

# **Workflow Testing**

by

**Ho Kam Seng, Jacky**



**Master of Science in E-Commerce Technology**

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**Faculty of Science and Technology  
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by

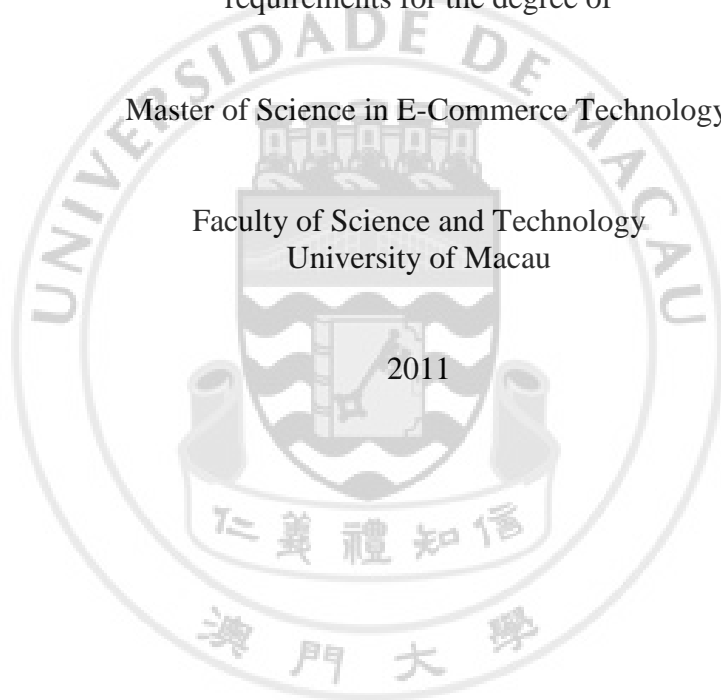
Ho Kam Seng, Jacky

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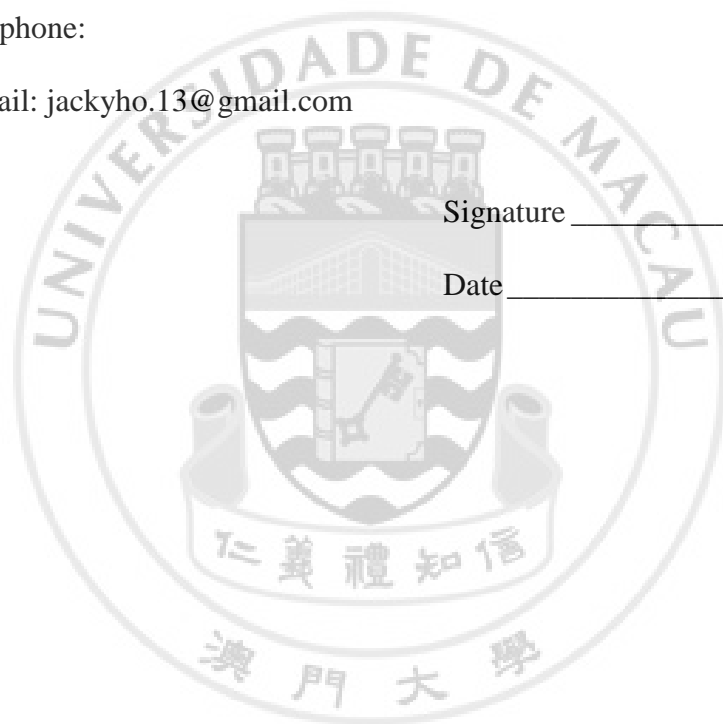
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Address:

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E-mail: jackyho.13@gmail.com



