

U-Check

**The Korea SAI's Customized Application
for Audit Data Analysis and Management**

Changseok Oh, Ph. D.

May 22, 2017.



**Audit and Inspection Research Institute,
The Board of Audit and Inspection of Korea**

Contents

I. Background

II. Program Features and Functions

III. Demonstrations



I. Background

❖ Originality of 'U-Check'

유 척

- 'U-Chuck' is a ruler made from brass, and it aims at auditing local officials whether they perform their duties in fair ways on paying tribute, military, tax, etc.

U-Check!

- 'U-Check' is named after the brass ruler pronounced similar to Korean name 'U-Chuck' .



I. Background

- ❖ **The use of computerized data in audit work** has been increasing but only few auditors use the **data comparison method**.
- ❖ Specifically, the analysis of the data is requested to the institute, increasing **the load of auditing** and **causing risks of exposure of audit direction**.
- ❖ The EUROSAI members mostly use **commercial software** (Germany, Norway, Czech Republic, Poland), or use **self-developed software**(Switzerland, Poland).

I. Background

- ❖ Hence, in 2012 and 2013, it developed “U-Check” in the Korean Windows OS through Step 1~2 development and also conducted self-training within the Audit Research Institute
- ❖ Thereafter, in 2016, it pursued the development of “U-Check” in the English Windows OS through Step 3 development in order to counteract globalization. The following is a brief development progress summary of “U-Check”

Our Development Progress

- Oct. ~ Sep. 2012: Program test development through the “IT utilization audit special unit Task Force” work
- Dec. 2011 ~ Jan. 2013: Opinions on the education and usage of the program was determined (93% optimistic)
- Jan. ~ Feb. 2013: Development of program function improvement and manual
- Sep. ~ Nov. 2016: By translating the previous Korean program into English, the program will be globalized to be convenient to use in foreign public institutions

II. Program Features and Functions

1. Program Features

- ❖ The program is based on MS Access, which has the ability to use simple methods to quickly handle variety of data
- ❖ The functions of MS Access that are often utilized in audit works are packaged so that the users can easily apply them
- ❖ However, the file format the MS Access uses to load is limited, so the program is improved to be able to load most of the other file formats

Excel

- Pros. : Different forms of data can be processed, user-friendly program
- Cons. : The speed of data processing is slow, data analysis can not be done for large sized data

Access

- Pros. : The data processing speed is fast and large file sized can be handled
- Cons.: Only DB format data can be analyzed, program is difficult to use

II. Program Features and Functions

2. Program Functions

- ❖ **Data reliability check for high accuracy of the audit result is basically served by U-Check**
 - To Check the validity of social security number, license maintenance number, corporation registration number that are often used in comparison data
 - To inspect for omission/duplication of unique numbers such as social security number or contract number
 - To provide descriptive statistics that will check whether the contract cost is a singular value
 - To Check whether the collected data are in the same form

II. Program Features and Functions

2. Program Functions

❖ Conversion, analysis, and processing of collected data

- When most of the data of same form are collected from variety of auditees, the collected data is easily appended into one file.
- In order to meet the purpose of the analysis, the field form of the collected data is conversed (number↔letter↔date), or is being processed using the four fundamental arithmetic operations.
- Implementing criteria after mutually comparing based on “matching key”.
- The raw data are summarized and organized by tables and pictures to determine the work progress.

II. Program Features and Functions

2. Program Functions

❖ Maintenance and Security of the analysis results

- The raw data, analysis logic, and analysis result that are applied to the ideas that are remained during the auditing, are saved on different files so that knowledge accumulation and data sharing is possible(data backup).
- Intermediate analysis results and personal information are protected by the login(password given) and uninstall functions.

III. Demonstrations

Initial Login Display

U-Check Logo

LOGIN Data Analysis Program u-check
You need to login to use program.

