



PROJECT REPORT
FINDING POLYNOMIAL ROOTS USING
PARTICLE SWARM OPTIMIZATION

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APPROVAL AND RATIFICATION PAGE

PROJECT REPORT

Finding Polynomial Roots using Particle Swarm Optimization


by

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This project report has been approved and ratified by the Faculty of
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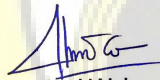

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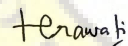
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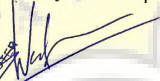
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STATEMENT OF ORIGINALITY

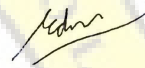
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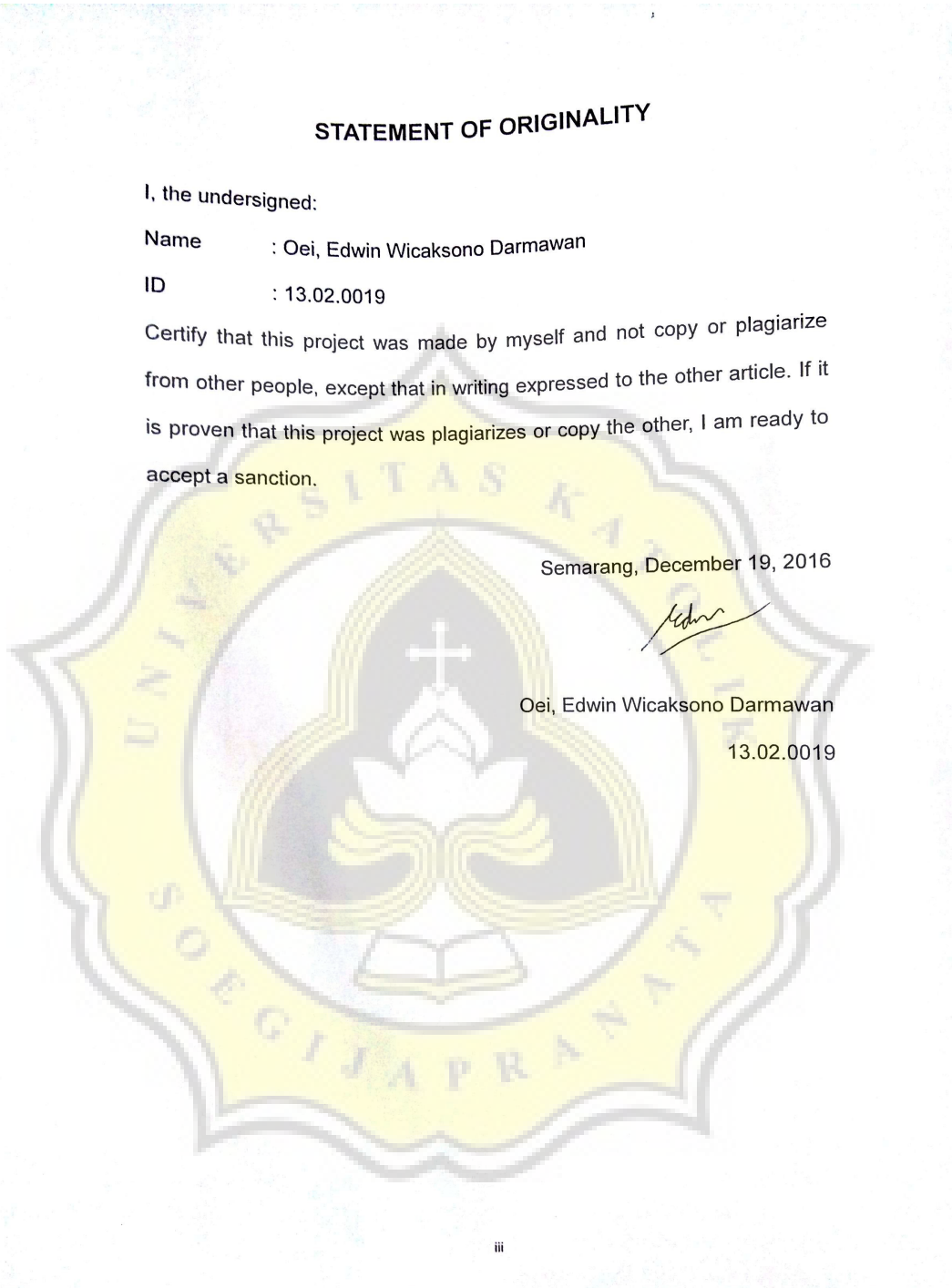
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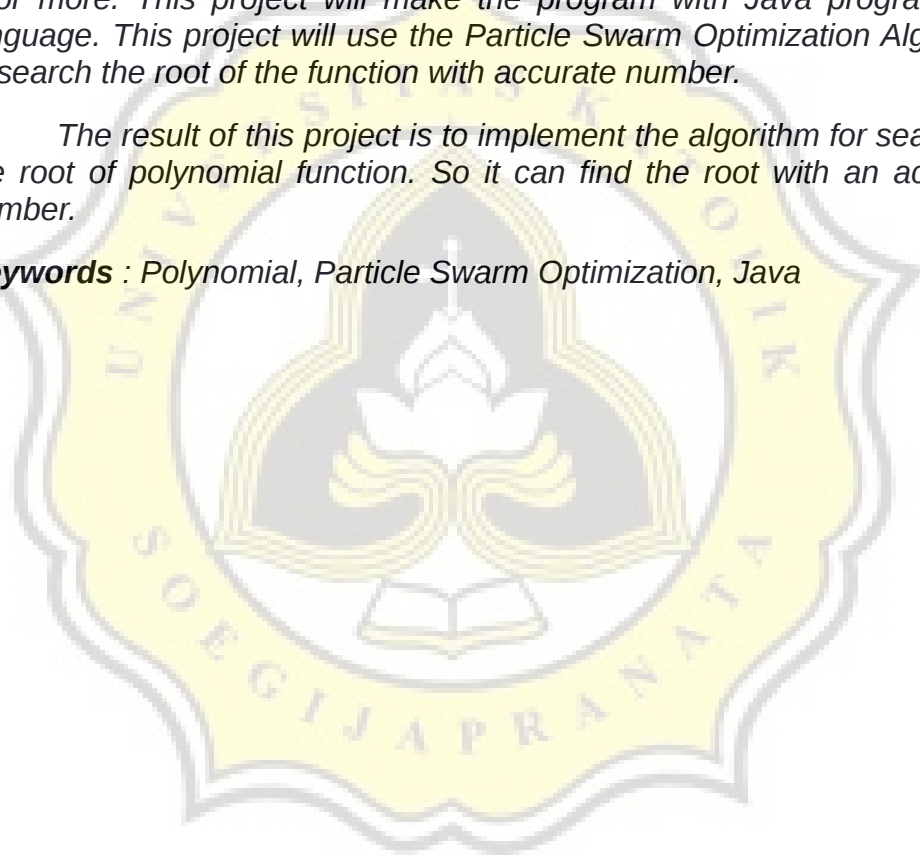
ABSTRACT

