

**COMPARATIVE STUDY OF METHODS
FOR SOLVING THE RUBIK'S CUBE**

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DECLARATION BY CANDIDATE

We certify that this report and the project to which it refers is the product of our own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.



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ABSTRACT

Solving Rubik's cube can be using software or layer-by-layer human method. This study are to analyze and compare between two different methods for solving Rubik's cube. Therefore, many researches incline to use layer-by-layer human for solving the Rubik's cube. Through this project, the study method of layer-by-layer human which are Fridrich and ZZ method are being applied. Moreover, this project is focusing more on Fridrich method in finding the best time taken for solving the Rubik's cube rather than ZZ method. The factors that were considered are the minimum, maximum and average of the moves and times of Fridrich Method (CFOP) requires for solving Rubik's Cube, how many moves and times to solve per algorithm. The mathematics behind the steps for solving Rubik's cube are observed. Besides, from the observation, there are commutative, conjugate, association and inverse through random jumble of Rubik's cube. Since the efficiency were factored by move and time of each method by several algorithms, the movement of each method of several algorithms will be determined the efficiency for solving the Rubik's Cube. The conclusion, the data of moves and times by Fridrich Method (CFOP) were collected from beginner. For each several algorithms that are going to compare between Fridrich Method (CFOP) and ZZ Method will determine the best method for solving the Rubik's Cube. From the result, the ZZ method is the most efficiency and the best method for solving the Rubik's cube which is, 102.30s compared to Fridrich method which is, 146.20s.

TABLE OF CONTENT

DECLARATION BY THE SUPERVISORS	i
DECLARATION BY CANDIDATE	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
LIST OF TABLES	viii
LIST OF FIGURES	x
1. INTRODUCTION OF RESEARCH	1
1.1 Introduction	1
1.2 Background of study	1
1.3 Problem statement	3
1.4 Objective	4
1.5 Significant of study	5
1.6 Project benefit	5
1.7 Scope of project	6
1.8 Organization of project	7
2. METHODOLOGY	10
2.1 Introduction	10
2.2 Literature Review	10
2.3 Methodology	19
2.3.1 Methods for solving the Rubik's cube	19
2.3.1.1 Fridrich method	20

2.3.1.1 ZZ method	26
2.3.2 Notation of Rubik's cube	28
2.3.3 Permutation	29
2.3.4 Group permutation	30
2.3.5 Conjugates	33
2.3.6 Commutators	34
2.4 Maximum, minimum and average	36
2.5 Definition of terms and concept	37
2.6 Conclusion	38
3. IMPLEMENTATION	39
3.1 Introduction	39
3.2 Research step	40
3.3 Conclusion	45
4. RESULTS AND DISCUSSION	46
4.1 Introduction	46
4.2 Result of Fridrich method	46
4.2.1 Five jumble of the Rubik's cube from the beginner player	47
4.3 Result of Maximum and Minimum	57
4.4 Average of each jumble of Rubik's cube	61
4.5 The result that have been comparing by using the Fridrich method and ZZ method	67
4.6 Result of the mathematical behind the Fridrich method	72
4.7 Conclusion	75