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Test Security

Do-It-Yourself Cheating Detection

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The
Starbucks
CARD

Got questions? Get the Card.



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How to Ask Questions

Your phone is muted. To ask a question, please "raise your hand." To raise your hand, please click the hand icon with an arrow in the upper right corner of your screen.

Please ask questions as we go along!



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We'll send a copy of this presentation after the webinar and answer any questions you may have thought of after the webinar.

Today's Agenda

- Why do people cheat?
- Introduction to Data Forensics
- Explanation of Caveon Test Detective
- Demo
- How can Caveon Test Detective be of a benefit to your organization
- How to sign up for a free trial
- Awarding of that coveted Starbucks gift card



Why Do People Cheat?

- “I need to get good grades to stay on the team”
- “I want to get into the right college”
- “I need certification to keep my job”
- “I need to have good scores to earn my bonus”



How widespread is Cheating?

- November 2008 study (29,760 students surveyed) released by the Josephson Institute found:
 - 36% admitted to using the internet to plagiarize an assignment
 - 64% admitted to cheating on a test within the last year. 38% said they did it more than once.



Cheating is going on everywhere

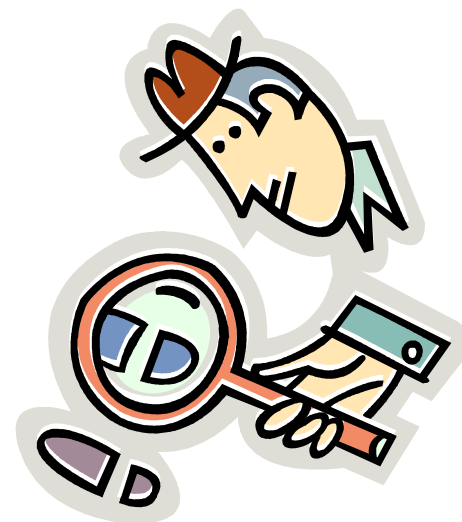
- Grades K through Graduate level
- Not limited to just students
- Professional certifications, licensure

Cheating is on the increase.



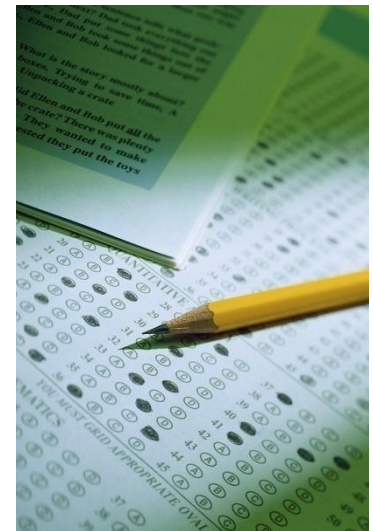
What is Data Forensics?

- Data Forensics detects possible cheating by analyzing test response data
- Example: similar test response patterns
- You can't manage what you can't measure - *detection shows where to start.*



What are we looking for?

- Collusion (answer copying)
- Aberrance (memorizing test)
- Piracy (test theft)
- Proxies



