**ABSTRAK**

**Wahyudin Nur, 2011. *Metode Branch and Bound dan Aplikasinya dalam Menentukan Solusi Integer Linear Programming (ILP)*. Skripsi. Fakultas Matematika dan Ilmu Pengetahuan Alam. Universitas Negeri Makassar (dibimbing oleh Ilham Minggi dan Muhammad Darwis)**

Penelitian ini adalah penelitian kajian pustaka yang membahas cara menyelesaikan masalah Integer Linear Programming (*ILP*) yang merupakan bagian dari program linear tetapi dengan syarat tambahan bahwa variabelnya harus bilangan bulat. Dalam skripsi ini, penyelesaian *ILP* menggunakan metode *Branch and Bound* yang terlebih dahulu mengubah *ILP* ke bentuk program linear kemudian digunakan Metode Simpleks untuk menyelesaikan program linear tersebut.

**Kata Kunci: Integer Linear Programming, Metode Branch and Bound, Metode Simpleks.**

**ABSTRACT**

**RAHMAT HIDAYAT. 2011.** The Hungarian method in finding solutions for assignment problems. Thesis. Faculty of Mathematics and Science, Makassar State University. (The supervisors are Ilham Minggi and Bahar)

This research is a study about the Hungarian Method in Finding Solutions for assignment problem. Assignment problem is one of special case in the transport problem in linear programs. To solve the easiest assignment problem usually uses common methods, by permutation of n facilities to *n* kinds of work. So that it would be obtained *n!* alternative or arrangements way. A common method is easy if the *n* is small. But when it is large, this method will be less effective to used again, because they have to find an alternative from *n!* possibility that should be chosen. So that other methods are needed to solve the assignment problem.

This research discuss about how to solve the assignment problem using the Hungarian method for the case *m = n* to minimization,  to the case of maximization, and the case *m ≠ n* to minimization.

The steps taken to obtain the assignment using the Hungarian method is to create a matrix of problems faced. Subtracting each element in its row with the smallest entry of each row, as well as to each column so that there was at least obtained the zeros of each row and column. Then pull lines through rows and columns that involve all the entries zero we obtain previously with a minimum number of lines. If the number of lines same with the size of the matrix, then the settlement has been obtained. But if not then proceed to the next step. The next step is to determine the smallest entries that are not defined in any line. Subtract this entry from all entries contained and then add that entry to all entries contained by a horizontal and a vertical line. After that return to the step of making a line that involves all zeros. Stop the process after the number of lines equal to the size of the matrix.

**Keywords**: Assignment problem, Hungarian method, matrix.