Video – Creating a Thing in PT

Hello, everyone. This is our Cisco Packet Tracer, Creating a Thing walk-though video. This video's going to be great cause we're going to start off with the most basic and coolest creation yet.

We're going to first start with clicking on the Components section, then we're going to go ahead and click on Sensors. Now, before we start building our own custom device ourselves, we're going to look for a big red button, there it is. It's called the Push Button. I'll click on it, and I will click on my screen. Now, I have this thing that I can modify. I'll click on the push button. The push button loads up and let's take a look at the Specifications tab. The default value is Low and when we push and hold the button, it will then send a digital value of High, and yes, the color is red. Now, in order to interact with this button, we just need to hold down the ALT key on our keyboard and press and hold on our mouse. While I'm holding it, the bus is going to be taking action. So, let me just open the button again. It says direct control is the ALT + click we're using. The remote control is not available, which means we can't remotely control this with our registration server or that standalone home gateway that we saw previously in the prior videos. We want to work with this button and figure out how it can be programmed.

Let me resize my video. First thing we'll do is go to the bottom corner and click on Advanced. Then we can click on Thing Editor. Here we have a depiction of the button not pressed and pressed. If we wanted to modify these graphics, we can make it something completely different, I can go ahead and click on the not-pressed button, and I can take a look at all the default graphics that exist in Packet Tracer for components. We can pick one of these if we wanted, or I can head over to my desktop, and I have a picture of a lighter that is off. I can click on that, and now where the button is pressed and being held in, I can click on that one. I go back to my desktop, and I can pick graphic of the lighter that is lit because somebody is holding it with their thumb. From there I can close off of my IoT0 named device, which is this lighter and take a look. Now my push button is now a lighter. If I hold my ALT key and press and hold my mouse, stays lit. Once I leave and let go with my mouse, it's unlit. So, that's awesome, but let's change it up a little bit and go with how about a toggle push button. Here is another red push button, but this is a toggle, which is an on-off style button. So, click on that, and we'll drop it on our screen. Now, this looks very similar to what we had before, but I'll click on this to open it up. Just let me resize my window. We take a look at the specifications on this one. We're going to be switching between the states of Low and High. Now, Low and High is really going to be an on and an off state. There's no press and hold like we saw previously. I scroll down again, we'll see that it uses direct control with the ALT key to toggle it, not just to hold it. Remote control doesn't exist again. We can't use a remote server with this. So, I'm going to click on the Advance button in the bottom right corner. I'll go back to my Thing Editor. In Thing Editor, we can see when the button is pushed and toggled to on and also toggled to off.

So, I'll start with the first one. The first one I'll go to my desktop, and we'll take to a toggle of off, got a toggle switch. Then I can take the other one, and we can say like toggle of on. You can flip this either way that you'd like. So, that's awesome, so our IoT1 button switch device here. You can close off of the graphic. Now we've got this toggle switch, so you can hold on the ALT and just give it a click, left click. Don't have to hold it, just click it again. You can toggle the state from on and off. Now, Packet Tracer's awesome because we can customize any one of our IoT devices that we like and change the graphics to graphics of our own choosing. But if we want to see the code behind it, let's go back to that lighter. Packet Tracer allows you to take a look at the code behind your devices. We can go into our Programming tab and inside of here, we can actually double click and we can see PY. This is our Python code, and you can literally take your time and scroll through it and read through how the code is working to actually make this device work.

From here you can actually exit out and go into the other device, which is our other toggle switch, and we can do a comparison of our code. So, we'll go into Programming tab on the other switch, and here we can go into the one on the top, and you can see Javascript, which is JS, or we can go all the way back, and we can take a look at the Python code and read through that as well. So, this is awesome in order to do some comparison. Now, what if we wanted to save these for the future, so we don't have to recreate them from scratch every time you open Packet Tracer? Well, we can do it. We can go up to our Tools followed by Custom Device Dialog, and with Custom Device Dialog, we can then get our template device manager. All I need to do is click the Select button, and I can choose my IoT0 device, which is this lighter by clicking on it. It then allows me to name the template. It's based off

the device name, or I can just say this would be Toggle_Lighter, L-I-G-H-T-E-R. Put an underscore there so it's a nicer name and then description I could just say Push to hold lighter. Down below I can pick the category that it's going to put it in, so I can put this, for example, into the sensors category. It's not going to be a switch, those are network switches, we don't want to put it there. Once I hit Add, it's going to ask me for a directory. I can leave this into the default Templates with the name of Toggle_Lighter and click Save. Now, check it out, it appeared right there in the bottom right corner, and if you check and just drag and drop, and I get more lighters.

We can do the same thing for the second switch just for repetition. Tools > Custom Device Dialog, again we'll use the Select button. When I click Select I can now choose that on-off toggle switch. I can name this On_Off_Toggle, and now it doesn't need a description. Put this here in the sensors area and click Add, saves with the name of On_Off_Toggle. Check it out, we're now going to have another item, more toggle switches.

So this is great that we can just custom build our own IoT devices, but keep in mind, this is going to be limited to our own local machine. These will be stuck in the Templates folder. So, play with Packet Tracer, build your own custom IoT devices, and have some fun designing with code and with graphics.