



## INTISARI

### HUBUNGAN ANTARA GRAF *GRACEFUL* DAN GRAF LINGKARAN

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Pelabelan *graceful* pada suatu graf terhubung sederhana  $G = (V(G), E(G))$  merupakan suatu pemetaan injektif  $\theta : V(G) \rightarrow \{0, 1, \dots, |E(G)|\}$  yang menginduksi pemetaan bijektif  $\pi : E(G) \rightarrow \{1, 2, \dots, |E(G)|\}$  dengan definisi  $\pi(uv) = |\theta(u) - \theta(v)|$  untuk setiap edge  $uv \in E(G)$ . Graf  $G$  disebut graf *graceful* apabila graf  $G$  dapat diberi label dengan pelabelan *graceful*. Pada skripsi ini akan dibahas hubungan antara beberapa graf *graceful* (graf roda, dua buah graf lingkaran  $C_m$  dan  $C_n$  ( $m, n \equiv 0 \pmod{4}$ )) yang dihubungkan oleh suatu graf lintasan  $P_k$ , dan *path union* dari graf lingkaran  $C_n$  ( $n \equiv 0 \pmod{4}$ )) dan graf lingkaran.



**ABSTRACT**

**THE RELATION ON GRACEFUL GRAPHS AND CYCLE GRAPHS**

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A graceful labeling of a simple connected graph  $G = (V(G), E(G))$  is an injective mapping  $\theta : V(G) \rightarrow \{0, 1, \dots, |E(G)|\}$  which induces a bijective mapping  $\pi : E(G) \rightarrow \{1, 2, \dots, |E(G)|\}$  defined by  $\pi(uv) = |\theta(u) - \theta(v)|$  for all  $uv \in E(G)$ . A graph  $G$  is called graceful graph if graph  $G$  admits graceful labeling. In this thesis, it will be examined the relation between several graceful graphs (wheel graph, two cycle graphs  $C_m$  and  $C_n$  ( $m, n \equiv 0(\text{mod}4)$ )) joined by an arbitrary path graph  $P_k$ , and a path union of cycle graphs  $C_n$  ( $n \equiv 0(\text{mod}4)$ )) and cycle graph.