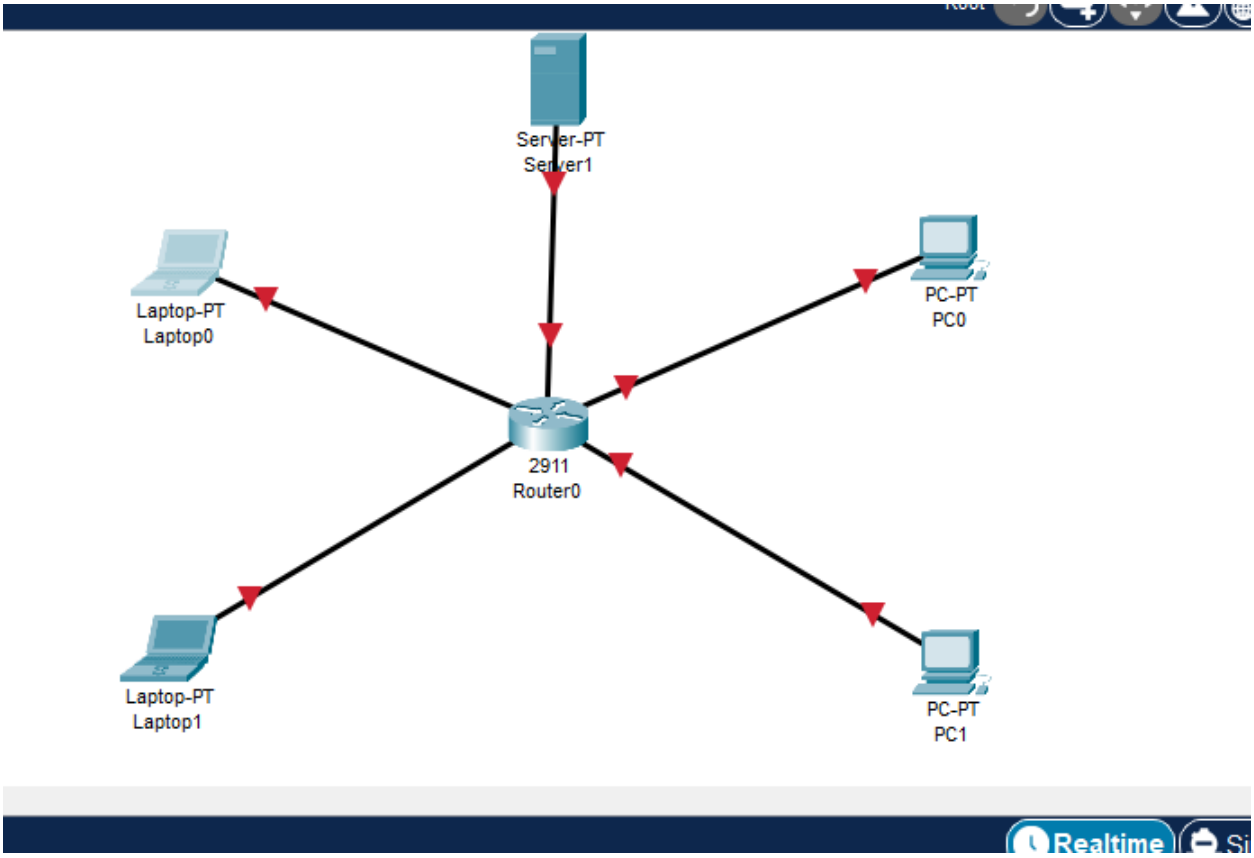
# SIBDOU IBRAHIM ISSIFU

NETWORK ESSENTIALS ASSIGNMENT 1

## **STAR** TOPOLOGY

IMAGE FROM PACKET TRACER:




