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| **Algorithm 1:** Binary Search |
| **Input:** An ordered array *arr*, the searching value *v*.**Output:** The returned value. If can not find, return None.  |
| 1. *i* ← *arr*[1]
2. *j* ←*arr*[end]
3. **while** *i* ≤ *j* **do**
4. *mid* ← (*i*+*j*)/2
5. **if** *arr*[*mid*] == *value* **then**
6. **return** *value*
7. **else if** *arr*[*mid*] < *value* **then**
8. *i* ← *mid* + 1
9. **else**
10. *j* ← *mid* – 1
11. **end if**
12. **end while**
13. **return** None
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