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function An = select_by_node_presence(A, nodes, union)
%Returns a subset of the incidence matrix with hyperedges that include
%nodes of interest. If one node is of interest, this function
%selects all hyperedges that include that node. If more than one node is of
%interest, the user can specify whether this function returns all
%hyperedges that contain ALL of the nodes of interest or all hyperedges
% that contain ANY of the nodes of interest.
%
%
% A: (m,n) double. Incidence matrix.
% nodes: (1,k) double. Indices of nodes of interest, where k <= m and each
%       entry in "nodes" <= m.
%       Default: 1:m (all nodes)
% union: logical. Specifies selection of hyperedges. If true, keep
%       hyperedges that contain all nodes in "nodes". If false, keep
%       hyperedges that contain any node in "nodes".
%       Default: true

arguments
    A (:,:)
    nodes (1,:) = 1:size(A,1)
    union logical = true
end

% (n,k) logical array with ones indicating node presence in a hyperedge
V = A(nodes, :) > 0;

if union
    % (n,1) logical with ones for columns of V that are all ones
    idx = all(V, 1);
else
    % (n,1) logical with ones for columns of V that contain any ones
    idx = any(V, 1);
end

An = A(:, idx);
end

```

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