion
people**

**Mobile phone
owners**

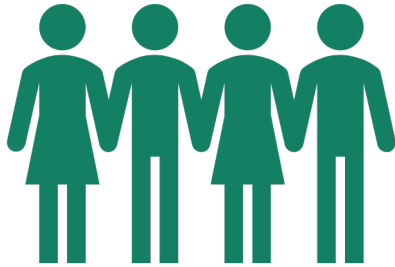


**5.34 billion
people**
66.9% of the total
population



Climate Killer AI?

**total
population**



**7.98 billion
people**

**Mobile phone
owners**

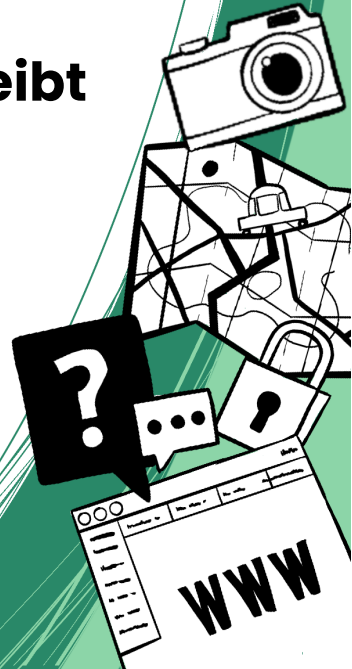


**5.34 billion
people**

**66.9% of the total
population**

**Wie viele Menschen
benutzen das Internet?**

**Schätzt in Gruppen und schreibt
die Zahl auf!**



Climate Killer AI?

**total
population**



**7.98 billion
people**

**Mobile phone
owners**

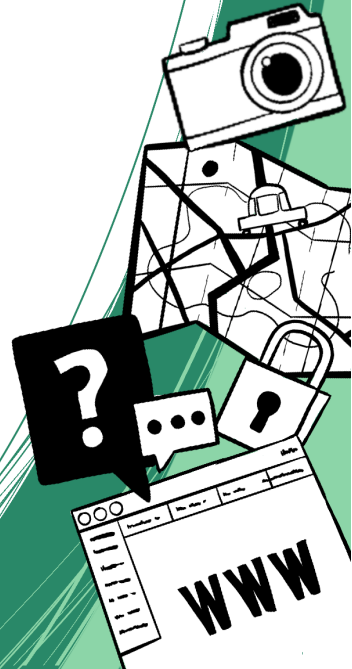


**5.34 billion
people**
66.9% of the total
population

**Internet-
user**

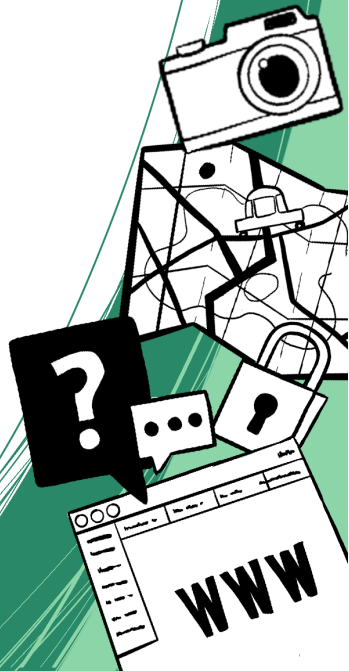


**5.03 billion
people**
63.1% of the total
population



Climate Killer AI?

But what does using **smartphones** and **computers** have to do with **environmental protection** and **climate change**?





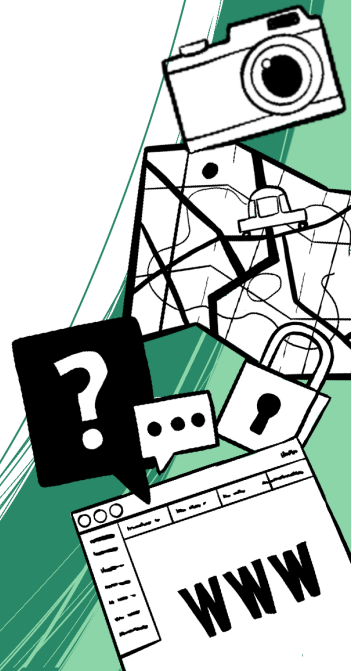
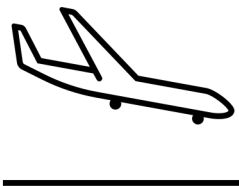
Climate Killer AI?



