

CSE232B Milestone 3

Implementation Hints

The “dependsOn” Relationship between Vars

We say that variable d **dependsOn** variable v if the for clause contains an expression

$\$d$ in $\$v/\text{path}$

Example:

for $\$b$ in doc(“books.xml”)//book, $\$a$ in $\$b/\text{author}$, $\$y$ in $\$b/\text{year}$

$\$a$ dependsOn $\$b$

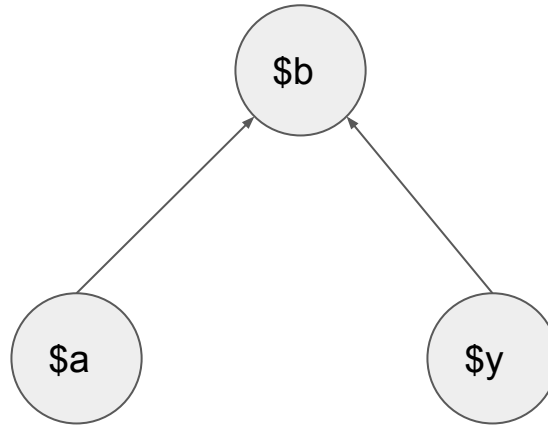
$\$y$ dependsOn $\$b$

The Graph of Variables

Nodes: the variables defined in the FOR clause