Caveon Test Detective

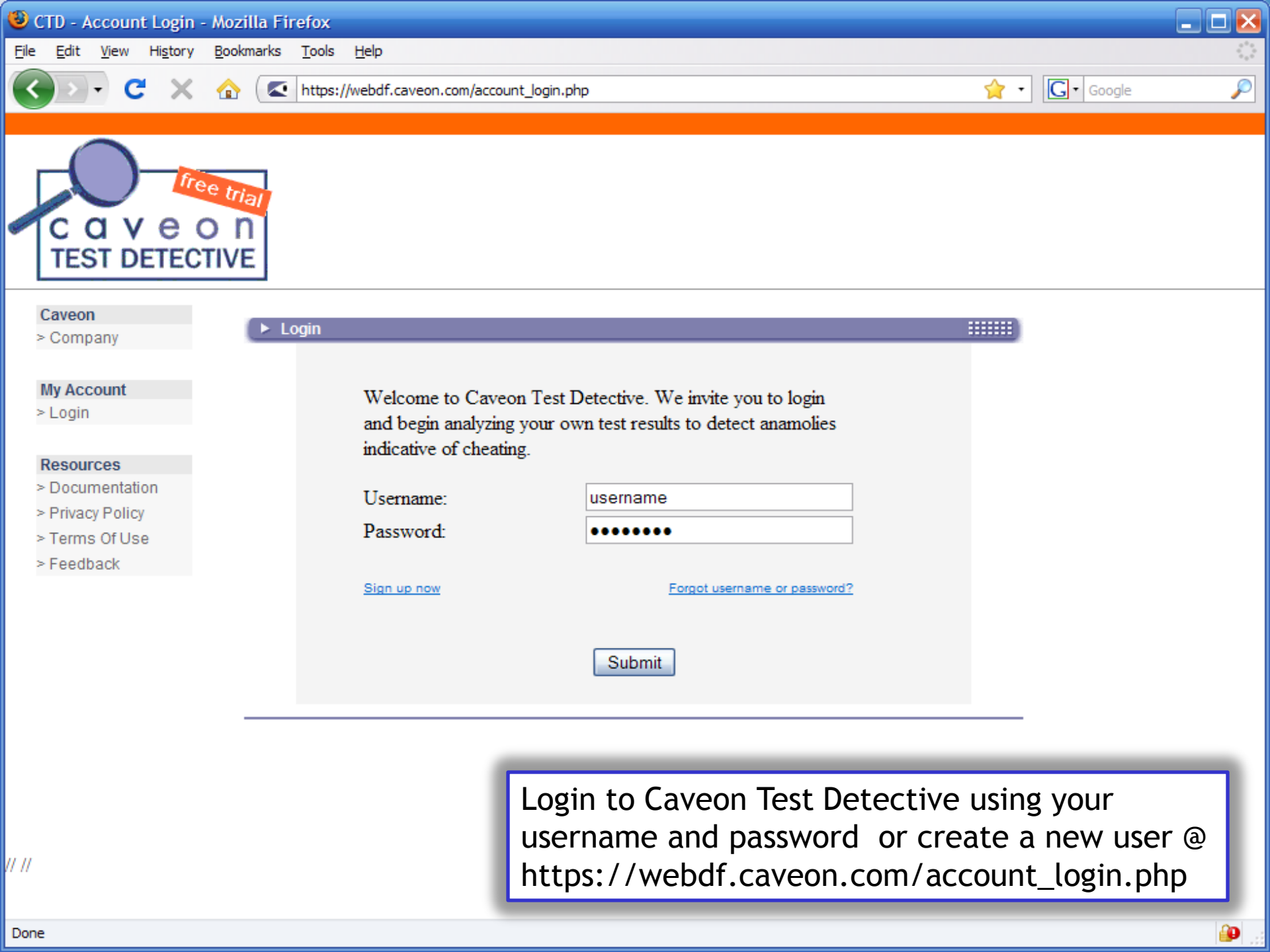
- Web-based analytical tool
 - No hardware or software needed
 - It is there when you need it
 - Caveon supplies all the computing power
- You are in control
 - You manage your data
 - You decide what and when to analyze
 - You decide how to share the results

Caveon Test Detective

- Analyzes all tests for similar answers
- Looks at respondents ability levels
- Finds pairs as well as groups
- Shows easy questions, hard questions



Demo Time



- Caveon
 - > Company
- My Account
 - > Login
- Resources
 - > Documentation
 - > Privacy Policy
 - > Terms Of Use
 - > Feedback

Login

Welcome to Caveon Test Detective. We invite you to login and begin analyzing your own test results to detect anomalies indicative of cheating.