• USER ID login

COPYRIGHT2013 AIRI AUDIT AND INSPECTION RESEARCH INSTITUTE


Password Input

Main Functions

File Import performs the function of converting audit data, such as Excel, text file or a remote database table, into a database format for the program.

Import:File

■ Select File



C:\#u-Check#Example#CLASS.XLS

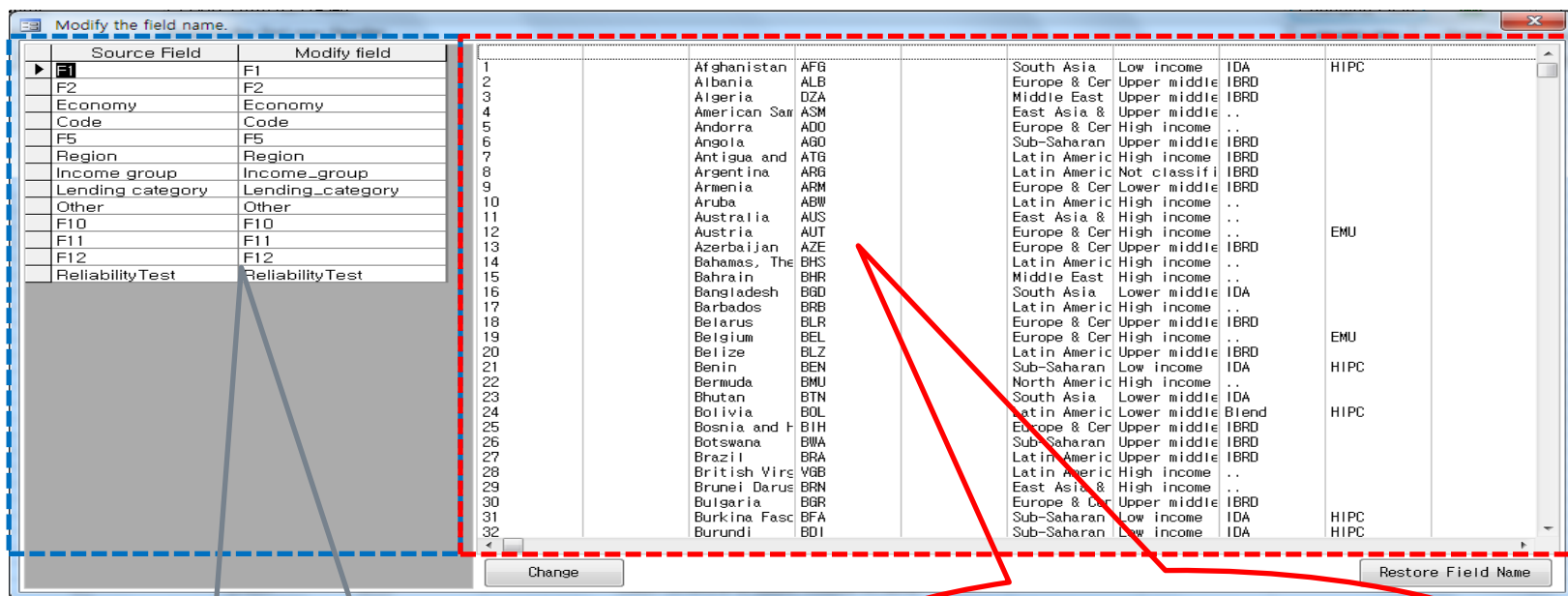
You can only import the text which has the extentions with xls ,
xlsx , xlsb , xlsxm , csv or seperated with commas.

FileName

CLASS

Main Functions

You can change the title of the imported table with this function, If you did not import the first row as a file , or when you want to change the name of the field in the imported file.



