

## ***Abstract***

*Modern optimization algorithms are often metaheuristic, and nature-inspired algorithms are among the most powerful algorithms and very promising in solving NP-Hard (Nondeterministic Polynomial-time Hard) optimization problems like Travelling Salesman Problem (TSP). In this final year project, performs analysis and implementation of Firefly Algorithm (FA) to solve TSP. FA is inspired by social behavior of fireflies and the phenomenon of bioluminescent communication. The result showed that FA can determine the optimum tour with the accuracy up to 100% with the number of cities is 666 and the result prove that FA can solve TSP with a fixed small population in reasonable time.*

***Keywords:*** NP-Hard, FA, TSP