Student Name: **Hongyao Tao (001067209)**

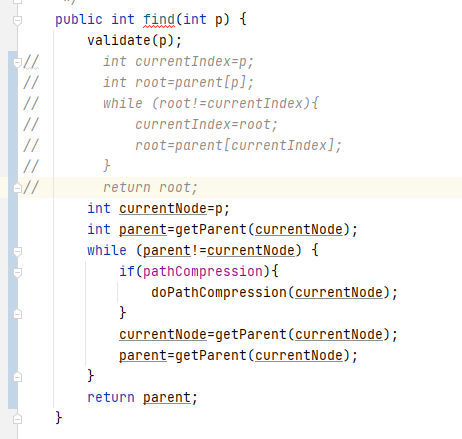
**INFO 6205**

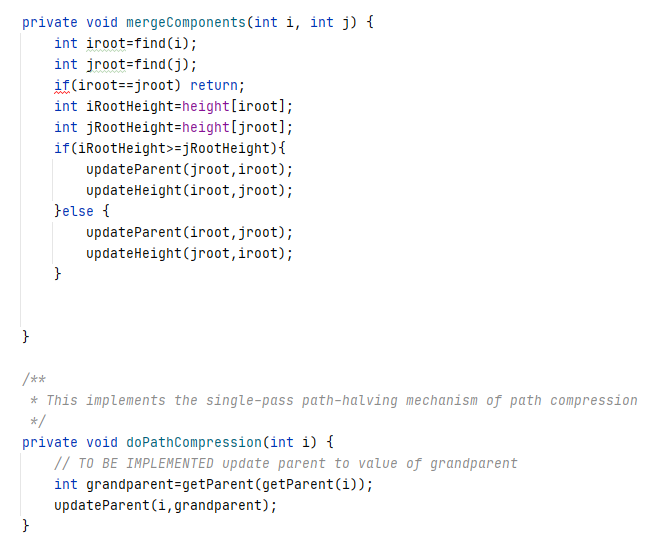
**Program Structures & Algorithms**

**Spring 2021**

**Assignment No.3**

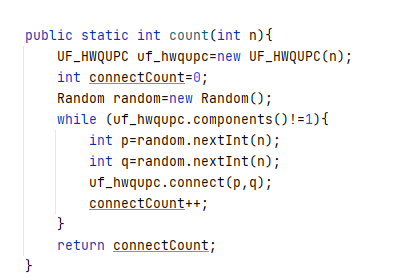
* **Implement height-weighted Quick Union with Path Compression**





**Figure 1. The implement of UF\_HWQUPC class**

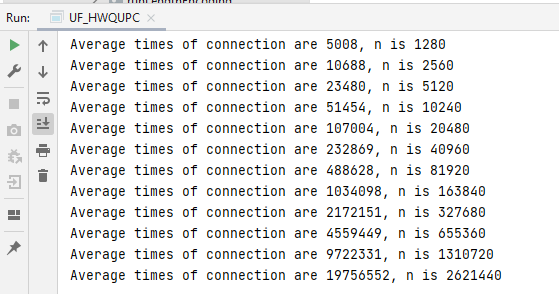
* **The implement of main and count function**





**Figure 2. The implement of count and main functions**

* **The Output**

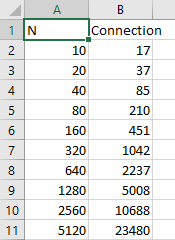
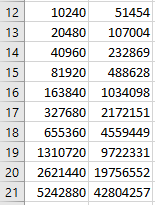
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**Figure 3. The output result of main function**