Polynomial is one of the mathematic function which involving the multiplying, exponent, and variable. To search the root of the function, it need some method to solve it. The method will different and more complicated if the highest exponent of the polynomial function is 3 or more.

This project will solve the problem with the algorithm. This algorithm will used to search the root of the polynomial function with highest degree 3 or more. This project will make the program with Java programming language. This project will use the Particle Swarm Optimization Algorithm to search the root of the function with accurate number.

The result of this project is to implement the algorithm for searching the root of polynomial function. So it can find the root with an accurate number.

Keywords : Polynomial, Particle Swarm Optimization, Java



PREFACE

Polynomial is one of the function in mathematics which involves multiplying, exponent and value of the variable. Many people can search the root of the function if the highest exponent is 2 with some method that they learned from school. But, it need a different and more complicated method to search the root if the highest exponent is 3 or more. So, this project will try to search the root of the polynomial function for highest degree 3 or more with an algorithm, which is the Particle Swarm Optimization Algorithm.

The background, scope, and the objective of this project will be explained in the chapter 1. In chapter 2, it will explain the past researches that already been done and the difference with this project. And then, it will explain the steps that already been done to finish this project in chapter 3. In chapter 4, it will explain the analysis and the design of the program that needed to solving the problem. In chapter 5, it will explain the implementation of the program and the testing with many parameters and the result. And in chapter 6, it will explain the conclusion of this project and the result of the testing. It explain the future research that can be done too.

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