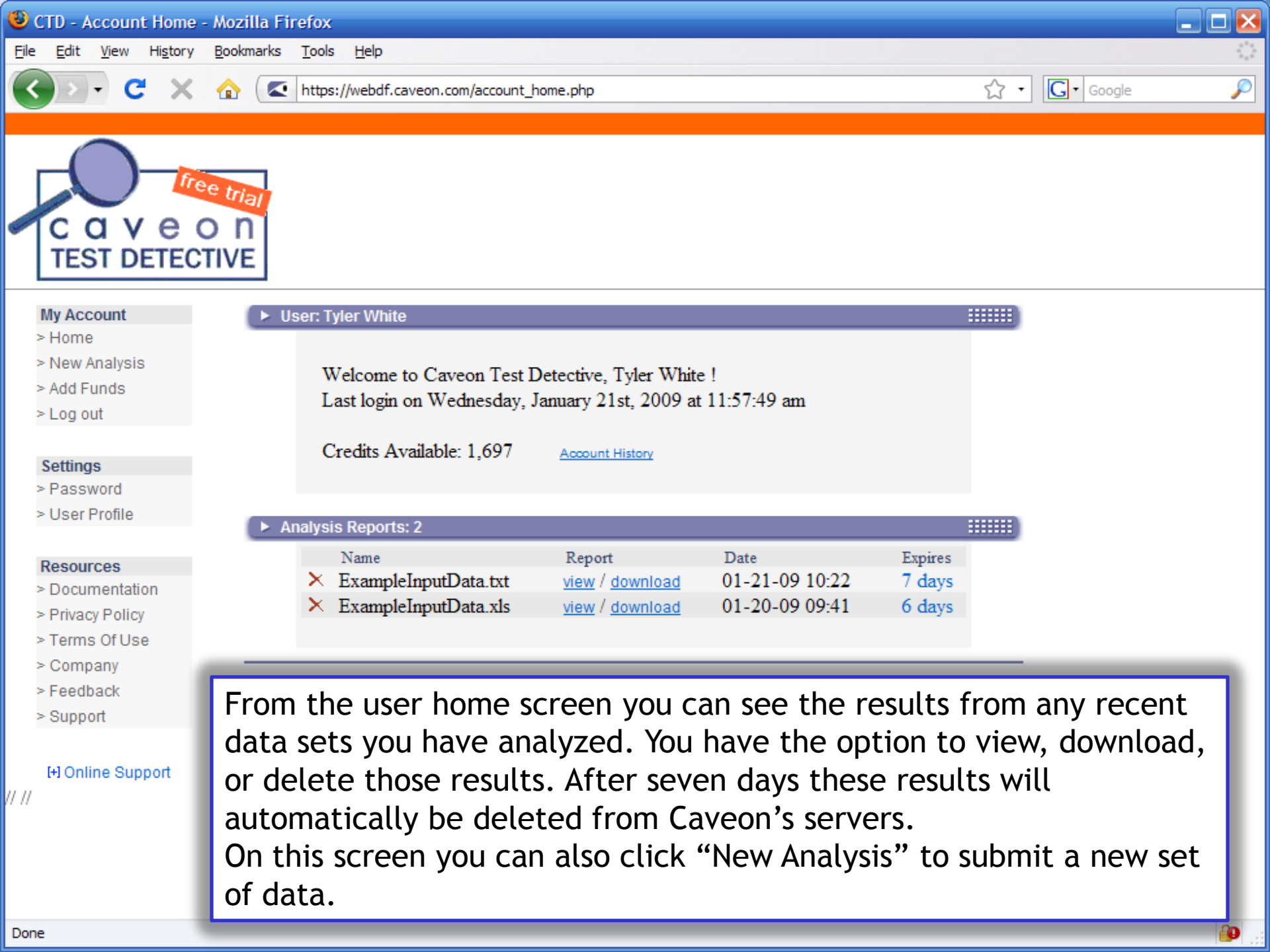
Username:

Password:

[Sign up now](#) [Forgot username or password?](#)