* **Relationship Conclusion:**

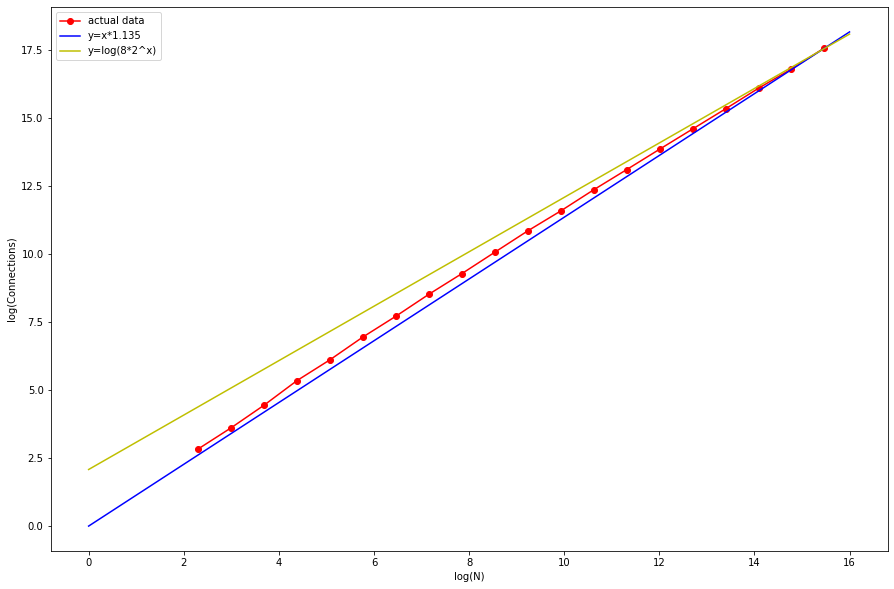
**Connection = N^1.135**

* **Evidence to support the conclusion:**

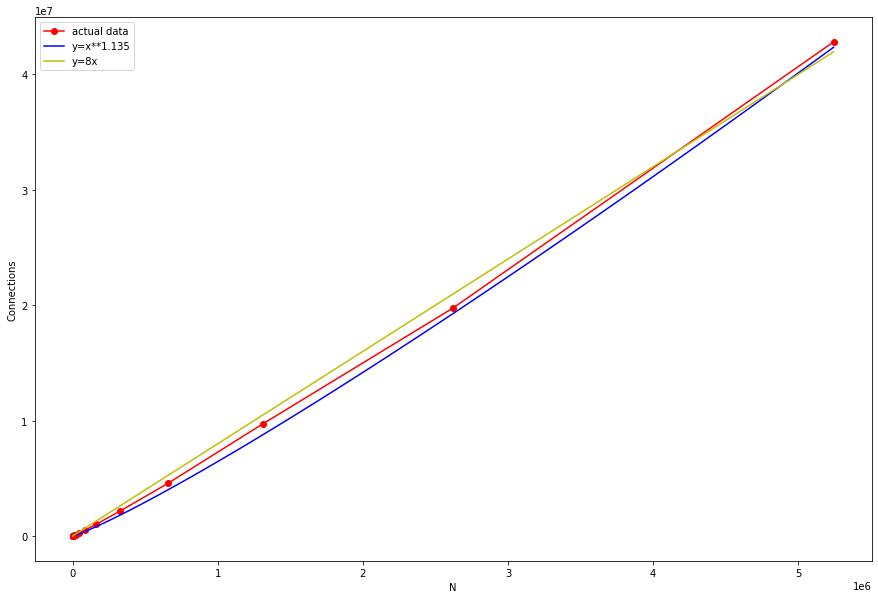
 

**Figure 4. The data of examination**

* **Graphical representation:**

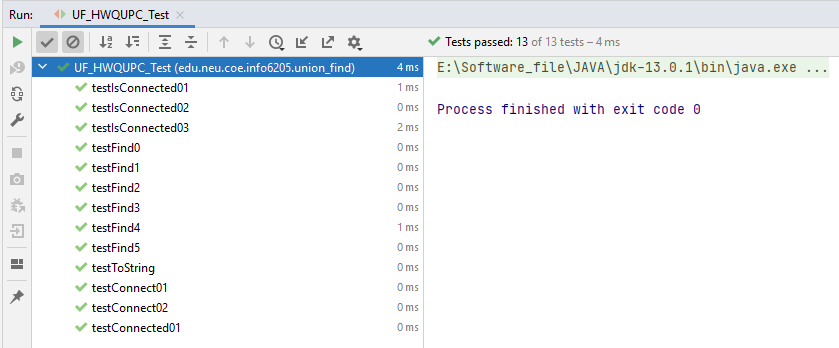


**Figure 5. The Connection/N grow logarithm graph**

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**Figure 6. The Connection/N line graph**

* **Unit tests result:**

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**Figure 7. The unit tests of UF\_HWQUPC class**