```tcl
# SE 201B: NONLINEAR STRUCTURAL ANALYSIS (WI 2021)
# HOMEWORK # 1
# NONLINEAR QUASI-STATIC & TIME-HISTORY ANALYSIS OF A SDOF SYSTEM
# ##############################################################################
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# PUSHOVER ANALYSIS (LOAD CONTROLLED) ------------------------------------------

# SET LOAD LEVELS VECTOR -------------------------------------------------------
set loadFileName "P.txt";           # load file name with one col (force values) (Need to set it manually)

# EXTRACT LOAD DATA ------------------------------------------------------------
set data_fid [open $loadFileName "r"]
set data [read $data_fid]
close $data_fid
set data_new [split $data "\n"]
set P {}
for {set k 0} {$k <= [expr [llength $data_new] - 2]} {incr k 1} {
    set data_t [lindex $data_new $k]
    lappend P [lindex $data_t 0]
}
set nls [expr [llength $P] - 1]; # Number of load steps

# DEFINE TIME SERIES -----------------------------------------------------------
set tsTag 1; # Tag for the time series
set dt 1.; # Time step of 1.0 for load application. Doesn't matter for a static analysis.

#timeSeries Path $tag   -dt $dt -values {list_of_values}
timeSeries Path $tsTag -dt 1.  -values  $P;

# DEFINE LOAD PATTERN ----------------------------------------------------------
set loadTag 1; # Tag for the load pattern
pattern Plain $loadTag $tsTag {
    #load $nodeTag      (ndf $LoadValues)
    load  $nodeTag2     1.0;         # Reference load = 1.0 will be multiplied by the values in the list P.
}

# CREATE THE SYSTEM OF EQUATIONS -----------------------------------------------
system BandGeneral;

# CREATE THE CONSTRAINT HANDLER ------------------------------------------------
constraints Plain;

# CREATE THE DOF NUMBERER ------------------------------------------------------
numberer Plain;

# CREATE THE CONVERGENCE TEST --------------------------------------------------
test NormUnbalance 1.0e-5 1000; # The norm of the displacement increment with a tolerance of 1e-5 and a max number of iterations of 1000. The "1" or "0" at the end shows/doesn't show all iterations.

# CREATE SOLUTION ALGORITHM ----------------------------------------------------
set algorithmBasic [split $algorithmString]
algorithm {*}$algorithmBasic

# CREATE THE INTEGRATION SCHEME ------------------------------------------------
set lambda 1.; # Set the load factor increment. A value of 1 indicates no further divison of load levels into steps. A value of 0.1, for example, would mean subdivision of each load step into 10 further steps.
integrator LoadControl $lambda; # The LoadControl scheme

# CREATE THE ANALYSIS OBJECT ---------------------------------------------------
analysis $analysisType;

# RECORD AND SAVE OUTPUT -------------------------------------------------------
source generateRecorders.tcl; # Call file Recorders.tcl to record desired structural responses and save as an output file
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63
64  # ANALYZE -------------------------------------------------------------------------
65  set nSteps 1; # Set the number of steps in which the structure is to be analyzed for
    each load increment. A value of 1 is used to analyze the structure for each load step
    at a time and not in one go.
66  for {set i 1} {$i <= $nls} {incr i 1} {
67      set ok [analyze $nSteps]; # Analyze the structure for each load increment (0 - 200,
        200 - 300, etc.). Sets ok to 0 if successful.
68      # If the solution algorithm fails, as expected at reversals, change analysis option
        to Newton
69      if {$ok != 0} {
70          puts "Solution algorithm failed! Might be a load reversal! Changing algorithm
            to Newton"
71          algorithm Newton;
72          set ok [analyze $nSteps];
73          # If successful, revert to original algorithm
74          if {$ok == 0} {
75              puts "Changing to Newton helped. Going back to original algorithm"
76              algorithm {*}$algorithmBasic
77          }
78      }
79  }
```