Video – Environmental Controls in PT

Hello everyone. This is our Cisco Packet Tracer, Environmental Controls walkthrough video. In this video, we're going further than just basic IoT devices. Here, we're going to talk about environmental conditions that exist within Cisco Packet Tracer itself.

So we've got a smart lamp, we've got a wind sensor, we've got a solar panel, and we've got a battery. If you look close to that solar panel, it's pulling in zero Watts of sunlight. If you look at the battery, it is empty. That thing is drained. That battery is hooked up to a smart lamp, and we can turn on that smart lamp, and we could just drain that battery down to zero, which may have been what happened. So what we want to do is talk about Cicso Packet Tracer and these environmental conditions that we can customize in order to make our IoT network better and more useful. So in the top left corner, we're going to click on the Physical tab, and this will put us into our physical mode. And when we do that, we're in this intercity view. In this Intercity view, we then have a Home City, which I can click on the Home City. Here's our house. We see a little ISP-style rack on the side. Let's not worry about that. That's like my little server file I'm playing with.

What we want to do is work with the environmental conditions. So in the top right corner, there's a button called Environment. We can click on that. Inside of Environment, we see a huge dropdown menu here at the top. If you click on the dropdown at the top, you have three different physical locations. When I click on Intercity, it's going to change my physical topology back to the Intercity. Now this is going to be called the Intercity Container. Any environmental conditions that I set or change here are going to be specific to the Intercity Container but also for the other containers down below. When I click on Home City, we're now going to have our own environmental conditions in the Home City. If we go back to the Environment button, you will see that here. We're now in the Home City Container. Each one of these containers has the ability to have environmental conditions set for it. So for us, we're going to start at the Intercity Container, which is the master container, and I'm going to click the View button, and we can see anything occurring here regarding environmental conditions. To modify the conditions, we'll click Edit for the Intercity, and this is where we're going to work. Now first, I want to show you the Advanced tab. In the Advanced tab, we can take a look at adding what are called Keyframes. A Keyframe is a moment in time. We can add Keyframes, which is a new moment in time, one out of three or one out of four, by adding one more Keyframe. We'll be able to check the time of that Keyframe. And at that individual moment in time, we can use these check boxes to be able to say what's occurring, such as heat would be to use and setting how much regarding KiloWatts. Or we can go into the area of light and sun and set radiant heat and sunlight. You can go to town with all of this stuff. It's amazing. But if you wanted to start with the basics, where we want to go is Keyframe Graph. In Keyframe Graph, we can scroll to the bottom, and you can see a huge legend of all these different items that we can customize. For us, I don't want to use Ambient Temperature. Everything else is not set right now, regarding seeing it on the graph. If I click the down arrow, here I can see Sunlight, and Sunlight is pink. So let's scroll up again. So this pink line I have, which shows from 00s all the way to 00 on the other side, this would be the equivalent of sunlight from midnight all the way until 11:59 p.m. the next day. So if we want to be able to customize the sunlight for the Intercity Container, this is what we can do. I can double click on the middle of this line, let's say about 12:00 noon, I can just double click. And when I double click, I get a new Keyframe. What I can do then is take this Keyframe, and I could try to drag it upwards, or I can actually go into the value here, and I can change this value, for example, to a hundred. 100 would be maximum, and this would be at noon of the day. Once I hit the Enter key on my keyboard, check it out. The sun's going to rise and provide sunlight from midnight until about high noon. And then the sun will set and go back to zero around midnight. Now, if you want to customize it further, you could just double click and drop in another Keyframe over here on the right, closer to about 6:00 p.m. You can customize that, maybe to about 5:00. I can double click and put another Keyframe about 6:00 a.m. Again, I can increase that a little bit, or I can change the time that the sun is going to be rising. There we go. So now we've got this setup for my sun going up and providing so much sunlight. So this looks good. So I can click the View button, and now again, I can see my different environmental conditions that are occurring. I can minimize them. I can take a look and watch the sunlight. But watch the sunlight when? Well, If you look up, you'll see the current time, and this is starting from zero, which is midnight. Now it's 6:30, 7:00 a.m., 7:30, 8:00 a.m., and you can watch the percent of sunlight increasing. That is awesome.

Now what we can do as well is I can go into my physical topology, click on the Home City, and look at that. Look at the solar panel. 120 Watts, 110, wait, why is it going down? Because in the top, right corner, it's 6:00 p.m., 8:00 p.m., 9:00 p.m., 10:00 p.m., 11:00 p.m., midnight. We're almost at zero. And now the sun is rising, and then actual morning, it's increasing, increasing. And watch, this is going to be charging the battery. The battery is at red, it just went to orange, and this will continue. Now, there's a wind sensor there as well. If you want to go to town with this, we can go back into our Environmental Conditions area, and we're going to go back into the master container, which is Intercity. Inside of Intercity, you'd go back to Edit, and now here in this Keyframe Graph, before we were working with sunlight, which is the pink one. The Ambient one came up again, so we'll just turn it off by clicking it. But we can scroll down and now we can look for Wind Speed. Here's Wind Speed. We can click it. So we've got our Wind Speed, which is this bright pink one. We could take and modify this. Maybe overy night, the Wind Speed is going to be greater than during the day, so I can double click and drop in another Keyframe. Maybe we can actually modify and edit all these values too. So maybe it's going to be extremely windy about 4:00 in the morning. We could say 100, enter. And it'll be very windy close to around 6:00 p.m. at night, which is going to be 1800. So we can click on that one, and we'll put it in there as well. So let's say about 80 is the value. So it'll be insanely windy around 4:00 in the morning, and here about six o'clock at night. So then I'd scroll to the top and hit click View, we can go back and minimize these items, then we can watch things like light, as well as we can watch things like wind. I'll go back to my home, and that wind sensor, it's going. It's moving. That wind is there around 4:00, 5:00, 6:00 in the morning. It'll die out eventually, it gets closer to noon. Then it's going to come up and would get faster, as you get closer to the evening again.

So this is the idea of modifying our actual environmental conditions live inside of Cisco Packet Tracer. That solar panel's doing a beautiful job charging up that battery, which then we can utilize for those lights and any other devices hooked off to bring in power. So take your time with Cisco Packet Tracer. Experience the environmental conditions and customize your own IoT environment.