```
      _____

           name:  <unnamed>
            log:  /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter/log/
      > 23 Feb 2023.smcl
       log type:  smcl
      opened on:  23 Feb 2023, 22:25:15


  1 .
  2 . *************************************************************************
  3 . ** DO-FILE WORKFLOW ****************************************************
  4 . *************************************************************************
  5 .
  6 . **PART 1. Dataset preparation
  7 .
  8 .         ** Generate dataset
  9 .         do "script/gen_data.do"

 10 . /*
    > Name: Generate new dataset from random distribution
    > Date Created: 02/23/2023
    > Date Last Modified: 02/23/2023
    > Created by: EKY
    > Modified By: EKY
    > Last modified by: EKY
    > Uses data:
    > Creates data:
    > Description:
    > */
 11 .
 12 . *************************************************************************
 13 . ** SYSTEM SETUP ******************************************************
 14 . *************************************************************************
 15 .
 16 . cls

 17 . clear
```

```
18 . set more off

19 . * set memory // not applicable for version > 12.0
20 .
21 .
22 . version 16.1

23 .
24 .
25 . * Set directory [to replicate, CHANGE THIS DIRECTORY]
26 . cd /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter
   /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter

27 .
28 . * Check directory
29 . pwd
   /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter

30 .
31 . * Set seed
32 . set seed 02232023

33 .
34 . ************************************************************************
35 . ** CREATE DATASET ****************************************************
36 . ************************************************************************
37 .
38 . * Panel dataset
39 .
40 .          * Set observations
41 .          set obs 10000
   number of observations (_N) was 0, now 10,000

42 .
43 .          * Generate id
44 .          egen id = seq(), f(1) t(100)
```

```
45 .
46 .          * Generate yr
47 .          gen yr = int((_n-1)/100) +1

48 .          replace yr = 1900 + yr
   (10,000 real changes made)

49 .
50 .          * Generate gang
51 .          egen gang = seq(), f(1) t(4) b(4)

52 .
53 .          * Generate depvar by gamma distributions
54 .          gen depvar = (rgamma(30,90)+50)/100

55 .
56 .          * Generate indepvar and covariates
57 .          gen indep = rbeta(20,75)

58 .          gen cov1 = rbinomial(1000, 0.3)

59 .          gen cov2 = runiform(0,77)

60 .          gen cov3 = runiform(-3, 10) + 5

61 .          gen cov4 = runiform(0,1)

62 .          replace cov4 = cov4 < .5
   (10,000 real changes made)

63 .
64 . *************************************************************************
65 . ** DATA CLEANING & MODIFICATION *****************************************
66 . *************************************************************************
67 .
68 . * LABELLING
69 .          * Labelling indepvar and depvar
```

```
70 .            lab var depvar "Dependent Variable"

71 .            lab var indep "Independent Variable"

72 .
73 .            * Covariates
74 .            foreach i of num 1/4{
   2.                   lab var cov`i' "Covariates `i'"
   3.              }

75 .
76 .            lab var gang "Coalition"

77 .
78 .            * Identifier
79 .            lab var id "ID obs"

80 .            lab var yr "Year"

81 .
82 .            * Labelling dataset
83 .            lab data "Demo dataset"

84 .
85 . * REORDERING
86 . order id yr depvar indep cov1 cov2 cov3 cov4

87 . sort id yr

88 . ************************************************************************
89 . ************************************************************************
90 .
91 . * SAVING DATASET
92 . compress
     variable yr was float now int
     variable cov1 was float now int
     variable cov4 was float now byte
     (70,000 bytes saved)
```

```
 93 . save "data_raw/demo_dataset.dta", replace
    file data_raw/demo_dataset.dta saved

 94 .
    end of do-file

 95 .
 96 .          ** Merging dataset
 97 .          do "script/reshape.do"

 98 . /*
    > Name: Reshape Do
    > Date Created: 02/23/2023
    > Date Last Modified: 02/23/2023
    > Created by: EKY
    > Modified By: EKY
    > Last modified by: EKY
    > Uses data:
    > Creates data:
    > Description:
    > */
 99 .
100 . ***********************************************************************
101 . ** SYSTEM SETUP *******************************************************
102 . ***********************************************************************
103 .
104 . cls

105 . clear

106 . set more off

107 . * set memory // not applicable for version > 12.0
108 .
109 .
110 . version 16.1
```

```
111 .
112 .
113 . * Set directory [to replicate, CHANGE THIS DIRECTORY]
114 . cd /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter
    /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter

115 .
