**INFO 6205**

**Program Structures & Algorithms**

**Fall 2020**

**Assignment No 04**

* **Task： Comparison between Height Weighted UF, Weighted UF with Path Compression, Weighted UF with Path Compression(All node point to root)**
* **Conclusion: As the time and m showed, it is obvious that Weighted UF with Path Compression performs best in the three algorithms using less time and m to union all components. So, the best way to do UF is to weigh and compress path but no need to compress all nodes because it wastes O(N) time to traverse all elements.**
* **Screenshot of Unit test passing**

**Height weighted union find: 1000\*1000 elements with 10,000 runs time1: 0.1373, m1: 5031**

**Weighted union find with path compression: 1000\*1000 elements with 10,000 runs time2: 0.1041, m2: 4498**

**Weighted union find with path compression(All node compressed): 1000\*1000 elements with 10,000 runs time3: 2.4312, m2: 4259**

**(main method in HWQU\_Alternative using class HWQU\_Alternative and WQUPC)**

**图形用户界面, 文本, 应用程序, 电子邮件

描述已自动生成**