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**DEPARTMENT OF SOFTWARE ENGINEERING**

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### **Subnetting vs Supernetting**

**Subnetting** involves dividing a large network into smaller, manageable sub-networks called subnets. This process helps optimize IP address usage, reduce broadcast traffic, and improve network organization. For example, if you have a network 192.168.1.0/24 with 254 possible hosts, you can split it into four smaller subnets like 192.168.1.0/26, 192.168.1.64/26, 192.168.1.128/26, and 192.168.1.192/26. Each subnet will accommodate 64 hosts, allowing better management and isolation of devices.

**Supernetting** on the other hand, combines multiple smaller networks into a larger one to simplify routing and reduce the size of routing tables. It is often used in WANs and internet routing. For instance, if you have two networks, 192.168.1.0/24 and 192.168.2.0/24, you can merge them into a single network 192.168.0.0/23. This larger network will cover 510 hosts, encompassing both original ranges and minimizing the need for multiple routing entries.

