**What is cloud computing?**

Welcome to this course on cloud computing! I'm Sara, your instructor for this first chapter.

**The importance of the cloud**

In 2018, The Register published an article titled: "Amazon is at this point a money-printing cloud machine with a grocery store by the parking lot," highlighting the rising importance of cloud computing. Amazon's cloud services have grown so significantly that they overshadow its e-commerce operations!

Cloud computing has developed rapidly and continues to grow. Gartner predicts global spending on cloud services will reach $678bn in 2024, equivalent to the GDP of countries like Ireland or Austria.

**Cloud computing definition**

But what is cloud computing? Let's start with a definition. Cloud computing is the delivery of technology services including compute, storage, databases, networking, software, and more - over the internet with pay-as-you-go pricing. Instead of owning your own computing infrastructure or data centers, you can rent access to these services from providers like Amazon AWS, Microsoft Azure, or Google Cloud Platform. Let's look at an example to get a better understanding of how it works.

**Use case - hosting a website**

Imagine you're a company with a website, like DataCamp.

**Users learn on DataCamp**

Learners can navigate to the DataCamp website to take a course.

**Free week increases traffic**

During free weeks, when learners can access all content for free, website traffic increases significantly.

**High traffic leads to slow service**

Increased traffic can lead to problems if the infrastructure can't keep up, causing slowdowns.

**Users stop learning on DataCamp**

This potentially drives users away. What can we do to make sure that this doesn't happen?

**Hosting a website using an on-premise server**

We first need to understand how you can host a website. One way is by buying a server and hosting your website on that server. This server, a powerful computer accessible remotely, is hosted on-site.

When traffic increases, you'll need to buy or rent more servers to handle the demand.

This is costly and time-consuming. Even if the servers are only needed temporarily, you'll still pay for them year-round.

**Hosting a website using a cloud server**

Alternatively, you can use cloud computing. You can host your website on a cloud server, accessible remotely just like a dedicated server.

As traffic increases, you can instantly scale up computing power in the cloud on-demand.

When traffic decreases, you can release those resources back to the cloud.

Billing works like utilities — pay for what you use.

**Cloud computing vs. on-premise**

Let's contrast these two approaches. Cloud computing is more scalable and offers faster setup compared to on-premise servers. Billing is flexible since you only pay for what you use. However, the best approach depends on your specific needs. However, on-premise servers can be cheaper or more secure in some cases.

**Other uses of cloud computing**

You can do more with the cloud than host a website on a server. You could store, back up, and recover data, create cloud-native applications, stream audio and video, deliver software on demand, analyze data, embed artificial intelligence models, and much more.

**Cloud computing companies**

Many companies make use of cloud technologies to grow their business and meet their goals.