
```

function C = strassen(A,B)
n = length(A);
if length(A) ~= length(B)
    warning('matrix are not equal in size')
    C = eye(n);
    return
end

if n == 1
    C = A*B;
else
    A = mat2cell(A, [n/2 n/2], [n/2 n/2]);
    B = mat2cell(B, [n/2 n/2], [n/2 n/2]);
    temp1111=strassen(A{1,1},B{1,1});
    temp1122=strassen(A{1,1},B{2,2});
    temp2211=strassen(A{2,2},B{1,1});
    temp2222=strassen(A{2,2},B{2,2});
    temp2111 = strassen(A{2,1},B{1,1});
    temp1112 = strassen(A{1,1},B{1,2});
    temp1222=strassen(A{1,2},B{2,2});
    temp2221=strassen(A{2,2},B{2,1});

    P1= temp1111+temp1122+temp2211+temp2222;
    P2= temp2111+temp2211;
    P3=temp1112-temp1122;
    P4=temp2221-temp2211;
    P5=temp1122+temp1222;
    P6=temp2111+strassen(A{2,1},B{1,2})-temp1111-temp1112;
    P7=strassen(A{1,2},B{2,1})+temp1222-temp2221-temp2222;

    C = [(P1 + P4 -P5 +P7), (P3 + P5);(P2 + P4), (P1 + P3 - P2 +
P6)];
end
end

```

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