Submit

Login to Caveon Test Detective using your username and password or create a new user @ https://webdf.caveon.com/account_login.php



My Account

- > Home
- > New Analysis
- > Add Funds
- > Log out

Settings

- > Password
- > User Profile

Resources

- > Documentation
- > Privacy Policy
- > Terms Of Use
- > Company
- > Feedback
- > Support

[Online Support](#)

User: Tyler White

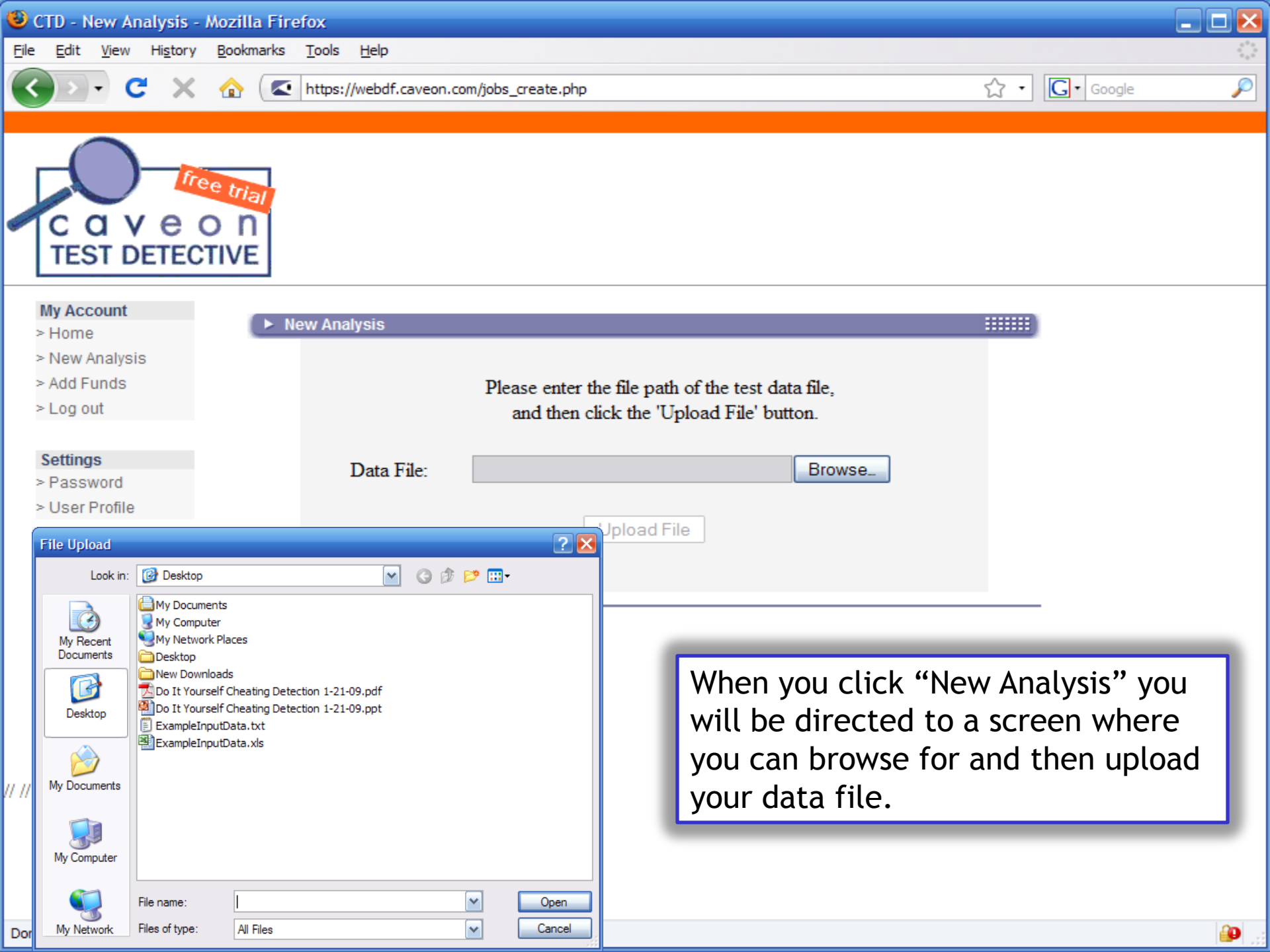
Welcome to Caveon Test Detective, Tyler White !
 Last login on Wednesday, January 21st, 2009 at 11:57:49 am

Credits Available: 1,697 [Account History](#)

Analysis Reports: 2

Name	Report	Date	Expires
✕ ExampleInputData.txt	view / download	01-21-09 10:22	7 days
✕ ExampleInputData.xls	view / download	01-20-09 09:41	6 days

From the user home screen you can see the results from any recent data sets you have analyzed. You have the option to view, download, or delete those results. After seven days these results will automatically be deleted from Caveon's servers. On this screen you can also click "New Analysis" to submit a new set of data.



- My Account
 - > Home
 - > New Analysis
 - > Add Funds
 - > Log out
- Settings
 - > Password
 - > User Profile

New Analysis

Please enter the file path of the test data file,
and then click the 'Upload File' button.

Data File:

File Upload

Look in: Desktop

- My Recent Documents
- Desktop
- My Documents
- My Computer
- My Network

- My Documents
- My Computer
- My Network Places
- Desktop
- New Downloads
- Do It Yourself Cheating Detection 1-21-09.pdf
- Do It Yourself Cheating Detection 1-21-09.ppt
- ExampleInputData.txt
- ExampleInputData.xls

File name:

Files of type: All Files

When you click “New Analysis” you will be directed to a screen where you can browse for and then upload your data file.

ExampleInputData.xls [Compatibility Mode] - Microsoft Excel

Home Insert Page Layout Formulas Data Review View

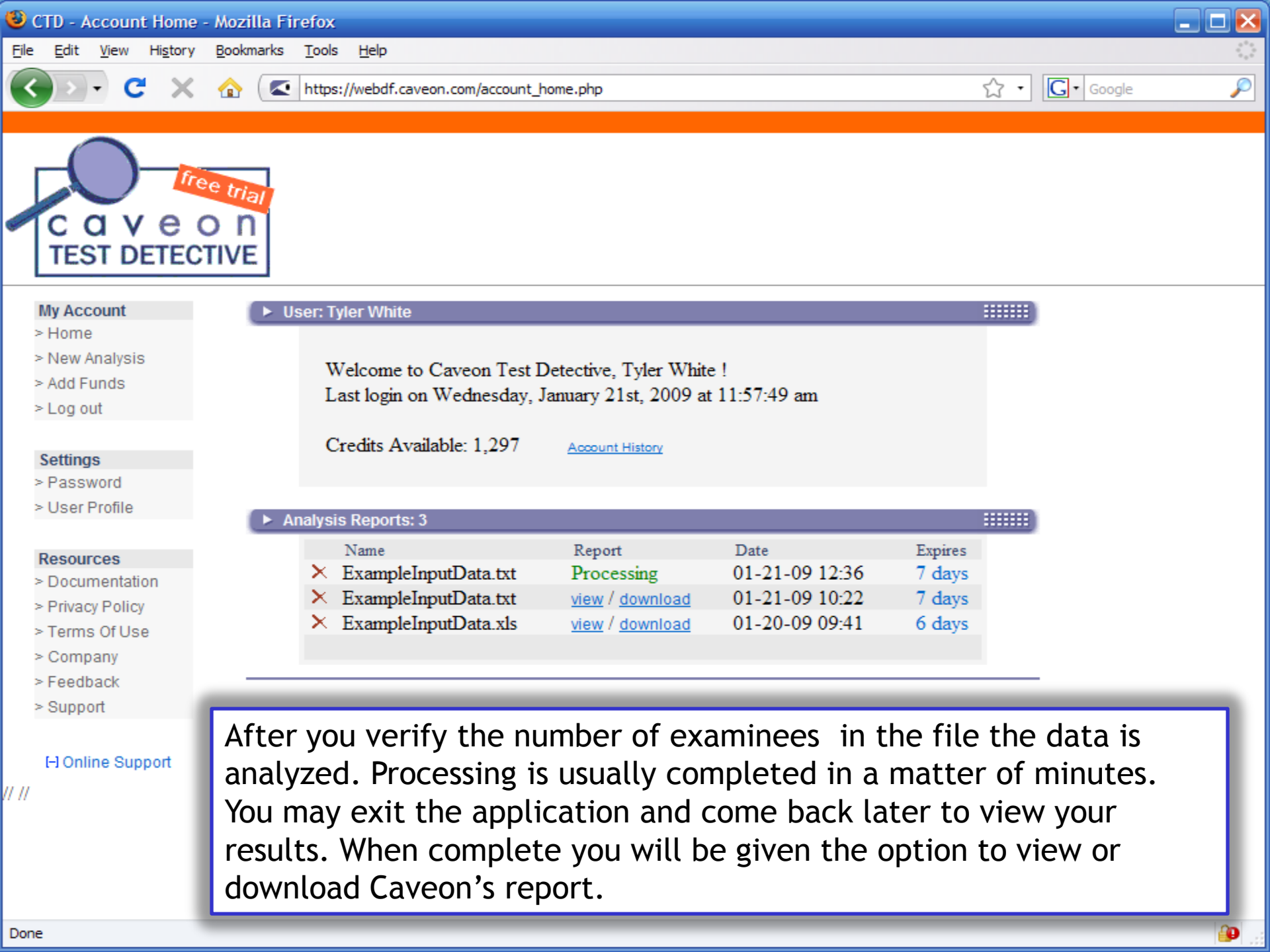
A1 fx key

	A	B	C	D	E	F	G	H	I	J	K	L
1	key	1	4	2	4	3	1	4	4	4	4	4
2	ID_0127	1	4	2	4	3	1	4	4	4	4	4
3	ID_0128	2	4	2	4	3	1	4	4	4	4	4
4	ID_0129	2	3	1	4	4	1	2	4	4	4	4
5	ID_0130	1	3	2	3	3	1	4	4	4	4	4
6	ID_0131	1	4	2	4	4	1	4	4	4	4	4
7	ID_0132	3	4	3	3	2	1	4	1	4	4	4
8	ID_0133	2	2	2	3	4	3	4	3	1	1	4
9	ID_0134	2	2	4	4	4	1	3	3	4	2	1
10	ID_0135	1	1	3	3	3	1	3	4	4	4	2
11	ID_0136	1	1	2	4	3	1	4	4	4	4	2
12	ID_0137	1	4	2	4	3	1	4	4	4	4	4
13	ID_0138	1	3	2	4	2	1	4	4	4	4	4
14	ID_0139	3	2	1	3	3	3	4	1	3	2	4
15	ID_0140	4	2	2	2	4	1	3	4	4	4	2
16	ID_0141											
17	ID_0142											
18	ID_0143											
19	ID_0144											
20	ID_0145											
21	ID_0146											
22	ID_0147											
23	ID_0148											
24	ID_0149	1	4	2	1	1	2	4	1	4	1	4
25	ID_0150	4	4	4	4	3	4	4	4	4	4	1
26	ID_0151	1	2	2	3	3	4	3	3	4	4	3

Chart1 ExampleInputData

Ready Average: 2.546875 Count: 65 Sum: 163 100%

You can either upload data in the Caveon Test Detective format or the tool can be customized to recognize whatever data format you use. Caveon Test Detective format is a very simple tab delimited file. The data is organized so that the first row contains the answer key and the subsequent rows contain each examinee's responses as pictured. The free trial will accept up to 100 examinees.



- My Account**
 - > Home
 - > New Analysis
 - > Add Funds
 - > Log out
- Settings**
 - > Password
 - > User Profile
- Resources**
 - > Documentation
 - > Privacy Policy
 - > Terms Of Use
 - > Company
 - > Feedback
 - > Support

▶ User: Tyler White

Welcome to Caveon Test Detective, Tyler White !
Last login on Wednesday, January 21st, 2009 at 11:57:49 am

Credits Available: 1,297 [Account History](#)

▶ Analysis Reports: 3

Name	Report	Date	Expires
✗ ExampleInputData.txt	Processing	01-21-09 12:36	7 days
✗ ExampleInputData.txt	view / download	01-21-09 10:22	7 days
✗ ExampleInputData.xls	view / download	01-20-09 09:41	6 days

After you verify the number of examinees in the file the data is analyzed. Processing is usually completed in a matter of minutes. You may exit the application and come back later to view your results. When complete you will be given the option to view or download Caveon's report.

Test instances are also grouped into clusters, using standard clustering techniques based on the similarity values. A probability index value is also calculated for each of the clusters. Such groupings of similar test instances are often referred to as "collusion clusters." A summary of results from the analysis for overly similar test instances is shown in Table 1, below.

Table 1: Results summary - analysis of overly similar test instances

Number of Tests (unless otherwise indicated)	Category
4	High similarity risk tests
0	Medium similarity risk tests
96	Low similarity risk tests
2	N similarity clusters
100	Test instances analyzed

Table 1 categorizes test instances into "high", "medium" and "low" risk groups. Test instances in the "high" category were found to have similarity index values equal to or greater than 9.0, "medium" were between 5.0 and 9.0, and "low" were less than 5.0. Detailed information from which the data for Table 1 were taken is located in the accompanying spreadsheet "[ExampleInputData.txt.ccluster.xls](#)".

