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SOLVING TRAVELLING SALESMAN PROBLEM USING GENETIC ALGORITHM BASED ON HEURISTIC CROSSOVER AND MUTATION OPERATOR

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ABSTRACT

Genetic Algorithm (GAs) is used to solve optimization problems. It is depended on the selection operator, crossover and mutation rates. In this paper Roulette Wheel Selection (RWS) operator with different crossover and mutation probabilities, is used to solve well known optimization problem Traveling Salesmen Problem (TSP). We have compared the results of RWS with another selection method Stochastic Universal Selection (SUS), which demonstrate that the SUS is better for small number of cities; but as the number of cities increases RWS is much better than SUS. We have also compared the results with a variation between mutation & crossover probability, which concludes that mutation, is more effective for decimal chromosome. We have proposed a new crossover operator which is variation of Order Crossover (OX) and found results are better than existing crossover operator.

KEYWORDS: TSP, GAs, SUS, RWS, OX