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# SE 201B: NONLINEAR STRUCTURAL ANALYSIS (WI 2021)
# HOMEWORK # 1
# NONLINEAR QUASI-STATIC & TIME-HISTORY ANALYSIS OF A SDOF SYSTEM
# ##############################################################################
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# UNITS: kip, in, sec (OpenSees doesn't have units. So be consistent!)

# INITIALIZATION ----------------------------------------------------------------
wipe; # Clear memory of all past model definitions
model BasicBuilder -ndm 1 -ndf 1; # Define the model builder, ndm=#dimension, ndf=#dofs

# SETUP DATA DIRECTORY FOR SAVING OUTPUTS ---------------------------------------
set dataDir "Results";  # Set up name of data directory
file mkdir $dataDir; # Create data directory

# SET ANALYSIS TYPE -------------------------------------------------------------
set analysisType "Transient"; # Change between Static & Transient
set algorithmString "Newton"; # Change between Newton, ModifiedNewton and
ModifiedNewton -initial

# SOURCE MODEL ------------------------------------------------------------------
source "trussModel.tcl"

# ANALYSIS ----------------------------------------------------------------------
if {$analysisType == "Static"} {
    source analysisPushover.tcl;
} elseif {$analysisType == "Transient"} {
    source analysisTimeHistory.tcl
}

if {$ok == 0} {
    puts "ANALYSIS DONE!"; # Spit out a success message
} else {
    puts "ANALYSIS FAILED!"; # Spit out a failure message
}

# DON'T FORGET TO ---------------------------------------------------------------
remove recorders;
# AND/OR
wipe;
```