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

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| |

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| Tue Jun 18 08:56:54 2013 |

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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 |