Single Vehicle Routing Problems are classical problems. Among them Traveling Salesman Problem, Single Vehicle Pickup and Delivery problem and Single Vehicle Pickup and Delivery Problem with Time Windows are of importance in transportation engineering. This study is an effort to develop a simple general algorithm (genetic types of Single Vehicle Routing Problems with minimum computation effort even for large sized problems. The proposed algorithm is tested on 48 problems of sizes ranging from 15 to 202 nodes of which most of them are obtained in some form from the existing literature. The results from the proposed algorithm are compared with the results obtained by other available algorithms wherever possible. The results of the routes with reasonably less computation effort even for large sized problems.