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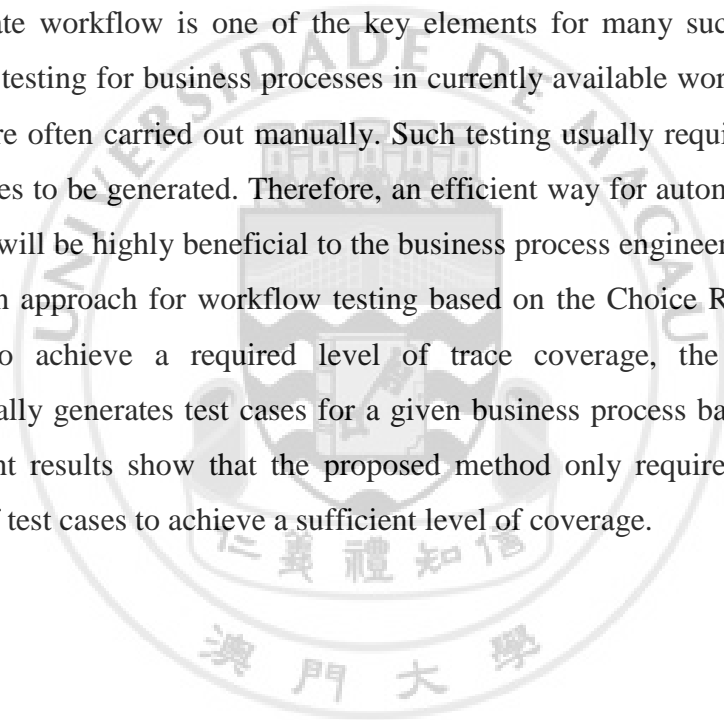
Abstract

WORKFLOW TESTING

by Ho Kam Seng, Jacky

Thesis Supervisor: Assistant Professor, Dr. Si Yain Whar, Lawrence  
Master of Science in E-Commerce Technology

An accurate workflow is one of the key elements for many successful businesses. However, testing for business processes in currently available workflow management systems are often carried out manually. Such testing usually requires a large number of test cases to be generated. Therefore, an efficient way for automatically generating test cases will be highly beneficial to the business process engineers. In this thesis, we propose an approach for workflow testing based on the Choice Relation Framework (CRF). To achieve a required level of trace coverage, the proposed method incrementally generates test cases for a given business process based on a threshold. Experiment results show that the proposed method only requires significantly low number of test cases to achieve a sufficient level of coverage.



