

**CSE3151**

# **COMPUTER NETWORKS**



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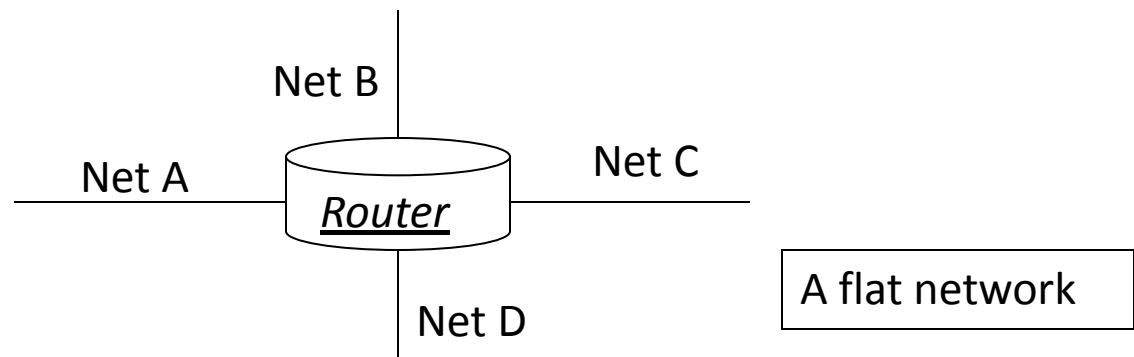
ASSOCIATE PROFESSOR, CSE, RU

# Definition

- Virtual Local Area Network
- Logical group of network users
- Associate with ports on a switch
- Unique ID and NAME
- VLANs could span multiple switches

# Problems with flat network

- Broadcast domain become too large
- No security control for individual switch ports
- Inflexible because subnets are created only with addition of routers



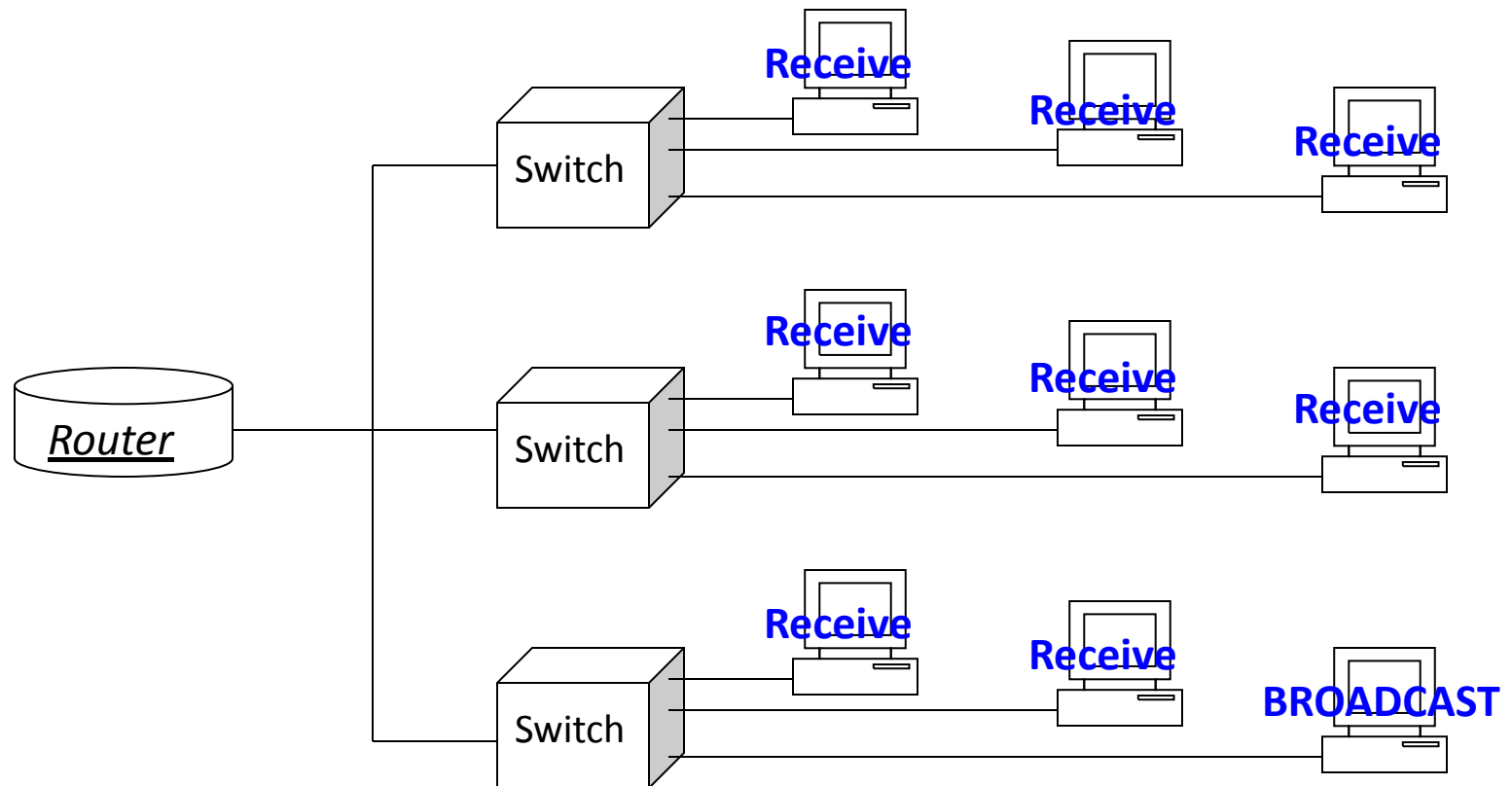
# What does VLAN do?

