# -\*- coding: mbcs -\*-from part import \* from material import \* from section import \* from assembly import \* from step import \*

from interaction import \* from load import \*

from mesh import \* from job import \* from sketch import \*

from visualization import \* from connectorBehavior import \*

mdb.models['Model-1'].ConstrainedSketch(name='\_\_profile\_\_', sheetSize=20.0) mdb.models['Model-1'].sketches['\_\_profile\_\_'].rectangle(point1=(-5.0, -1.0),

point2=(5.0, 1.0)) mdb.models['Model-1'].Part(dimensionality=TWO\_D\_PLANAR, name='Part-1', type=

DEFORMABLE\_BODY) mdb.models['Model-1'].parts['Part-1'].BaseShell(sketch=

mdb.models['Model-1'].sketches['\_\_profile\_\_']) del mdb.models['Model-1'].sketches['\_\_profile\_\_'] mdb.models['Model-1'].Material(name='Material-1')

mdb.models['Model-1'].materials['Material-1'].Elastic(table=((1000000000.0, 0.3), ))

mdb.models['Model-1'].HomogeneousSolidSection(material='Material-1', name= 'Section-1', thickness=None)

mdb.models['Model-1'].parts['Part-1'].SectionAssignment(offset=0.0, offsetField='', offsetType=MIDDLE\_SURFACE, region=Region( faces=mdb.models['Model-1'].parts['Part-1'].faces.findAt(((-1.666667, -0.333333, 0.0), (0.0, 0.0, 1.0)), )), sectionName='Section-1')

mdb.models['Model-1'].parts['Part-1'].Set(edges= mdb.models['Model-1'].parts['Part-1'].edges.findAt(((-5.0, -0.5, 0.0), )), name='Set-1')

mdb.models['Model-1'].parts['Part-1'].Surface(name='Surf-1', side1Edges= mdb.models['Model-1'].parts['Part-1'].edges.findAt(((-2.5, 1.0, 0.0), )))

mdb.models['Model-1'].parts['Part-1'].setMeshControls(elemShape=QUAD, regions= mdb.models['Model-1'].parts['Part-1'].faces.findAt(((-1.666667, -0.333333, 0.0), )), technique=STRUCTURED)

mdb.models['Model-1'].parts['Part-1'].setElementType(elemTypes=(ElemType( elemCode=CPS8R, elemLibrary=STANDARD), ElemType(elemCode=CPS6M, elemLibrary=STANDARD)), regions=( mdb.models['Model-1'].parts['Part-1'].faces.findAt(((-1.666667, -0.333333, 0.0), )), ))

mdb.models['Model-1'].parts['Part-1'].seedPart(deviationFactor=0.1, size=0.5) mdb.models['Model-1'].parts['Part-1'].generateMesh() mdb.models['Model-1'].rootAssembly.DatumCsysByDefault(CARTESIAN) mdb.models['Model-1'].rootAssembly.Instance(dependent=ON, name='Part-1-1',

part=mdb.models['Model-1'].parts['Part-1']) mdb.models['Model-1'].rootAssembly.regenerate() mdb.models['Model-1'].StaticStep(initialInc=0.1, maxInc=0.1, name='Step-1',

previous='Initial')

mdb.models['Model-1'].DisplacementBC(amplitude=UNSET, createStepName='Step-1', distributionType=UNIFORM, fieldName='', fixed=OFF, localCsys=None, name= 'BC-1', region= mdb.models['Model-1'].rootAssembly.instances['Part-1-1'].sets['Set-1'], u1= 0.0, u2=0.0, ur3=0.0)

mdb.models['Model-1'].Pressure(amplitude=UNSET, createStepName='Step-1', distributionType=UNIFORM, field='', magnitude=-100000.0, name='Load-1', region= mdb.models['Model-1'].rootAssembly.instances['Part-1-1'].surfaces['Surf-1'])

mdb.Job(contactPrint=OFF, description='', echoPrint=OFF, explicitPrecision= SINGLE, historyPrint=OFF, memory=90, memoryUnits=PERCENTAGE, model= 'Model-1', modelPrint=OFF, multiprocessingMode=DEFAULT, name='EXAMPLE', nodalOutputPrecision=SINGLE, numCpus=1, numDomains=1, parallelizationMethodExplicit=DOMAIN, scratch='', type=ANALYSIS, userSubroutine='')

mdb.jobs['EXAMPLE'].submit(consistencyChecking=OFF) mdb.jobs['EXAMPLE'].\_Message(STARTED, {'phase': BATCHPRE\_PHASE,