Climate Killer AI?

Not only driving a car and traveling by plane is harmful to the environment!

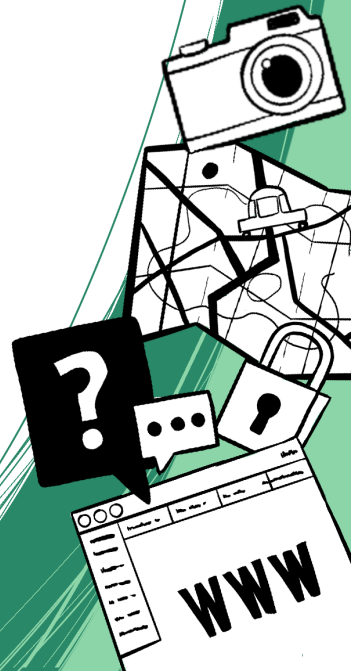
The emission rate in information technology has already **overtaken air travel!**



Climate Killer AI?

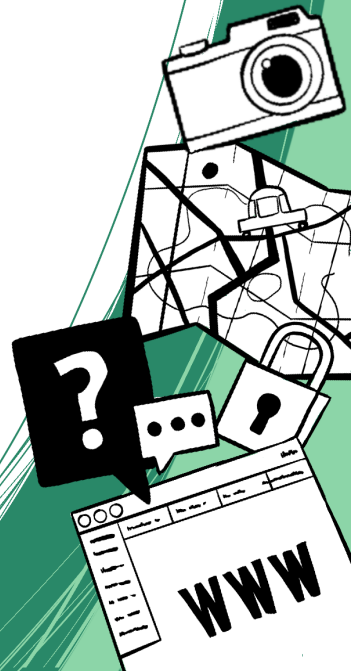
The dilemmas of computer science:

- Reduce emissions as much as possible
- Better performance when using their technological devices



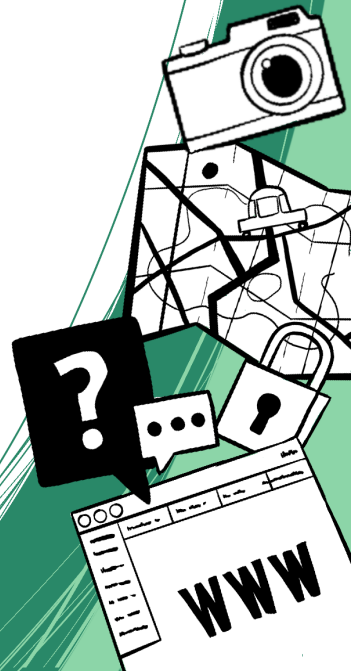
Mobile Phone Usage

- over 5.5 billion cell phones in circulation
- increased use of various apps → higher power consumption
- Battery performance has increased by 50% in recent years, **BUT** smartphones are charged just as often



Music and video streaming

- is one of the largest power consumers (more than 75% of data traffic)
- high-resolution technologies such as "4K"
- Music streaming services cause 200 to 350 million kilograms of greenhouse gas emissions per year