- Create smaller broadcast domains by grouping users according to
  - Location
  - Department
  - etc
- Improve security by preventing anyone in the same LAN from monitoring the network traffic (eavesdropping)

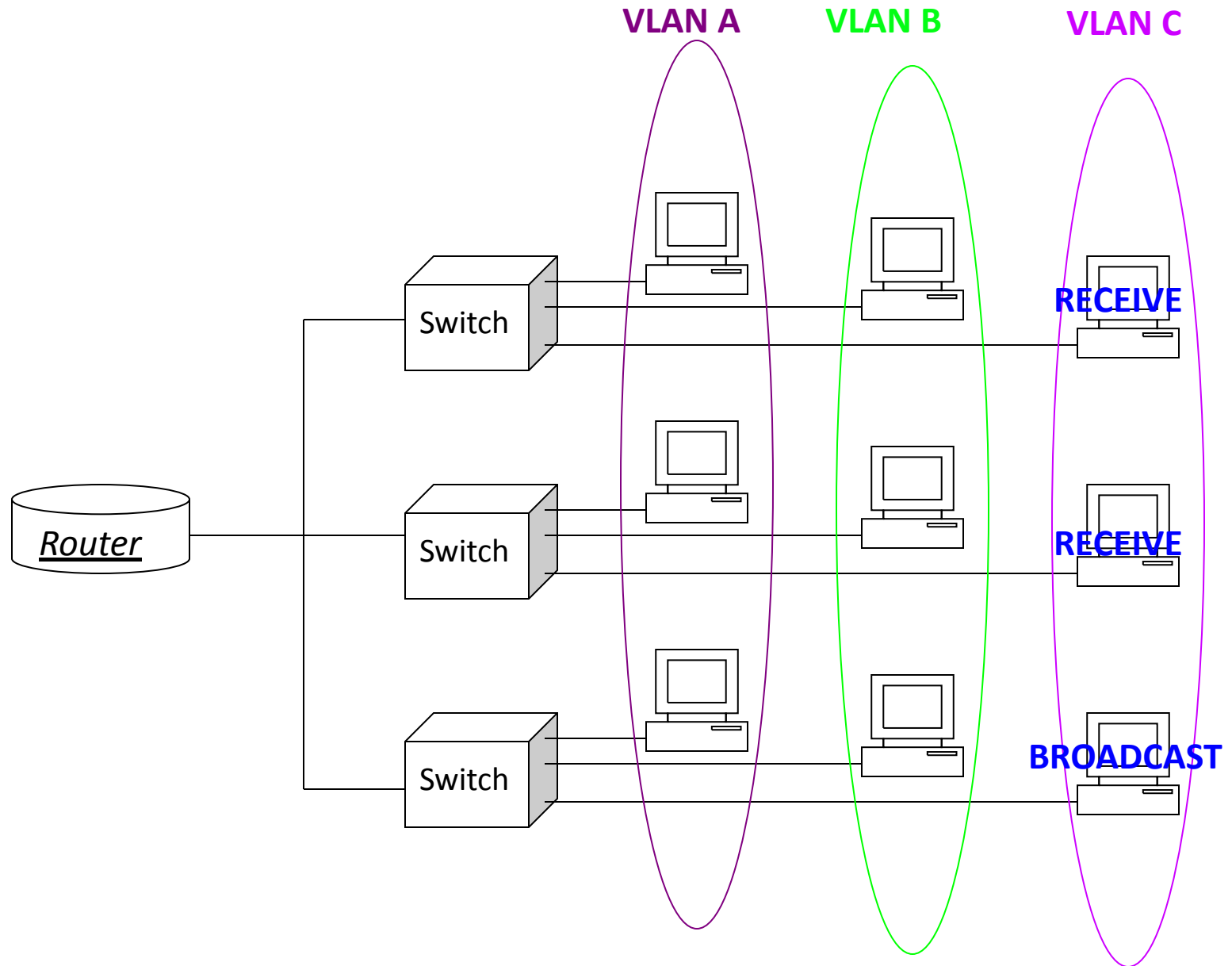
# What does VLAN do?

- Increase flexibility and scalability by letting system administrators to create virtual subnets without adding routers

# Broadcast in flat network



# Broadcast in VLAN



# Routing between VLAN

- Switches do not route data between VLANs
- Routing has to be done in routers, the same way as with ordinary subnets