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The **cd**-index is a noncommutative polynomial which compactly encodes the flag vector data of an Eulerian poset. There are two major classes of Eulerian poset: face lattices of convex polytopes (and more generally face posets of regular spherical CW-complexes) and intervals of the strong Bruhat order of Coxeter groups. Billera and Brenti have recently introduced the notion of the complete **cd**-index of a Bruhat interval which encodes more information than the classical **cd**-index of the interval. Motivated by their work, we extend the notion of Bruhat graphs to balanced labeled graphs and prove the existence of the **cd**-index. (Received January 30, 2009)