## PROS AND CONS OF STAR TOPOLOGY

*PROS*

1. Star network topology is straightforward to set up and manage, making it a popular choice for many organizations.

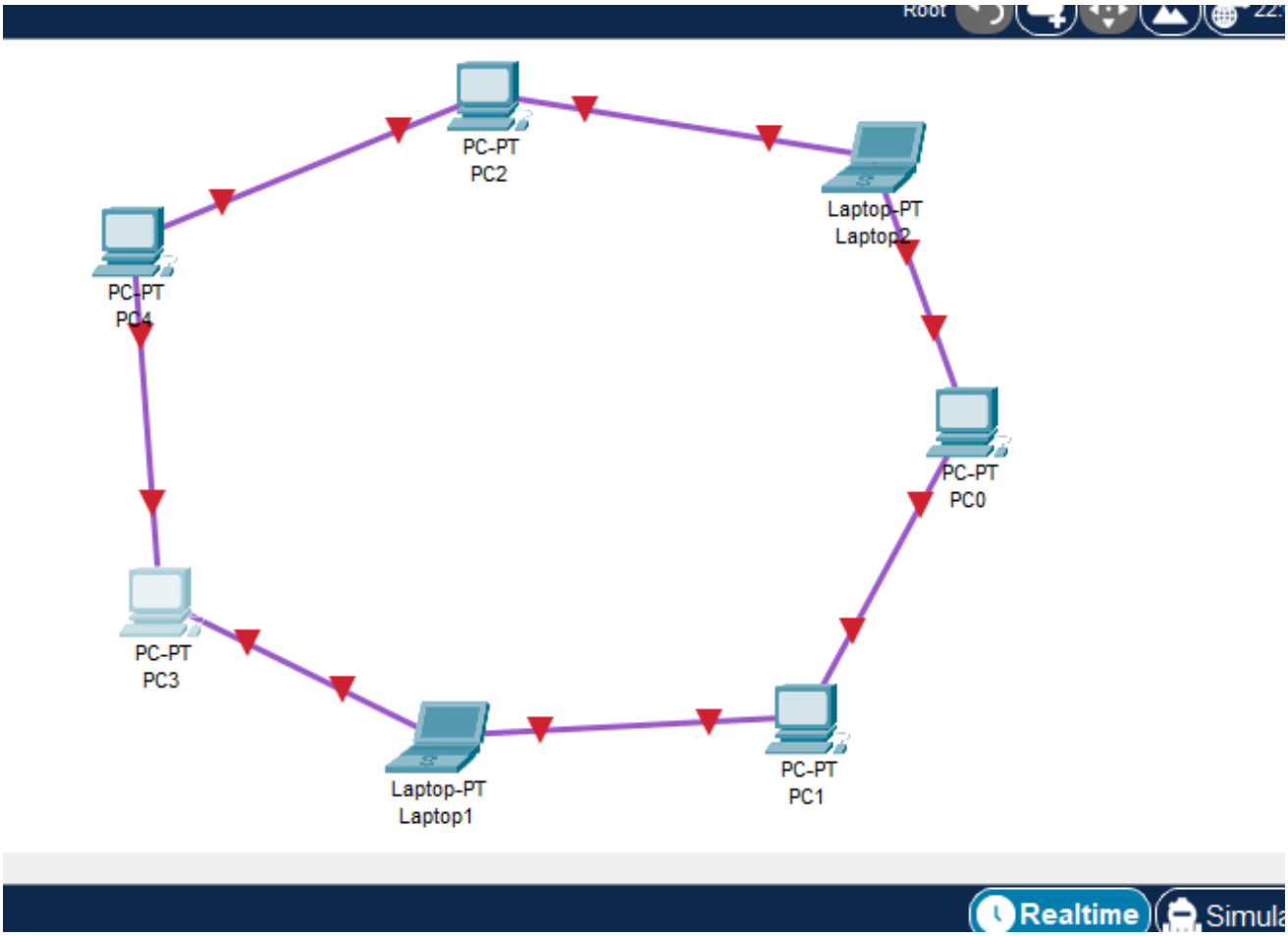
2. Adding or removing devices in a star network is simple and can be done without affecting the rest of the network.
3. If a single device or cable fails, the rest of the network remains unaffected, which makes troubleshooting easier.
4. The central hub or switch allows for efficient monitoring and management of the entire network.
5. Each device has a dedicated connection to the hub, ensuring that data transfer rates are typically faster and more reliable.

*CONS*

1. If the central hub or switch fails, the entire network goes down and disrupts all connected devices.
2. The need for a central hub and more cabling could make star networks more expensive to install compared to other topologies.
3. Although adding devices is straightforward, expanding the central hub's capacity can be complex and may require significant changes or upgrades.
4. All data traffic passes through the central hub, which can become a bottleneck if it is not powerful enough to handle the network's load.
5. Each device needs its own cable connected to the hub, which can lead to a significant amount of cabling and potential clutter.

## **RING** TOPOLOGY

IMAGE FROM PACKET TRACER:




## PROS AND CONS OF RING TOPOLOGY

*PROS*

1. Setting up a ring topology is relatively simple as each device is connected to exactly two other devices.

2. Each device has an equal opportunity to send and receive data, reducing the chances of data collision.
3. Data packets travel in one direction, which can make data transfer more efficient and predictable.
4. If a failure occurs, it is easier to identify and locate because each device is directly connected to two others.
5. It can be easier to add more devices to a ring topology without significantly affecting the performance of the network.

*CONS*

1. If any single device or connection in the ring fails, it can disrupt the entire network.
2. Adding or removing devices can be challenging because it may require temporarily breaking the ring.
3. As more devices are added, data packets must pass through more devices, potentially slowing down the network.
4. If multiple failures occur, identifying and resolving issues can become complex and time-consuming.
5. The network's performance and reliability depend heavily on the proper functioning of each device in the ring.