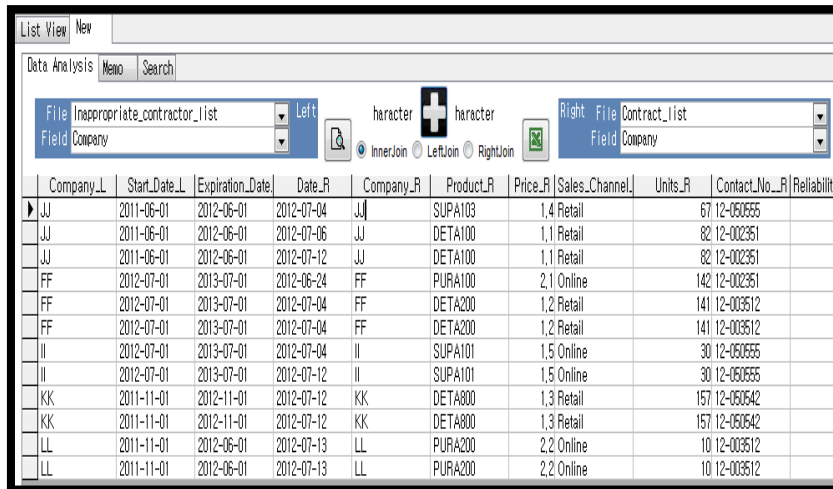
This function is used to change the title through direct input.

When the data is not in the first row, you can specify the location of the line where the data begins.

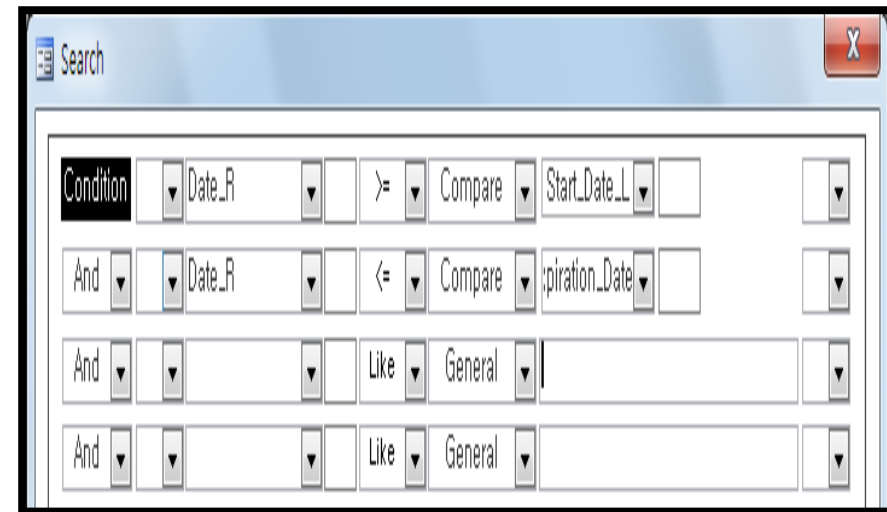
Main Functions

Data Analysis-Data Reconcile

Data Reconcile merges the two tables based on a particular field (common key), and sets the conditions for the merged table functions to derive results.



Company_L	Start_Date_L	Expiration_Date	Date_R	Company_R	Product_R	Price_R	Sales_Channel	Units_R	Contact_No_R	Reliability
JJ	2011-06-01	2012-06-01	2012-07-04	JJ	SUPA103	1,4	Retail	67	12-050555	
JJ	2011-06-01	2012-06-01	2012-07-06	JJ	DETA100	1,1	Retail	82	12-002351	
JJ	2011-06-01	2012-06-01	2012-07-12	JJ	DETA100	1,1	Retail	82	12-002351	
FF	2012-07-01	2013-07-01	2012-06-24	FF	PURA100	2,1	Online	142	12-002351	
FF	2012-07-01	2013-07-01	2012-07-04	FF	DETA200	1,2	Retail	141	12-003512	
FF	2012-07-01	2013-07-01	2012-07-04	FF	DETA200	1,2	Retail	141	12-003512	
II	2012-07-01	2013-07-01	2012-07-04	II	SUPA101	1,5	Online	30	12-050555	
II	2012-07-01	2013-07-01	2012-07-12	II	SUPA101	1,5	Online	30	12-050555	
KK	2011-11-01	2012-11-01	2012-07-12	KK	DETA800	1,3	Retail	157	12-050542	
KK	2011-11-01	2012-11-01	2012-07-12	KK	DETA800	1,3	Retail	157	12-050542	
LL	2011-11-01	2012-06-01	2012-07-13	LL	PURA200	2,2	Online	10	12-003512	
LL	2011-11-01	2012-06-01	2012-07-13	LL	PURA200	2,2	Online	10	12-003512	



