

Assignment 9

```
function d = mydet(A)
    % Check if matrix A is 1x1
    if size(A, 1) == 1
        d = A(1, 1); % Base case: the determinant of a 1x1 matrix is the
single element itself
        return;
    end

    % Initialize determinant to zero
    d = 0;
    n = size(A, 1); % Number of rows (or columns, since A is square)

    % Loop through each element in the first row
    for j = 1:n
        % Create the (n-1)x(n-1) submatrix by removing row 1 and column j
        M1j = A(2:end, [1:j-1, j+1:end]);

        % Compute the cofactor for element (1, j)
        C1j = (-1)^(1 + j) * mydet(M1j);

        % Add to determinant
        d = d + A(1, j) * C1j;
    end
end
```

```
B = [
    -7, 4, -2, -8, 6;
     8, 7,  2,  3, -1;
     6, -6, 6,  0, -7;
    -6, 2, -9, 2,  0;
    -9, 6,  7, 5,  0
];

% Compute determinant using custom function
det_B = mydet(B);

% Compute determinant using MATLAB's built-in function to verify
det_builtin = det(B);

% Display results
disp(['Determinant computed with mydet: ', num2str(det_B)]);
```

Determinant computed with mydet: -77871

```
disp(['Determinant computed with MATLAB's det: ', num2str(det_builtin)]);
```

Determinant computed with MATLAB's det: -77871