'clientHost': 'wumpus.seas.harvard.edu', 'handle': 0, 'jobName': 'EXAMPLE'})

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mdb.jobs['EXAMPLE'].\_Message(WARNING, {'phase': BATCHPRE\_PHASE,

'message': 'DEGREE OF FREEDOM 6 IS NOT ACTIVE IN THIS MODEL AND CAN NOT BE RESTRAINED', 'jobName': 'EXAMPLE'})

mdb.jobs['EXAMPLE'].\_Message(ODB\_FILE, {'phase': BATCHPRE\_PHASE,

'file': '/home/overveld/ScriptManual/EXAMPLE.odb', 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(COMPLETED, {'phase': BATCHPRE\_PHASE,

'message': 'Analysis phase complete', 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STARTED, {'phase': STANDARD\_PHASE,

'clientHost': 'wumpus.seas.harvard.edu', 'handle': 0, 'jobName': 'EXAMPLE'})

mdb.jobs['EXAMPLE'].\_Message(STEP, {'phase': STANDARD\_PHASE, 'stepId': 1, 'jobName': 'EXAMPLE'})

mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0, 'frame': 0, 'jobName': 'EXAMPLE'})

mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.0, 'attempts': 0, 'timeIncrement': 0.1, 'increment': 0, 'stepTime': 0.0, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 0,

'phase': STANDARD\_PHASE, 'equilibrium': 0}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 1, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.1, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 1, 'stepTime': 0.1, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 2, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.2, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 2, 'stepTime': 0.2, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 3, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.3, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 3, 'stepTime': 0.3, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 4, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.4, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 4, 'stepTime': 0.4, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 5, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.5, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 5, 'stepTime': 0.5, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 6, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.6, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 6, 'stepTime': 0.6, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 7, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.7, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 7, 'stepTime': 0.7, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 8, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.8, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 8, 'stepTime': 0.8, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 9, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 0.9, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 9, 'stepTime': 0.9, 'step': 1, 'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1,

'phase': STANDARD\_PHASE, 'equilibrium': 1}) mdb.jobs['EXAMPLE'].\_Message(ODB\_FRAME, {'phase': STANDARD\_PHASE, 'step': 0,

'frame': 10, 'jobName': 'EXAMPLE'}) mdb.jobs['EXAMPLE'].\_Message(STATUS, {'totalTime': 1.0, 'attempts': 1,

'timeIncrement': 0.1, 'increment': 10, 'stepTime': 1.0, 'step': 1,

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'jobName': 'EXAMPLE', 'severe': 0, 'iterations': 1, 'phase': STANDARD\_PHASE, 'equilibrium': 1})

mdb.jobs['EXAMPLE'].\_Message(END\_STEP, {'phase': STANDARD\_PHASE, 'stepId': 1, 'jobName': 'EXAMPLE'})

mdb.jobs['EXAMPLE'].\_Message(COMPLETED, {'phase': STANDARD\_PHASE, 'message': 'Analysis phase complete', 'jobName': 'EXAMPLE'})

mdb.jobs['EXAMPLE'].\_Message(JOB\_COMPLETED, {

'time': 'Wed Nov 17 21:09:11 2010', 'jobName': 'EXAMPLE'})

# Save by overveld on Wed Nov 17 21:09:48 2010

Final EXAMPLE MDB.py

#load modulus from part import \*

from material import \* from section import \* from assembly import \* from step import \*

from interaction import \* from load import \*

from mesh import \* from job import \* from sketch import \*

from visualization import \* from connectorBehavior import \*

### PART ###

mdb.models['Model-1'].ConstrainedSketch(name='\_\_profile\_\_', sheetSize=20.0) mdb.models['Model-1'].sketches['\_\_profile\_\_'].rectangle(point1=(-5.0, -1.0),

point2=(5.0, 1.0)) mdb.models['Model-1'].Part(dimensionality=TWO\_D\_PLANAR, name='Part-1', type=