116 . * Check directory
117 . pwd
    /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter

118 .
119 . ***********************************************************************
120 . ** RESHAPING DATA *****************************************************
121 . ***********************************************************************
122 .
123 . * Importing dataset
124 . use "data_raw/demo_dataset.dta", clear
    (Demo dataset)

125 .
126 . * Set panel
127 . xtset id yr
         panel variable:  id (strongly balanced)
          time variable:  yr, 1901 to 2000
                  delta:  1 unit

128 .
129 . * Preserve and drop
130 . preserve

131 . drop cov* gang // make sure to include all variables, so I drop it for a whi
    > le

132 .
133 .
134 . * Reshape from long to wide
```

```
135 . reshape wide depvar indep, i(id) j(yr)
    (note: j = 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 19
    > 14 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 192
    > 9 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944
    >  1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959
    > 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1
    > 975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 19
    > 90 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000)

    Data                              long   ->   wide
    ─────────────────────────────────────────────────────────────
    Number of obs.                   10000   ->     100
    Number of variables                  4   ->     201
    j variable (100 values)            yr    ->   (dropped)
    xij variables:
                                   depvar    ->   depvar1901 depvar1902 ... depva
    > r2000
                                    indep    ->   indep1901 indep1902 ... indep20
    > 00
    ─────────────────────────────────────────────────────────────

136 .
137 . * Reshape from long to wide
138 . reshape long depvar indep, i(id) j(year)
    (note: j = 1901 1902 1903 1904 1905 1906 1907 1908 1909 1910 1911 1912 1913 19
    > 14 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 192
    > 9 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940 1941 1942 1943 1944
    >  1945 1946 1947 1948 1949 1950 1951 1952 1953 1954 1955 1956 1957 1958 1959
    > 1960 1961 1962 1963 1964 1965 1966 1967 1968 1969 1970 1971 1972 1973 1974 1
    > 975 1976 1977 1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 19
    > 90 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000)

    Data                              wide   ->   long
    ─────────────────────────────────────────────────────────────
    Number of obs.                     100   ->   10000
    Number of variables                201   ->       4
    j variable (100 values)                  ->   year
    xij variables:
        depvar1901 depvar1902 ... depvar2000  ->   depvar
          indep1901 indep1902 ... indep2000   ->   indep
    ─────────────────────────────────────────────────────────────
```

```
139 .
140 . * Restoring dataset
141 . restore


142 .
143 . **************************************************************************
144 . **************************************************************************
145 .
146 . * SAVING DATASET
147 . compress
       (0 bytes saved)


148 . save "data_cleaned/demo_cleaned.dta", replace
     file data_cleaned/demo_cleaned.dta saved


149 .
     end of do-file


150 .
151 . //      * Cleaning part (a)
152 . //      do "script/clean_1.do"
153 .
154 . //      * Cleaning part (b)
155 . //      do "script/clean_2.do"
156 .
157 .
158 . **PART 2. Analysis
159 .
160 .           ** Descriptive analysis and EDA
161 .           do "script/EDA.do"


162 . /*
     > Name: Analysis 1
     > Date Created: 02/23/2023
     > Date Last Modified: 02/23/2023
     > Created by: EKY
     > Modified By: EKY
     > Last modified by: EKY
     > Uses data:
     > Creates data:
     > Description:
     > */
```

```
163 .
164 . ************************************************************************
165 . ** SYSTEM SETUP *******************************************************
166 . ************************************************************************
167 .
168 . cls

169 . clear

170 . set more off

171 . * set memory // not applicable for version > 12.0
172 .
173 .
174 . version 16.1

175 .
176 .
177 . * Set directory [to replicate, CHANGE THIS DIRECTORY]
178 . cd /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter
    /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter

179 .
180 . * Check directory
181 . pwd
    /Users/egayazid/QMSS/SPRING23/coding_test/stata-cookiecutter

182 .
183 . ************************************************************************
184 . ** EDA ****************************************************************
185 . ************************************************************************
186 .
187 . * Importing dataset
188 . use "data_cleaned/demo_cleaned.dta", clear
    (Demo dataset)

189 .
    end of do-file
```

```
190 .
191 .          ** Inference analysis
192 . //       do "script/analysis_2.do"
193 .
194 . **PART 3. Reporting
195 .
196 .          ** Table reporting
197 . //       do "script/report_1.do"
198 .
199 .          ** Plot visualization
200 . //       do "script/report_2.do"
201 .
202 . **************************************************************************
203 .
204 . * End log session
205 . capture log close
```