1b. Double Hashing

1a. Quadratic Probing

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | **Insert 0** | **Insert 1** | **Insert 19** | **Insert 200** | **Insert 201** | **Insert 219** | **Insert 220** | **Insert 820** | **Insert 821** | **Insert 839** | **Final** |
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **1** |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **2** |  |  |  |  | 201 | 201 | 201 | 201 | 201 | 201 | 201 |
| **3** |  |  |  |  |  | 219 | 219 | 219 | 219 | 219 | 219 |
| **4** |  |  |  | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| **5** |  |  |  |  |  |  |  |  | 821 | 821 | 821 |
| **6** |  |  |  |  |  |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |  |  |  | 839 | 839 |
| **9** |  |  |  |  |  |  | 220 | 220 | 220 | 220 | 220 |
| **10** |  |  |  |  |  |  |  |  |  |  |  |
| **11** |  |  |  |  |  |  |  |  |  |  |  |
| **12** |  |  |  |  |  |  |  |  |  |  |  |
| **13** |  |  |  |  |  |  |  |  |  |  |  |
| **14** |  |  |  |  |  |  |  |  |  |  |  |
| **15** |  |  |  |  |  |  |  |  |  |  |  |
| **16** |  |  |  |  |  |  |  | 820 | 820 | 820 | 820 |
| **17** |  |  |  |  |  |  |  |  |  |  |  |
| **18** |  |  |  |  |  |  |  |  |  |  |  |
| **19** |  |  | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |

1b. Double Hashing

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Index** | **Insert 0** | **Insert 1** | **Insert 19** | **Insert 200** | **Insert 201** | **Insert 219** | **Insert 220** | **Insert 820** | **Insert 821** | **Insert 839** | **Final** |
| **0** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **1** |  | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **2** |  |  |  |  |  |  |  |  |  | 839 | 839 |
| **3** |  |  |  | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| **4** |  |  |  |  |  | 219 | 219 | 219 | 219 | 219 | 219 |
| **5** |  |  |  |  | 201 | 201 | 201 | 201 | 201 | 201 | 201 |
| **6** |  |  |  |  |  |  |  | 820 | 820 | 820 | 820 |
| **7** |  |  |  |  |  |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  | 220 | 220 | 220 | 220 | 220 |
| **9** |  |  |  |  |  |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |  |  |  |  |  |
| **11** |  |  |  |  |  |  |  |  | 821 | 821 | 821 |
| **12** |  |  |  |  |  |  |  |  |  |  |  |
| **13** |  |  |  |  |  |  |  |  |  |  |  |
| **14** |  |  |  |  |  |  |  |  |  |  |  |
| **15** |  |  |  |  |  |  |  |  |  |  |  |
| **16** |  |  |  |  |  |  |  |  |  |  |  |
| **17** |  |  |  |  |  |  |  |  |  |  |  |
| **18** |  |  |  |  |  |  |  |  |  |  |  |
| **19** |  |  | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |