

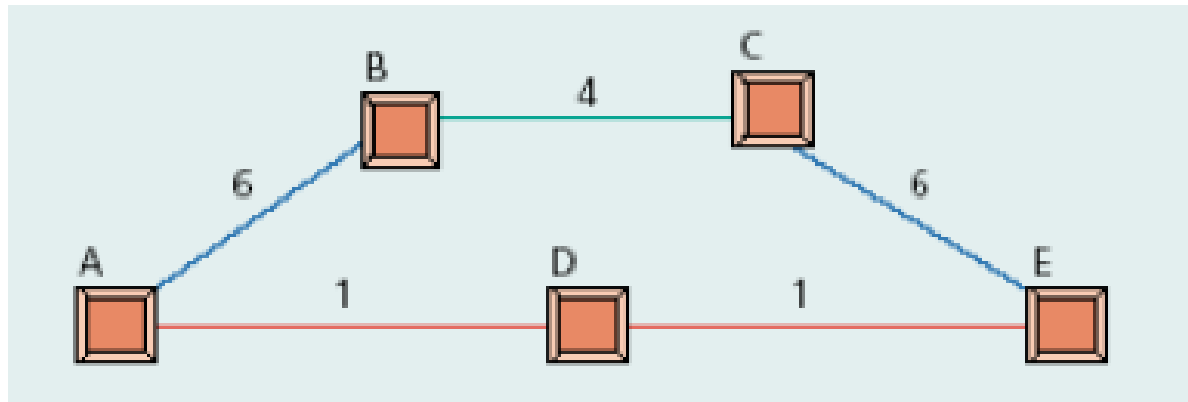
Presentation Credits

- Mr.Hassan Aqeel,CSE Dept

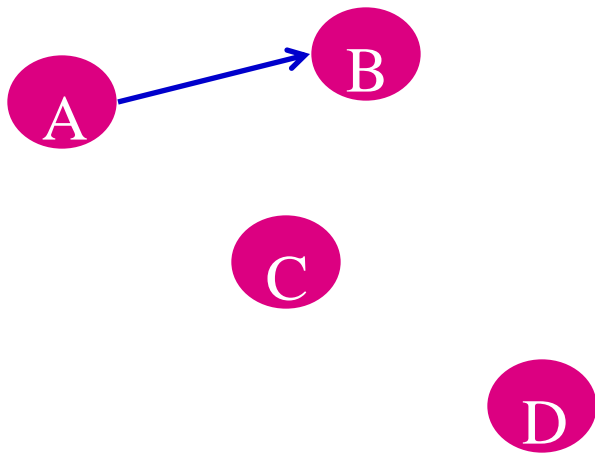
Ad Hoc Networks

- Formed by wireless hosts which co-operatively and spontaneously form a network independent of any fixed infrastructure
- **Self Creating**-not relying on pre-existing structure
- **Self Organizing**-no predetermined topology required
- **Self administering**-no central control required

Adhoc Network Example



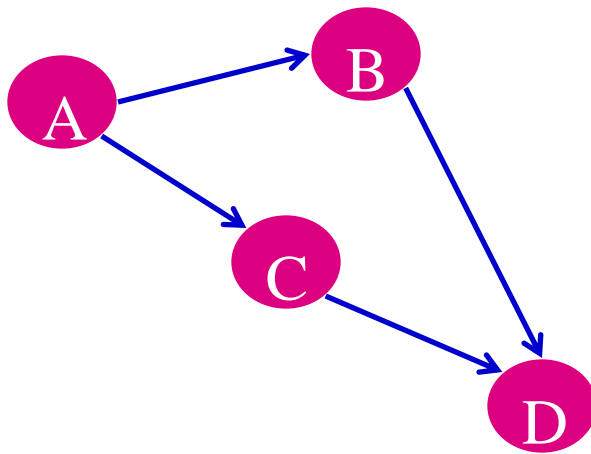
Ad Hoc Networks



A wants to communicate with **B**

A sets up a connection directly with **B**

Ad Hoc Networks



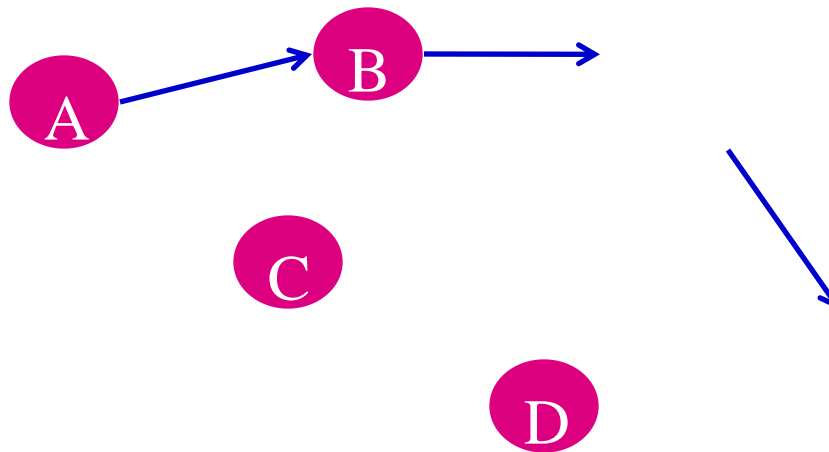
A wants to communicate with **D**

D is not directly accessible

A sets up a connection with **D** via **C** or **B**

Ad Hoc Networks

Routes change as a result of mobility



Now if **A** wants to communicate with **D**

Two nodes must be traversed as compared to one in previous scenario

Ad Hoc Networks

- **ADVANTAGES (??):**
 - **Ease of deployment**
 - **Speed of deployment**
 - **Decreased dependence on infrastructure**

Ad Hoc Networks

Applications

- **Personal Area Networking:**
cell phones, wrist watches, laptops etc
- **Military Applications:**
battlefield tanks, aircrafts, soldiers
- **Civilian Environments:**
stadiums, taxi cab networks, meeting rooms, boats etc
- **Emergency Operations:**
search and rescue, policing and fire fighting

Ad Hoc Networks

Challenges

- Limited wireless transmission range
- Packet losses due to transmission errors
- Mobility induced routing changes
- Mobility induced packet losses
- Battery constraints
- Ease of snooping on wireless transmissions

Ad Hoc Networks

Conclusion

- Lots of research already conducted because lots of funding available.
- However, there is still a lot to be done.
- No guarantee that this concept will turn out to be successful.