```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
"""
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"""
import       as
import                    as
from      import

class element




    def __init__ self
        pass

def createBlock
                              0       2         0       2  00000000000001
                              1       2         1       2  00000000000001
    print len
    print len
                       2
            0
               0

    for   in range len
        for   in range len
                   0
                   1
                                              +1
                         +1
                               +2


            0

    for   in range len         1
        for   in range len         1
                                    +1           +1
                                                                  +1
            if       len         2
                               +2
            else
                               +1
            #print(count)
```

```
    return

def ShapeFcn
         1 4  1     1
         1 4  1     1
         1 4  1     1
         1 4  1     1
                  0    0    0    0
                0    0    0    0

    return

def MakeB
            1 4   1   1
            1 4  1   1
            1 4  1   1
            1 4   1   1
            1 4  1      1
            1 4  1      1
            1 4  1     1
            1 4  1     1


                0  0
                1  0

                0  0
                1  0

                0  0
                1  0

                0  0
                1  0


                       0       0       0       0
                  0       0       0       0

    return

def Jacobian
           1 4    1           0  0   1           1  0   1           2  0   1
           1 4    1           0  1   1           1  1   1           2  1   1
           1 4    1           0  0   1           1  0   1           2  0   1
           1 4    1           0  1   1           1  1   1           2  1   1
```

```
    return

def createKe
           0 57735 0 57735
                   8 8
    for   in
        for   in

                                  2     0 0
                                  0 2     0
                                  0 0




    return

def createMe

                   8 8
    for   in range len
                     0 0

                  4 1 4
    return

def createAe
           0 57735 0 57735
                   8 1
    for   in
        for   in


                     0 0
                     0 2
                     0 4
                     0 6
                     1 1
                     1 3
                     1 5
                     1 7

                                 0       0       0       0
                           0       0       0       0
```

```
                                0       0       0       0
                              0       0       0       0
```

```
    return

def createA
                   len
    for   in range len
                                                      0
                                                      1
                                                      2
                                                      3
                                                      4
                                                      5
                                                      6
                                                      7
        #print(vec)

        for   in range len


    return

def createCe
           0 57735 0 57735
                   1 8
    for   in
        for   in



                                0  0    1  1    0  2    1  3    0  4    1  5    0
    return

#CODE for running predictor corrector
       01
      1
       41
       41
                                          5  5  1 1
```

```
              2 len
                  2 len
              2 len


for   in range len
    if           0           0
                     1 1

    elif           0            1
                     1 1

    elif           1           0
                     1 1

    elif           1            1
                     1 1

    else
                     0 0


    if           1            1
          2      1


for   in range len
                  0



#boun[20] = [1,0]
     4     1 0
      35     1
  35    0
for   in range len

                                              0                1                2


                                             0               1               2
                                                      0  0                   0  1
                                                  2  0                   2  1












        0



for   in range len
```

```
    if          0     1

                     +1
    else

                     +1
    if          1     1

                     +1
    else

                     +1

        0
for   in range len
    if           0     1

    else

                  +1

#Creates the ReDOF and RepDOF vectors which map the old global dofs to new positi


          0   2 len
           0   len
for   in range len


for   in range len



                           0
                           0
                      0


#assemble global matrices
              2 len        2 len
              2 len        2 len
              2 len        len
for   in range len
    for   in range 8
                                                    0
        for   in range 8
```

```
#Splitting up matrices into known and unknown parts
        0 len        0 len
        0 len        0 len

          0 len        0 len



#CTMCinv = CTMCinv[0:len(pFDOFS),0:len(pFDOFS)]

        0 len        len
        0 len        len
          0 len        len
            0 len          len


#Implement predictor corrector
      001
              0 10

for   in      range len

            0 len
    #print(A)


    #vfree = vfree-dt*Mffinv@(Kff@vfree)+dt*Mffinv@F

             1




       0  2
       1  2
                2     2
```

50

51

52

90