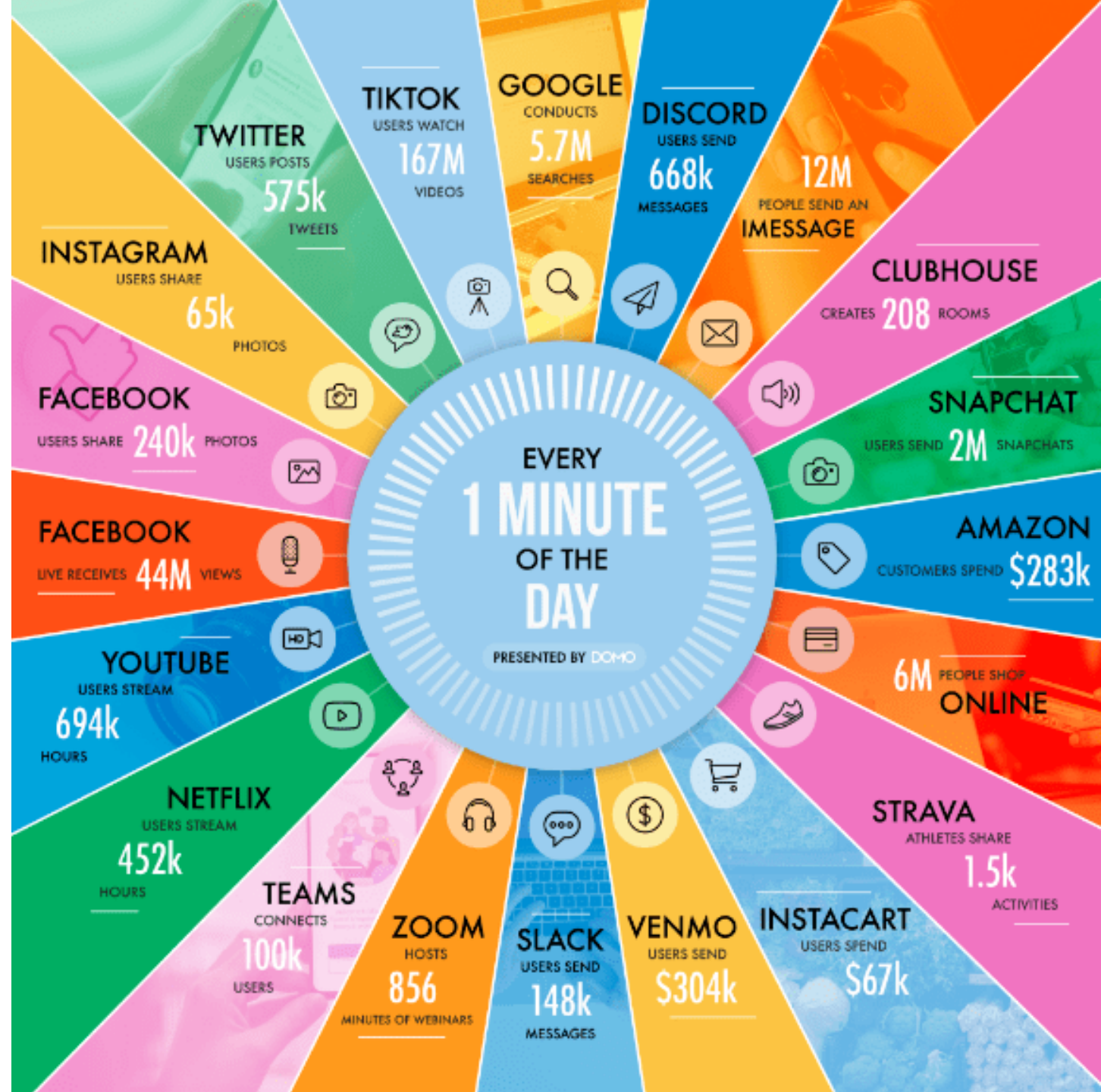


Music and video streaming

How much data is generated per minute?

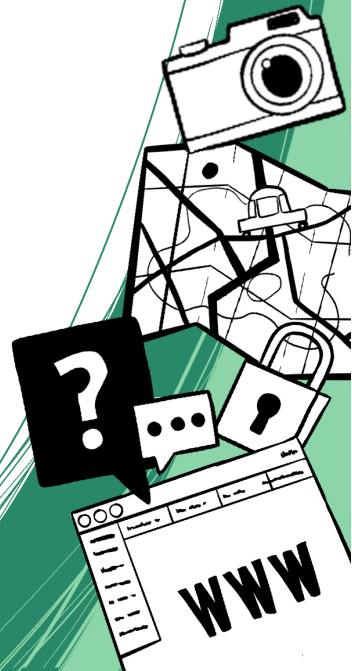
All these activities require **energy!**

Source: <https://www.domo.com/learn/infographic/data-never-sleeps-9>



What measures can be taken now?

