They both do the same thing, one does holds water and rains when needed, the other one holds information like videos pictures music, and gives them when needed. If all these needs to go into a computer, how big a computer do you need to have?

Massive, like really big, like up to like here. It has to be as big as New Jersey. But can you make a computer as big as New Jersey?

No.

No, you are absolutely right. What have smart people done? They took several big computers as big as your table and they connected all of these computers through a wire, and they made a giant computer called a cloud computer.

So, cloud is like a rubber band. Have you used a rubber band?

To hold like, um like, stuff that that you need. Like that is broken, you could like fix it and it holds that?

How is a rubber band different from a normal string or a tie?

Um, that it's elastic.

Yeah, and what is the advantage of having something that's elastic?

That it like, I never really pull it, like as I get it, like zooms out.

It can stay in its form and it could expand to become large.

So, cloud computer is elastic. It can give you small amount of information and it could give you large amounts of information.

Angel, thank you so much for spending time with me. Talking to me. Did you learn about cloud computing?

Yes, yeah, I liked it a lot and I learned too.
COLLEGE STUDENT:
Hi Rucha, how are you?

Hi I'm good, I'm good, how are you?

Okay. So Rucha, where and what do you study?

I'm currently a fourth-year student at UCLA studying computer science.

Wonderful. Computer science is fascinating. I'm sure in everything that you're doing academically, as well as all the planning that you're doing for your future, cloud is foundational and there's so much cloud that you are touching upon. So, in your words, what is cloud computing?

I guess cloud computing is when you have remote servers somewhere that can help you store data or do computation, so you don't need to do them yourself with your computer.

What do you think, uh, cloud computing allows us to do today that would not have been possible before the advent of cloud?

I think one cool thing is that you know you yourself don't need to have all these robust and complex resources to kind of run what you want to run and store all that data and so you see a lot of small businesses as well, they don't have to invest in this, and so they can kind of use those remote servers to make that happen. Wonderful and with all of this, there's huge amount of data that's being used, uh, an enormous amount of compute that needs to be, uh, powering and processing this data. So, let's unpack it to something which is autonomous vehicle and let's talk about how the power of computing and unlimited data is playing there.

So, what do you think is the most important thing to get right?

Yeah, well there's so much data coming in, I think that's the hardest part is that you have you know all this information about your car, who's in it, who's around you, and so all of this data needs to be collected, processed, and then decisions need to be made about that, and it's so important to make the right ones because in autonomous vehicles it could be the matter of life and death.

And do you think, um, we could have done this or even attempted to do this without cloud, how does cloud help in these decisions, or these processing?

Yeah, I think it's critical that we have cloud computing here. I mean, there's so much to be processed and all of that processing power, it's cool that we have cloud computing to help that. In addition I guess there's also you know mapping and traffic and data that needs to be constantly collected and updated, and so to have a place to get that information and update it's just necessary to have cloud computing there.

You're absolutely right Rucha, if you imagine an autonomous vehicle, it needs to operate, uh, by sensing recognizing and understanding all its surroundings every single second as though it was a human, but yet should be able to make decisions that are not possible by any individual human, so it needs both the contextual information from multiple humans and multiple vehicles, but at the same time be able to apply it, uh, at the right time, with the right decision. So that's essential for an autonomous vehicle to work. The other element is the amount of data that's moving from each of these vehicles, um, in milliseconds, nanoseconds. What do you think is required, uh, for that volume of data and to operate at that speed?

I think speed is the is the hardest part of all of this and making sure that those decisions can be made really fast, and I know, I don't know a whole lot about edge computing, but I do know
that that is one thing that combined with cloud computing, you can really leverage that low latency and make decisions really, really fast. Yeah, you are absolutely right, cloud is providing unlimited power in compute but its ability to work with the edge seamlessly and be able to provide that experience, um, at the edge is going to be critical for clouds power to be realized. So where do you see the future, uh, going with, uh, with the power of cloud computing?

There's data coming in from all over the world and I think cloud computing is essential to actually taking that and making something of it. So for example huge computations maybe in the artificial intelligence sphere as we're getting more data and collecting it, I think we could have you know incredible algorithms and figure out a lot more information that we hadn't before.

