

UserConsole

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1. Introduction

UserConsole allows for the estimation of parameters as specified by a Program USER workspace file (See: [Program USER manual](#)) from the command line. This creates the possibility of performing multiple estimation runs from a batch file without the need of user intervention between runs.

The workspace file can be created either by Program USER or manually using a text editor.

2. Usage

2.1. Help

```
$ user -help
```

Displays the version and possible command lines

2.2. Update

```
$ user -update
```

Checks for possible updates.

2.3. Validate

```
$ user workspace-file-name -validate
```

Validates the specified workspace file,

- verifying that the probabilities for all likelihoods sum to one,
- printing the dimension of the minimum sufficient statistic (MSS), and
- printing the number of parameters.

2.4. Estimate Parameters

```
$ user workspace-file-name -output output-file-prefix
```

Runs estimation for the workspace and creates three output files:

1. Estimates file, containing estimates and standard errors,
2. Covariance file, containing the covariance matrix, and
3. Residuals file, containing the observed, expected, and Anscombe residuals for all categories.

The files are comma-separated-value (CSV) files. For example, if the output file prefix is “myWork,” the following three files will be created:

1. myWork_estimates.csv
2. myWork_covariance.csv
3. myWork_residuals.csv

2.5. Estimate Parameters with Alternate Category Counts

```
$ user workspace-file -output output-prefix -counts count-file
```

Runs estimation using the category counts specified in the count-file. The workspace file need not contain category counts; if it does, they will be ignored.

2.6. Estimate Parameters in Batch Mode

```
$ user workspace -output output-file -counts counts-file -batch
```

In batch mode, all parameter and convenience function estimates, along with their standard errors, are written to the output file.

If the output file does not exist, it will be created as a .csv file, and the first line will be a header with the names of the parameters and convenience functions. The second line will be the corresponding estimates and standard errors.

If the output file already exists, the new estimates will be appended to it. This allows multiple runs with multiple input counts to be estimated and saved to one file.

3. File Format

The workspace file conforms to the workspace file format for the current USER program, with one notable exception. In the current USER, the category counts are appended to the end of the workspace, for example:

```
1 0 0 : 100
1 0 1 : 25
1 1 0 : 50
1 1 1 : 150
```

In UserConsole, the format is now

```
categoryCounts
1 0 0 , 100,
1 0 1 , 25,
1 1 0 , 50,
1 1 1 , 150;
```

The reason for this change is to have it conform to all the other sections of the workspace file and allow for more flexibility in the format of the workspace file. The headers for the sections of a workspace file are:

1. parameters,
2. variables (convenience functions),
3. likelihood (any number),
4. optimizer,
5. parameterSeeds,
6. profileLikelihoodRequests, and
7. categoryCounts.

These sections can now appear in any order in the workspace file. The category counts file may be omitted if an external category counts file is specified. The external category counts file must contain a “categoryCounts” section as described above.

4. Current Limitations

1. The profile likelihood requests are not implemented. This section of the workspace file will be ignored.
2. The only optimizer option is “fletcher,” and specifying any other optimizer will cause an error.
3. The optimizer options “usePreviousEstimatesAsSeeds” and “calculateCovariance” are currently ignored.