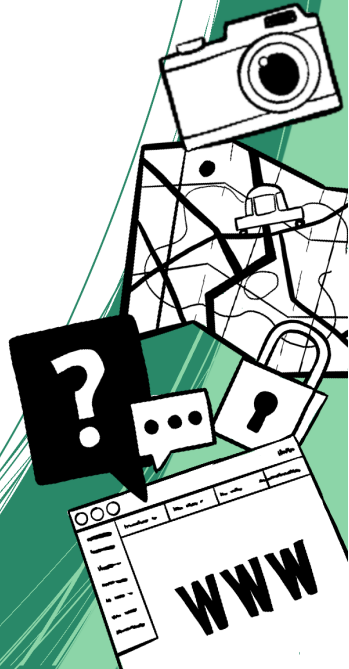
- Physical servers can be virtualized (physical servers are often only 15-30% utilized)
- Cooling systems for servers can be revised or replaced
- Use of "green", energy-efficient hardware, reduction of critical metals in building components
- Rethinking your own usage behavior (raising awareness through energy measurements and saving energy, for example by switching off devices that are not required)
- Use of renewable energies (wind, sun, water, etc.)
- Recycling of important raw materials





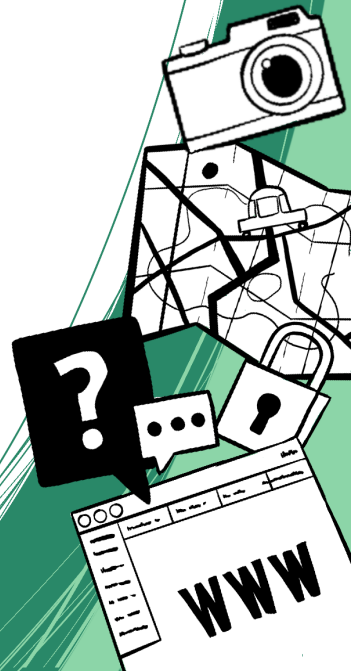
What other measures can you implement yourself?

Collect ideas!



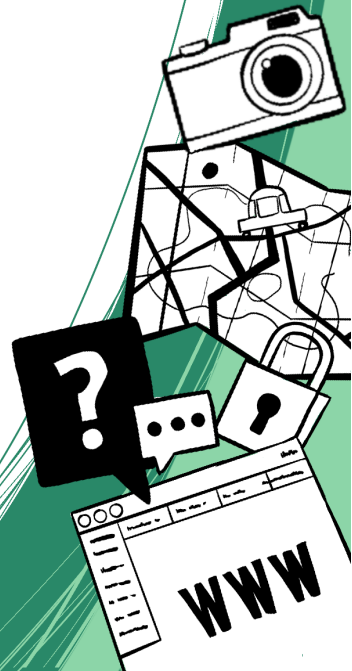
What measures can you take? (further suggestions/ideas)

- Buy devices only when you really need them. If a device breaks, try having it **repaired** or **buying used**.
- Use smartphone, laptop or TV sparingly. **Focus on one device** and don't let others run in parallel.
- Save power with **switchable power strips**
- **Small screens** require less energy than large ones
- **Stream consciously**: Disable the autoplay feature and only look at the content that really interested you.
- **Throttle down image resolution**. Because: At the highest resolution, 23 times as much data per hour is consumed as at lower.
- **Voice calls** are more economical than video calls.
- For example, clean up your inbox and **delete mails** that you don't need. You can also move or **delete other files** that you have stored in the cloud or online to a hard drive if you no longer need each other.
- ...



Estimates in groups **how many hours the average person uses the Internet**

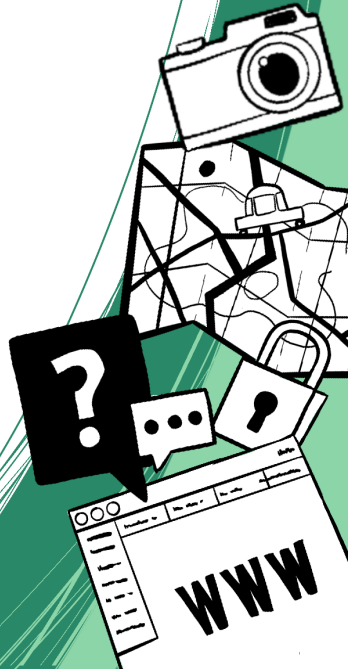
(via smartphone, computer, smart TV, game consoles, etc.).



**On average, people are online for
6 hours and 49 minutes a day.**



In Austria it is 05:55 hours
In Germany it is 05:32 hours



Practical task – Green Portfolio

- How much time do I spend on my mobile phone, on the Internet...?
- How much CO₂ do all these devices, apps consume...?
- What can I do about it?

