CHAPTER 1
INTRODUCTION

1.1 Background

“Assignment problem” is a problem about assigning worker to do job. It has several workers and jobs. Usually, the workers ask their cost based on the jobs that are taken. Sometime, the cost for each job is different although it is same worker, while each worker has different costs with the others. So, there are workers, jobs, and costs data which are noted. One worker is assigned to do one job, while the cost each job is different with the others and it is not optimal cost. So, it needs to find the minim cost as the optimal cost. To find the minim costs, it needs to be computed. But, it is difficult to compute by manual computing if the workers and jobs data too many. So, it is offered Hungarian Algorithm to solve it.

Hungarian Algorithm is a combinatorial optimization algorithm that solves the assignment problem. It consists of a set of operations applied to a square matrix whose cells values are a function of the cost of assigning the job to the worker.

Hungarian Algorithm works by mapping the workers, jobs, and costs into table. The row and column in the table is normalized and eliminated. The processes are looped iteratively until find the most minim costs. The result from normalizing and eliminating row and column in table will be found the optimal costs from workers and jobs data.
1.2 Scope

The limitation of the problems are :

1. How the jobs are assigned to workers to minimize the total cost of the assignment.

2. How to compute the minimum cost in condition one job is assigned to one worker using Hungarian algorithm.

3. How to map workers, jobs, and costs of data.

1.3 Objective

To make a program which can solve assignment problem by Hungarian Algorithm.