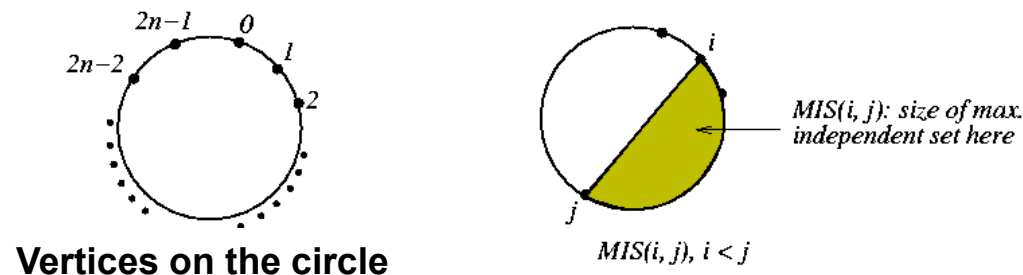
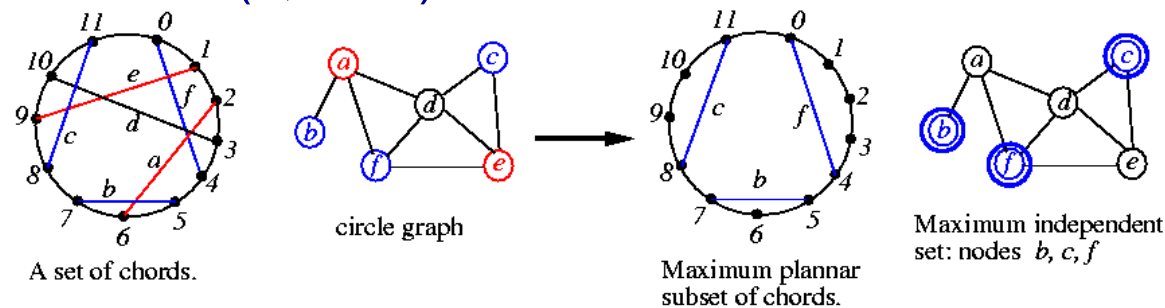


Supowit's Algorithm for Finding MPSC

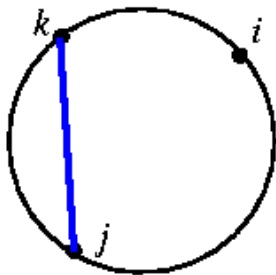
- Supowit, "Finding a maximum planar subset of a set of nets in a channel," *IEEE TCAD*, 1987.
- Problem MPSC: Given a set of chords, find a maximum planar subset of chords.
 - Label the vertices on the circle 0 to $2n-1$.
 - Compute $MIS(i, j)$: size of maximum independent set between vertices i and j , $i < j$.
 - Answer = $MIS(0, 2n-1)$.



Dynamic Programming in Supowit's Algorithm

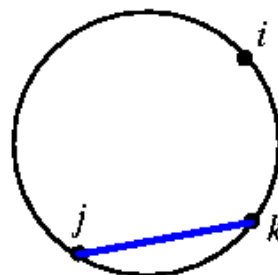
- Apply dynamic programming to compute $MIS(i, j)$.

$k > j$ case 1



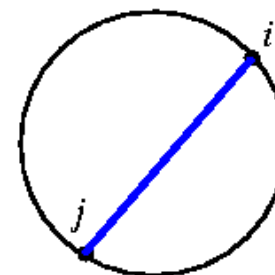
$$MIS(i, j) = MIS(i, j-1)$$

$j > k$ case 2

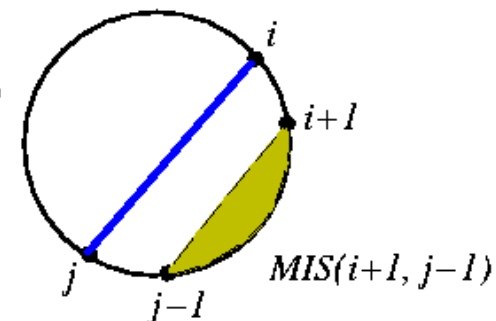
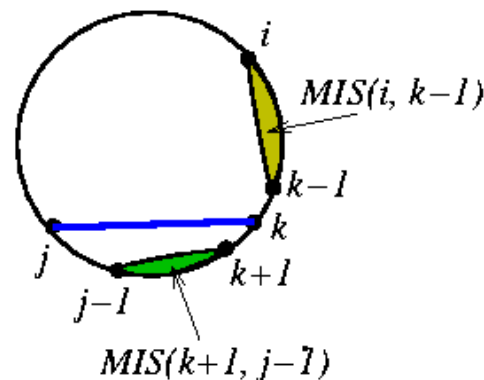
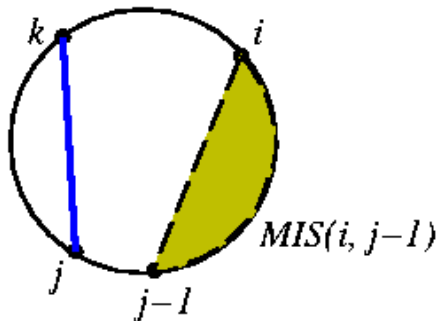


$$MIS(i, j) = MIS(i, k-1) + 1 + MIS(k+1, j-1)$$

$k = j$ case 3



$$MIS(i, j) = MIS(i+1, j-1) + 1$$



100: 13是錯的，更多
兩萬：177是錯的，更多