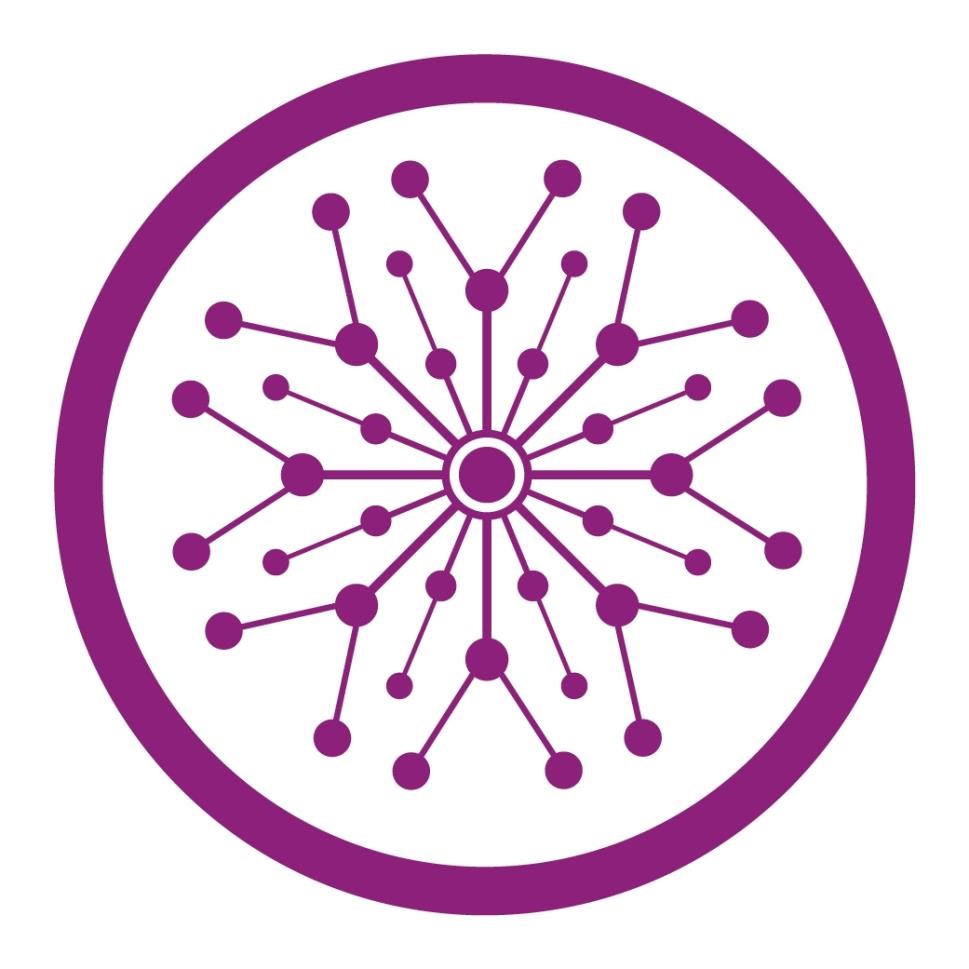
**Assignment 1**

**Computer Networks (LAB)**



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**Q1:**

**What is the difference between all the routers, and when to use them (mentioned in cisco packet tracer).**

**Cisco 4331**

What it is: A router that is applauded for its abilities and is designed for medium sized structured offices.

When to use: Such businesses, which need others services such as security and voice among many others will find this product useful.

**Cisco 4321**

What it is: The 4321 model is somewhat downgraded from the 4331.

When to use: Works well for smaller and much basic routing office designs.

**Cisco 1941**

What it is: A more basic version of the router for small to medium enterprise.

When to use: Works well on such small networks that require basic internet connectivity.

**Cisco 2901**

What it is: Has a combination of performance and features.

When to use: Great for a handful of services that small offices require.

**Cisco 2911**

What it is: This is the 2901 with improved features.

When to use: Appropriate for medium size businesses where more capabilities are required.

**Cisco 819IOX**

What it is: Comes as a compact metal router designed to be used at the places remote from each other.

When to use: Useful for situations where the IoT devices or places have no normal internet connections.

**Cisco 829**

What it is: is a Mini workgroup router, which also supports wireless options.

When to use: Best suited for mobile configurations with the need of Wi-Fi connectivity.

**Cisco 1240**

What it is: Is one of the common devices in the environment used as a wireless access point.

When to use: Works perfectly in old environment setups that require wireless connections.

**PT-Router**

What it is: A very simple router available for practice in the Cisco Packet Tracer.

When to use: Useful for practicing the configurations and carrying out tests.

**Q2:**

**What is the difference between all the switches, and when to use them (mentioned in cisco packet tracer)**

**1. Cisco 2960:**

What is its basic function: light layer 2 switch targeting small to medium networks.

When is that useful: For basic internet and network connection purposes.

**2. PT-Switch:**

What is it: switch for training / learning networks.

When is that useful: For exercises and comprehending the particular networking aspects.

**3. Cisco 3560 24PS:**

What is it: An advanced switch with voice and data features.

When is that useful: For average networks which require various advanced features.

**4. Cisco 3650 24PS:**

What is it: An even more advanced switch with different features.

When is that useful: For heavy users and high-performance networks with advanced features.

**5. Cisco IE 2000:**

What is it: A rugged switch used in harsh environments.

When is that useful: For plants or other settings which require stable network connectivity.

**6. PT-Bridge:**

What is it: A practicing equipment that one uses to learn about bridges.

When is that useful: For learning and practicing the particular work of bridges.

**7. Cisco 2950-24:**

What is it: basic switch with 24 ports.

When is that useful: For the smallest networks requiring basic services.

**8. Cisco 2950T:**

What is it: Upgraded version of the 2950 with enhanced speed and performance.

When to apply: For smaller to average sized networks that require effectiveness.

**Q3:**

**What is the difference between all connection wires, and when to use them (mentioned in cisco packet tracer).**

Just when you thought that there was enough complexity surrounding Cisco Packet Tracer and its operations, a least prioritized where cable connections are concerned comes in: use of different cables.

**1. Straight-Through Cable:**

What is it: It is basically an ordinary cable.

When to use: Such as linking switches to routers or computers to switches.

**2. Crossover cable:**

What is it: A special cable which is intended for use when similar devices have to be connected directly to one another.

When to use: For instances, connecting switches to switches or computers to computers (recently not so much required).

**3. Rollover cable:**

What is it: It basically a connecting cord that helps to connect a computer to a router to facilitate configuration.

When to use: It is useful when there is intended management as well as setting up of the routers.

**4. Fiber Optic Cable:**

What is it: A cable that propagates a signal by light in order to enhance the delivery of data within minimal variations over a large bandwidth.

When to use: It is used mostly in connecting either two building or even two data centers at long distances away.

**5. Patch cable:**

What is it: This is a cable that connects various devices when the devices are very close together in-out spaghetti.

When to use: When connecting devices within a rack or running cables from wall outlets to switches.

**How to remember them:**

**Straight-Through:** This cabling has to be used for different devices.

**Crossover:** This is used for similar devices (less common now).

**Rollover:** This is used when there is need to configure a router.

**Fiber Optic:** This is used for cable distance where speed is very significant.

**Patch Cable:** Use for short connections.