Algorithm & complexity

Laboratory - Binary search algorithm steps

For the given collection and searched value, analyze the steps of the binary search algorithm. Fill only yellow fields.

Collection:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| **12** | **14** | **17** | **21** | **35** | **52** | **61** | **69** | **72** | **80** | END |

Searched value – last two digits of your student album number:

|  |
| --- |
| 24562 |

Fill the table (yellow fields only) with the variable values for the consecutive steps of the algorithm:

* from, to (index and value) - search range,
* middle – the middle index and value determined by the algorithm.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **from** | | **to** | | **middle** | |
| **index** | **value** | **index** | **value** | **index** | **value** |
| 0 | 12 | 10 | END | 4 | 35 |
| 0 | 12 | 3 | 21 | 1 | 14 |
| 0 | 12 | 0 | 12 | 0 | 12 |
|  |  |  |  |  |  |
|  |  |  |  |  |  |