DEFORMABLE\_BODY) mdb.models['Model-1'].parts['Part-1'].BaseShell(sketch=

mdb.models['Model-1'].sketches['\_\_profile\_\_']) del mdb.models['Model-1'].sketches['\_\_profile\_\_']

### MATERIAL & SECTION ###

mdb.models['Model-1'].Material(name='Material-1') mdb.models['Model-1'].materials['Material-1'].Elastic(table=((1000000000.0,

0.3), )) mdb.models['Model-1'].HomogeneousSolidSection(material='Material-1', name=

'Section-1', thickness=None) mdb.models['Model-1'].parts['Part-1'].SectionAssignment(offset=0.0,

offsetField='', offsetType=MIDDLE\_SURFACE, region=Region( faces=mdb.models['Model-1'].parts['Part-1'].faces.findAt(((-1.666667, -0.333333, 0.0), (0.0, 0.0, 1.0)), )), sectionName='Section-1')

### SET & SURFACE ###

mdb.models['Model-1'].parts['Part-1'].Set(edges= mdb.models['Model-1'].parts['Part-1'].edges.findAt(((-5.0, -0.5, 0.0), )), name='Set-1')

mdb.models['Model-1'].parts['Part-1'].Surface(name='Surf-1', side1Edges= mdb.models['Model-1'].parts['Part-1'].edges.findAt(((-2.5, 1.0, 0.0), )))

### MESH ###

mdb.models['Model-1'].parts['Part-1'].setMeshControls(elemShape=QUAD, regions= mdb.models['Model-1'].parts['Part-1'].faces.findAt(((-1.666667, -0.333333, 0.0), )), technique=STRUCTURED)

mdb.models['Model-1'].parts['Part-1'].setElementType(elemTypes=(ElemType( elemCode=CPS8R, elemLibrary=STANDARD), ElemType(elemCode=CPS6M, elemLibrary=STANDARD)), regions=( mdb.models['Model-1'].parts['Part-1'].faces.findAt(((-1.666667, -0.333333, 0.0), )), ))

mdb.models['Model-1'].parts['Part-1'].seedPart(deviationFactor=0.1, size=0.5) mdb.models['Model-1'].parts['Part-1'].generateMesh()

### ASSEMBLY ###

mdb.models['Model-1'].rootAssembly.DatumCsysByDefault(CARTESIAN) mdb.models['Model-1'].rootAssembly.Instance(dependent=ON, name='Part-1-1',

part=mdb.models['Model-1'].parts['Part-1']) mdb.models['Model-1'].rootAssembly.regenerate()

### STEP, BC & LOAD ###

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mdb.models['Model-1'].StaticStep(initialInc=0.1, maxInc=0.1, name='Step-1', previous='Initial')

mdb.models['Model-1'].DisplacementBC(amplitude=UNSET, createStepName='Step-1', distributionType=UNIFORM, fieldName='', fixed=OFF, localCsys=None, name= 'BC-1', region= mdb.models['Model-1'].rootAssembly.instances['Part-1-1'].sets['Set-1'], u1= 0.0, u2=0.0, ur3=0.0)

mdb.models['Model-1'].Pressure(amplitude=UNSET, createStepName='Step-1', distributionType=UNIFORM, field='', magnitude=-100000.0, name='Load-1', region= mdb.models['Model-1'].rootAssembly.instances['Part-1-1'].surfaces['Surf-1'])

### JOB & CALCULATE ###

mdb.Job(contactPrint=OFF, description='', echoPrint=OFF, explicitPrecision= SINGLE, historyPrint=OFF, memory=90, memoryUnits=PERCENTAGE, model= 'Model-1', modelPrint=OFF, multiprocessingMode=DEFAULT, name='EXAMPLE', nodalOutputPrecision=SINGLE, numCpus=1, numDomains=1, parallelizationMethodExplicit=DOMAIN, scratch='', type=ANALYSIS, userSubroutine='')

mdb.jobs['EXAMPLE'].submit(consistencyChecking=OFF)