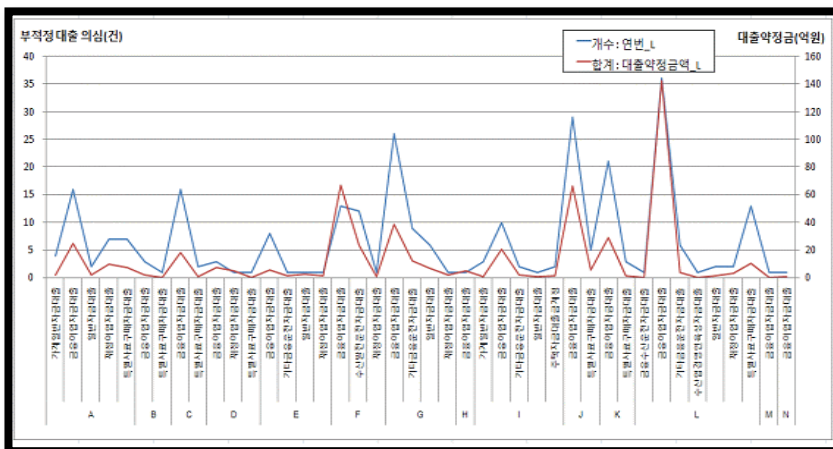
Search

Condition Date_R >= Compare Start_Date_L

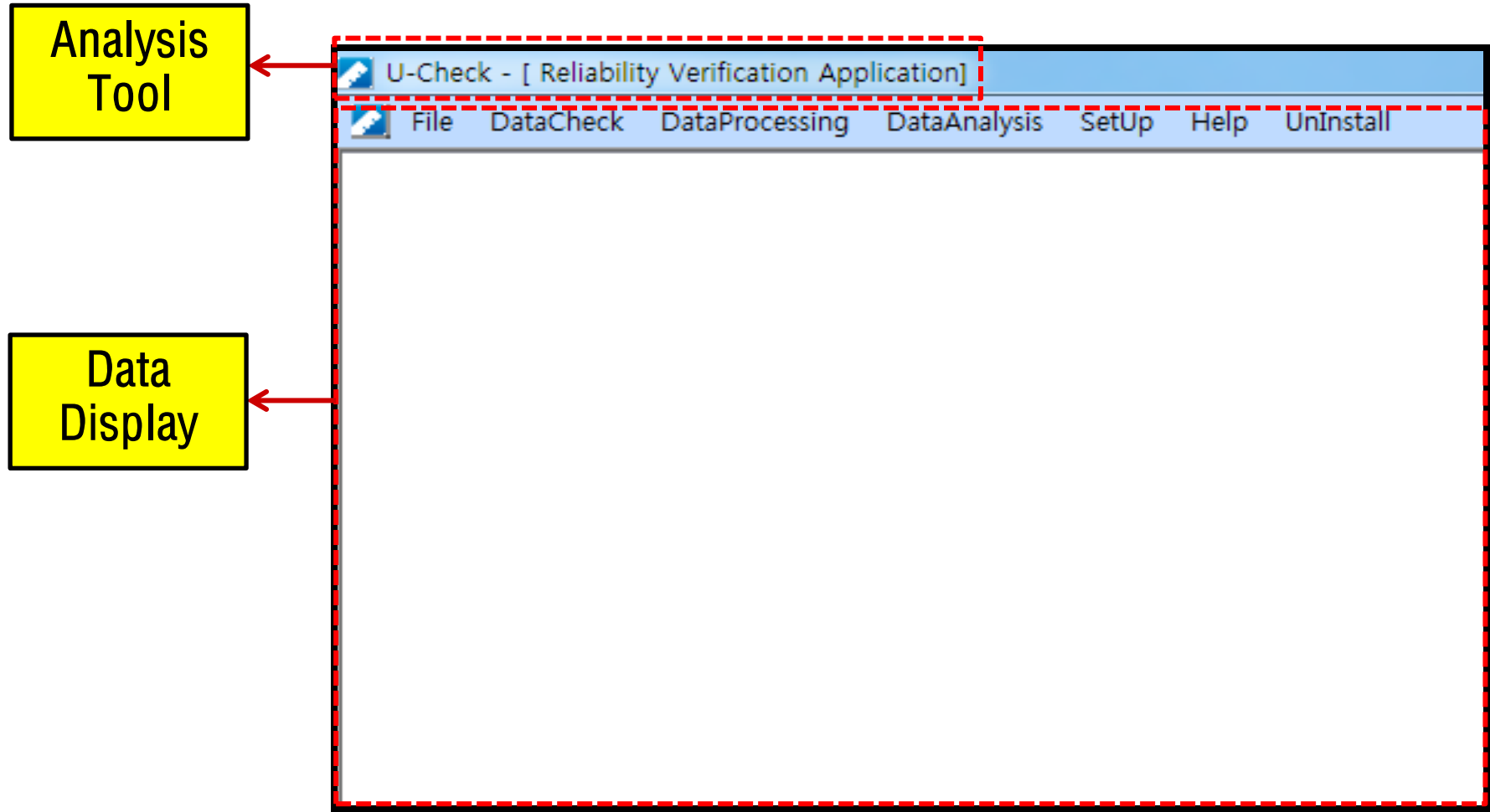
And Date_R <= Compare Expiration_Date

And Like General

And Like General



Screen Configuration – Initial Display




Screen Configuration – File Import

Collected Data Importing

File

Import:File

■ Select File 

You can only import the text which has the extensions with xls, xlsx, xlsb, xlsx, csv or seperated with commas.

FileName

Kinds

First Row Header

☒ Import directly from the first Sheet ☐

☐ Import after Select Sheet ☐

Sheet Name

Import

Imported File list (Contents of file can be checked in List View.)

master_organism_com_commensals_lists	Import the first row Header
IME_List_19_1	Import the first row Header
CPXSourceList_04152016_Web	Import the first row Header
CLASS_2016111712426	Import the first row Header
CLASS	Import the first row Header asad

Caution

- Close the Excel file you select, before importing files
- Import the Excel files with
- format after release 'first row title importing'
- The Excel files importing may not processing caused by insufficiency of memory.

When this happened, retry to merge files after split files or change the file types.

Data storing ammount is up to 2GB, It is recommended to back up the data.

Delete some files that are unnecessary.

Screen Configuration – Testing Data Reliability

Testing Data Reliability is a function to check the electronic data collection, such as the one that consists of the same type, or if the data is correct which uses the common key. This function can test file format, data value, duplicate, technology statistics in [Testing Data].

➤ Details of function

Function	Details
Testing Data Form	▪ Test consistency, and display unmatched data (Data formats can be added in the "Settings" function)
Testing Data Value	▪ Test digit value on Social Security Number, Company Registration Number, Legal Registration Number and display input errors.
Testing Duplicate	▪ Test whether there is a unique number that is redundant.
Technology statistics	▪ Test whether there is specific value in a particular data item through a data distribution.

