

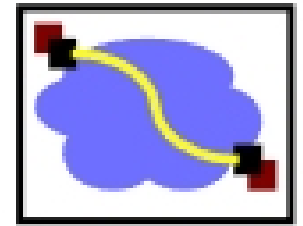


# 15-441 Computer Networking

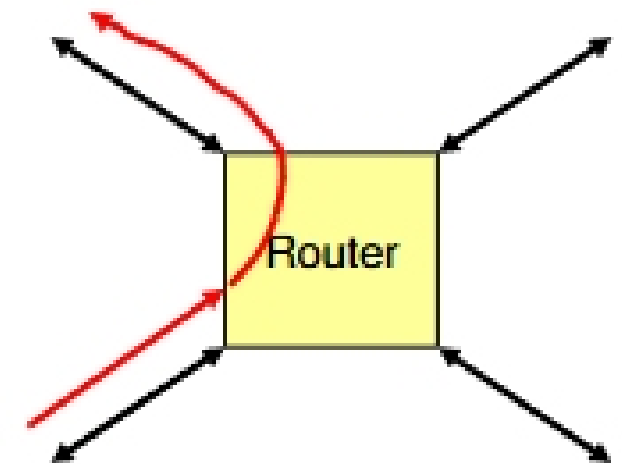
## Lecture 10: Intra-Domain Routing

RIP (Routing Information Protocol) &  
OSPF (Open Shortest Path First)

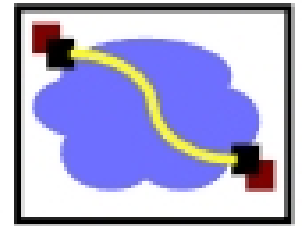
# IP Forwarding



- The Story So Far...
  - IP addresses are structure to reflect Internet structure
  - IP packet headers carry these addresses
  - When Packet Arrives at Router
    - Examine header to determine intended destination
    - *Look up in table to determine next hop in path*
    - Send packet out appropriate port
- This/next lecture
  - How to generate the forwarding table



# Graph Model



- Represent each router as node
- Direct link between routers represented by edge
  - Symmetric links  $\Rightarrow$  undirected graph
- Edge "cost"  $c(x,y)$  denotes measure of difficulty of using link
  - delay, \$ cost, or congestion level
- Task
  - Determine least cost path from every node to every other node
    - Path cost  $d(x,y)$  = sum of link costs

