PAIRED COMPARISON TOOL – USER'S GUIDE

INSTALLATION

There is no need for installation. Simply extract the archive (PairedComparison.zip) anywhere in your file system. There should be a folder named "dist", which contains everything you need to run the application.

STARTING THE APPLICATION

It is assumed that you have the Java Runtime Environment (JRE) 1.6 or later installed on your machine and added to your execution path. On command line, you can start the application within the "dist" folder by issuing the following command:

```
> java –jar PairedComparison.jar
```

Alternatively, for Windows systems you can start the application by double clicking on the PairedComparison.bat file. For Unix/Linux, you can execute:

```
> PairedComparison.sh
```

USING THE TOOL

1. To conduct a paired comparison, you will first need to set two parameters: number of artifacts and replication factor.

For example, the above parameters are set to compare five artifacts. The replication factor determines how many comparisons will be conducted.

2. After the parameters are set, you need to enter (1) the names of the artifacts and (2) the reference value.

Ref. Value	Artifact Name	A	B	C	D	E
	A		0.0			
	B			0.0		
5.0	C				0.0	
	D					0.0
	E	0.0				

The above example shows components named A, B, C, D and E. Note that only the white column cells need to be populated with names, and the grey row cells will be automatically populated. The example shows a reference value of 5 for component C. You can only enter one reference value.

3. Now you are ready to do comparisons. For each white cell in the judgment matrix, populate the relative sizes of the components.

Ref. Value	Artifact Name	A	B	C	D	E
	A		4.0			
	B			0.5		
5.0	C				2.0	
	D					1.0
	E	0.2				

For example, in the above case, the user determined that the size of component A is 4 times as large as component B, size of component B is half the size (0.5) of component C, and so forth. You do not need to be perfectly consistent across all the cells. Also, try not to look at previous cells that you populated to determine other comparison values.

4. Once all the white cells in the judgment matrix are populated, press "Calculate" at the left bottom of the application. This will give you the result of the paired comparison method in the bottom right output portion of the application.

```
Paired comparison calculation result

Artifact                    Absolute Size           Absolute Std Dev
A                           9.52                    8.31
B                           1.25                    1.09
C                           5.00                    4.37
D                           2.18                    1.90
E                           1.51                    1.32


Inconsistency Index:    1.75
Sum abs std dev:        9.73
```

The "Absolute Size" shown in the above output is the sizes of the components calculated by the tool.

THE "GUIDE" BUTTON

In step 3 above before beginning any of the comparisons, you can press the "Guide" button to have the application guide you through the comparisons. For each unfinished comparison, the tool will ask you to input a value as follows:

Comparison

How many times bigger or smaller is B compared to C?

[OK] [Cancel]
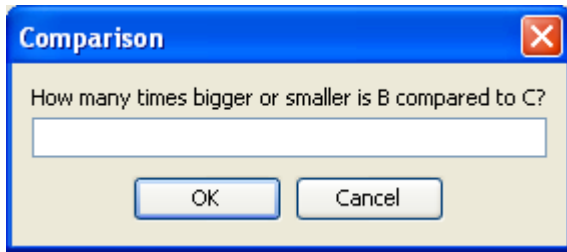
If you have any questions please mail ssasao@andrew.cmu.edu