



## ADVANCED TEST TECHNIQUE TOOLBOX

### CLASSIFICATION TREES AND PAIRWISE TESTING – TWO POWERFUL TECHNIQUES

Most testers will use the common test design techniques such as Equivalence Partitioning and Boundary Value Analysis during their testing. This workshop will take a detailed look at two of the more unusual advanced test design techniques; Classification Trees and Pairwise Testing.

Tools and utilities will be issued and used during the workshop to support these techniques allowing testers to become more effective and efficient with their time. Due to the high practical elements, participants are encouraged to bring their laptops to get maximum benefit from the workshop.

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### Objectives

The objectives of this 1-day workshop is to equip anyone involved in testing to become more effective in detecting bugs and more efficient with their time. Participants will become proficient in the use of the tools and utilities that support these two powerful techniques.

### Who Will Benefit?

Testers, test team leaders, QA staff, developers, managers, business users and anyone interested in improving their skills in test design.

### Prerequisites

None.

### Skills Gained:

During this 1 day workshop delegates will

- Understand the theory surrounding Classification Trees and Pairwise Testing.
- Know the circumstances in when and when not to use these techniques.
- Practical outworking of these powerful techniques using simple and complex examples.
- Understand how pairwise testing works and how the number of test cases can be significantly reduced – yet have a high bug detection
- Learn the differences between Orthogonal Arrays and Pairwise algorithms.
- Generate test cases using a “free” tools and utilities to support Classification Trees and Pairwise and how dependency rules can assist in reducing testing of full combination coverage

### Content

#### Introduction

Exhaustive testing is impractical in the majority of situations so we must turn to techniques to use our time to maximum benefit. During this session the delegates will not only learn the theory behind these under-used techniques, but will apply these techniques to various applications

demonstrating their power and agility. Once you master these techniques they will become invaluable tools to include in your “test technique toolbox”.

Free tools and utilities will be demonstrated and used during the workshop on many different examples. This will assist testers design quality tests in a fast and powerful way.

#### Classification Trees

The power of this technique is the visual display of the test cases which allows ease of understanding by many different parts of the organization. It also assists the tester with impact analysis and maintenance, which is often a time-consuming activity. Test documentation is kept to a minimum yet the technique is still capable of providing excellent quality tests.

Combinatorial testing and coverage can be achieved using this technique, and with the inclusion of dependency rules ensures a minimum test set is produced for efficiency and effectiveness.

#### Pairwise Testing

Most organisations are faced with the unenviable task of testing multiple combinations. This combinatorial problem often leads to an explosion of the number of test cases.

Testing of all possible combinations is not only undesirable, but in most cases infeasible due to time constraints.

If you find yourself in the situation of considering testing many combinations of inputs/outputs then Pairwise testing could be the solution you are looking for. This technique not only significantly reduces the total number of test cases but they have a high probability of detecting bugs.

There are two recognized methods for testing all-pair combinations; Orthogonal arrays and all-pair algorithms.

The workshop demonstrates the effectiveness of this technique using both methods.

#### Practical Element

Participants will be encouraged to bring their laptops with a “free” tool and utility pre-loaded. Instructions will be given prior to the course for installing this tool and utility. The combination of knowledge and tool support will provide the tester with two powerful techniques to include in their toolbox.

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