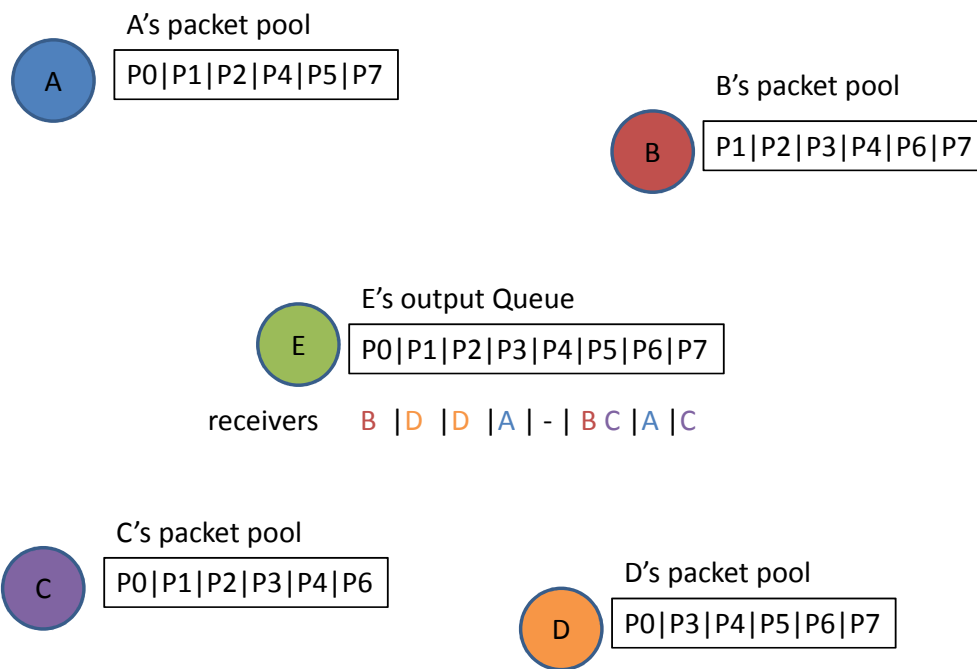


Exercise for the lecture  
**Algorithms for Radio Networks**  
 Winter 2011/12  
 Sheet 13

**EXERCISE 13:**

- Consider the following network that contains the nodes (A,B,C,D,E). Node E is aware of the packet pools of its neighbors and all of them are in transmission range of node E. Node's E goal is to maximize throughput through COPE (Opportunistic coding).



- What is the best coding scheme for node E to transmit the packets such that all its neighbors can have the complete set of eight packets? ( Note: A node can receive at most one packet in each transmission.)
- Given the following irreducible polynomial  $q(x) = x^3 + x^2 + 1$  in  $GF(8)$ :
    - Calculate the exponentiation and logarithm tables.
    - Calculate the following multiplications:
      - $101 * 011$
      - $110 * 010$
      - $100 * 101$