**ABSTRAK**

**Neldi, 2014.***Algoritma Prim padaPohonMerentang Minimum (Studikasus :PemasanganPipa PDAM di Perumahan Green Palm Makassar).* Skripsi.JurusanMatematika, FakultasMatematikadanIlmuPengetahuanAlam. UniversitasNegeri Makassar.

Teorigrafmerupakancabangilmumatematikasekaliguspokokbahasan yang memilikibanyakterapansaatini.Graf adalahsatualat yang digunakanuntukmencarisolusidaripermasalahandiskrit yang ditemuidalamdunianyatautamanyapadapemasanganpipa PDAM.Skripsiinimembahasgrafdengankonseppohonuntukmenyelesaikanmasalahmenentukanpohonmerentang minimum denganmenggunakanalgoritma Prim padapemasanganpipa PDAM di perumahan Green Palm Makassar danmenentukanbiaya minimum padapemasanganpipa PDAM.Metodedalamskripsiiniadalahmetodepenelitianlapangan.

Langkah-langkahmenentukanpohonmerentang minimum denganmenggunakanalgoritma Prim adalahsebagaiberikut: (1) *T* masihkosong, (2) pilihsisi (*u,v*) denganbobot minimum. Tambahkan (*u,v*) kedalam*T* yang bersisiandengansisisebelumnya, dan (3) ulangilangkah 2 sebanyak*n-1* kali. Sedangkanlangkah-langkahuntukmenentukanbiaya minimum padapemasanganpipa PDAM di Green Palm Makassar adalahsebagaiberikut: (1) Menggambarkanbentukgrafpadapemasanganpipa yang dapatdilalui, (2) menentukanjarakterpendekpadagrafpemasanganpipasehinggamenghasilkanbiaya yang minimum.

Hasil yang diperolehmenunjukkanbahwajikasisipadasebuahgrafsemakinbanyakpadasebuahgrafdenganjumlahsimpultetapmakasemakinkecilhasilpohonmerentang minimum daniterasinya, sedangkanbiaya minimum darihasilpenelitian yang dilakukanpadapemasanganpipa PDAM di perumahan Green Palm Makassar adalahRp 7.040.000,-

Pembahasanmengenaipohonmerentang minimum inimasihdapatdilanjutkanuntukpenelitianpohonmerentang minimum padajenisgraf yang laindenganmenggunakanalgoritmalainnya.

**Kata kunci :***Graf, Perumahan Green Palm Makassar, PohonMerentang Minimum, algoritma Prim, Microsoft Visual Basic*

**ABSTRACT**

**Neldi , 2014**, algorithm Prim at the Spanning Tree Minimum (study case : Pipe installation PDAM at Green Palm Real estate Makassar) Script of Mathematic faculty of sains and Mathematic UniversitasNegeri Makassar.

Graph Theory is a part of mathematic knowledge. And also have been an application in almost people. Graph is one of choice application for the diskrit problem in a true fact of PDAM, specially at pipe installation problem of PDAM. By this script I will explain about of Graph Application with the Spanning Tree Minimum with algorithm Prim at pipe installation of PDAM on Green Palm Real Estate Makassar, and determine minimum cost at PDAM Pipe installation. Method of this script is a Survey and investigation Method.

The points of spanning tree minimum progressing with Algoritma prim : (1) T is empty, (2) Put the new minimum capacity (u.v). connect the (u,v) with the new (u,v),and (3) repeat step 2 much as for *n*-1 times.

The points to determine the minimum cost at the pipe installation of PDAM in Green Palm Real Estate Makassar : (1) Design first the graph installation, (2) determine the short paths at the Graph installation to make the minimum cost.

By the explain above, can we concluded if, many side in patent graph can make little capacity of spanning tree minimum and that working. Almost of minimum cost from the survey at pipe installation of PDAM in Green Palm real estate Makassar are, Rp 7.040.000,-

The Graph spanning tree minimum by algoritma Prim also can use to surveying with other spanning tree minimum graph with the other algorithm.

**Key word** : Graph, Green Palm Real Estate Makassar, Spanning Tree Minimum, Algorithm Prim, Microsoft visual basic