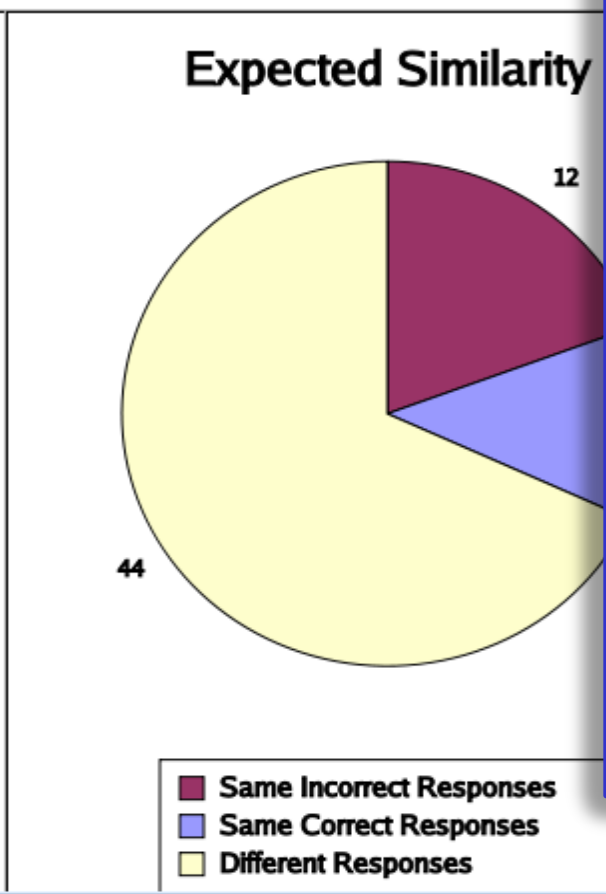
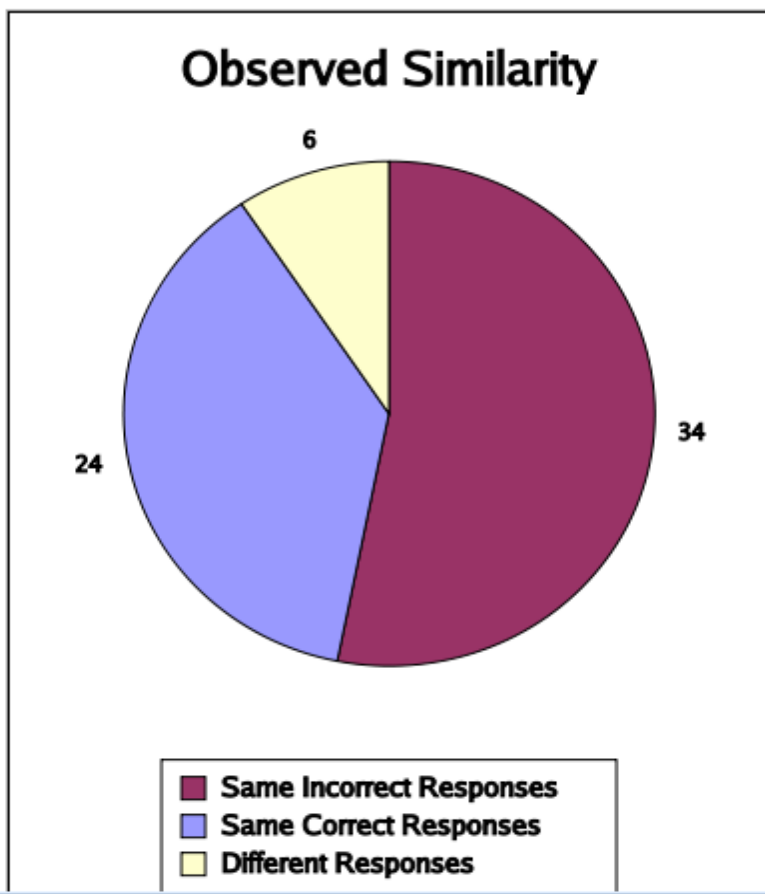
The basic report summarizes the findings and lists the number of tests flagged by Caveon Test Detective.

...s of overly similar tests. Click on the "Cluster ID" for detailed information about individual clusters.

Table 2: Results summary - clusters of overly similar test instances

Cluster IDs	Number of Test Instances	Probability Index Values
1	2	22.1
2	2	20.7

	Same Incorrect Responses	Same Correct Responses	Different Responses
Observed Values	34	24	6
Expected Values	12	8	44



There are a number of supporting documents that describe why certain tests were flagged. We invite you to try out Caveon Test Detective yourself and take time to read through these pages to better understand the statistical methodologies used.

https://webdf.caveon.com/account_login.php.

Caveon Test Detective needs to be a part of your testing strategy

1. Prioritize vulnerable areas
2. Create a plan, e.g.,
 - Change website, candidate agreements to emphasize ethical test taking
 - Test site monitoring and update security procedures
 - Investigate suspicious scores
 - Refurbish exposed test items
3. Apply resources in selected areas.

What's my next step?

- Review your organizations test strategy
- Try out Caveon Test Detective on us
 - Limited time, trial version
 - Use our sample data or your own data
 - https://webdf.caveon.com/account_login.php
- Share the results with your staff

Caveon Services

- Caveon's Test Security Enhancement services:
 - Security Audit/Plan
 - Web Patrol
 - Data Forensics

Before we go....

- Our next webinar is scheduled for
Wednesday, March 25
at 12:00 PM EST

Ten Test Security Lessons from the 2009 ATP Conference.

We'll send more information or you can register at Caveon.com.

- Start receiving *Cheating In The News* today (register on Caveon's home page, www.caveon.com)

And the winner is:



The
Starbucks
CARD

Thanks for attending!

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Joe Rostowsky

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www.caveon.com