Screen Configuration – Data Reconcile

List View New

Data Analysis Memo Search

File Inappropriate_contractor_list Left
Field Company

haracter + haracter
InnerJoin LeftJoin RightJoin

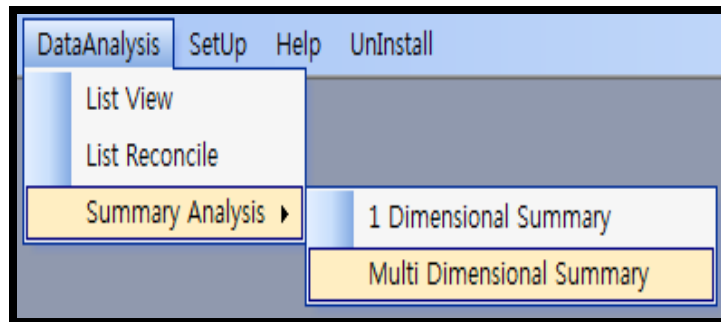
Right File Contract_list
Field Company

Analysis Field or Matching Key Select

	Company_L	Start_Date_L	Expiration_Date_L	Date_R	Company_R	Product_R	Price_R	Sales_Channel_L	Units_R	Contact_No_R	Reliability
▶	JJ	2011-06-01	2012-06-01	2012-07-04	JJ		1,4	Retail		67	12-050555
	JJ	2011-06-01	2012-06-01	2012-07-06	JJ		1,1	Retail		82	12-002351
	JJ	2011-06-01	2012-06-01	2012-07-12	JJ		1,1	Retail		82	12-002351
	FF	2012-07-01	2013-07-01	2012-06-24	FF		2,1	Online		142	12-002351
	FF	2012-07-01	2013-07-01	2012-07-04	FF		1,2	Retail		141	12-003512
	FF	2012-07-01	2013-07-01	2012-07-04	FF		1,2	Retail		141	12-003512
	II	2012-07-01	2013-07-01	2012-07-04	II	SUPA101	1,5	Online		30	12-050555
	II	2012-07-01	2013-07-01	2012-07-12	II	SUPA101	1,5	Online		30	12-050555
	KK	2011-11-01	2012-11-01	2012-07-12	KK	DETA800	1,3	Retail		157	12-050542
	KK	2011-11-01	2012-11-01	2012-07-12	KK	DETA800	1,3	Retail		157	12-050542
	LL	2011-11-01	2012-06-01	2012-07-13	LL	PURA200	2,2	Online		10	12-003512
	LL	2011-11-01	2012-06-01	2012-07-13	LL	PURA200	2,2	Online		10	12-003512

Screen Configuration – Data Analysis (Multi dimension summary)

The multi-dimensional feature is unlike the one-dimensional analysis, in that rows and columns in the axial service function to obtain a summary value with respect to the specific field.



	Name	Department	Age	Gender	Salary	ReliabilityTest
	Britanni Bender	Human Resources	51	F	27000	
	Samuel Ayala	Marketing	42	M	18750	
	Shad Delacruz	Sales	42	M	12000	
	India Gilbert	Human Resources	41	M	13200	
	Ursula Mcconnell	Finance	41	F	21000	
	Ryder Conner	Marketing	43	F	13500	
	Germaine Kidd	Finance	51	F	18750	
	Rhona Clarke	Finance	38	M	9750	
	Maxwell Parker	Marketing	44	M	12750	
	Isaac Wolf	Sales	38	F	13500	
	Guinevere Key	Human Resources	39	M	16500	
	Lani Sweet	Human Resources	42	M	13500	
	Clark Weaver	Marketing	42	F	18750	

Screen Configuration – Data Management

Data Backup

(1) u-Check Backup

Backup Execution

(2) File Backup

CLASS	D:\My Documents\Project
sales_data	C:\u-Check\Example\sal
Inappropriate_contract	C:\u-Check\Example\Ina
Contract_list	C:\u-Check\Example\Con

All Release Backup

Data backup of the U-Check itself

Original Data Backup

Deleted the Analysis Data, Analysis Logic

File DataCheck DataProcessing DataAnalysis SetUp Help UnInstall

Uninstall

Uninstall

(1) U-Check UnInstall

Run Uninstall

Q&A

Thank you for your attention.

csoh@bai.go.kr