Applications of Parallel Computing

Rewrite your matrix multiply using Strassen's method. Use the library version of DGEMM to perform the matrix multiply parts you will need. Also compare the performance of your version of Strassen's matrix multiply with the library version.

```
nd2=n/2;

a11=a(1:nd2,1:nd2); a12=a(1:nd2,nd2+1:n);

a21=a(nd2+1:n,1:nd2); a22=a(nd2+1:n,nd2+1:n);

b11=b(1:nd2,1:nd2); b12=b(1:nd2,nd2+1:n);

b21=b(nd2+1:n,1:nd2); b22=b(nd2+1:n,nd2+1:n);


p1=(a11+a22)*(b11+b22);

p2=(a21+a22)*b11;

p3=a11*(b12-b22);

p4=a22*(b21-b11);

p5=(a11+a12)*b22;

p6=(a21-a11)*(b11+b12);

p7=(a12-a22)*(b21+b22);


c11=p1+p4-p5+p7;

c12=p3+p5;
```

```
c21=p2+p4;

c22=p1+p3-p2+p6;


c=[c11,c12;

   c21,c22];
```