Absolutely, I think that's a great possibility. Uh, one other way to think about this is as we are getting into the fourth industrial revolution where the physical digital and biological worlds are colliding, or are smoothing out, I think cloud is going to be the fabric that's going to stitch all these three worlds and bring experiences, uh, that are unparalleled and unimagined in the past, and making lifestyle better, new inventions and discoveries happen quicker and faster, and overall, uh, civilization get to the next level all right. Alright Rucha, this was fascinating talking to you. Good luck to you and thank you for spending the time talking to me about cloud computing.

Thanks so much, I learned a lot had a great time, thanks for having me.

EXPERT:
Hello and welcome Jean-Claude, I'm Karthik Narain, I lead Accenture cloud first. Please share with us where do you work what do you do?

Yes Karthik, good to meet you. My name is Jean-Claude Von Trade, you can call me JC actually. I am a professor of computer science at New York University and I'm also the founder and CEO of an AI and cloud company.

You are right in the middle of cloud so from your point of view, what is cloud computing JC?

Well, you know, cloud computing is a lot of things. I think it evolved a lot, uh, in the past few years which basically make it possible to, uh, pretty much, you know, have resources on the cloud like storage, uh, you know compute, uh, you know so you don't need really to have a computer on your desk, you can actually allocate a virtual machine on the cloud and you can access it from your computer, and you can also have a lot of storage on the cloud that you can actually connect to your machine as well, and you can also kind of play with the networking capabilities as well, and you can create a network of your own on the cloud.

Amazing JC. We also keep hearing and I’m seeing this in the market that the pandemic has actually accelerated the adoption of cloud. From your vantage point, why is that?

Well, I think that, you know, a lot of different reasons. I think one would be obviously people have left the office in some sense but staying in distributed locations, and you now need to have access to, uh, more kind of you know, distributed resources, and you need to allocate these resources. And just the fact that we're, you know, using, uh, technologies to teleconference and whatnot that are actually cloud-based is, uh, you know its kind of a sign that, uh, you know, obviously the pandemic has accelerated the use of these type of technologies.

The healthcare sector was really pushed, uh, during the pandemic. So how do you think elasticity played a role in the healthcare system to respond to the COVID-19 pandemic?
You know, I wasn't really physically there to actually monitor what was happening in the background but I think they, well obviously, just getting the vaccine for example, uh, you know kind of put together that that fast. Well, I mean, that's something that body required, uh, a lot of uh, you know, like experiments in the lab and whatnot and possibly a lot of distributed type of communications and possibly using analysis of data. All of this has definitely enabled on the cloud.

Yeah, and also, if you see the amount of remote online, you know, consultations that have started with between the patients and their doctors is also another big step in advancement because now patients hopefully can get a consultation from doctors that need not be just local but could be available anywhere. And that remote option increases huge amount of capabilities and availability of medications, suggestions, uh, and just advice in terms of what is happening in the field of, um, health care around the world.

Absolutely Karthik and I think that's in my opinion just the beginning because we're going to see like things, like body area networks I think you probably heard about like ban, right ban, and we're talking about having like suits or sensors you know attached to people being able to monitor their condition in real time. I think in the future we probably will get to a point where we can get robots to actually analyze your condition in real time and actually do some, you know, we talked about analytics or deep learning type of studies to, uh, to predict what's going on.

Standing here as a professor and also as a as an entrepreneur, how would you describe the future of cloud computing?

I think what's going to happen next is, uh, we're going to look at more capabilities. We're probably going to look at advancing the state of like blockchain technologies and advanced robotics, and uh, and all of these different things that we're trying to do to address some of the needs in the industries like healthcare or very demanding type of situations, and I think that's what I foresee is going to happen in the near future.

Thank you again for being part of this conversation, looking forward to catching up with you in a different forum later.

It was a great opportunity for me so I would like to say thank you and hopefully see you soon and stay safe, take care now.

I hope you enjoyed these three different conversations as I did. It gives me the satisfaction that cloud is touching everyone's life and it's going to be even stronger in the coming years. Cloud has been making gradual inroads into our lives over the last decade and I see the role of cloud even more firmly over the coming decade. Overall, we are going to see an exciting future that's going to be powered by cloud and the speed of innovation is going to be exciting for all of us to have a better quality of life.