Objective

Linear programming problems have got many practical applications. Some of the main applications involve:

a. Production mix problem
b. Production smoothing problem
c. Production scheduling
d. Communication industry
e. Road and Rail transportation
f. Portfolio selection
g. Profit planning
h. Human resource management
i. Combinatorial and scheduling problem
j. Make or buy problem etc.

Solutions to all these problems have one thing in common; first solution step is to find feasible solution and second step is to find optimal one. There might exist multiple feasible solutions out of which one is selected. There are many solution techniques available to solve Transportation problem. General approach is to pick any one of these methods and apply it to get feasible/optimal solution. For instance, one might select lowest cost entry method to get first feasible solution and then modified distribution to get optimal solution. But chances are there that if method, North West corner if selected would have given more feasible solution than that of former.

The motive behind proposed project is to introduce a system where, probably all methods can be applied to the problem and more feasible and optimistic solution can be selected. When all solutions are available there at our disposal, a better one can be selected very easily. This is possible only when these solutions are produced in parallel. Hence parallel processing is the primary need of this project.

Objective of proposed project is to introduce a system to solve Transportation problem in less time with more feasible and optimal solution ever, with the help of parallel processing techniques in general. Following specific objectives are framed.

1. To analyze the conventional serial / sequential approach and parallelism approach of system development
2. To compare serial / sequential and parallelism approaches
3. To develop an indigenous system using parallelism to solve the Transportation Problem of Operation Research
4. To test and analyze the performance of the system in terms of time and space complexity and prove that system developed by using parallelism is better