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```
clear all;
clear;
clc;
```

Jacobi Method

```
disp('Jacobi Method');
S= [
    1 0 0
    0 5 0
    0 0 -2 ];

T= [
    0 -1 -6
    -1 0 1
    -4 -2 0];

lamda_max=power_method(S,T)
lamda_min= 1./power_method(T,S)

cond_no= sqrt(abs(lamda_max./lamda_min))
```

Gauss- Siedel Method

```
disp('Gauss-Siedel Method');
S= [
    1 0 0
    1 5 0
    4 2 -2];

T= [
    0 -1 -6
    -1 0 1
    -4 -2 0];

lamda_max= power_method(S,T)
lamda_min= 1./power_method(T,S)

cond_no= sqrt(abs(lamda_max./lamda_min))
```

SOR

```
disp('SOR Method');
```

```
S= [
    1 0 0
    1.2 5 0
    4.8 2.4 -2];

T=[
    0.2 -1.2 -7.2
    0 1 1.2
    0 0 -0.4];

lamda_max= power_method(S,T)
lamda_min= 1./power_method(T,S)

cond_no= sqrt(abs(lamda_max./lamda_min))
```

Jacobi Method

```
No convergence within 100 iterations

lamda_max =

   NaN


lamda_min =

    0.0689


cond_no =

   NaN
```

Gauss-Siedel Method

```
lamda_max =

   -9.3659


lamda_min =

    0.0769


cond_no =

   11.0372
```

SOR Method

```
lamda_max =

  -14.2084
```

```
lamda_min =

   -0.0031

cond_no =

   67.6029
```

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