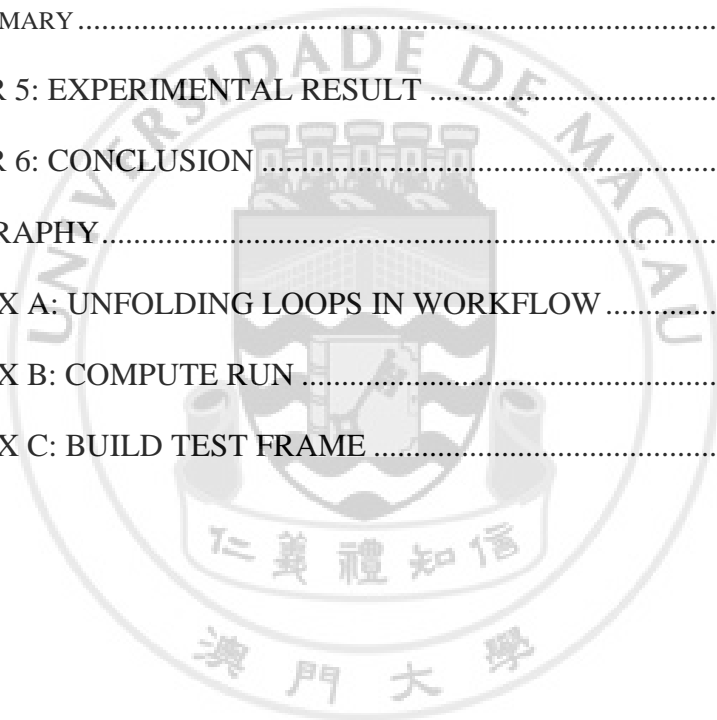




## TABLE OF CONTENTS

| <i>Number</i>   | <i>Page</i> |
|---|-------------|
| LIST OF FIGURES .....   | IV          |
| LIST OF TABLES .....  | V           |
| LIST OF ABBREVIATIONS .....   | VI          |
| CHAPTER 1: INTRODUCTION .....                                       | 1           |
| 1.1 MOTIVATION .....  | 1           |
| 1.2 RESEARCH PROBLEMS .....   | 2           |
| 1.3 CONTRIBUTION .....  | 3           |
| CHAPTER 2: LITERATURE REVIEW .....                                  | 4           |
| 2.1 VALUE OF TEST CASES IN SOFTWARE TESTING .....                   | 4           |
| 2.2 EXISTING METHODS FOR PARTITION TESTING .....                    | 5           |
| 2.3 EXISTING METHODS FOR WORKFLOW TEST CASE GENERATION .....        | 8           |
| 2.4 CONCLUSION .....  | 10          |
| CHAPTER 3: CHOICE RELATION APPROACH TO WORKFLOW TESTING ...         | 12          |
| 3.1 CHOICE RELATION FRAMEWORK (CRF) .....                           | 12          |
| 3.1.1 Decompose the specification into functional units .....       | 16          |
| 3.1.2 Identify categories and their associated choices .....        | 16          |
| 3.1.3 Construction of the Choice Relation Table .....               | 17          |
| 3.1.4 Construction of the Choice Priority Table .....               | 21          |
| 3.1.5 Construction of Test Frames .....                             | 22          |
| 3.1.6 Randomly Construct Test Cases from Generated <i>CTF</i> ..... | 24          |
| 3.2 INCREMENTAL WORKFLOW TESTING .....                              | 25          |
| 3.2.1 Identify the parameters, define categories and choices. ....  | 29          |
| 3.2.2 Traverse the workflow graph to get all the runs. ....         | 29          |
| 3.2.3 CREATE NON-ROUTING CHOICE PROBABILITY TABLE .....             | 33          |

|  |    |
|--|----|
| 3.2.4 Sort all the runs by their probabilities and set the minimum probability threshold $P_T$ .....                               | 33 |
| 3.2.5 Incrementally create the choice relation table by each run.....  | 34 |
| 3.2.6 For each run, use the subset of choice relation table and non-routing choice probability table to construct test frames..... | 34 |
| 3.2.7 Create a test case from each generated test frame.....   | 35 |
| CHAPTER 4: CASE STUDY.....   | 36 |
| 4.1 EXAMPLE ON TEST CASE GENERATION.....   | 36 |
| 4.2 SUMMARY.....   | 45 |
| CHAPTER 5: EXPERIMENTAL RESULT.....  | 47 |
| CHAPTER 6: CONCLUSION.....   | 54 |
| BIBLIOGRAPHY.....  | 56 |
| APPENDIX A: UNFOLDING LOOPS IN WORKFLOW.....   | 60 |
| APPENDIX B: COMPUTE RUN.....   | 63 |
| APPENDIX C: BUILD TEST FRAME.....  | 66 |

