# 实验报告模板

华南理工大学

《课程名称》课程实验报告

实验题目：3 Solve Minimum Spanning Tree (MST) Problem by Greedy Algorithm

姓名：ZULKARNINE MOHAMMED SHAHLA,CHRISTOPHER GABRIEL PINHIERO,GLIGOROVSKI NIKOLA,TADESSE ABEL MASRESHA

学号:201869990129, 201869990420,201869990252, 201869990725

班级： 组别：

合作者：

指导教师：

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| **实验概述** |
| 【Purposes and requirements】  Purpose:  To solve minimum spanning tree problem with prims greedy algorithm  Requirements:  GNU GCC compiler and a text editor  【lab environment】  OS：Windows 10 |
| **实验内容** |
| 【experiment procedure】  We chose prims greedy algorithm to solve the minimum spanning tree. At every step, it considers all the edges and picks the minimum weight edge. After picking the edge, it moves the other endpoint of edge to set containing MST.  **MST-PRIM (G, w, r)**  1. for each u ∈ V [G]  2. do key [u] ← ∞  3. π [u] ← NIL  4. key [r] ← 0  5. Q ← V [G]  6. While Q ? ∅  7. do u ← EXTRACT - MIN (Q)  8. for each v ∈ Adj [u]  9. do if v ∈ Q and w (u, v) < key [v]  10. then π [v] ← u  11. key [v] ← w (u, v) |
| **小结** |
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| **指导教师评语及成绩** |
| 评语：  成绩：           指导教师签名：                                                 批阅日期： |