```
options = optimoptions('fmincon', "Display","iter","Algorithm","sqp");
fun = @(x)((-1*sin(2*pi*x(1)))^3*sin(2*pi*x(2)))/(x(1)^3*(x(1) + x(2)));
lb = [0, 0];
ub = [10, 10];
A = [];
b = [];
Aeq = [];
beq = [];
```

generate random number and load non linear constraint

```
x0 = randn(2,1,"double")
```

```
x0 = 2×1
    0.5377
    1.8339
```

```
nonlcon = @conQ2;
```

solve the equation

```
[x, fval] = fmincon(fun, x0, A, b, Aeq, beq, lb, ub, nonlcon, options)
```

```
 Iter  Func-count            Fval   Feasibility   Step Length       Norm of    First-order
                                                                       step     optimality
    0           3   -3.022224e-02     5.154e+00     1.000e+00     0.000e+00     2.181e+00
    1           6   -1.372851e-02     1.764e+00     1.000e+00     1.595e+00     3.314e+00
    2           9    1.963830e-05     1.954e-01     1.000e+00     5.664e-01     1.074e+00
    3          12   -2.825333e-12     1.515e-02     1.000e+00     1.236e-01     3.865e-02
    4          15   -2.933447e-09     1.193e-04     1.000e+00     1.094e-02     7.904e-04
    5          18   -3.139222e-09     8.802e-09     1.000e+00     9.479e-05     1.541e-05
    6          21   -4.144586e-09     0.000e+00     1.000e+00     3.831e-04     1.900e-05
    7          24   -1.487836e-08     0.000e+00     1.000e+00     2.304e-03     4.451e-05
    8          27   -1.816361e-06     0.000e+00     1.000e+00     2.693e-02     1.076e-03
    9          35   -2.478430e-03     0.000e+00     2.401e-01     9.544e-01     1.303e-01
   10          38   -9.345002e-03     4.705e-04     1.000e+00     3.796e-01     3.863e-01
   11          41   -3.395573e-02     0.000e+00     1.000e+00     2.993e-01     5.351e-01
   12          48   -3.652522e-02     0.000e+00     2.401e-01     2.006e-01     4.920e-01
   13          53   -7.056574e-02     0.000e+00     4.900e-01     2.040e-01     6.601e-01
   14          56   -8.717167e-02     0.000e+00     1.000e+00     1.127e-01     3.628e-01
   15          59   -9.442412e-02     0.000e+00     1.000e+00     6.799e-02     1.014e-01
   16          62   -9.450627e-02     0.000e+00     1.000e+00     4.712e-02     1.253e-01
   17          65   -9.581469e-02     0.000e+00     1.000e+00     2.113e-02     1.387e-02
   18          68   -9.582464e-02     0.000e+00     1.000e+00     1.942e-03     1.893e-03
   19          71   -9.582504e-02     0.000e+00     1.000e+00     4.019e-04     1.962e-05
   20          74   -9.582504e-02     0.000e+00     1.000e+00     5.519e-06     8.244e-07

Local minimum found that satisfies the constraints.

Optimization completed because the objective function is non-decreasing in
feasible directions, to within the value of the optimality tolerance,
and constraints are satisfied to within the value of the constraint tolerance.

<stopping criteria details>
x = 2×1
    1.2280
    4.2454
fval = -0.0958
```

```
conQ2(x)
```

```
ans = 1×2
   -1.7375   -0.1678
```