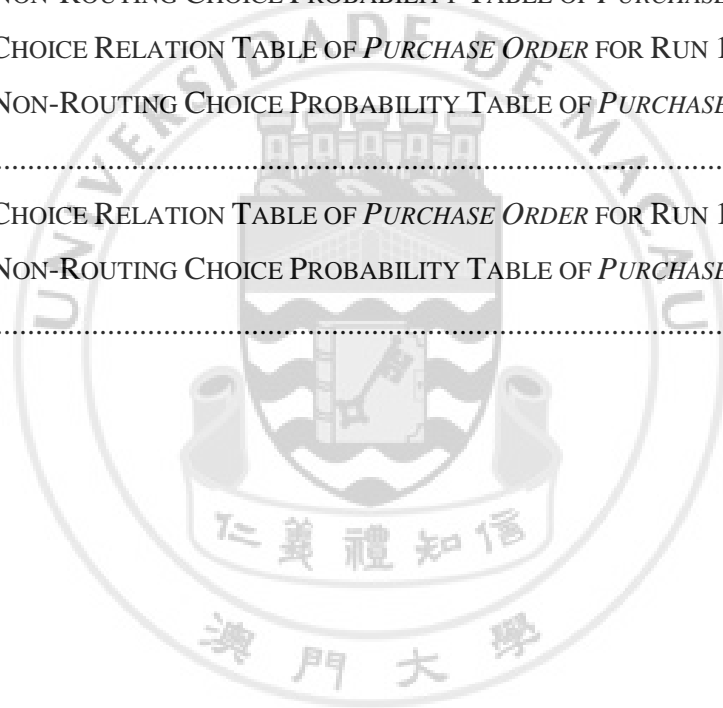


## LIST OF FIGURES

| <i>Number</i>  | <i>Page</i> |
|--|-------------|
| FIGURE 1. FLOW OF CHOICE RELATION FRAMEWORK.....   | 14          |
| FIGURE 2. CONTROL FLOW OF <i>PURCHASE ORDER</i> .....                                      | 15          |
| FIGURE 3. FLOW OF INCREMENTAL WORKFLOW TESTING .....                                       | 28          |
| FIGURE 4. UNFOLDING OF STRUCTURED LOOP.....  | 30          |
| FIGURE 5. UNFOLDING OF A NESTED LOOP .....   | 32          |
| FIGURE 6. RUN 1 OF <i>PURCHASE ORDER</i> .....   | 37          |
| FIGURE 7. RUN 2 OF <i>PURCHASE ORDER</i> .....   | 37          |
| FIGURE 8. RUN 3 OF <i>PURCHASE ORDER</i> .....   | 38          |
| FIGURE 9. OVERALL RESULT OF 42 PROCESS MODELS .....  | 50          |
| FIGURE 10. GROUP 1 .....   | 51          |
| FIGURE 11. GROUP 2.....  | 52          |
| FIGURE 12. AVERAGE PERCENTAGE OF TASKS REQUIRED TO ACHIEVE A GIVEN<br>COVERAGE LEVEL ..... | 53          |

## LIST OF TABLES

| <i>Number</i>  | <i>Page</i> |
|--|-------------|
| TABLE 1. CHOICE RELATION TABLE OF <i>PURCHASE ORDER</i> .....                            | 20          |
| TABLE 2. CHOICE PRIORITY TABLE OF <i>PURCHASE ORDER</i> .....                            | 22          |
| TABLE 3. NON-ROUTING CHOICES OF <i>PURCHASE ORDER</i> .....                              | 36          |
| TABLE 4. ROUTING CHOICES OF <i>PURCHASE ORDER</i> .....                                  | 36          |
| TABLE 5. NON-ROUTING CHOICE PROBABILITY TABLE OF <i>PURCHASE ORDER</i> .....             | 38          |
| TABLE 6. CHOICE RELATION TABLE OF <i>PURCHASE ORDER</i> FOR RUN 1.....                   | 40          |
| TABLE 7. NON-ROUTING CHOICE PROBABILITY TABLE OF <i>PURCHASE ORDER</i> OF RUN 1<br>..... | 41          |
| TABLE 8. CHOICE RELATION TABLE OF <i>PURCHASE ORDER</i> FOR RUN 1 AND RUN 2.....         | 43          |
| TABLE 9. NON-ROUTING CHOICE PROBABILITY TABLE OF <i>PURCHASE ORDER</i> OF RUN 2<br>..... | 44          |



## LIST OF ABBREVIATIONS

- APN.** Algebraic Petri Nets
- BPMN.** Business Process Modeling Notation
- BVA.** Boundary Value Analysis
- CPM.** Category Partition Method
- CRF.** Choice Relation Framework
- CTF.** complete test frame
- CTM.** Classification tree method
- EP.** Equivalence partitioning
- m.** Minimally Achievable Priority Level
- M.** Preferred Maximum Number of Test Frames
- MR.** Preferred Maximum Number of Test Frames of Run
- MSG.** Message sequence graph
- nrc.** non-routing choice
- P<sub>T</sub>.** minimum probability threshold
- PTC.** Percentage of tasks required to achieve a given trace coverage level
- rc.** routing choice
- SDLC.** Software Development Life Cycle
- SESE.** Single-entry single-exit



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## DEDICATION

The author wishes to dedicate this thesis to his beloved parents who provide all their continuous support throughout the time of his studies.

