**[16,21,11,8,12,22] - Merge Sort**

**1-) Write the stages of the above array according to the sort type.**

**2-) Write the Big-O notation.**

**1-) Steps**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 16 | 21 | 11 | 8 | 12 | 22 |

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| --- | --- | --- |
| 8 | 12 | 22 |

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| --- | --- | --- |
| 16 | 21 | 11 |

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| --- |
| 8 |

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| --- | --- |
| 12 | 22 |

|  |  |
| --- | --- |
| 16 | 21 |

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| 11 |

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| 16 |

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| 21 |

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| --- | --- |
| 12 | 22 |

|  |  |
| --- | --- |
| 16 | 21 |

|  |  |  |
| --- | --- | --- |
| 11 | 16 | 21 |

|  |  |  |
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| 8 | 12 | 22 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 8 | 12 | 12 | 16 | 21 | 22 |

**2-) Big-O Notation**

= n, log(n) = x => O(nlogn)