Edges: the dependsOn relationships, directed from dependent var

Example continued

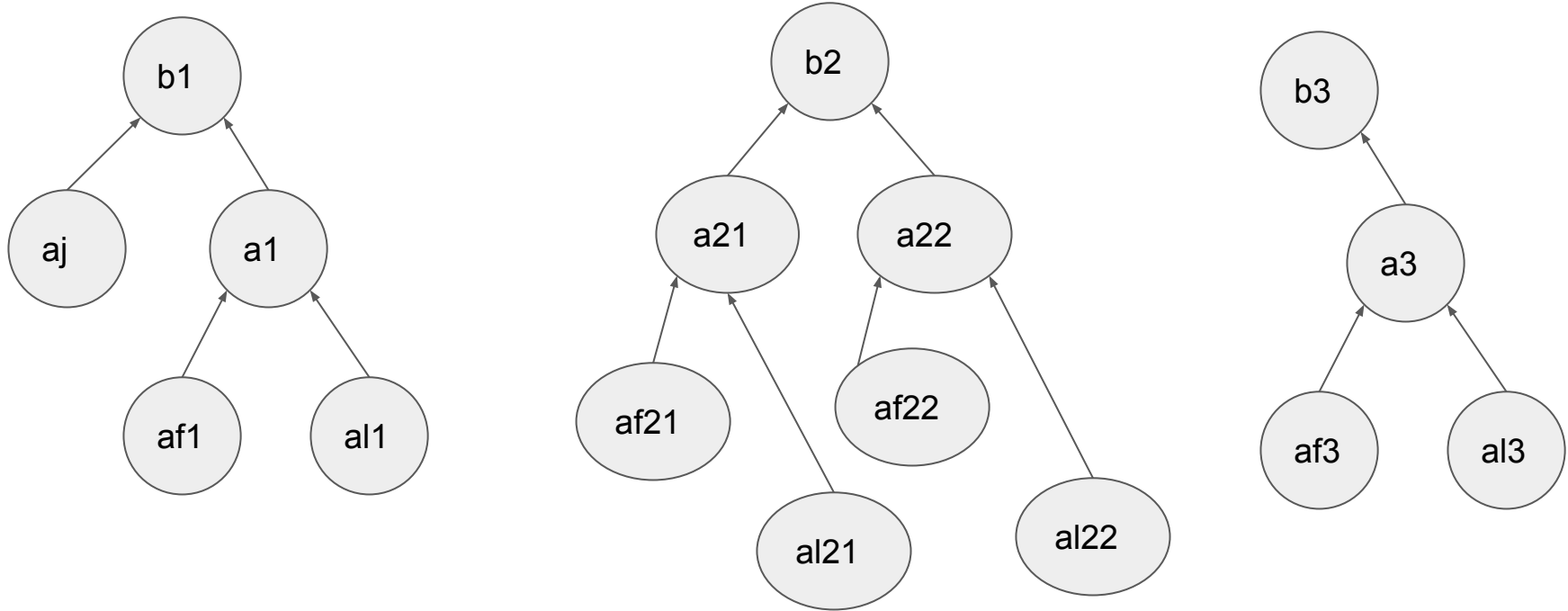


Variable Group

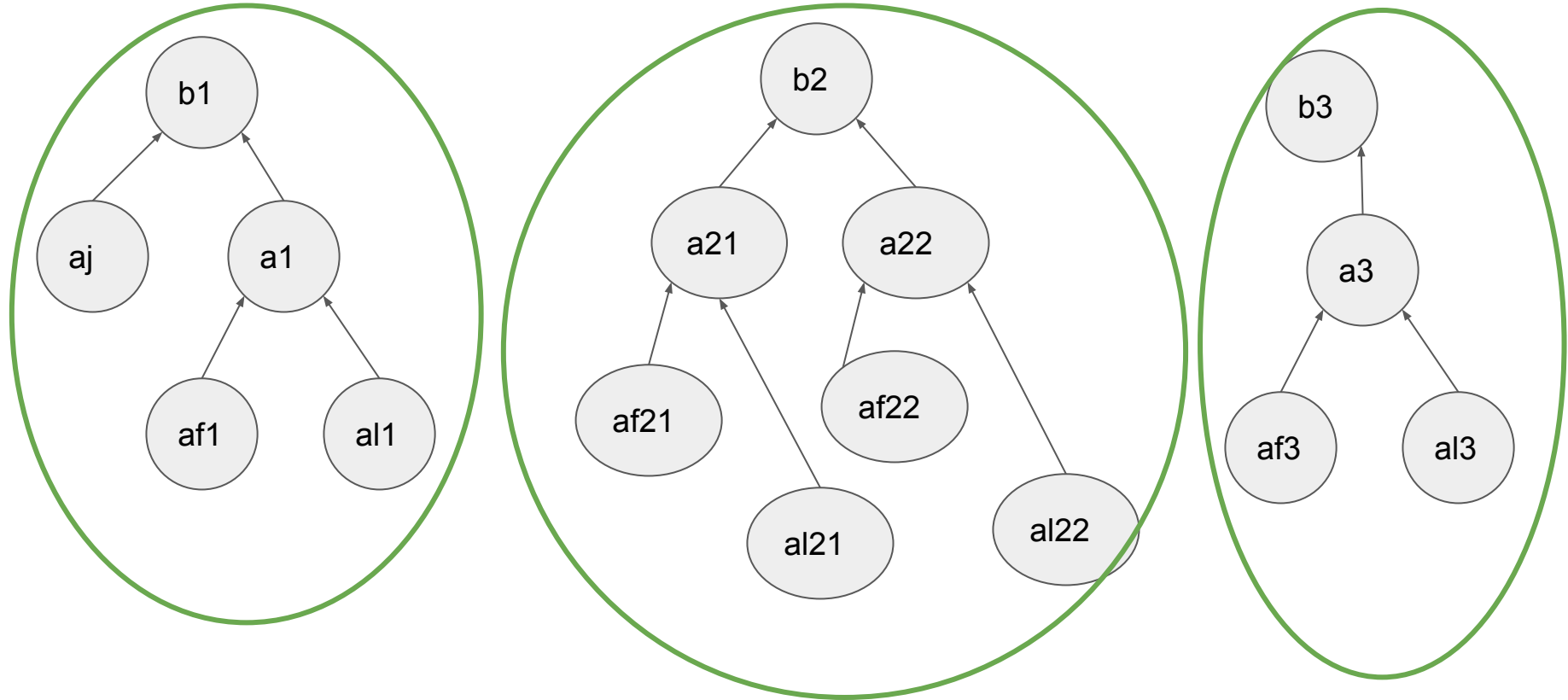
A variable group is a connected component of the graph of variables.

Each variable group induces a subquery, to be given as argument to a join function.

Example: Var Graph for Query in Milestone II Specification Note



Example: Connected Components Yield Variable Groups



Example: Join Equalities Identified as Cross-component Edges

