

SmartTC

A Test Case Optimization and Generation Tool



About SmartTC

In the current technical scenario it has been consistently noticed that exhaustive testing is increasingly becoming painful due to the combinatorial explosion of features interactions to be tested. Cistel Technology Inc. a Canadian based IT solutions organization brings forth a breath of fresh air for testers via **SmartTC** - a test case optimization and generation tool that has the capability of generating both test plans and detailed test-cases.

SmartTC covers most of the test interactions with far fewer test cases. By automatically generating a much smaller set of test cases (as compared to exhaustive testing) **SmartTC** satisfies all pair-wise combinations of the whole test set. In several applications it has been proven that it greatly reduces the cost and schedule of testing.

**Cost Effective and
Reduction in time to
market.
That's SmartTC!!!**

How it Works

SmartTC uses a proprietary pair-wise algorithm, based on an optimized mathematical model that generates a pair of results at least once thereby eliminating “unnecessary test cases” from the optimized test set.

Empirical results show that pair-wise testing is effective and practical for various types of software systems and it ensures that systems work as intended. For more information please visit

http://www.cistel.com/business_solutions/software_engineering/test_generation.shtm

Key Features

Key features of the **SmartTC** product which make it an extremely cost effective tool are the following.

Generates an optimum set of Test Cases for automated or manual testing which cover all possible pair-wise interactions.	☑
Operates on all the common operating systems since SmartTC has been designed and coded in Java making SmartTC inherently platform independent.	☑
Provides a systematic and formal method to generate test plans and test cases.	☑
Ability to incorporate or avoid specific test cases to provide highly effective test set.	☑
Ability to provide “Default” combinations that can be used for exception testing	☑
Exports output to different formats including MS Excel which can be fed to automated testing tools.	☑

Key Benefits

SmartTC provides consistent test results and deliverables allowing the tester to:

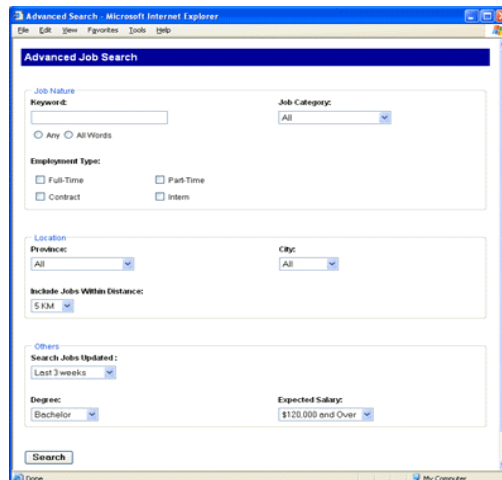
- **Balance financial constraints on resources:**
 - Reduce costs by reducing the level of effort required to test software products.
 - Find inaccuracies early and reduce rework time and test execution time.
- **Reduced time-to-market** - Faster and more efficient testing.
- **Enhanced software quality** - Deliver software that has been thoroughly tested with an increased defect discovery rate
- **Easy to Integrate** - Can be easily integrated into an existing testing environment.
- **Independent of application programming language, application type or testing levels** - SmartTC can be applied at any level of testing (unit, integration, system, etc.) and for any type of testing (functional, non-functional, screen testing, system configuration, interoperability, etc.)
- **Easy to Use and Fast** - Generates optimized set of test cases within few seconds for moderate size system
- **Consistent testing** - Provides a standard methodology for creating test cases that can be followed consistently in an organization.

Examples

The following two examples demonstrate the key benefits of using SmartTC.

Testing a GUI Application

Consider a busy job search form (adjoining figure) that has several drop-down menus, text fields and check boxes with diverse users entering different values. With just 10 fields and 4 values each, exhaustive testing would dictate that 1 million tests would have to be run to test all combinations. However, by using SmartTC the number of test cases on the same form would be reduced to merely 31 tests



Installation Testing

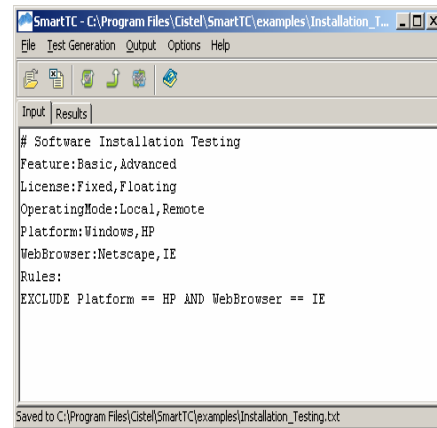
In addition to being cost effective, efficient and faster **SmartTC** is also ‘smart’ in terms of operability. SmartTC provides installation testing of web based software system that works on a variety of platforms, web browsers and operating systems.

**Faster, Reliable &
Efficient.
*That’s SmartTC!!!***

The tool comes equipped with features that can either be enabled or disabled. Its array of features also includes diverse modes of operation, and licensing models.

The fact that this particular system does not expect to work on HP UNIX with Internet Explorer web-browser can be incorporated into **SmartTC** using the **Rules** and **Exclude** constructs.

Following is an example of a test output subsequent to the user inputting values of each of the parameters.



```

SmartTC - C:\Program Files\Cistel\SmartTC\examples\Installation_T...
File Test Generation Output Options Help
Input Results
# Software Installation Testing
Feature:Basic,Advanced
License:Fixed,Floating
OperatingMode:Local,Remote
Platform:Windows,HP
WebBrowser:Netscape,IE
Rules:
EXCLUDE Platform == HP AND WebBrowser == IE
Saved to C:\Program Files\Cistel\SmartTC\examples\Installation_Testing.txt
    
```

Using **SmartTC**, the test set size is reduced from 32 to 9. Note that none of these test cases contain any HP-IE combination.

Parameter /Test #	Platform	Web Browser	Feature	License	Operation Mode
1	Windows	Netscape	Advanced	Fixed	Remote
2	Windows	Netscape	Advanced	Floating	Local
3	Windows	Netscape	Basic	Floating	Local
4	HP	Netscape	Advanced	Fixed	Local
5	Windows	IE	Advanced	Floating	Remote
6	Windows	IE	Basic	Fixed	Remote
7	HP	Netscape	Basic	Fixed	Remote
8	Windows	IE	Basic	Floating	Local
9	HP	Netscape	Basic	Floating	Local



SmartTC is a one stop shop for all your testing needs. Its unique combination of technology, services and deliverables promises to meet all your testing requirements. To place an order **Contact Cistel today!!!!!!**

Find out for yourself how SmartTC can help your organization improve dependability, productivity and reduce time to market. For your convenience Cistel has offices across the Americas and Asia. Contact your nearest office today. Visit www.cistel.com or send an email to info@cistel.com

Canada Office(s)	
<u>Ottawa – Corporate Head Quarter</u> Cistel Technology Inc. 30 Concourse Gate, Unit 40, Ottawa Ontario K2E 7V7 Ph: (613) 723-8244 Fax: (613) 723-8502	<u>Toronto</u> 5359 Timberlea blvd. Unit #50, Mississauga ON L4W 4N5, Canada Ph: (905) 629-9009 Fax: (905) 629-9973
USA	ASIA
<u>Atlanta</u> 1080-A Upper Hembree Road Roswell, Georgia USA, 30076 Ph: (770) 667-7021 Fax: (770) 667-7022	<u>New Delhi - India</u> NG SOFTECH PVT LTD (Authorized Partner) 408, 4th Floor G.D.ITL., North Ex Tower, (Opposite Wazirpur Depot) Netaji Subhash Place, Pitampura, Delhi 110034 Ph: (011)424 70534 Mobile: 91-9810584744