RandomSelect

Version 5.0.1

Revision History

June 2013 - Created by Volpe Center

The **RandomSelect** program is used to partition a set of households or trips.

Syntax is RandomSelect [-flag] [control_file]

The control_file is the file name of an ASCII file that contains the control strings expected by the program. The control_file is optional. If a file name is not provided, the program will prompt the user to enter a file name. The flag parameters are also optional. Any combination of the following flag parameters can be included on the command line:

Optional Flags:
  -Q[uiet]   = execute without screen messages
  -H[elp] = show program syntax and control keys
  -C[ontrol] = create/update a default control file
  -K[eyCheck] = list unrecognized control file keys
  -P[ause] = pause before exiting
  -N[oPause] = never pause before exiting
  -D[etail]   = execute with detailed status messages
  -X[ML] = write an XML file with control keys

The program automatically creates a printout file based on the control file name. If the filename includes an extension (e.g., ".ctl"), the extension is replaced with ".prn". The printout file will be created in the current working directory and will overwrite an existing file with the same name.

Version 5 Features

RandomSelect is a new program for Version 5. It creates a selection file whose last column contains the assigned partition number.

Control Key List

The list of control file keys appears in the tables below:
- Req / Opt indicates whether the key is **req**uired or **opt**ional
- The types include **Text**, Input **File**name, **New** file, **Bool**ean, **Path** (to a file), **Time**, **Int**eger, **Dec**imal, and **List** of items
- The Default is the default value, used if the key does not appear in the control file.
- I/O/P indicates Input, Output or Parameter.

For a more detailed description of the Parameter control keys, refer to the Parameter Reference. For a more detailed description of the Input or Output control keys, refer to the File Reference. These two documents also provide the possible values or range of values allowed for each control key listed below. For instance, files can usually be output to numerous formats beyond TAB_DELIMITED for additional post-processing / file manipulation actions.

Configuration Keys

Control File Keys:	Req/Opt	Type	Default	I/O/P
TITLE	Opt	Text		P
REPORT_DIRECTORY	Opt	Path		O
REPORT_FILE	Opt	New		P
REPORT_FLAG	Opt	Bool	FALSE	P
PAGE_LENGTH	Opt	Int.	65	P
PROJECT_DIRECTORY	Opt	Path		P
DEFAULT_FILE_FORMAT	Opt	Text	TAB_DELIMITED	P
TIME_OF_DAY_FORMAT	Opt	Text	DAY_TIME	P
MODEL_START_TIME	Opt	Time	0:00	P
MODEL_END_TIME	Opt	Time	24:00:00	P
MODEL_TIME_INCREMENT	Opt	Time	15 minutes	P
UNITS_OF_MEASURE	Opt	Text	METRIC	P
RANDOM_NUMBER_SEED	Opt	Int.	0	P
MAX_WARNING_MESSAGES	Opt	Int.	100000	P
MAX_WARNING_EXIT_FLAG	Opt	Bool	TRUE	P
MAX_PROBLEM_COUNT	Opt	Int.	0	P
NUMBER_OF_THREADS	Opt	Int.	1	P

System File Keys

Control File Keys:	Req/Opt	Type	Default	I/O/P
NEW_SELECTION_FILE	Req	File		I
NEW_SELECTION_FORMAT	Opt	Text	TAB_DELIMITED	P
HOUSEHOLD_FILE	Opt	File		I
HOUSEHOLD_FORMAT	Opt	Text	TAB_DELIMITED	P
TRIP_FILE	Opt	File		I
TRIP_FORMAT	Opt	Text	TAB_DELIMITED	P

Select Service Keys

Control File Keys:	Req/Opt	Type	Default	I/O/P
SELECT_HOUSEHOLDS	Opt	List	ALL	P
SELECTION_PERCENTAGE	Opt	Dec	100.0%	P

Control Keys

Control File Keys:	Req/Opt	Type	Default	I/O/P
NUMBER_OF_PARTITIONS	Req	Int	8	P

Notes

Each '_FILE' key has a corresponding '_FORMAT' key. The following file formats can be used for input and ouput files:
TEXT, BINARY, FIXED_COLUMN, COMMA_DELIMITED, SPACE_DELIMITED, TAB_DELIMITED, CSV_DELIMITED, DBASE,
SQLITE3, VERSION3

Example

Control File

```
TITLE                      RandomSelect Test
TRIP_FILE                  demand/trip.txt
NEW_SELECTION_FILE         demand/select.txt
RANDOM_NUMBER_SEED         234
NUMBER_OF_PARTITIONS       2
```

Resulting .prn file

```
*********************************************
|                                           |
|        RandomSelect - Version 5.0.1       |
|    Copyright 2012 by TRANSIMS Open-Source |
|          Tue Jun 18 08:56:54 2013         |
|                                           |
*********************************************

Control File = RandomSelect.ctl
Report File  = RandomSelect.prn (Create)

RandomSelect Test

Project Directory = ../
Default File Format = TAB_DELIMITED
Time of Day Format = HOUR_CLOCK
Model Start Time = 6:00
Model End Time = 10:00
Units of Measure = ENGLISH
Random Number Seed = 234
Number of Threads = 2
Warning: RandomSelect is Not Thread Enabled

Input System Demand Files:
Trip File = ../demand/trip.txt

Output System Demand Files:
New Selection File = ../demand/select.txt

Data Service Controls:
Select Service Controls:

RandomSelect Control Keys:
Number of Partitions = 2

Number of Trip File Records = 28341

New Selection File Records = 28341

Partition Distribution
    0      14220 ( 50.2%)
    1      14121 ( 49.8%)
Total      28341

Tue Jun 18 08:56:54 2013 -- Process Complete with 1 Warning (0:00:00)
```

Excerpt from the output selection file

This shows the random assignment to partitions 0 or 1:

HHOLD	PERSON	TOUR	TRIP	PARTITION
1	1	1	1	0
2	1	1	1	0
3	1	1	1	0
4	1	1	1	1
5	1	1	1	1
6	1	1	1	1
7	1	1	1	0
8	1	1	1	1
9	1	1	1	1
...	...	...	...	...
28339	1	1	1	0
28340	1	1	1	0
28341	1	1	1	1